

# ***NABET***

***Northeastern Association  
Of Business, Economics,  
and Technology***

***2008 Proceedings***

**of the**

**31st Annual Meeting**

**October 30<sup>th</sup> & 31<sup>th</sup>, 2008**

**Edited by:**

**Dr. Jerry D. Belloit**

**Clarion University of Pennsylvania**

**Dr. Tony R. Johns**

**Clarion University of Pennsylvania**

## Table of Contents

<b>NABET OFFICERS.....</b>	<b>ii</b>
<b>NABET EXECUTIVE BOARD.....</b>	<b>iii</b>
<b>HISTORY AND PURPOSE OF NABET .....</b>	<b>iv</b>
<b>THE IMPACT OF MANDATORY DISCLOSURES OF MATERIAL WEAKNESSES IN INTERNAL CONTROL BY THE SARBANES-OXLEY ACT OF 2002</b>	
Robert Bee, Deloitte & Touche LLP	
Eric Blazer, Millersville University .....	1
<b>DISCRIMINATORY PRACTICES USING INDEPENDENT CONTRACTOR STATUS</b>	
Dr. Jerry Belloit, Clarion University of Pennsylvania	
Dr. Frank Shepard, Clarion University of Pennsylvania .....	3
<b>PETRODOLLARS, GLOBALIZATION AND U.S INFLATION REVISITED</b>	
Tahereh Alavi Hojjat, DeSales University	
Bhagyavati, DeSales University .....	7
<b>TOOLS FOR DRIVING EXCELLENCE IN AN ACCOUNTING PROGRAM: THE BALANCED SCORECARD AND STRATEGY MAPPING</b>	
Larry N. Bitner, Shippensburg University	
Mary D. Myers, Shippensburg University .....	17
<b>PUBLIC POLICY EXCEPTION TO THE EMPLOYMENT-AT-WILL DOCTRINE IN PENNSYLVANIA</b>	
Thomas L. Bright, Shippensburg University of Pennsylvania	
Richard L. Coffinberger, George Mason University .....	30
<b>BLENDING STRATEGIC, PROJECT, AND SYSTEMS/PROCESS MANAGEMENT IN SUCCESSFUL EFFORTS TO ACHIEVE AACSB ACCREDITATION/REACCREDITATION</b>	
Alan L. Brumagim, Ph.D., Kania School of Management, University of Scranton	
Cynthia Cann, Ph.D., Kania School of Management, University of Scranton .....	38
<b>ADJUSTABLE RATE MORTGAGES: IS THE "COST OF FUNDS RISK" ASSUMED BY THE BORROWER?</b>	
Joshua Buch, La Salle University	
Kenneth Rhoda, La Salle University .....	50
<b>IDENTIFYING AND DEVELOPING THE ELUSIVE M-COMMERCE CUSTOMER</b>	
Marlene E. Burkhardt, Juniata College .....	58
<b>ASSESSING THE EFFECTIVENESS OF A BUSINESS SIMULATION AS A CAPSTONE INTEGRATING TOOL</b>	
John Buttermore, Slippery Rock University .....	63

<b>RESULTS OF A LAPTOP SURVEY AT A PENNSYLVANIA COLLEGE USING ROGERS' THEORY OF DIFFUSION OF INNOVATION</b>	
W. R. Eddins, York College of Pennsylvania .....	66
<b>INVENTORY EFFICIENCY IN PENNSYLVANIA FIRMS: A TIME-SERIES ANALYSIS</b>	
Enyang Guo, Millersville University	
Gary Leinberger, Millersville University .....	73
<b>FIRM GROWTH RATES AND FINANCIAL CHOICES IN PENNSYLVANIA FIRMS -- AN EMPIRICAL STUDY ABOUT THE PECKING ORDER THEORY</b>	
Enyang Guo, Millersville University	
Gary Leinberger, Millersville University .....	79
<b>CLOSING THE LOOP: ASSURANCE OF LEARNING AND ORGANIZATIONAL LEARNING IN BUSINESS EDUCATION</b>	
David H. Hartley, Clarion University .....	88
<b>MICRO-FINANCING – A POWERFUL TOOL FOR ELEVATING POVERTY</b>	
Mehdi Hojjat, Neumann College .....	97
<b>THREE BIG MISTAKES UNDERGRADUATE BUSINESS PROGRAMS MAKE: A CURRICULAR DESIGN VIEW</b>	
Gabriel Jaskolka, Tiffin University .....	106
<b>PROCESS THEORY APPROACHES IN SME ORGANIZATIONS TO ENTERPRISE RESOURCE PLANNING SYSTEMS (ERP) IMPLEMENTATION LIFECYCLES</b>	
Robert L. Kachur – Richard Stockton College of New Jersey	
Ajantha Herath – Richard Stockton College of New Jersey .....	111
<b>DRIVING NFL FAN SATISFACTION AND RETURN INTENTIONS WITH CONCESSION SERVICE QUALITY</b>	
Brian V. Larson, Widener University	
Ross B. Steinman, Widener University .....	125
<b>UNEMPLOYMENT AND UNDEREMPLOYMENT IN AFGHANISTAN</b>	
Muhammad Masum, Towson University .....	133
<b>TEACHING STRATEGIC BUSINESS POLICY IN TODAY'S ENTREPRENEURIAL ECONOMY</b>	
Donald Mong, Slippery Rock University .....	149
<b>DOES YOUR TEACHING TOOLKIT INCLUDE THE WRITE STUFF?</b>	
Cori J. Myers, Lock Haven University	
Richard Van Dyke, Lock Haven University .....	159
<b>RAISING THE MINIMUM WAGE: THE PENNSYLVANIA EXPERIENCE</b>	
Sanjay Paul, Elizabethtown College	

Brian Rossell, Elizabethtown College	
Tom Scheiding, Elizabethtown College .....	161

READABILITY OF INTERMEDIATE ACCOUNTING TEXTBOOKS	
Kenneth J. Plucinski, State University of New York at Fredonia .....	168

AN EXPLORATION OF THE RELATIONSHIP BETWEEN MOTIVATION AND THE INTENTION TO STAY IN A HIGHER EDUCATION PROGRAM	
Tracy H. Porter, Cleveland State University .....	175

EFFECTIVENESS OF ONLINE LEARNING AND VIRTUAL TOOLS IN ASSISTING ENTREPRENEURS WITH BUSINESS PLANNING	
Ernie Post, Kutztown University Small Business Development Center	
CJ Rhoads, Kutztown University .....	186

DO ECONOMIC REFORMS AND HUMAN CAPITAL EXPLAIN POST-REFORM GROWTH?	
Mahbub Rabbani, Milliman Inc	
Svitlana Maksymenko, University of Pittsburgh .....	202

ADDRESSING THE 'BOUNDARYLESS CAREER': IMPACT ON ORGANIZATIONS, WORKERS, AND INSTITUTIONS OF HIGHER LEARNING	
Irwin H. Siegel, Harrisburg Area Community College .....	233

PROJECTIVE TECHNIQUES IN CONSUMER RESEARCH	
Ross B. Steinman, Widener University .....	246

A.D. Roy: THE FORGOTTEN FATHER OF PORTFOLIO THEORY	
Edward J. Sullivan, Lebanon Valley College .....	255

PUBLIC POLICY EXCEPTION TO THE EMPLOYMENT-AT-WILL DOCTRINE IN PENNSYLVANIA	
Thomas L. Bright, Shippensburg University, Pennsylvania	
Richard L. Coffinberger, George Mason University, Virginia .....	261

RETURN ON BOOKED GOODWILL	
David E. Vance, Rutgers University .....	268

FINANCIAL MANAGEMENT DECISION-MAKING AT A COMMUNITY BANK: A CASE STUDY OF TWO BANKS	
John S. Walker, Kutztown University of Pennsylvania	
Henry F. Check, Jr., Kutztown University of Pennsylvania .....	283

INFLUENCING CONSUMER LOYALTY	
Jefrey R Woodall, Argosy University and York College of Pennsylvania .....	311

DETERMINANTS OF THE ANNUAL EARNINGS OF THE LPGA AND PGA GOLFERS .....	320
Jonathan K. Ohn, Bloomsburg University of Pennsylvania .....	320
Victoria Geyfman, Bloomsburg University of Pennsylvania .....	320



# *NABET OFFICERS*

President

Norman C. Sigmond

Kutztown University of Pennsylvania

Vice-President, Programs

Dean Frear

Wilkes University

Vice-President, Publicity

William Eddins

York College of Pennsylvania

Treasurer

Arshad Chawdhry

California University of Pennsylvania

Secretary

Abe Ghoads

Mansfield University of Pennsylvania

# *NABET*

## *Executive Board*

### Chairperson

Norman Sigmond, Kutztown University of Pennsylvania

### Treasurer

Arshad Chawdhry, California University of Pennsylvania

### Secretary

Abe Ghoads, Mansfield University of Pennsylvania

### Conference Chairperson

Martina Vidovic, Bloomsburg University of Pennsylvania

### Journal co-Editors

Kevin Roth, Clarion University of Pennsylvania

John Walker, Kutztown University of Pennsylvania

### Proceedings Editor

Jerry Belloit, Clarion University of Pennsylvania

### Webmaster

William Eddins, York College of Pennsylvania

## History and Purpose of NABET

This organization is in its thirtieth year of existence. It formerly was known as APUBEF (The Association of Pennsylvania University Business and Economics Faculty). It was founded by a small group of Economics professors of the fourteen state universities comprising the Pennsylvania System of Higher Education. Their goal was to provide a platform for sharing and exploring scholarly work among the business faculty of the fourteen state universities in Pennsylvania. As a result of their efforts, the organization has sponsored an academic conference each year for the past 30 years.

Over the years, the fundamental goal of NABET/APUBEF has been to target the business faculty of the small business colleges in Pennsylvania, and surrounding states. The organization has been successful in achieving this goal for the past several years. In 2006 the Executive Board determined that the APUBEF organization should be renamed as NABET and become regional in scope. As a result, the October 2007 annual meeting presented 87 scholarly and pedagogical papers and workshops over two days. It featured authors from eight states including 53 different colleges and universities.

The original founders also established a referred journal, the Pennsylvania Journal of Business and Economics (now renamed as the Northeastern Journal of Business, Economics and Technology). The journal applies a double blind review process and is listed in Cabell's Directory. It is published at least once each year, and has a devoted editorial staff supported by an excellent corps of reviewers.

# THE IMPACT OF MANDATORY DISCLOSURES OF MATERIAL WEAKNESSES IN INTERNAL CONTROL BY THE SARBANES-OXLEY ACT OF 2002

Robert Bee, Deloitte & Touche LLP  
Eric Blazer, Millersville University

---

## ABSTRACT

The current financial crisis has renewed calls for additional regulation of financial markets and criticisms of existing regulations including the 2002 Sarbanes-Oxley Act (SOX). This research focuses on the effectiveness of section 404 of SOX which requires firms to disclose material weaknesses in internal controls. The paper examines a sample of 155 companies disclosing material weakness in internal controls in the year 2004, and analyzes the relationship between material weakness disclosure and the likelihood of a firm restating its total assets. The findings of the research suggest that the disclosure of material weaknesses in a firm's internal control does not provide investors with useful information regarding a company's financial health. The overall results suggest that the costs of compliance may outweigh any benefits provided to potential investors, creditors, or other interest parties. The ongoing assessment and evaluation of the effectiveness of financial market regulation is essential to the health of our financial system and maintaining a healthy economy.

---

## INTRODUCTION

The Sarbanes-Oxley Act (SOX) of July 2002 introduced new rules and procedures for both managers and auditors of publicly registered companies. One focus of SOX involves disclosures of the effectiveness of internal controls over financial reporting. Prior to SOX the only regulation addressing the maintenance and disclosure of internal controls was the Foreign Corrupt Practices Act (FCPA) of 1977. This act requires all companies whose securities are registered with the SEC to keep books, records, and accounts that accurately and fairly reflect transactions and dispositions of assets, and to devise a system of internal accounting controls. Under the FCPA firms were only required to disclose internal control deficiencies when filing a form 8-K (during a change of auditors) assuming the outgoing auditor actually identified a deficiency.<sup>1</sup> With the implementation of SOX, companies are now required to include a discussion of internal controls over financial reporting (ICOFR) in both 10-K and 10-Q filings.<sup>2</sup> Many companies complain about high compliance costs, a lack of guidance on how to comply with SOX requirements (including identifying internal control deficiencies and determining their level of significance), and on how the market will react to the new disclosure requirements.

The complaints aimed at ICOFR disclosures arise from sections 302 and 404 of SOX, which require management (section 302) and the external auditors (section 404) to assess and report on the effectiveness of these controls.<sup>3</sup> If any control deficiencies are identified both the auditor and the company must determine whether the deficiencies are "significant deficiencies" or "material weaknesses", of which only material weaknesses are required to be publicly reported. The Public Company Accounting Oversight Board (PCAOB) in Auditing Standard No. 2 defines both terms as follows:

*A significant deficiency* is a control deficiency, or combination of control deficiencies, that adversely affects the company's ability to initiate, authorize, record, process, or report external financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the company's annual or interim financial statements that is more than inconsequential will not be prevented or detected.

*A material weakness* is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the

annual or interim financial statements will not be prevented or detected.

Many managers and auditors find these definitions are unreasonably vague. In a letter to the Secretary of the SEC (Nancy M. Morris) the Executive Director of the Chamber of Commerce (Michael J. Ryan) argues that managers and auditors need to have objective, quantitative benchmarks to guide their evaluation of material weaknesses. Ryan states that the indicators of a material weakness need to be more specific, and include illustrative examples to serve as guides while implementing and evaluating controls; "otherwise costly over-testing, and over-documentation will continue".<sup>4</sup>

While a disclosure of ineffective internal controls does not result in sanctions or penalties from the SEC, the costs associated with disclosing a material weakness can be high. These costs include direct compliance costs and may lead to an increase in the firm's cost of capital. The confusion related to identifying and disclosing material weaknesses, as required by SOX, can result in excessive and unnecessary compliance and audit costs from, "independent auditors, external consultants, additional internal audit and compliance functions, and the additional demands placed on management."<sup>5</sup> Vague regulations may lead companies to be overly conservative, resulting in excessive investments on internal controls, and consequently reducing funds for operating activities and slowing creativity and innovation.<sup>6</sup>

A 2004 Wall Street Journal article from stated companies disclosing material weaknesses could see declines in stock prices of 5 to 10 percent. Disclosures of material weaknesses could also make directors' and officers' insurance more restrictive and more costly.<sup>7</sup> On another level, investors are still on edge in the wake of major corporate accounting scandals associated with companies like Enron, WorldCom, Tyco, Xerox, and others in the early 2000's. As a result, any public disclosure a company makes about potential accounting related problems may lead to an increased cost of capital.

These costs may be unnecessary if the material weakness does not have an adverse impact on the firm's financial statements. Moody's Investors Service states that many reported material weaknesses do not "rise to the level of serious concern from an analytical perspective."<sup>8</sup> Thus, it is possible that companies are punished by investors as a result of reporting material weaknesses, even if the disclosure does not result in a significant change to internal control procedures or the financial statements themselves.

## LITERATURE REVIEW

Research on the reporting of material weaknesses can be separated in two categories, research before the passing of SOX and research performed after the passage of SOX section 404 and 302. Prior to SOX, material weaknesses were only disclosed in 8-K reports. Krishnan (2005) rated audit committees based on size, independence, and expertise, and found that for the years 1994-2000 "the frequency of reportable conditions (including material weaknesses) was negatively related to the quality of the audit committee." SOX has raised the profile of material weakness disclosures by requiring their inclusion in 10-K and 10-Q filings.

Ge and McVay (2005) examined companies that reported at least one material weakness during the period August 2002 to November 2004. They explored five different firm characteristics, business complexity, firm experience, size, profitability, and auditor. They found the likelihood of reporting a material weakness is positively associated with business complexity, and negatively associated with firm size and profitability. Ge, McVay, and Doyle (2007) extended this analysis over a longer time period (2002 to 2005) with a larger sample. The study also included an expanded selection of firm characteristics such as firm size, age, financial health, financial reporting complexity, corporate governance, growth rates, and restructuring charges. They found that "material weaknesses in internal control are more likely for smaller less profitable firms, that are growing rapidly, are more complex, or undergoing restructuring."

Leone (2005) finds share prices drop by up to 4% in the 60 day period following the disclosure of a material weakness. Neri Buksan, the chief accountant at S&P observes that fewer than 10% of all companies disclosing a material weakness receive a subsequent downgrade.<sup>9</sup>

## DISCUSSION OF THE STUDY

This study examines the impact of the SEC's mandatory disclosure requirements on publicly issued financial statements. Specifically it examines the relationship between a firm's disclosed weaknesses in internal controls and its concurrent and subsequent restatement (if any) of total assets and the firm's financial health, as measured by changes in its Altman Z-Score. A finding of a significant relationship between disclosed material weaknesses and restated assets or a firm's financial health would provide evidence to support the requirements of Section 302 and 404. On the other hand, if no significant relationship is found between disclosed material weaknesses and restated assets or a firm's financial health would bolster critics of Sections 302 and 404, who claim that compliance costs outweigh benefits to investors.

### Restatement of Assets

Primary reasons for financial restatements include flawed judgments due to oversight or misuse of facts, fraud, or a misapplication of GAAP. These errors are usually caused by problems applying accounting rules, human or system errors, and fraudulent behavior.<sup>10</sup> When a company identifies these errors they will often restate prior year(s) financial documents to correct the identified error. Sections 302 and 404 of SOX were designed to help management and auditors uncover these types of accounting errors.

In this study Compustat data is used to calculate the average percentage change in a firm's restated assets for a two year period (2002-2003) prior to and two year period (2005-2006) subsequent to the disclosure of a material weakness. The average restated total assets for companies disclosing a material weakness are compared to the change for a control group. The difference between the two groups is used to evaluate

the relationship between material weaknesses disclosures and the likelihood subsequent financial document restatements.

### Altman Z-Score

The Altman Z-Score combines liquidity, profitability, and bankruptcy ratios into one metric for assessing a company's financial health. Jayadev (2006) finds the Z-score successfully predicted 72% of corporate bankruptcies two years prior to filing for Chapter 7. The Z-score combines the following five ratios:

Ratio 1: Working Capital / Total Assets

Ratio 2: Retained Earnings / Total Assets

Ratio 3: Earnings Before Income Tax / Total Assets

Ratio 4: Market Value of Equity / Total Liabilities

Ratio 5: Sales / Total Assets

The coefficient weights as determined by Altman as follows:

$$\begin{aligned} \text{Z-Score} = & (1.2 * R1) + (1.4 * R2) + (3.3 * R3) \\ & + (0.6 * R4) + (1.0 * R5) \end{aligned}$$

A company's Z-Score places it in one of three risk categories. A Z-Score of less than 1.8 indicates likelihood of bankruptcy, and a Z-score greater than 3.0 indicates a healthy financial position, suggesting the firm is unlikely to file for bankruptcy. A score between 1.8 and 3.0 lies in the gray area.

This study compares average Z-Scores for the two years prior (2002-2003) and the two years after (2005-2006) disclosing a material weakness, with the average Z-Scores for the same periods using restated financial statements. A significant difference between the original Z-Scores and Z-Scores based on restated data would indicate that the original financial statements may have been misleading to investors. If there is no significant difference between Z-Scores it would suggest that material weakness disclosures, in accordance with current legislation, do not provide meaningful information to investors.

## SAMPLE

The sample group obtained for this study is based on an initial set of 478 companies disclosing various levels of internal control deficiencies in 2004. This

set was retrieved through Compliance Week, a service dedicated to SOX related compliance issues. This initial data set was screened against Compustat's North American database, and 147 companies were excluded because of unavailable financial data. This reduced the sample size to 331 companies. Since Compliance Week reports all internal control disclosures, and not just material weakness disclosures, each SEC filing was examined to ensure only disclosures of material weaknesses in internal controls were included. This screening eliminated an additional 176 companies, leaving a final set of 155 companies for analysis. Of the 155 companies only 74 restated assets during 2002-2003, with an average over-statement of \$18.7 million or .48 percent. During the post-disclosure period (2005-2006) only 16 companies restated their assets, with an average understatement of \$0.8 million or .06 percent.

The control group was created by screening the Compustat database for companies with the traits of firms likely to disclose a material weakness in 2004. The screen was performed using three main determinants identified by Ge (2007). Ge examined traits of 779 companies disclosing material weaknesses from 2002 to 2005, and found that firms disclosing material weaknesses tend to be smaller, less profitable, and more complex. Ge used market capitalization as a proxy for firm size, and found a significant negative relationship between firm size and the likelihood of disclosing a material weakness. Income before extraordinary items over a two year period was used to measure profitability, and a significant negative relationship was found between profitability and the likelihood of disclosing a material weakness. The number of business segments reported for the company was used as a proxy for firm complexity, and Ge found a significant positive relationship between complexity and the likelihood of disclosing a material weakness. Ge found that firms are more likely to disclose a material weakness if; their market capitalization is less than \$181 million, they are less profitable, and they operate with 3 or more business segments. To build a control set the Compustat database was screened to eliminate companies that did not match these criteria in the year 2004. This created a control set of 270

companies that did not disclose material weaknesses, but had characteristics of firms likely to disclose a material weakness. Of the 270 companies 45 restated assets during 2002-2003, with an average over-statement of assets of \$.06 million or .47 percent. During 2005-2006 25 companies restated assets, with an average understatement of \$.03 million or .21 percent. The following table outlines the descriptive statistics sample and control groups.

Sample Group (n=155)			
	Mean	Median	Standard Error
Market Cap*	450.05	100.81	95.48
Profitability*	174.21	-6.12	167.14
Total Assets*	5773.06	135.89	4324.76
# of Segments	2.11	1	0.13
		02-03	05-06
# of Firms with Restatements		73	16
% of Firm with Restatements		47%	10%
Average Restatement*		-18.71	0.79
Average % Restatement		0.48%	0.06%

\* millions

Control Group (n=270)			
	Mean	Median	Standard Error
Market Cap*	47.37	28.81	2.99
Profitability*	-24.50	-6.22	5.53
Total Assets*	159.55	32.65	38.00
# of Segments	3.60	31	0.06
		02-03	05-06
# of Firms with Restatements		45	256
% of Firm with Restatements		17%	9%
Average Restatement*		-0.06	-.03
Average % Restatement		0.47%	0.21%

\* millions

## METHODOLOGY / RESULTS

Paired two sample t-tests are used first to evaluate the likelihood that a material weakness disclosure will lead to a subsequent restatement of total assets. This is done by comparing pre and post disclosure period total restated assets between the sample and control group. To evaluate whether restated financial

statements associated with material weakness disclosures provide useful information to current or potential investors, pre and post disclosure period Z-Scores are calculated and compared. The results of these tests are used to evaluate the overall effectiveness of current material weakness disclosure regulations.

If Compustat was unable to return complete data for a firm, it was removed from its group (either the sample group or control group). The number of observations listed in the each tables indicates the number of companies in that group for which full data was available.

#### Average Restated Assets

To control for differences in firm size between the control and test group, Total Restated Assets as a percentage of Total Assets were compared for each two-year period. The following hypotheses were tested:

H0: Average Restated Assets are not significantly different.

H1: Average Restated Assets are significantly different

First, F-tests were performed to determine whether the sample and control groups had equal or unequal variances. The variances for both the pre and post disclosure periods are significantly different, and t-tests assuming unequal variances were performed.

#### 2002-2003 (Prior Years) Results:

The means for the test group (.0047) and the control group (.0046) indicate that neither group made restatements of a substantial nature in their financial statements for the two years prior to 2004. The p-value of .988, is much greater than the accepted level of significance (.05) which suggests that disclosing a material weakness in internal controls does not significantly increase the likelihood of making a restatement for the two years prior to the disclosure.

The t-test results appear below:

#### t-test: Percentage Restated Total Assets

(2002-2003)	Sample	Control
Mean	0.0048	0.0047
Variance	0.0057	0.0094
Observations	132	210
t-Stat	0.0146	
P(T<=t) two tail	0.988	
t Critical two-tail	1.967	

#### 2005-2006 (Subsequent Years) Results

The small means for the test group (.0006) and the control group (-.002) indicate that neither group made restatements of a substantial nature in the two years after 2004. The p-value of .24 is much greater than the accepted level of significance (.05), which suggests that disclosing a material weakness in internal controls does not significantly increase the likelihood of making a restatement for the two years subsequent to the disclosure. The t-test results appear below:

#### t-test: Percentage Restated Total Assets

(2005-2006)	Sample	Control
Mean	0.0006	-0.0021
Variance	0.0001	0.0011
Observations	129	208
t-Stat	1.1690	
P(T<=t) two tail	0.244	
t Critical two-tail	1.971	

#### Altman Z-Score

A paired two sample t-test was used to evaluate the difference between Z-Scores calculated using initial financial statements and Z-Scores calculated using restated (if any) financial statements for companies in



the sample group. The following hypotheses were tested:

H0: Average Z-Scores are not significantly different

H1: Average Z-Scores are significantly different

#### *2002-2003 (Prior Years) Results:*

The average Z-Score calculated using initially reported financial statements is -0.39 while the mean Z-Score for the same companies using restated information (if any was reported) is -.65. This decrease in Z-Score indicates that initially reported financial statements on average overstate a company's Z-Score, but a p-value of .321 indicates that the difference is not statistically significant. This indicates that disclosing a material weakness in internal controls does not result in a significantly greater likelihood of making a financially meaningful financial restatement. The t-test results appear below:

t-test: Altman Z-Score Sample Group		
(2002-2003)	Original	Restated
Mean	-0.388	-0.649
Variance	636.7	671.6
Observations	128	128
t-Stat	0.997	
P(T<=t) two tail	0.321	
t Critical two-tail	1.979	

#### *2005-2006 (Subsequent Years) Results*

The mean Z-Score using originally reported financial information was -1.85 while the mean Z-Score for the same companies using their restated information (if any was reported) is -1.91. Since the P-Value is just below the significance level of .05 this may indicate that originally reported information was overstating the Z-Score and that disclosing a material weakness in internal controls could significantly increase the

likelihood of presenting unreliable information to investors two years after disclosing a material weakness. While this difference of Z-Scores is significant at a statistical level, there is not likely an economic difference between the two groups of a significant level. This is because the average Z-Score for both groups is so far below the lowest Z-Score threshold that the difference between them is not likely significant enough to provide any substantial information to investors. The t-test results appear below:

t-test: Altman Z-Score Sample Group		
(2005-2006)	Original	Restated
Mean	-1.849	-1.915
Variance	593.2	594.6
Observations	125	125
t-Stat	2.018	
P(T<=t) two tail	0.046	
t Critical two-tail	1.979	

#### CONCLUSIONS

The Sarbanes-Oxley Act of 2002 introduced mandatory public disclosures of material weaknesses in internal control over financial reporting for all SEC registered companies. The SEC's definition of material weaknesses focuses on whether or not an error *could* have been material thus many organizations are forced to make disclosures of ineffective controls leading to public reports of material weaknesses under subjective terms. This means companies with unqualified financial statements may still be required to disclose a material weakness in their internal controls. Any material weakness in internal controls leads to an adverse opinion on the overall effectiveness of internal controls. This may leave investors, creditors, and others with the impression that an organization's financial statements are not reliable, even though the

opinion on the financial statements is likely unqualified.

This paper examined the relationship between the disclosure of material weaknesses in internal controls, and concurrent and subsequent restatement of assets and changes in a firm's financial health as measured by its Z-score. Concurrent and subsequent asset restatements were compared for firms disclosing material weaknesses with a control group. No significant difference was observed between total assets as originally reported and restated total assets. This suggests that the disclosure of material weaknesses does not provide investors with any new or useful information that rational investment decisions would rely on. Since the results of this analysis suggest that there may be no useful information supplied by this disclosure, it implies that the cost incurred by a company to discover and disclose this information outweighs the benefit it provides to interested parties.

To assess the impact of restated assets on measures of financial health, Z-scores were calculated prior to and subsequent to restatements (if any) for firms disclosing material weaknesses. No statistical difference was found between original and restated Z-scores for the two-year period prior to the disclosure, but a weak statistical difference was observed during the period subsequent to the disclosure. However, it is unlikely that the difference is economically significant as the average restated Z-score decreased from -1.85 to -1.92, which are both so far below the lowest Z-Score threshold of 1.8 (which indicates a poor financial position) that the difference between them is not likely significant enough to provide any substantial economic information to investors.

Sections 302 and 404 of the Sarbanes-Oxley Act (along with other requirements as well) have led to strained relationships between companies and their external auditors. While in the past management and external auditors worked together to ensure financial statements were presented in accordance with GAAP, it seems the external auditors now stand back and simply evaluate the decisions of management and

assess penalties. Because of the subjective nature of the definition of a material weakness auditors are probably over-cautious with their examinations, leading to the conclusion that an otherwise immaterial item could potentially have been material, causing classifications of ineffective internal controls. The results of this study suggest that this may happen with some degree of regularity. These decisions greatly impact the cost of the audit, and the costs of compliance with Sarbanes-Oxley. It is likely that the costs of compliance incurred by a company, both internally and externally, outweighs the benefits provided to those interested in their financial documents. Further research could examine how much these costs outweigh the benefit provided to investors, or the impact these increased compliance costs have on a private companies decision of whether or not to go public.

Using the tests performed in this study it is apparent that the disclosure of a material weakness in internal controls in accordance with current legislations is not significantly related to a decrease in financial health, so the adverse opinions on internal controls may be unnecessarily, and adversely, impacting the opinions of those interested in a company's financial statements. These results suggest that some sort of reform or revised definition of what constitutes a material weakness in internal controls by the SEC, along with guidance from the SEC for both management and external auditors on how to interpret and enforce a new definition, could reduce compliance costs and improve the quality of information provided to investors. Until then many SEC registered corporations may be susceptible to unnecessary costs; both monetarily and to their reputation.

#### ENDNOTES

<sup>1</sup> SEC. 1988. Disclosure Amendments to Regulation S-K, form 8-K and Schedule 14-A Regarding Changes in Accountants and Potential Opinion Shopping Situations. SEC Release No. 6766.

<sup>2</sup> Agami, Abdel M. 2006. Reporting on Internal Control Over Financial Reporting. *The CPA*

*Journal Online* Vol. LXXVI, No. 11. Available at <http://www.nysscpa.org/cpajournal/2006/1106/essentials/p32.htm>

- <sup>3</sup> SEC. 2002. Certification of Disclosure in Companies' Quarterly and Annual Reports, Final Rule 33-8124 (August 29), Washington D.C. Available at <http://www.sec.gov/rules/final/33-8124.htm>
- <sup>4</sup> Public Company Accounting Oversight Board (PCAOB). 2004. Auditing Standard No. 2—An Audit of Internal Control over Financial Reporting Performed in Conjunction with an Audit of Financial Statements. Available at [http://www.pcaobus.org/Rules/Rules\\_of\\_the\\_Board/Auditing\\_Standard\\_2.pdf](http://www.pcaobus.org/Rules/Rules_of_the_Board/Auditing_Standard_2.pdf)
- <sup>5</sup> Ibid.
- <sup>6</sup> Ryan, Michael J. 2007. File Number PCAOB-2007-02; File Number S7-24-06. U.S. Chamber of Commerce. Available at <http://www.uschamber.com/NR/rdonlyres/ezleeiwv tv2gj5le66fkygopkflsaooj2ysvmbopjci5lrxuwe 53zlp26vxjdrq6xzlal2wt4ywttsm65ul6bc/SOXAS 5Mgmt7.12.07.pdf>
- <sup>7</sup> Ibid.
- <sup>8</sup> Ibid.
- <sup>9</sup> Leone, Marie. November 18, 2004. Where Material Weaknesses Really Matter. *CFO.com*. Available at [http://www.cfo.com/article.cfm/3396587/c\\_3400615?f=singlepage](http://www.cfo.com/article.cfm/3396587/c_3400615?f=singlepage)
- <sup>10</sup> Doss, M., and G. Jonas. 2004. Section 404 Reports on Internal Control: Impact on Ratings Will Depend on Nature of Material Weaknesses Reported. October. New York, NY: Moody's Investors Service, Global Credit Research.
- <sup>11</sup> Ibid.
- <sup>12</sup> Business Editors/Legal Writers. January 13, 2004. Huron Consulting Group Reveals Leading Causes of Financial Restatements in 2003. *Business Wire*.

Available at [http://findarticles.com/p/articles/mi\\_m0EIN/is\\_2004\\_Jan\\_13/ai\\_112124080](http://findarticles.com/p/articles/mi_m0EIN/is_2004_Jan_13/ai_112124080)

<sup>13</sup> Ibid.

## WORKS REFERENCED

- Agami, Abdel M. 2006. Reporting on Internal Control Over Financial Reporting. *The CPA Journal Online* Vol. LXXVI, No. 11. Available at <http://www.nysscpa.org/cpajournal/2006/1106/essentials/p32.htm>
- Business Editors/Legal Writers. January 13, 2004. Huron Consulting Group Reveals Leading Causes of Financial Restatements in 2003. *Business Wire*. Available at [http://findarticles.com/p/articles/mi\\_m0EIN/is\\_2004\\_Jan\\_13/ai\\_112124080](http://findarticles.com/p/articles/mi_m0EIN/is_2004_Jan_13/ai_112124080)
- Doss, M., and G. Jonas. 2004. Section 404 Reports on Internal Control: Impact on Ratings Will Depend on Nature of Material Weaknesses Reported. October. New York, NY: Moody's Investors Service, Global Credit Research.
- Doyle, J., et al., Determinants of Weaknesses in Internal Control Over Financial Reporting. *Journal of Accounting and Economics* (2007), doi:10.1016/j.jacceco.2006.10.003
- The Foreign Corrupt Practices Act. 12 U.S.C. §§ 78dd-1. Available at <http://www.usdoj.gov/criminal/fraud/docs/statue.html>
- Ge, Weili, McVay, Sarah. 2005. The Disclosure of Material Weaknesses in Internal Control After the Sarbanes-Oxley Act. *Accounting Horizons* 19, 137-158.
- Jayadev, M. 2006. Predictive Power of Financial Risk Factors: An Empirical Analysis of Default Companies. *Vikalpa: The Journal for Decision Makers* 31 (3), 45-56.
- Krishnan, J. 2005. Audit committee quality and internal control: An empirical analysis. *The Accounting Review* 80 (2): 649-675.

Leone, Marie. July 21, 2005. How Markets Punish Material Weaknesses. CFO.com. Available at <http://www.cfo.com/article.cfm/4197475?f=search>

Leone, Marie. November 18, 2004. Where Material Weaknesses Really Matter. CFO.com. Available at [http://www.cfo.com/article.cfm/3396587/c\\_3400615?f=singlepage](http://www.cfo.com/article.cfm/3396587/c_3400615?f=singlepage)

McClure, Ben. 2007. Z Marks the End. Investopedia.com. Available at <http://www.investopedia.com/articles/fundamental/04/021104.asp>

Public Company Accounting Oversight Board (PCAOB). 2004. Auditing Standard No. 2—An Audit of Internal Control over Financial Reporting Performed in Conjunction with an Audit of Financial Statements. Available at [http://www.pcaobus.org/Rules/Rules\\_of\\_the\\_Board/Auditing\\_Standard\\_2.pdf](http://www.pcaobus.org/Rules/Rules_of_the_Board/Auditing_Standard_2.pdf)

Ryan, Michael J. 2007. File Number PCAOB-2007-02; File Number S7-24-06. U.S. Chamber of Commerce. Available at <http://www.uschamber.com/NR/rdonlyres/ezleeiwvtv2gj5le66fkygopkfknsaoj2ysvmuibopjci5lrxtuwe53zlp26vxjdrq6xzlal2wt4ywttsm65ul6bc/SOXAS5Mgmt7.12.07.pdf>

SEC. 2002. Certification of Disclosure in Companies' Quarterly and Annual Reports, Final Rule 33-8124 (August 29), Washington D.C. Available at <http://www.sec.gov/rules/final/33-8124.htm>

SEC. 1988. Disclosure Amendments to Regulation S-K, form 8-K and Schedule 14-A Regarding Changes in Accountants and Potential Opinion Shopping Situations. SEC Release No. 6766.

Wackerly, Dennis D. and W. Mendenhall. Mathematical Statistics with Applications, Sixth Edition. Pacific Grove: Duxbury Thomson Learning, 2002

---

Robert Bee is a graduate of Millersville University of Pennsylvania. He received a Bachelors of Science in Business Administration with an option in Accounting. He is Audit Assistant with Deloitte & Touche LLP in Pittsburgh.

Eric L. Blazer, CPA, is an Associate Professor of Finance and Accounting at Millersville University of Pennsylvania. He received a PhD in Finance and a Masters in Accounting from Virginia Tech.

## DISCRIMINATORY PRACTICES USING INDEPENDENT CONTRACTOR STATUS

Dr. Jerry Belloit, Clarion University of Pennsylvania  
Dr. Frank Shepard, Clarion University of Pennsylvania

---

### Abstract

It is broadly understood that employers may not discriminate against a protected class in their hiring processes. Those protected classes include race, gender, national origin, etc. There are significant penalties under the law for those that violate the law. However, a glaring exception to the protection affording potential employees against protected class discrimination is the exception under the law for independent contractors. While not illegal in the employment of independent contractor sales staff, this paper will examine the employment practices of the real estate industry in selected larger communities for evidence of de facto discrimination on the basis of race.

---

#### Introduction and Legal Issues

The Civil Rights Act of 1964 became law only through great tenacity and great political skill. It had been initially proposed by President Kennedy. At the time of his assassination the Civil Rights Act was buried deep within the House Rules Committee. The chairman of that committee was Howard Smith a Democrat from Virginia. He vowed to never let the bill ever reach the house floor.

President Johnson went on the offensive to get the legislation passed. The effect of the Johnson political offensive resulted in individual congressmen receiving pressure from back home to pass the legislation. Congressman Smith allowed the bill to clear committee and Congress passed it 290 to 130.

The bill then went on to the United States Senate where it faced an even tougher challenge. The majority of senators were in favor of the legislation; however, they did not have enough votes to defeat a filibuster. The Democratic leader in the senate was Mike Mansfield; he knew that if the bill was referred to the senate judiciary committee it would never come to vote on the Senate floor.

He proposed that the legislation would go straight to the senate floor bypassing the committee. A majority voted to bypass committee and the bill went straight to the Senate. Once there the bill faced a filibuster that lasted for 57 days. The only northern democrat to oppose the legislation, Robert Byrd, of West

Virginia spoke for 14 hours and 13 minutes to prevent voting on the measure.

Without getting six republican votes the northern democrats did not have enough votes to force cloture. Senator Hubert Humphrey and Everett Dirksen worked out compromise legislation that got enough republican support to end the filibuster.

President Johnson signed the legislation in July of 1964. He sat his pen down and said that he just signed the death of the Democratic Party in the south for a generation. He was right

Title VII of this act purports to end racial discrimination in employment. However, it contained two large holes. The first is that it only applies to businesses with fifteen or more employees. The second is that it does not apply to independent contractors.

This independent contractor exception has apparently allowed the real estate sales industry to escape the requirements of the Civil Rights Act.

Title VII did not define the term employer or employee and therefore left it for the courts to decide. As is typical in our federal system we ended up with three definitions and therefore three different tests.

One was the old common law right to control test; other courts applied an economic reality test; and still others used a hybrid test. Eventually, the United States Supreme Court in *Nationwide Insurance v*

*Darden* settled the issue. This was an ERISA case. The Employee Retirement Security Act has the same circular definition of employee as does Title VII. They define an employee as someone who is employed by an employer.

Darden had operated a Nationwide Insurance office from 1962 until 1980. He had a contract that prevented him from selling other company products. He received a percentage of policies sold and Nationwide contributed to a retirement account on his behalf, again based on sales.

In 1980 Nationwide terminated its relationship with Darden and refused to pay his pension because he began selling competitive products. The Fourth Circuit Court of Appeals ordered Nationwide to pay the pension since Darden was an employee. The Supreme Court reversed the decision applying old common law standards to define employee and independent contractor.

The Court held that "In determining whether a hired party is an employee under the general common law of agency, we consider the hiring party's right to control the manner and means by which the product is accomplished. Among the other factors relevant to this inquiry are the skill required; the source of the instrumentalities and tools; the location of the work; the duration of the relationship between the parties; whether the hiring party has the right to assign additional projects to the hired party; the extent of the hired party's discretion over when and how long to work; the method of payment; the hired [\*324] party's role in hiring and paying assistants; whether the work is part of the regular business of the hiring party; whether the hiring party is in business; the provision of employee benefits; and the tax treatment of the hired party."

This test was first applied in a sex discrimination case filed in New York State. Mary Lou Stetka received a real estate license and attended a six week training program at Hunt's Real Estate in Orchard Park, New York. She was given an office and was required to attend weekly sales meetings and quarterly meetings involving all of the offices of Hunt Real Estate. She was also required to spend four hours per week

answering phones. She had no other required work hours and was paid by commission only. She had to pay her own license fees and multi-listing fees. Hunt provided all office supplies and provided her with an office.

She claimed that she turned down a sexual advancement from the office manager. The office manager then punished her by not giving her certain listings. She filed a sexual harassment and discrimination action under Title VII.

The District Court granted summary judgment to Hunt Real Estate stating. "As Title VII [\*\*23] and the New York State Human Rights Law do not permit actions to be raised by independent contractors, this determination precludes any inquiry into the actions of Eric Bowen. If such harassment could be proved, it is indeed unfortunate that Plaintiff has no recourse based on the employment discrimination laws. However, until such time as Congress sees fit to expand the scope of the federal discrimination laws, this court is bound to apply the relevant law in this case.

We doubt that any real estate agent would be protected by Title VII. As long as the independent contractor exception remains part of federal law. Statistically, it is clear that minorities are underrepresented in real estate offices.

### Methodology

The analysis in this study was limited to twenty cities across the United States. These cities are listed below:

New York, N.Y.	Detroit, Mich.
Los Angeles, Calif.	Indianapolis, Ind.
Chicago, Ill.	Jacksonville, Fla.
Houston, Tex.	San Francisco, Calif.
Philadelphia, Pa.	Columbus, Ohio
Phoenix, Ariz.	Austin, Tex.
San Antonio, Tex.	Memphis, Tenn.
San Diego, Calif.	Baltimore, Md.
Dallas, Tex.	Fort Worth, Tex.
San Jose, Calif.	Charlotte, N.C.

Web sites of real estate firms from each of these cities were examined. In all 53 offices were examined. From the names and photographs of the sales persons shown on the web sites, the sales staff was categorized into the following groups:

Male	Female
White	Hispanic
Black	Oriental

Next the percentage of the salespersons belonging to each of the above six categories was calculated. That percentage was then compared to the population percentages for these groups for the zip code where the office was located.

### Results

It is widely believed that women are disproportionately represented in real estate sales staffs. The results of the analysis support that belief. In 64.15% of the offices, the percentage of women sales persons exceeded the percentage of women in the general population within the zip code. In contrast, men were underrepresented in 64.15% of the offices.

In examining the respective percentages of African-American representation in the sales staff, 54.72% of the offices were under-represented. In examining the offices where the ten largest percentages of African-American population, half of the offices showed serious under-representation as seen below:

Population	Office
% Black	% Black
88.6%	100.0%
85.0%	95.8%
74.4%	59.1%
60.2%	8.0%
39.9%	0.0%
37.2%	40.0%
29.2%	7.1%
26.6%	8.0%
21.3%	32.0%
18.8%	0.0%

Hispanic agents were under-represented in 58.49% of the offices. In the ten zip codes with the highest Hispanic population, again 50% of the offices were seriously under-represented as seen below:

Population	Office
% Hispanic	% Hispanic
70.2%	61.1%
33.8%	68.0%
29.2%	0.0%
27.8%	30.0%
24.3%	26.3%
21.3%	4.0%
21.3%	8.0%
20.9%	4.5%
19.7%	28.0%
18.9%	0.0%

The most obvious under-represented in the real estate office was the Asian agent. In 75.47% of the offices studied, the percentage of the Asian population exceeded the percentage of Asian agents. In the top ten zip codes with the highest percentage of Asian population, only two offices had a higher percentage of Asian agents than the general population. In six offices, the percentage of Asian agents was substantially lower than percentage of Asians in the population as seen in the table below:

Population	Office
% Asian	% Asian
52.5%	40.0%
44.9%	15.0%
38.0%	52.0%
26.4%	24.0%
14.5%	4.0%
13.7%	4.2%
13.0%	4.5%
12.5%	4.0%
12.3%	11.1%
11.9%	0.0%
10.4%	15.0%

## Conclusions

The results of this study suggest that African-American, Hispanic, and Asian real estate agents are under-represented in real estate offices. Even in areas where the largest respective percentages of these groups, there is still evidence of under-representation.

These results are somewhat surprising. If the goal of the real estate firms is to maximize profits, it would be expected that the proportion of African-American, Hispanic, and Asian real estate agents would reasonably reflect the respective representation within the populations the offices serve. Often this was not the case.

In conjecturing explanations for these observed phenomena, several questions arise. For example, are there educational or economic barriers that limit employment opportunities for African-American, Hispanic, and Asian real estate agents? If educational barriers were present, then why would there be so large of an under-representation by Asians? According to the US Census, a much higher percentage of Asians have a four-year college degree than any other group.<sup>1</sup> Likewise, Asian poverty rates only slightly exceed the white population<sup>2</sup> and appear unlikely to explain their under-representation as real estate agents. In addition, the entry costs of

becoming a real estate agent are relatively low as compared to many other occupations.

It is possible that there could be some cultural preferences that influence the success of some groups over others. Perhaps customers from one group may prefer real estate agents of the same group because of issues of language or distrust of other groups. However, if this was the explanation, offices in areas where the percentage of the population is high in a particular group, would have a high percentage of real estate agents from that group. As the data demonstrated, there is significant evidence to the contrary.

There may be other explanations for the observed differences in employment rates of African-American, Hispanic, and Asian real estate agents. However, it may well be possible that real estate brokers may be using the independent contractor status to circumvent the intent behind the 1964 Civil Rights Act of curtailing discrimination against protected classes.

1

<http://64.233.169.104/search?q=cache:EbUt4cYGzIAJ:www.census.gov/prod/2004pubs/p20-550.pdf+educational+attainment+bv+race&hl=en&ct=clnk&cd=2&gl=us>

2 <http://www.infoplease.com/ipa/A0104520.html>

---

C. Frank Shepard is an assistant professor of business law at Clarion University of Pennsylvania. He received his J.D. from University of Akron School of Law. His research interests are in the application of law to the function of the society.

Jerry D. Belloit is the chairperson of the Department of Finance and a professor of finance and real estate at Clarion University of Pennsylvania. He received his Ph.D. in Real Estate and Urban Analysis from the University of Florida. His other research interests are real property law, financial institutions, and urban analysis.



PETRODOLLARS, GLOBALIZATION AND U.S INFLATION REVISITED  
Tahereh Alavi Hojjat and Bhagyavati, DeSales University

---

Abstract

Globalization has profoundly affected the U.S. economy in recent years. We are interested in researching whether globalization in general and petrodollars recycling, in particular, contributed to changes in U.S. inflation. This paper evaluates the theoretical and empirical evidence bearing on the research question. Direct and indirect impacts of globalization are studied on data compiled from the U.S. Department of Commerce and the International Monetary Fund from 1990 to 2005. The direct impact is because of the cheaper cost of imported goods to the U.S as a component of Consumer Price Index. The indirect impact of globalization on U.S. inflation can be studied via the effects on wage, cost of capital, inflow of funds and the impacts of price of competing goods. Our findings show that globalization has a modest dis-inflationary effect on U.S inflation, given current circumstances. The recent spike in prices of oil, raw materials, commodities and agricultural produce in developing countries produces growing pressure on global low inflation and this will lead to decreased global prosperity in the years to come.

---

Introduction

In the decades that followed, two world wars, the Great Depression, and protectionist policies seemed to bring economic integration to an end. If we look back to post- World War II period, the external sector of the U.S economy had a small overall impact on macroeconomic policy than it does today. Exchange rates for the dollar with respect to major currencies were fixed in a system in which the United States enjoyed the "exorbitant privilege" of being the reserve currency (Kohn, 2005). Currently, the U.S dollar is not privileged. The recovery of trading partners from WWII, the development of more sophisticated financial markets, the growth of trade, and the desire of other countries to pursue policies independent of United States brought about changes in the exchange rate system. In the early 1970s, U.S shifted from fixed exchange rates under the Bretton Wood system to the present managed float arrangements, in which the dollar's value against major currencies is set by the market forces. This change along with advancement of technology and steady trends toward greater openness have integrated U.S economy with the rest of the world and hence the economy is more directly affected by foreign development and more global integration. Developments in ocean shipping have also facilitated the latest wave of globalization, e.g. larger and faster vessels and containerization of their cargoes. These developments (ocean shipping and containers) are not

recent. However, offshore outsourcing is a recent development that has globalized the U.S economy. These development combined with state-of-art logistics, have significantly lowered the costs of international transactions.

The first stage of globalization began with the collapse of the Soviet Union and German unification in 1990. That was followed by Eastern Europe opening for business, Latin America embarking on privatization, India emerging from its 1991 financial crisis and China gaining traction after its 1980s opening. The second decade of globalization is characterized by the maturing of places like China, India and Eastern Europe and their integration in the global economy. The barriers among countries have been largely eliminated among high-income countries and have been significantly lowered in middle-income countries, too. Billions of dollars of funds can move instantaneously among countries at the touch of a computer key (Thompson, 2007).

Since then, however, advanced technology and change in policy have worked together to reopened the borders and brought about more integration among nations. The U.S economy has advanced considerably over the last three decades, more than tripled the variety of international goods available to American consumers along with wealth of technological sophisticated new products at reasonable price. Recently the ration of trade to Gross Domestic Product (GDP) has approached 27%

by 2005 (International Financial Statistics, IMF, 2006), its highest point in at least a century. Availability of new goods and varieties through international trade has affected the welfare of U.S. citizens. Improved transportation technologies have reduced the cost of moving products. Improved communications and information technologies have also facilitated international commerce, particularly in trade in services. Improved communications and information technologies also underpinned rapid financial market developments and contributed to the massive gross flows of financial capital.

Some economists argue that U.S. economy is still "effectively insulated" from foreign competition, because imports and exports, respectively, only represents slightly over 10 percent of U.S. GDP (Krugman 1994, 1995). Here the argument is on the degree of openness or "globalization" of the U.S. economy. There is no doubt that the process has an upward trend and it is inevitable unless some substantial policy changes take place. As Gamber and Hung suggested, increase in services—a mostly non-tradable sector—as a component of GDP means that the imports/GDP ratio underestimates the depth of U.S. reliance on imports. Goods imports as a share of total goods purchased represent over 30 percent of total purchased (survey of Current Business of the Bureau of Economic Analysis) and such finding suggest that imports have become an increasingly important component of final demand for goods by private sector. With higher demands for imported goods, change in import prices have not only directly affecting U.S. consumer prices but also indirectly adjusting competitive pressures on domestic producers to adjust their prices in response to change in import prices.

#### Capital Flow

In addition to further exposure of U.S. with foreign countries, the U.S. becomes more globalized in terms of capital flows across its borders. The removal of regulations and barriers along with further economic growth in other countries allowed more capital inflow and outflows across the U.S. border. U.S. Private capital outflow which was roughly about 3 percent of GDP (\$140 billion) per year during the 1980s,

increased to 9 percent of GDP (\$700 billion) by 1997. An U.S. private capital inflow is more pronounced, as during 1997 it was 9 percent of GDP (\$700 billion). Obviously the trend is toward greater capital inflow due to higher capital mobility and greater influence of foreign economies on U.S. Furthermore, direct investment abroad as a percentage of GDP increased from 13 percent in 1990 to 28 percent in 2004 (International Financial Statistics, IMF, 2006). All of these suggests that capital inflow and outflow and hence increase in capital mobility implies that foreign economic conditions will have greater influence on U.S. economy. The implication of the further flow of capital is the impacts on U.S. interest rates. Capital flow affects U.S. interest rates and hence cost of capital. This process can pertain up to the point that foreign investment find U.S. economy attractive. China alone has over \$1.5 trillion dollars in its accounts. Golman Sachs has predicted that, by 2040, five emerging-market countries—China, India, Brazil, Russia and Mexico—will together have a larger economic output than the G-7 countries, the seven Western nations that have dominated global affairs for centuries.

The impact of further mobility of capital is not only affecting U.S. but also other countries as well. A recent example is that the Reserve Bank of India (equivalent to the Federal Reserve in the U.S.) has been trying to combat excessive capital inflows (foreign direct investment and speculative real estate investment) from 2006. Some research argue that when the capital inflow takes the form of foreign direct investment, the inflow often improves access to international best practices in production, including managerial, technical, and marketing know-how. Therefore global investment like trade benefits both sides of the transaction. This benefits, in turn can lead to higher real income and wages (Chicago Fed Letter, April 2001).

#### Recycling Petrodollars

After the OPEC oil embargo of 1973, oil prices jumped from an average of slightly less than \$4.00 a barrel to \$11.40 a barrel in 1974 (or in 2005 dollar, oil price increased from \$16.75 to \$45.40 a barrel). Second major oil shock was in 1979-80 with Iranian

Revolution pushing oil prices from approximately \$14.00 a barrel to \$37.20 a barrel in 1980 (or from \$41.95 to \$88.25 a barrel in 2005). The third episodes of price volatility occurred gradually and oil prices average just \$25.00 a barrel in 2003 and climbed modestly in 2003. In early 2004, price began a strong upward trend, averaging \$37.75 a barrel that year, \$53.35 in 2005, and \$65.35 over the first ten months of 2006. (Higgins, Klitgaard, Lerman, 2006). By 2008, price of oil reached at \$135 a barrel, more than doubling from the 2006 price.

The three episodes of price volatility generated large swings in export revenues for oil-exporting countries. Since 1972 oil revenues has been increasing from \$24 billion to \$117 in 1974 and to roughly \$275 billion in 1980 and \$250 billion in 1981. Significant increase is in 2002-2006 with increase of oil revenues from \$300 billion to \$970 billion. This has increased oil exporters' saving from roughly 28% of GDP in 2003 to 39% in 2006 without much increase in investment. Tracking petrodollars is difficult because other major countries do not report details of financial transactions with oil exporters. Also, oil exporters' revenues could be deposited in another country and then being used to purchase U.S assets. Since the financial flow coming from another country rather than oil exporter country, tracking the original source of funds entering U.S is difficult.

Given the complication of this portion of the study, we rely on limited data to justify that the increase in saving has been allocated to purchase of foreign assets directly or indirectly (See Table 1).

Table 1: Global Current Account Balances

	2002	2006	change
surpluses			
Oil exporters	88	571	483
Emerging Asia	122	263	141
Japan	113	167	55
Western Europe	57	13	-44
Deficits			
United States	-472	-869	-397
Other countries	-59	-130	-72
Global Discrepancy	151	-16	-167

Sources: International Monetary Fund (IMF) and [www.newyorkfed.org/research/current\\_issues](http://www.newyorkfed.org/research/current_issues)

Oil exporters have two options to utilize with oil revenues; to import more goods and services or to purchase foreign financial assets in international capital markets. It is estimated that that export revenues for 2006 is about \$980 billion, just half of that or about \$475 billion has been going to increases net purchases of foreign financial assets (Higgins, Klitgaard, and Lerman, 2006). The U.S deficit is projected to reach almost \$870 billion in 2006, up roughly \$400 billions from 2002. Thus, U.S has been the only major economy willing to take on sizable foreign liabilities during the period of rising oil prices. As indicated in Table, increase in net financial inflows to the U.S is roughly matching the increase in net outflows from oil exporters.

Indirect petrodollar recycling should also have an effect on interest rate, exchange rates and other asset prices. As in most oil producing countries, oil industry mostly through central bank purchases of foreign exchange reserves. is owned by the state, as a result the major player is official sector in petrodollar recycling as shown in Table 2.

Table 2: Net Foreign Investment of oil Exporters, Billions of U.S Dollars

	2003	2004	2005	2006	total
Net foreign investment	138	217	385	571	1,311
Private investment	22	33	40	81	176
Official investment	116	184	344	490	1,134
Foreign Exchange Reserves	72	126	213	245	655

Sources: International Monetary Funds and [www.newyorkfed.org/research/current\\_issues](http://www.newyorkfed.org/research/current_issues)

#### Wage Effect

Another way that globalization affecting the costs of production is through increase in global labor force and further outsourcing. Global outsourcing reduces supervisory and administrative expenses, lowers effective wage rates through the use of offshore workers, and eliminates payment for nonproductive time and workers' benefits (such as health insurance, liability insurance, and workers' compensation) and reduces operating costs. Some research suggests that this depresses wage rates for remaining workers and creates fewer job opportunities in many occupations

(Ansberry, 2003b and 2003c). The other issue is changing technology and trade patterns that put high-skilled workers in increasing demand, reducing the demand for less-skilled workers. Skilled workers are enjoying rapid wage increases, but unskilled workers have had very slow wage rises in recent years.

#### Purpose of This Study

This paper evaluates the theoretical and empirical evidence bearing on the question of whether globalization and petrodollars recycling contributed to significant changes in inflation performance in U.S. We are assuming that the impact of globalization can be direct and indirect. Direct impact is through the cheaper imported goods to the U.S as a component of Consumer Price Index. Indirect impacts are through the effects on wage, cost of capital, inflow of funds and the impacts of price of competing goods.

Data for analysis is compiled from the Department of Commerce and IMF for period of 1990-2005.

#### Review of Literature

##### Gain from Trade

Classical international trade theory postulates that the opening of an economy to trade improve welfare by allowing consumers to have access to cheaper products and a wider range of goods than consumers in closed economies. The assumption is no one country can produce all of the varieties available in the world. In this model, most gain of trade is measured directly by the number of variables.

Globalization involves increasing integration of economies around the world, from the national to the most local levels, hence promoting not only trade among nations but also movement of technology, information, investment and people. Some study has shown that when country engage s in international trade, its households' real purchasing power rises because they can obtain at lower cost the goods and services they have been buying. Also a country engages in international trade, it can produce gross domestic product (GDP) from its land, labor and capital because it is not using them to produce something that can produce in another country at lower resource costs (Thompson, 2007). In this

process industries rise and fall and rise again in other countries at a very rapid rate. What is clear is that one of the great benefits of globalization is the manner in which it increases wage rates and purchasing power in previously low-income countries. This has happened over and over again in the past half century. (Ibid)

Not all agree that globalization is working for everyone. Stagnating wages and rising job insecurity in developed countries are creating popular disenchantment with the free movement of goods, capital and people across borders. This group argues that in theory, less-developed countries win from globalization because they get jobs making low-cost products for rich countries. Rich countries win because, in addition to being able to buy inexpensive imports, they also can sell more sophisticated products like machine tools or financial services to emerging economies. The first win is there, but the second win is going to the owners of capital rather than labor," says Stephen Roach, chief economist at Morgan Stanley (The Wall Street Journal, January 25, 2007). As a result ever-larger share of national income in the U.S, Japan and Western Europe is going to company profits. The share that flows to workers is dwindling. Many companies in the U.S and Europe threatening to move production abroad and as a result real labor incomes in the U.S have grown at roughly half the rate of labor productivity (Roach, 2007).

In addition, business executives and others have long hailed globalization's anti-inflation impact, but economists don't consider it a clear-cut case. There has been some study measuring the welfare gain of globalization from global variety growth. Broda and Weinsein (2005) find that the value to consumers of global variety growth in the 1972-2001 periods was roughly \$260 billion. They assumed the number of domestic varieties remains the same when the number of imported varieties increases. Such estimate of gain from trade was much larger than the previous findings of Feenstra (1992) and Romer (1994) where they measured gains from eliminating protectionism.

In the late 1990s, both unemployment and inflation were falling in U.S. Typically falling unemployment fuels wages and, thus, higher prices. Many economists concluded that information technology had triggered acceleration in productivity and contributed to price stability despite a rapid growth of GDP. In year 2002-2005, with productivity growth leveling off and unemployment declining, economists including Alan Greenspan has fingered globalization as a missing variable contributed to lower inflation in the United States of America.

The integration of the former Soviet Union, China and India into world markets would "approximately double the overall supply of labor," (Greenspan, 2006) and prove a major contributor to the disinflationary pressures that have been evident in the global economy.

Fed research suggested that low import prices may have knocked from one-half to one percentage point off the underlying inflation rate in the past decade (Donald Kohn, 2005). The question is how much of that decline was because of the strong dollar and increased manufacturing efficiency in the U.S and abroad, not globalization is an empirical question.

Another study estimates growing imports from China have cut U.S inflation by at most 0.1 percentage point in recent years. More over, many workers facing the greatest growing pressure for wage and benefit cuts in industry due to foreign competition. Maury Harris, chief economist at UBS Securities, notes that wage growth in services industries rose to 3.2% in 2005 (from 2.7% in 2004), but in manufacturing, the sector most exposed to global competition, fell to 2.3% from 2.6% in 2004. Often the mere threat that production may move overseas is enough to trigger wage concessions. Thus such "threat effect" has pressed wages and benefit down.

According to Donald Kohn (2005), globalization has widened product choice everywhere and lowered costs to consumers by improving the global allocation of resources and moving factors of production into their more effective uses. More of the concerns of the globalization arise from the potential consequences of adding these workers to the global network of production and distribution. At the

beginning low wages reflected their low productivity under rigid economic and political systems they were saddled with. But as they become more productive as they acquire more tools, capital, training, and the freedom to make choices, then their real wages will rise on average. With introduction of large numbers of new workers into global economy, we would expect to see downward pressure on the compensation of low-skill workers in developed nations. At the same time, prices of goods and services imported from newly industrialized economies will decline relative to the prices of the products they buy from us, effectively raising the real incomes of U.S citizens.

Several observers have argued that increased trade has been an important factor in the downtrend in inflation over the past two decades (Greenspan, 2005) and (Rogoff, 2003). One channel is said to be through greater competitive pressures and another through increased support for price stability engendered by the competitive environment. Globalization might restrain prices and wages in those sectors in which imports play an increasing role, but how does it hold back the average wage and price level? And, how do we reconcile the sense of greater competitive pressures with record levels of profits--and capital income more generally--in the United States?

The view that China's exports surge has contributed importantly to decline in global inflation, and adds to the risk of global deflation, is not universally shared (Anderson, 2002, Noland and Posen (2002). Critiques of this view argue that it is unlikely that China have a pronounced deflationary effect on the global economy. First, as large as China's economy is in dollar term, and as rapidly as it has grown, it still accounts for only 5 percent of global exports and GDP; therefore, it seems unlikely that it could restrain global activity and prices much by itself.

Roach (2002a) referred to Asia as "as exporter of deflation to the rest of the world and China is leading the way." He found out that among other factors since share of imports from China in U.S GDP is relatively low, these imports are unlikely to impact the general price level.

While some research (IMF, 2003) has looked into impact of China's CPI inflation on foreign inflation, it is generally understood that it is China exports and exports prices that are most likely to be influencing foreign prices. Anderson (2002) provides a broad-ranging and insightful analysis of China's impact on foreign activity and prices, but does not provide estimates of aggregate effects. Young (2003) takes a general look at China's impact on prices in Japan, but does not come up with estimates of the effect.

Kamin, Marazzi and Schindler (2004) found out that China's share of U.S import since 1993 has lowered share of import price inflation by about 0.8 percentage per year; given the relatively low share of imports in U.S GDP, however, the ultimate impact on the U.S consumer prices has likely been quite small. They estimated that Chinese exports lowered average annual import unit value inflation in a largest set of economies since 1993 by about 1/10 to 1/4 percentage point, and by 1 percentage point in the United States of America.

Gamber and Hung (2001), used data for 1987-1992 find that import prices exert a greater impact on prices of products in industries faced with greater import penetration. Their result suggests that increased globalization has helped prolong the U.S expansion in 1990s by holding down inflation, thereby allowing the Fed to let the economy continue growing. But they caution against the view that globalization makes it possible for excess foreign capacity to help dampen U.S inflationary pressure in the midst of a strong recovery. Furthermore, they argue that high foreign excess capacity accounts for much of the decline in U.S inflation of 1990s.

Krugman (1994, 1995) and Irwin (1996) have looked at whether the United States has become more globalized over the past decade. They find that trade with the rest of the world is not a significant or rapidly growing influence on the U.S economy. Swagel (1997) investigated to see whether prices of foreign good influence domestic prices through the competing goods effect. He finds a statistically significant but small impact in 10 of the 19 industries in his sample. Slaughter and Swagel (1997) find that increased globalization had a modest impact on

wages of industrial countries. Tootel (1998) who investigated the impacts of foreign capacity utilization on U.S inflation finds a very little or no impact of foreign capacity utilization on domestic inflation. Kohen (2005) study found out that decline in import prices since the mid- 1990s has shaved between 1/2 and 1 percentage point off core inflation over the past ten years.

#### Empirical Analysis

This paper utilizes data, 1990-2005 to assess the impact of import price on U.S inflation. We assume that import price have influenced domestic inflation in two different ways, one through competition with imported goods, which made it difficult for domestic producers to raise their price. We are assuming that imported goods and domestic products are perfect substitute for one another. Second, the impacts of cheap imported raw material on costs, and thus on the finished product prices of U.S goods and services will be considered. The U.S consumer price (P) is a weighted average of two components-the dollar price of imported goods (Pim) and the price of other goods and services- non-imported (Pot).

$$(1) \quad P = \alpha P_{im} + \beta P_{ot}$$

In Equation (1),  $\alpha$  and  $\beta$  represent the shares of imported and non-imported goods respectively. We assume domestic prices are set based on marginal cost pricing; which is a function of the cost of capital, unit labor cost and cost of imported inputs. Thus, price of non-imported goods (Pot) also depends upon several factors; cost of capital (i), unit labor cost (w), price of imported raw material (Prm) excluding energy and X represents other factors that could influence Pot.

$$(1) \quad P_{ot} = f(i, w, P_{rm}, X)$$

$$(2) \quad P_{ot} = \beta_1 i + \beta_2 w + \beta_3 P_{rm} + X$$

$$\beta_1 > 0 \quad \beta_2 > 0 \quad \beta_3 > 0$$

$$(3) \quad P_{rm} = f(CUf) \quad P_{rm} < 0$$

$$(4) \quad P_{ot} = \beta_1 i + \beta_2 w + \beta_3 P_{rm} + \beta_4 CUf + X$$

Equation (2) represents an increase in cost of capital (i) will increase Pot and P by increasing the marginal cost. An increase in wage (w) and P<sub>rm</sub> will increase Pot and P by raising the variable costs of production.

We also assume that falling import prices could result in lowering the unit labor cost of domestic firms.

Equation (3) represents that the impacts of foreign capacity utilization (CUF) on import price ( $P_{rm}$ ). In this paper, foreign capacity utilization is measured based on the deviation of GDP from estimates of the potential GDP of the major trading partners of U.S. Foreign capacity utilization is assumed to affect the prices of foreign goods. Foreign goods prices, then, help determine U.S import prices. In addition, U.S import prices may affect U.S inflation both directly and indirectly as represented by Equation (4). As import prices fall, U.S consumer price will fall directly by the proportion of  $\alpha$ . Moreover, as interest rate, wage and price of raw material fall we will observe indirect impacts on U.S consumer price, second third and fourth terms in equation (4). Throughout the direct and indirect effects, a decrease in import prices will dampen U.S inflationary pressure and keep U.S economy in expansionary period.

For Equations (1), (2), and (3), OLS is going to be used. However, to have a more complete model, it might be a good idea to run OLS on the estimated values of  $P_{rm}$  and  $P_{ot}$  obtained from step 1. Therefore, we could also use a three-stage least square method with merely needing to be careful about the standard error adjustment.

Table 3: Goods Imports Relative to Total Demands for Goods, in Billion of dollar

Year	Personal consumption expenditures	Imports of Goods	Imports/total consumption	Other goods
1990	3839.9	630.3	16.4%	83.59
1991	3986.1	624.3	15.7%	84.34
1992	4235.3	668.6	15.8%	84.21
1993	4477.9	720.9	16.1%	83.90
1994	4743.3	814.5	17.2%	82.83
1995	4975.8	903.6	18.2%	81.84
1996	5256.8	964.8	18.4%	81.65
1997	5547.4	1056.9	19.1%	80.95
1998	5879.5	1115.9	19.0%	81.02
1999	6282.5	1251.7	19.9%	80.08
2000	6739.4	1475.8	21.9%	78.10
2001	7055.0	1399.8	19.8%	80.16
2002	7350.7	1430.3	19.5%	80.54
2003	7709.9	1546.5	20.1%	79.94
2004	8214.3	1797.8	21.9%	78.11

2005 8745.7 2027.7 23.2% 76.81

Source: Bureau of economic Analysis

Table 4: U.S Percentage of Imported from Major Trading Partners-1990-2005

	China	Western Europe	Japan	Canada	Mexico
1990	5.4	38.3	17.1	29.2	10
1991	6.6	35.6	16.7	29.6	11.5
1992	8.2	35.2	15.2	28.6	12.9
1993	9.4	34.7	14.2	29.7	12.4
1994	10	33.7	13.8	29.4	13.1
1995	10.7	34	15	29.5	10.8
1996	11.1	33.8	14.5	28.5	12.2
1997	12	33.1	12.6	28.7	13.7
1998	12.8	34.6	10.4	27.8	14.3
1999	13.6	35.3	9.5	27.2	14.4
2000	14.4	34.7	9.4	25.4	16.1
2001	15.4	36	8.7	24.6	15.3
2002	18.4	36.2	7.6	23.6	14.3
2003	20.7	36.1	7.1	23	13.2
2004	23.2	35.1	6.4	22.3	13
2005	25.5	34.1	5.8	22.1	12.6

Source: Bureau of Labor Statistics, U.S Department of Labor

Table 5: Variables Being Used in Analysis

Variable	Explanation
<i>Dependent</i>	
P	Inflation rate- (Percentage change in CPI)
Pot	Price of non-imported goods -GDP deflator (percentage change)
<i>Independent</i>	
Pim	Price of Imports- Import Price Index (Percentage change)
Pot	Percentage change in non-imported goods & Services-GDP deflator
i, ,	Interest Rate- long-term rate (Cost of capital)
w	Unit Labor Cost- Manufacturing Wage rate (percentage changes)
P <sub>rm</sub>	Price of raw-material- non-fuel commodity price index
CUF	Capacity Utilization rate-GDP Gap

The Impacts of Foreign Countries on U.S Inflation

There are different ways that trade with other nation can influence U.S inflation.

#### (a) Capital Flow Channel

High saving rate in other nations search for high rate of return. If they find out that U.S real rate of interest is higher, then foreign capital will flow to U.S. this inflow of capital (higher supply of loanable funds) can put downward pressure on U.S long-term interest rates and push up the security prices, thereby lowering the cost of capital. The decrease in cost of capital will enhance further investment and hence productive capacity, helping lower long-run marginal costs of production. This will help dampen the pressure on Pot even if the U.S economy is in expansionary period.

#### (b) Wage Effect

There are several factors affecting U.S bargaining power in wage negotiation. Deregulation and less restrictions on mobility of capital and investment, weakening of labor union and further outsourcing, have contributed to U.S firm better bargaining power in wage negotiation. U.S firm can choose to move their production abroad and take advantages of lower wages there. This will lower the unit costs and in turn help mitigate the inflationary pressure coming from rising labor costs.

#### (c) Trade and Exchange Rate

U.S higher real rate of interest attract more capital inflow and hence affect the dollar value. A stronger dollar will lower import prices and lower U.S. consumer prices. In addition falling import prices can lower domestic prices, as U.S firms will have to either enhance productivity or accept lower profit margins to stay competitive. It has been argued that U.S producers cannot raise their price even when cost pressures begin to appear, because doing so when foreign prices remain moderate would seriously diminish their market share. In addition, dollar value can influence the U.S exports, imports, hence net exports, and domestic inflation.

#### (d) Foreign Capacity

Foreign capacity affect U.S inflation through its effect on foreign inflation. Deviation of GDP from

estimates of its potential level were used as a measure of excess capacity in the major trading partners of U.S (China, Japan, Canada, Western Europe and Mexico).

Table 6: Percentage Change in Total Earning in Manufacturing-1990-2005

1990	1.20
1991	2.34
1992	5.46
1993	6.90
1994	0.41
1995	5.89
1996	5.72
1997	-1.02
1998	2.43
1999	-1.15
2000	-7.06
2001	-1.04
2002	-1.77
2003	2.60
2004	3.46

Source: Bureau of Labor Statistics

### Findings and Conclusion

The following reports the coefficient estimates of equation (1-4). Standard errors are presented in parentheses below the parameter estimates. Our findings show a positive but not statistically significant relationship between domestic inflation and import price inflation, with R- square of 82%. With  $\beta$  coefficient of 1.11 indicates that a 1% increase (decrease) in average import price leads to 1.1 percent increase (decrease) in domestic price inflation. Our findings did not support the role of foreign capacity utilization, on import price as the relationship between dependent and independent variable was negative and insignificant. One reason is China GDP gap was not available and we only used average of other trading partners. Then we included capacity utilization as an explanatory variable in equation (4), then it shows greater impact through other channels-such as capital flow channels and wage effect, besides import prices but still it was insignificant.

In short, under current circumstances, the globalization could have only a modest dis-



inflationary effect on U.S inflation. But if some fundamental factors changes such as appreciation of these country's exchange rates, increase in demand, commodity price and wage increase then these will reduce the degree of downward pressure on U.S inflation as it has been noticeable in recent years. Recently, it has not been just oil price that become higher, commodity prices are at a 200-year high and raw materials of all kinds are increasingly dear. Agricultural produce is now so expensive that developing countries face a growing political problem of how to respond to food inflation. These pressures will surely at some point end the era of low inflation that has undergirded global prosperity.

$$P = 0.18 + 1.11 P_{im} + 1.19 P_{ot}$$

$$(0.37) \quad (3.1) \quad (0.16)$$

$$(2) \quad P_{ot} = 1.06 + 0.24 i - 0.05w + 3.45 P_{rm}$$

$$(0.66) \quad (0.13) \quad (0.5) \quad (2.4)$$

$$(3) \quad P_{rm} = 0.0049 - .029 CUF$$

$$(0.02) \quad (0.024)$$

$$(4) \quad P_{ot} = 2.8 - 0.11i + 0.057w + 1.98 P_{rm} + 0.66 CUF$$

$$(1.45) \quad (0.28) \quad (0.09) \quad (2.5) \quad (0.49)$$

#### Recommendations

One of the challenges in the U.S is the education system, which is not flexible enough for the fast changing global environment. One strategy is to have a better education system from preschool onward to prepare global ready graduate. And a short term remedy is to have more assistance for workers who are laid off and are victim of globalization. Other support program can be retraining of workers who lose their jobs; a bigger role of public sector in the free market economy

#### Bibliography

Ansbeny, C. "A new blue-collar world." Wall Street journal, June 30, 2003a, B1-2

\_\_\_\_\_. "Laid off factory workers find jobs are dying up for good." Wall Street Journal, July 21, 2003b. A1

\_\_\_\_\_. "Outsourcing abroad draws debates at home.", Wall Street Journal, July 14, 2003c. A2

Broda, Christian and David Weinstein (2005), "Are we Understanding the Gains from Globalization for the United States?", Current Issues In Economics and Finance, Federal Reserve Bank of New York, Volume 11, Number 4, April

Greenspan, Alan (2005), "Globalization," Speech presented to the Council on Foreign Relations, March 10

Gamber, Edward N. and Juann H. Hung (2001), "Has the Rise in Globalization Reduced U.S Inflation in the 1990s?" Economic Inquiry, Vol. 39, No. 1, 58-73.

Higgins Matthew, Thomas Klitaard and Robert Lerman (2006), "Recycling Petrodollars", Current Issues in Economics and Finance, Federal Reserve Bank of New York Volume 12, Number 9, December 2006.

Ihrig, Jane and Jaime Marquez (2003), "An empirical Analysis of Inflation in OECD countries" Board of Governors of the Federal Reserve System, International Finance discussion Paper No. 765, May.

Irwin, D. "The United States in a New Global Economy? A Country's Perspective," American economic Review Papers and Proceedings, May 1996, 41-46.

Ip Greg (2006), "Greenspan's Final Act: Calculating the Impact of Globalization on Inflation", The Wall Street Journal, January 9.

Kamin, Steven, B. Mario Marazzi, and John W. Schindler, (2004), "Is China "Exporting Deflation"?

International Finance Discussion Paper series 2004-791 (Washington: Board of Governors of the Federal Reserve System. January 2004.

Kenneth S. Rogoff (2003), "Globalization and Global Disinflation," in *Monetary Policy and Uncertainty: Adapting to a Changing Economy*, proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City, August 28-30 (Kansas City: Federal Reserve Bank of Kansas City), pp. 77-112

Krugman, Paul. "Past and Prospective Causes of High Unemployment." Economic Review, Fourth Quarter 1994, 23-43.

\_\_\_\_\_. "Growing World Trade: Causes and Consequences." *Brookings Papers on Economic Activity*, 2, 1995, 327-77.

Kohn, Donald L. (2005), "Globalization, Inflation and Monetary Policy", James R. Wilson Lecture Series, The College of Wooster, Ohio, October 11

Leggett, Karby and Peter Wonacott (2002), "Surge In exports From China Gives a Jolt to Global Industry," *The Wall Street Journal*, October 10.

Revenge, Ana L. (1992), "Exporting Jobs? The Impact of Import Competition on Employment and Wages in U.S Manufacturing," *Quarterly Journal of Economics*, Vol. 107, No. 1, 255-284.

Slaughter, M. J., and P. Swagel (1997). "The Effect of Globalization on wages in Advanced Economies." *International Monetary Fund Working Paper*, April.

Swagel, P. (1997) "import Prices and the Competing Goods effect." *International Monetary Fund Working Paper*, August.

Thompson, Robert, L. "Globalization and the benefits of trade", *Chicago Fed Letter*, , The Federal Reserve Bank of Chicago, March 2007, Number 236.

Tootel, G. M. B. (1998) "Globalization and Inflation." *New England Review*, July/August, 21-33.

Walker Marcus, (2007), "Just How Good IS Globalization?" *The Wall Street Journal*, January 25, 2007

Zakari, Fareed (2008), *The Post-American World*, Motron.

---

Tahereh Alavi Hojjat is associate professor at DeSales University in Center Valley, Pennsylvania. She earned her Ph.D. in Economics and Business from Lehigh University in Bethlehem, Pennsylvania. Her areas of teaching are Economics and Finance for both graduate and undergraduate levels, and her areas of research interest include Women and Economic Development and Money and Economic Activities. Hojjat has completed and published several articles in both domestic and international journals. She is recipient of the Teaching Excellence Award by the Eastern Council of Business School and Programs (ECBSP). She received a grant from the Center for Advancing Partnership in Education (CAPE) for a collaborative faculty project. Hojjat currently serves on the board of directors and she is treasurer at the Bethlehem YWCA. In addition, Hojjat is ex-officio of the board of directors of the Pennsylvania Economic Association.

Bhagyavati is an associate professor in the Department of Business at DeSales University, Center Valley, PA. She earned a Ph.D. in Computer Science from the University of Louisiana at Lafayette, Lafayette LA. She teaches management of information technology, computing, statistics and management to undergraduate and graduate students. Her areas of research interest include management of information technology, information assurance, educational techniques and pedagogy. Bhagyavati has published extensively in peer-reviewed journals and professional conferences. She enjoys collaborating with colleagues and students on her projects. She is currently co-directing a \$220,000 Department of Labor federal grant to study the impact of the Wall Street West project under the WIRED initiative. Her professional memberships are in Lehigh Valley Research Consortium, Association of Computing Machinery, Institute of Electrical and Electronic Engineers, Beta Gamma Sigma, and Kappa Xi Society.

# TOOLS FOR DRIVING EXCELLENCE IN AN ACCOUNTING PROGRAM: THE BALANCED SCORECARD AND STRATEGY MAPPING

Larry N. Bitner, Shippensburg University

Mary D. Myers, Shippensburg University

## ABSTRACT

Excellence in any academic program is driven by a sound process for strategic planning and a well defined and implemented performance measurement system. In fact, the need for sound planning and assessment practices has been increasingly recognized by entities both internal and external to the university. For example, declining enrollments and decreases in financial resources have forced universities to require strategic planning and assessment at all levels. Further, accrediting agencies are increasing their emphasis on proper planning and assessment. This paper develops an appropriate planning and assessment program for an accounting program based on Kaplan and Norton's balanced scorecard. Four interrelated initiatives define what value-creating processes are needed for the program to achieve its objectives. Additionally, measures needed to capture the realizations of these initiatives are provided. Building on these initiatives and measures, a comprehensive strategy map is then constructed to provide the pathway to meet the objectives. The most important part of an effective implementation of any performance system is identifying readily available metrics for each measure. These metrics must be monitored and used for evaluating performance. To that end, for each initiative measure, target metrics are identified. Finally, we drive the balanced scorecard down to the faculty level. Scorecards are created for individual faculty members along with performance metrics to guide their actions. We posit that as constituencies manage their metrics, the program will move toward its goal of excellence.

---

## Introduction

The purpose of this paper is to demonstrate how the balanced scorecard (BSC) and a relevant strategy map can be used in the assessment and strategic management of an accounting program. Originally developed for the private sector, the BSC offers a comprehensive means of assessment and a framework for management of program, by "translating an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system" (Kaplan and Norton, 1996). It defines four critical performance areas, or "perspectives," along with multiple performance measures, that serve to assess whether objectives have been or are being accomplished.

While the use of multiple performance measures has been commonplace in the assessment of accounting programs (Gainen and Locatelli, 1995; Apostolou, 1999), the BSC offers the advantage of linking measures directly to mission and strategic plan. In this paper, a specific mission is proposed, and the initiatives are redefined for an academic setting. This

is followed by the development of a comprehensive strategy map that informs participants in the program as to what actions need to be taken to achieve program objectives. Performance measures for each initiative are identified. Finally, metrics and related targets are developed for each performance measure.

The need for a sound process for strategic planning and a well defined and implemented performance measurement system has been increasingly recognized by entities both internal and external to the university. Declining enrollments and decreases in financial resources have forced universities to require strategic planning and assessment at all levels. Further, accrediting agencies are increasing their emphasis on proper planning and assessment. This paper develops an appropriate planning and assessment process for an accounting program.

## The Balanced Scorecard

The balanced scorecard is a sophisticated and complex performance measurement and management system that ties an entity's performance to its mission and strategic plan. Its complexity derives from the

use of four perspectives with multiple performance measures. The performance measures within each perspective are identified from an entity's mission and encompass both leading indicators and lagging measures that drive performance and provide feedback for evaluating how well the entity is accomplishing its mission. It is sophisticated in the sense that the list of performance measures is compiled systematically based on an entity's mission, vision, and strategy. As such, it provides a comprehensive and integrative means of assessment and framework for strategic management.

Traditionally employed in the for-profit sector, the balanced scorecard measures performance along four perspectives (Kaplan and Norton, 2001):

1. Financial – the strategy for growth, profitability, and risk viewed from the perspective of the shareholder.
2. Customer – the strategy for creating value and differentiation from the perspective of the customer.
3. Internal business processes – the strategic priorities for various business processes that create customer and shareholder satisfaction.
4. Learning and growth – the priorities to create a climate that supports organizational change, innovation, and growth.

The integrative nature of the scorecard is illustrated in Exhibit 1.

The design of the BSC requires a clearly defined mission statement that is communicated to and accepted by participants. Strategies or goals are identified for each perspective and should reflect the mission of the entity. For each goal, multiple performance measures are identified, along with expected success rates.

The intuitive appeal of the BSC lies in the fact that it retains the measures of financial performance traditionally employed in the for-profit sector – the lagging outcomes performance measures – while adding leading indicators that drive future performance. The traditional financial measures tend to be internal and ex post. The addition of measures

along the other perspectives adds other dimensions to the measurement system. Most are nonfinancial in nature and provide external and ex ante perspectives. These tend to be the drivers of performance. The end result is that the BSC reflects not only how well an entity is performing but also tells it how to get to where it wants to be. In other words, it is not just a performance assessment tool, but also a strategic planning and communication device.

#### Managing Strategy: Four Processes

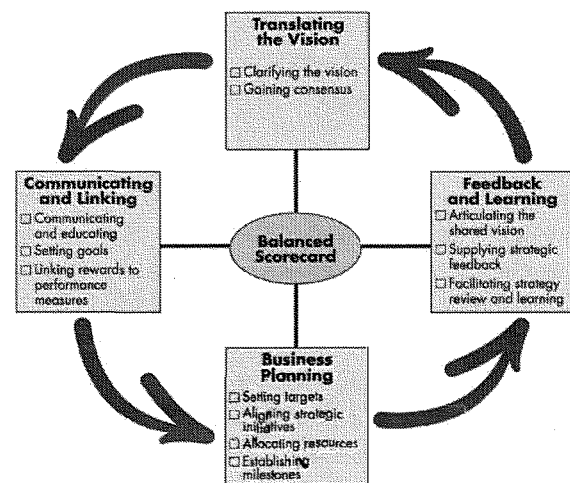


Exhibit 1: Managing Strategy: Four Processes  
(Source: Kaplan, R. and D Norton, Harvard Business Review, January February 1996.)

The use of the BSC offers several unique advantages (Storey, 2002, p. 325):

- Although it employs the multiple measures concept, the BSC can serve to limit the number of measures to what are considered the key measures.
- Its use guards against suboptimization of behavior where pursuit of excellence in one area may result in neglect of other important areas.
- It requires wider involvement of participants in the education process by putting strategy and mission at the center of the process. As such, it helps achieve goals that have been agreed upon by participants.

## The Balanced Scorecard in an Academic Setting – Literature Review

Current AACSB standards require that academic business units undertake procedures similar to those required for the development and use of the balanced scorecard. The driving force for any business program should be its mission statement. The mission then provides a framework for a strategic management system. Assessment methods should provide feedback on how well the academic program is performing according to its mission and strategy. Further, it should provide opportunities for changes in the strategy itself, allowing for the continuous improvement dimension of the AACSB standards.

The potential of the BSC as a tool for assessment of academic entities was addressed by Chang and Chow (1999). They surveyed 250 heads of U.S and Canadian accounting departments regarding the level of implementation of the BSC and its potential benefit for the accounting programs. Respondents were given a list of four components or perspectives and were asked to accept them or write in changes they deemed appropriate. For each component deemed appropriate, they were asked to select from a list of goals and associated measures they deemed appropriate for inclusion in a BSC. The 69 respondents indicated a low level of implementation but were positive about its potential ability to benefit their programs. Based on responses regarding the latter, the authors state "responses suggest that in due course, a number of accounting programs will be in a position to share their experiences with the balanced scorecard or similar type of approach." Debriefing telephone interviews revealed that impediments to use of the BSC include extra workload for faculty, absence of ability to tie performance measures to a reward system, the program's ability to construct an appropriate instrument, sentiment of faculty regarding responsibility for strategic planning in general, resistance to change, and financial resources necessary to develop and maintain.

In a similar vein, Bailey et al. (1999) surveyed 500 deans randomly selected from an AACSB mailing list. When asked the extent to which a BSC can be

beneficial to their school, only 3 of the 39 respondents gave an answer below 5 on a 10-point scale. Yet, when asked the extent to which their schools had implemented such a system, the mean response was only 3.9. The authors conclude that these results suggest that "business schools will likely find the balanced scorecard to be useful." It should be noted that this survey was less structured than that used by Chang and Chow. Respondents were asked to provide their own list of goals and related measures for each perspective. The resulting lists provide a wide range and diversity that can assist in the construction of individual scorecards.

One of the earlier implementations of the BSC was reported by O'Neil et al. (1999). A faculty committee at the Rossier School of Education at the University of Southern California adapted an Academic Scorecard based on the work done by Kaplan and Norton. Recognizing that all four perspectives as designed for businesses did not fit nicely in an academic setting, the committee made some modifications. The "financial" perspective was replaced with an "academic management" perspective, focusing on how the performance is viewed by the university leadership rather than by shareholders. In addition, the "customer" perspective was replaced with a "stakeholder" perspective, with students and employers identified as the most significant stakeholders. The authors note that a particularly favorable outcome was that the scorecard made it easier for the School to explain budget decisions in its budget plan by showing its relationship to particular scorecard indicators.

In a more conceptual approach, Storey (2002) examined whether the BSC could feasibly and usefully be deployed in schools in the UK. She examined an archive of responses to a governmental consultation document, *Professional Development: support for teaching and learning*, (Department for Education and Employment, 2000). Her research suggests that there has been a "cultural change" within education that has increased the receptivity of educators to the principles embedded in the balanced scorecard. Her findings suggest (pp. 330-331):

- The opportunities for fuller staff involvement in objective setting and in identifying worthwhile priorities might be welcomed.
- Staff involvement in designing appropriate measures and dispensing with what are regarded as distracting and distorting measures could also be welcomed.
- Scope exists within the model for considerable progress in the area of staff development.
- A set of processes that are not 'done to' teachers might be welcomed and productive.

She notes that while there are a number of schools in the UK that have adopted the BSC methodology, little empirical evidence has been reported yet as to its feasibility and successful application.

Another application in the field of education is reported by Karathanos and Karathanos (2005). They describe how the Baldrige National Quality Program adapted its excellence criteria for use in the education sector, highlighting the congruence with the BSC in the business sector. Also reported are the balanced scorecards of three 2001 recipients of the Baldrige Education Awards – Chugach School District, Pearl River School District, and University of Wisconsin-Stout.

Scholey and Armitage (2006) provide an example of a second-generation implementation where the process "begins with a succinct description of the mission and vision and employs a strategy map" (p. 32). They describe how the second-generation BSC was used successfully to develop and implement a Master of Business, Entrepreneurship and Technology at the University of Waterloo, Ontario. With the exception of changing the customer perspective to stakeholder perspective, they use the four perspectives as in the Kaplan & Norton model. A major revision, however, relates to the prioritization. They note (p. 35):

In not-for-profit and government organizations, the overriding objective is not to maximize a dollar return but to

achieve success on the institutional mission. In these organizations, the customer perspective usually takes precedence.

Another interesting addition to the Scholey and Armitage model is the 'stretch target.' Goals are developed for each perspective along with measures of achievement. Targets are identified that are expected to be achieved. Stretch targets are added, as the authors note, to communicate and motivate and to prevent complacency where targets are easily achievable.

Thomas (2007) also advocates a strategy map with the use of the BSC. He describes the framework used at Warwick Business School at the University of Warwick in the UK. This systems approach is summarized as follows (p. 41):

- The strategy map provides the framework for strategizing about the school's system dynamics.
- The BSC provides the means for monitoring, evaluating, and controlling the evolutionary path of the strategy.
- Performance gaps and weaknesses force continued attention on the process of strategic dynamics and change, highlighted both on the strategy map and the revised BSC model.

The systems approach described by Thomas reinforces the school's mission/vision as the driving force behind the strategy map and the BSC.

In a similar framework, Drtina et al. (2007) report on how a "graduate school of business has begun the balanced scorecard process by first examining value congruence." The process included four guidelines:

- Revisit the mission statement.
- Identify a list of potential core values.
- Survey key stakeholders (e.g., students, faculty, staff as well as external stakeholders).
- Prioritize core values.

The thrust of the Drtina et al. case study is that the core values must be congruent with the vision and mission of the school and that these values are congruent among major stakeholders. This outcome provides a strategy for the school to distinguish itself from other schools.

McDevitt et al. (2008) provide yet another case study of how the BSC was implemented in a School of Business. The developmental phase involved broad stakeholder participation who examined the traditional four perspectives of the BSC framework as originally designed for business and decided that a more appropriate set for academic institutions should include the following five perspectives:

1. Growth and development
2. Scholarship and research
3. Teaching and learning
4. Service and outreach
5. Financial resources

An interesting outcome of the analysis of results was the recommendation for faculty worksheets. The worksheets would serve two purposes. They would facilitate collection of some previously missing data. Further, they would serve as personal reminders of the goals and objectives of the School, especially as they relate to each participant.

#### The Balanced Scorecard for an Accounting Program

With the exception of Chang and Chow (1999), the research described above does not address the use of the BSC at the accounting program level. As in the second generation models described above, we propose a model that begins with the mission. The perspectives are modified to fit the academic mission. Finally, a strategy map is prepared to communicate and link resource usage to organizational objectives.

#### Mission

We will assume that the mission of the College of Business, and hence, the accounting program, is characterized primarily as "being an outstanding regional school by providing a quality teaching and

learning environment for undergraduate students." Other features include:

- Dynamic curriculum
- Related professional activities
- Faculty support for excellence in teaching and high standards of intellectual contributions

These characteristics or core values form the basis for the BSC and the strategy map.

#### Establishing Program Initiatives

As noted in earlier research, when formulating a balanced scorecard for a nonprofit organization, the four traditional perspectives must be adapted somewhat. For example, O'Neil (1999) reports on a University of California study that replaced the financial perspective with "academic management perspective." Further, the customer perspective was replaced with "stakeholder perspective." The most important of these stakeholders were identified as students and employers. In this study, we apply a second generation approach to our BSC. Additionally, four initiatives are used as surrogates for the traditional four perspectives. These initiatives are presented in Appendix.

The fourth initiative, as a surrogate for learning and growth, includes the premise that in order to excel as an accounting program, the department must effectively utilize the recommendations of its advisory council. Based on these recommendations and input from the faculty, the department must regularly review its curriculum to insure its currency, relevance, and alignment with the mission of the university, college, and department. Additionally, resources must be adequate to provide training to the faculty. Further, it is important to maintain a professionally satisfied faculty, eager to perform the teaching, service, and research specified by the college mission.

The third initiative addresses the internal processes perspective. Satisfying students and employers require that we excel at certain internal processes. It is imperative that existing courses are kept current

and new courses must be developed when necessary. Incorporating new technology and ethics should be a significant part of the updating progression. Research output must be steadily produced from a breadth of participating faculty. Accrediting guidelines, such as those of AACSB, must be adhered to as appropriate. Grade distributions should be reflective of a rigorous program. Finally, there must be evidence of faculty involvement in student activities outside the classroom. Departmental activities should provide a stage for showcasing students as well as exposing them to the professional accounting community.

Meeting the quality goals of the accounting program drives the need for the second initiative. To achieve this initiative, the department needs to satisfy its major constituencies. We need to monitor whether our students are convinced that their efforts to matriculate through the program will lead them to meet their career or higher education goals. Similarly, there must be assurance that employers are content with the knowledge level and professionalism of student output. In many schools it is not unusual for a majority of program graduates to have earned credits in accounting internship programs. Measuring the satisfaction of the internship providers is a leading indicator of employer satisfaction.

The first initiative captures the ultimate goal of the department to produce a higher value student output. Several surrogate measures are available to measure the quality of student output. Starting salaries as determined by the external market is a lagging measure of student value. Recruiting activity on campus would be a related lagging measure. Professional exam pass rates or scores would provide more immediate evidence of student value. Internal measures indicating the value students place on the program are the growth in the number of majors or the increase in the number of major changes to accounting.

### Mapping the Course

Simply developing the initiatives is not enough to drive the program to its goals. Administration, faculty, staff, and students need to know specifically

what actions need to be taken to achieve program objectives. How do they best use the resources at their disposal? As is the case with most nonprofit organizations, many of the resources are intangible. In an educational institution, faculty skills, employer relationships, information technology are likely more important than the physical facilities available. Kaplan and Norton (2004) tell us that creating value from intangible assets is very different than creating value from tangible assets. Among other points made by Kaplan and Norton, these assets rarely create value by themselves. A strategy map uses the perspectives or initiatives set forth in the balanced scorecard to link resource usage to organizational objectives. Specifically, a strategy map is a visual representation of the required path to meet the critical objectives of the program. It is a cause and effect chain that clearly displays how to convert the program initiatives into the desired outcomes. The proposed strategy map for the accounting program is illustrated in Appendix.

The lowest level of the map demonstrates the occurrences or events that, when addressed, will strengthen the tools and skills of the faculty needed to support the forth initiative. These tools and skills represent the traditional learning and growth section of the balanced scorecard. It is imperative that these boxes contain occurrences or events that can be monitored with easily obtainable or constructed metrics. The accounting department should assemble a strong advisory council from a representative mix of likely employers in the hiring community of the college. This council will provide an invaluable source of recommendations to strengthen the program. These recommendations will present new directions for the program or implementations to the existing program to keep it current. Regular in house curriculum reviews will also contribute to keeping the program current and vital.

For the faculty, the college must make available workshops, seminars, or other opportunities to learn new techniques or technology, new theory or trends, or simply share ideas with peer faculty. Encouraging or facilitating opportunities for faculty to remain on the cutting edge in their respective fields will be the



hallmark of a successful program. Inextricably linked to making opportunities available to faculty is funding of research and travel to engage or participate in the above described activities. Finally, faculty must be encouraged to be actively engaged with students outside the classroom. This engagement can take many forms. For example, advising student clubs, participating in club events, inviting students to participate in research projects or directing independent study are all ways of enriching the academic life of both students and faculty.

Moving up a level on the map, certain internal processes must be continually improved if all constituencies are to be satisfied. Success in this improvement is clearly linked to the skills and tools improvement. As the skills and tools issues are addressed, classes will be updated to reflect new technology and ethical standards. Increased research output from the faculty should be expected to naturally follow. As the faculty members expand their knowledge through research, rigor in the classroom may be expected to improve. More relevant and lively discussions in the classroom brought about by more excited faculty and students can easily lead to higher academic expectations. Finally, accreditation requirements will be more easily maintained.

Following the logical linkage up to the second level on the map gets the program even closer to its ultimate goals. A well constructed, continually evolving accounting program will maximize the value it can offer given the resources at the program's disposal. At this point students and faculty should be satisfied with the quality of the program. The final result where 'X marks the spot' on the map is the top level – an improved quality of student which leads to a highly sought after and well paid accounting graduate.

#### Measures Make it Work

Few would disagree with the soundness of the logic behind the construction of the strategy map. Some may argue that as long as the initiatives within the strategy map are communicated to all constituencies of the department, the scorecard project will

effectively produce the desired outcomes. Although communication of the initiatives is certainly important, it is not enough to insure success. We believe the implementation and execution is far from complete at this point. If we believe the adage, 'we manage what is measured,' all milestones in the strategy map must be addressed as part of formal performance evaluation. For example, if only student evaluations and research lines are evaluated in evaluating faculty performance, faculty will focus primarily on those two areas. For the scorecard to be truly effective, all milestones must be addressed and part of someone's performance review. Clearly defined target metrics must be articulated AND all of these must receive some weight in performance measurement. Further, these metrics must be easily obtained or constructed.

Exhibit 2 provides some suggested program target metrics for the proposed strategy map. It should be noted that the metrics suggested here are only general. If adopted, more specific metrics would be required (e.g. a 5% increase in declared majors or a 3 new firms recruiting on campus). These metrics would, of course, be specific to each campus. This time starting from the top of the strategy map and working down, recruiting activity may be tracked by counting the number of new firms recruiting on campus. As the program improves its output, more firms would be expected to seek its graduates. Further the total number of firms would be expected to increase as old relationships are maintained and new ones are added. Starting salaries for graduates would be expected to increase relative to the market reflective of new value added to graduates. Within the college, as the program improves, new and existing students will recognize improved opportunities. Evidence of any such change should be captured by measuring the number of changes in major to accounting or the number of declared majors of new students.

Tracking the GPA of students should help in measuring the quality of the program. Certainly, as the quality of the program improves, the department might expect to attract a higher quality student. It will be up to the faculty to maintain a consistent high

quality and rigorous delivery in the classroom. Monitoring faculty grade distributions to check for deviations from the norms may assist in preserving this consistency. CPA or other accounting certification test results can be used as a surrogate for program quality. Additionally, any in house testing results could be used.

Student and employer satisfaction would certainly be expected to improve with the quality of the program. Data measuring student satisfaction can easily be obtained from exit interviews, sophomore or junior surveys, and alumni surveys. Likewise, employer satisfaction may be measured using interviews or surveys. The number of classes that have been significantly revamped would provide an actionable measure to track the desire to keep course content current. Further, measuring the number of new classes developed should provide the appropriate stimulus to insure currency in the classroom. These new classes could include special studies, honors classes, or even short seminars. Drawing upon combining the expertise of different faculty to develop a team taught class must also be encouraged.

Research output is easily tracked by counting. Like many of the other metrics, what 'counts' depends upon the college. Each college likely will have determined what and how it wants to count built into its assessment plan. For example, class of publication journal, proceedings presentation, published proceedings, or case development may weigh differently for different schools. For AACSB schools, maintaining or meeting accreditation standards is critical. Most schools will have some accreditation standards to meet. Since these standards will be unique to the mission of the school, the metric that counts will be determined within each program. A related metric for an AACSB school will be the number of AACSB qualified faculty. In order for the faculty to strive to meet the above described target metrics, faculty satisfaction levels must reach some minimum level. Wherever the bar is set for that level, internal surveys can be established to measure and track satisfaction levels. These surveys would again have to reflect the mission or goals of the program.

An accounting advisory council can provide timely advice to the program to keep the program vibrant and relevant. It is up to the program to implement the suggestions from the council. The number or percentage of suggestions successfully implemented will measure how effective the program was in adopting council recommendations. Although implementing some of the recommendations may be restricted by budgetary or faculty resources, the target metric should reflect an expectation that a reasonable portion will be adopted. Program curriculum reviews should be a part of continuously improving the program. Considering advisory council recommendations would certainly be a part of those reviews. A simple metric of counting the number of times that the program is reviewed should suffice here.

While independent faculty research and an advisory council are important sources of information for program decision making, attending conferences and workshops are equally important. The number of these events attended by faculty members should be reflective of the amount of new information that flows into the program. The funding available for travel and research is critical to support the program's goals. Target metrics for this measure would include the total monies received from internal and external sources or the percentage change in such receipts.

The final piece necessary to make the scorecard work revolves around accountability. As the old adage tells us, managers manage what is measured. Not only must we measure and record all the metrics described above, the program must be held accountable for meeting the metrics set forth. Managers must be encouraged to manage all the metrics if the scorecard is to work. That means meeting all target metrics must be part of a formal performance evaluation process. Much like the rubrics used to evaluate students, a weighting scheme that incorporates all the metrics to create a composite score must be devised. The all important issue is that the score matters and thus will influence behavior.

Exhibit 2: Program Target Metrics

Measures	Target Metrics*
1. Recruiting Activity	Number of New Recruiting Firms Net change in number of recruiting firms
2. Starting Salaries	Change in Starting Salaries
3. Growth in Quality/Number of Majors	Declared Majors Changes in Major Average GPA of Majors
4. Rigor in Classroom	Deviation from Program Norms
5. Test Results	Reported CPA Results/Pass Rates In-House Results
6. Student Satisfaction	Changes in COB Student Exit Interviews Changes in Department Survey Results
7. Employer Satisfaction	Program Survey Results
8. Updated Classes	Number of New or Changed Courses Number of Team Taught Classes
9. Research Output	College Performance Measure Counts (e.g. from Sedona)
10. Maintaining AACSB Standards	Number of AACSB Qualified Faculty
11. Faculty Satisfaction	Program Survey Results
12. Advisory Council Recommendations	Number of Implemented Suggestions
13. Curriculum Reviews	Number of Reviews per Year
14. Faculty Training	Number of Workshops/Conferences Attended
15. Availability of Funding	Research Monies Received
16. Involvement in Student Activities	Sponsored Student Activities Number of Activities Attended

\*Target metrics will require more concrete specification unique to each school.

At the discretion of the program, scorecards may be established for each faculty member. The scorecard may assist each member in determining what specific actions he or she must take throughout the evaluation period to move the program toward its goals. It is extremely important that all faculty members

participate in building this scorecard. Typically, individual scorecards include the two perspectives learning and growth and internal processes. Exhibit 3 displays such a scorecard that clearly is a takeoff of the program scorecard. For the learning and growth perspective (skills and tools), each faculty member would want to track attendance at student events, funding requests and workshop or conference attendance. To achieve program internal processes goals, each faculty member would track grade distributions relative to program norms, number of qualified research publications, and new courses or significant course changes she or he has made. As was the case with the program scorecard, the individual scorecards must matter. They must be part of an ongoing performance evaluation process. A weighting scheme reflecting the same values as the program scheme would be anticipated.

Exhibit 3:  
Individual Scorecards for Program Faculty

Internal Processes	
Measures	Target Metrics*
New Technology in the Classroom	Number of New Implementations
New/Updated Courses	Number of Changes or New Courses
Research Output	Counts per AACSB Standards
Rigor in the Classroom	Relative Grade Distributions per Program Norms
Learning and Growth	
Measures	Target Metrics*
Training and Workshops	Number Attended
Funding Requests	Number Received/Requested
Involvement in Student Activities	Number of Events Sponsored/Attended

\*Target metrics will require more concrete specification unique to each school.

## Concluding Comments

Bailey et al. (1999, P. 180) conclude their survey of business deans about the usefulness of the BSC by stating that "business schools will likely find this approach to be worth of consideration." More recently, Scholey and Armitage (2006, p.33) state:

We believe that as universities and colleges face increasing demands for innovative programs and fiscal and customer accountability, the number of balanced scorecard adoptions in higher education will increase.

Few published results of actual implementations, however, exist at either the college or departmental/program level.

In this paper, we develop a model for an accounting program in a College of Business whose mission is primarily teaching-oriented. The initiatives are based on this mission, and the strategy map directly links activities to implementing the initiatives. Metrics, along with discussion of targets, are developed for assessment of where the program is in terms of accomplishing its initiatives. A unique feature of the model is that the scorecard is driven down to the individual faculty member, along with performance metrics to guide their actions. We believe that as constituencies manage their own metrics, the program will move toward its goal of excellence.

The paper has been silent in terms of reward for individual faculty contribution to accomplishment of program initiatives. More research must be done to determine how the reward system for participants can be tied to the implementation of the BSC. Some possibilities include allocation of travel funds, increased noninstructional time for research purposes, and priority in teaching assignments.

## References

Apostolou, B. 1999. Outcomes assessment. *Issues in Accounting Education*. (February): 177-197.

Bailey, A. R., C. W. Chow, and K. M. Haddad. 1999. Continuous improvement in business education: Insights from the for-profit sector and business schools deans. 1999. *Journal of Education for Business* 74(3): 165-180.

Chang, O. H. and C. W. Chow. 1999. The balanced scorecard: A potential tool for supporting change and continuous improvement in accounting education. *Issues in Accounting Education* 14 (3): 395-412.

Department for Education and Employment. 2000. Professional development: Support for teaching and learning. London: DfEE.

Drtina, Ralph, Gilbert, James P., and Alon, Ilan, "Using the Balanced Scorecard for Value Congruence in an MBA Educational Setting," *SAM Advanced Management Journal*, Winter 2007, pp. 4-13.

Gainen, J. and P. Locatelli. 1995. *Assessment for the New Curriculum: A Guide for Professional Accounting Programs*. Accounting Education Change Commission and American Accounting Association.

Kaplan, R. S., and D. P. Norton. 1996. Using the balanced scorecard as a strategic management system. *Harvard Business Review* (January-February): 75-85.

Kaplan, R. and D. Norton, 2004, *Strategy Maps*, HBS Press, Boston.

Karathanos, Demetrius, and Karathanos, Patricia, "Applying the Balanced Scorecard to Education," *Journal of Education for Business*, March/April 2005, Volume 80, Issue 4, pp. 222-230

McDevitt, Rosalie, Giapponi, Catherine, and Solomon, Norman, "Strategy Revitalization in Academe: A Balances Scorecard Approach," *International Journal of Educational Management*, 2008, Volume 22, Issue 1, pp. 32-47.

O'Neil, H. F., E. M. Bensimon, M. A. Diamond, and M. R. Moore. 1999. Designing and implementing an

academic scorecard. *Change: the Magazine of Higher Learning* 31 (6): 32-40.

Scholey, Cam and Armitage, Howard, "Hands-on Scorecarding in the Higher Education Sector," *Planning for Higher Education*, Oct-Dec 2006, Volume 35, Issue 1, pp. 31-41

Storey, Anne. 2002. Performance management in schools: Could the balanced scorecard help? *School Leadership & Management* 22 (3): 321-338.

Thomas, Howard, "Commentary: Business School Strategy and the Metrics for Success," *Journal of Management Development*, 2007, Volume 26, Issue 1, pp. 33-42.

---

Larry N. Bitner, DBA, Shippensburg University

Mary D. Myers, Ph.D., Shippensburg University

## Initiatives:

## As Measured by:

1. To increase the academic quality of our student product, we need to produce a higher value student output as measured by:

- Starting Salaries
- External Testing Results
- CPA Pass Rates
- Recruiting activity on campus
- Growth in number of majors
- Increase in major changes to accounting

2. To meet the program quality goals, we need to meet the needs of students and employers as measured by:

- Student satisfaction
- Employer Satisfaction
- Internship Provider Satisfaction

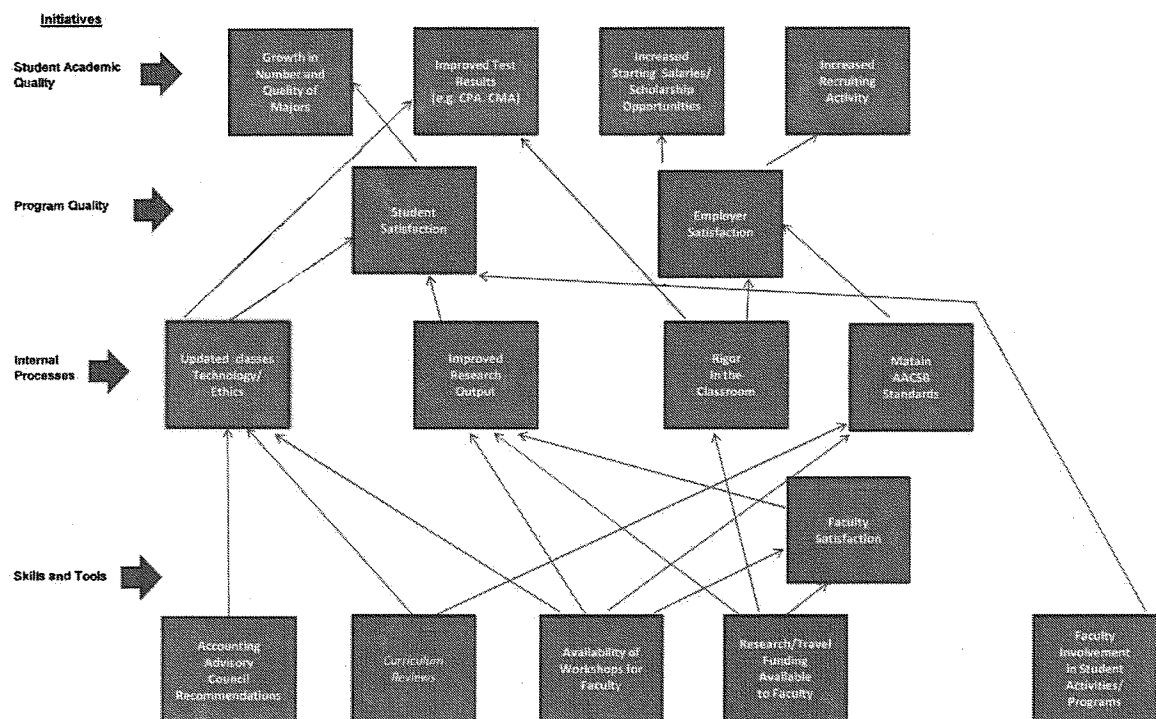
3. To satisfy students and employers, we must excel at certain internal processes as measured by:

- Developing or updating courses
- Research Output
- Grade distributions
- AACSB Qualifications
- Faculty Involvement with students (Attendance)
- Opportunities to showcase students
- Ethics, New Technology

4. To excel as a program we must develop skills and tools as measured by:

- Faculty Satisfaction
- Training Availability for Faculty
- Advisory Council Recommendations
- Curriculum Reviews

### Appendix : Balanced Scorecard Format for Accounting Department Initiatives



Appendix 1

# PUBLIC POLICY EXCEPTION TO THE EMPLOYMENT-AT-WILL DOCTRINE IN PENNSYLVANIA

Thomas L. Bright, Shippensburg University of Pennsylvania

Richard L. Coffinberger, George Mason University

## ABSTRACT

The employment relationship between the employer and a non-union employee in Pennsylvania in the private sector is governed by the legal doctrine of at-will employment, which allows discharge without stating a cause. However, the doctrine is not absolute and an employer may be subject to liability if the employer terminates an employee for a "wrong" reason. When termination is against a "clear mandate of public policy" a cause of action arises. An early case in which the exception to the rule was enunciated in Pennsylvania is Geary v. United States Steel Corp. decided by the Pennsylvania Supreme Court in 1974. Following the Geary decision, however, much confusion has arisen regarding what is a violation of public policy in Pennsylvania. This paper will review the evolution of at-will employment in Pennsylvania, and the case law defining, interpreting and modifying the rule, under the constraints of the public policy exception.

### Introduction

The management of the workforce personnel by Pennsylvania employers is governed by the doctrine of at-will employment. Employment-at-will permits that either the employer or the employee may terminate the employment relationship at the will of either party, without cause. The employment may be ended for a good reason, a bad reason or no reason at all.<sup>3</sup> Generally, an at-will employee has no valid case against an employer for ending his or her job.

Pennsylvania law presumes that employment is at-will due to the fact that most employees in the private sector do not work under the terms and conditions of a written contract. Employees covered by the terms and conditions of a written contract are, by definition, not at-will. Those with written contracts would include union members and, most often, high salaried employees such as CEOs and professional athletes. Their written agreement dictates the terms and conditions of their employment. Consequently, the specific terms in the at-will employment relationships regarding such matters as duration and/or grounds for termination of the relationship are not expressly stated in writing. The Pennsylvania Supreme Court has stated, "...this court has steadfastly resisted any attempt to weaken the presumption of at-will employment in this Commonwealth"<sup>4</sup>. Ergo, the relationship can legally be ended without a

reason; however, the relationship cannot be ended for the wrong reason.

A wrong reason would be a violation of statutory law. Violations of federal law include violations under:

1. Title VII of the 1964 Equal Opportunity in Employment Act;<sup>5</sup>
2. The Family Medical Leave Act of 1993;<sup>6</sup>
3. The Age Discrimination in Employment Act of 1967;<sup>7</sup> and
4. Various labor laws regarding union activity.<sup>8</sup>
5. Also prohibited are violations of Pennsylvania State Laws, which include:
6. Pennsylvania Human Relations Act;<sup>9</sup>
7. The Criminal History Records Information Act;<sup>10</sup> and
8. Commercial Drivers.<sup>11</sup>

A third exception to the termination of employment relationships for any or no reason whatsoever in Pennsylvania is "Where the discharge of at-will employees would threaten clear mandates of public policy"<sup>12</sup>. There exists, however, confusion regarding what is or is not, public policy in Pennsylvania. To date, no clear, bright, exact, or inclusive definition exists defining the term.



## History

Reiterating the fact that most employees in the private sector do not work under the terms and conditions of a written contract (as do, for example, union members who are protected by a collective bargaining agreement), the specific terms of the employment relationship regarding such matters as duration and/or grounds for termination are not stated. Thus, although an employer may not fire an employee for an improper reason (such as when one advocates unionization, or the firing is a form of prohibited discrimination) nevertheless, the employer is free to simply dismiss an employee at the will of the employer without stating a reason or cause.

The "at will" doctrine has been well entrenched in labor jurisprudence. The origin of employer and employee rights can be traced to England's Statute of Labourers<sup>13</sup> which provided that when a hiring of unfixed duration took place, it was presumed to be for one year and a master could not put away his servant except for reasonable cause. The statute was later repealed. However, the English courts continued to apply the principle by presuming that a general hiring was presumed to be for one year.

In America, although the courts initially followed the English precedent,<sup>14</sup> by the late 1880's there emerged a new development. The courts seemingly adopted "Wood's Rule" from the writings of H.G. Wood in his Treatise on the Law of Master and Servant.<sup>15</sup> Emphasis was shifted from a presumption of hiring for one year to freedom of both parties to define their relationship. If the servant sought to make out a yearly hiring, the burden was upon him to establish it upon proof.

The firmly established, well trenched doctrine of at-will employment was referred to by the Supreme Court of the United States of America as long ago as 1908 when in the case of Adair v. United States<sup>16</sup> the court mentioned that the right of an employee to quit his job, for whatever

reason, is the same as the right of an employer to terminate the employee for whatever reason.

Pennsylvania has historically recognized this unfettered right of an employer to discharge an employee-at-will for no reason, in the absence of a contractual or statutory prohibition. In the past it has been rare that at-will employees have been successful when attacking an employer for wrongful termination in Pennsylvania. The law in Pennsylvania generally remains to be employer friendly. The employment-at-will doctrine, arguably, continues to be strongly entrenched in Pennsylvania.

An early declaration of the doctrine was made in Pennsylvania in 1891 when a court stated "[an employer] may discharge an employee with or without cause at pleasure, unless restrained by some contract."<sup>17</sup> One hundred years later, the courts in Pennsylvania steadfastly continued to follow the doctrine.<sup>18</sup> Presently in the 21<sup>st</sup> Century, the courts in Pennsylvania remain firmly dedicated to the doctrine.

## Public Policy

The public policy exception is a narrow one and dictates a "finding of violation" of a clearly defined mandate of public policy which 'strikes at the heart of citizens', social rights, duties and responsibilities.<sup>19</sup> In Pennsylvania, the public policy exception to the employment-at-will doctrine must be based on Pennsylvania public policy. In the case of McLaughlin v. Gastro Intestinal Specialists,<sup>20</sup> the Pennsylvania Supreme Court held that "A plaintiff must do more than show a possible violation of a federal statute..."<sup>21</sup> The Court continued "[plaintiff] must allege that some public policy of this Commonwealth is implicated, undermined, or violated."<sup>22</sup>

In Pennsylvania, public policy is determined by examining the precedent set in Pennsylvania, looking at the Pennsylvania Constitution and the laws of the Commonwealth of Pennsylvania.

A Pennsylvania court has noted: "The sources of public policy [which may limit the Employer's right of discharge] include legislation; Administrative rules, regulation, or decision; and judicial decision. In certain instances, a professional code of ethics may contain an expression of public policy . . . Absent legislation the judiciary must define the cause of action in case-by-case determinations."<sup>23</sup>

Consequently, what societal considerations would be of sufficient moment to be recognized as public policy generated uncertainty.

Wrongful discharge of an at-will employee initially was recognized as being actionable in Pennsylvania in the landmark decision rendered in Geary v. United States Steel Corp.<sup>24</sup> in 1974. The court stated:

[T]here are areas of an employee's life in which his employer has no legitimate interest. An intrusion into one of these areas by virtue of the employer's power of discharge might plausibly give rise to a cause of action, particularly where some recognized facet of public policy is threatened. The notion that substantive due process elevates an employer's privilege of hiring and discharging his employees to an absolute constitutional right has long since been discredited. But this case does not require us to define in comprehensive fashion the perimeters of this privilege, and we decline to do so. We hold only that where the complaint itself discloses a plausible and legitimate reason for terminating an at-will employment relationship and no clear mandate of public policy is violated thereby, an employee at will has no right of action against his employer for wrongful discharge.<sup>25</sup>

Geary, a salesman for fourteen years, had been discharged after he voiced an opinion that new tubular products for the petroleum industry were inadequately tested and unsafe. He continued to express his reservations after being ordered to follow directions. Subsequently the product was

withdrawn from the market. Nevertheless, Geary was fired, due to his complaints and demeanor. Geary had bypassed the employer's chain of command and created a nuisance, which the court found to be a plausible and legitimate reason for the termination, leaving Geary without relief. The court determined that no clear mandate of public policy was present and that any implications of such were outweighed by the company's legitimate interest in preserving normal operational procedures from disruption.

In the wake of the Geary decision, case law in Pennsylvania continues to build regarding specific example of what are actionable violations of public policy, but only sparingly. It is to be noted that when a statutory remedy exists, in some cases there is no actionable claim for a violation of public policy. Therefore, it has been found that where a claim is based on the violation of the Pennsylvania Human Relations Act, (PHRA) an employee was prevented from suing for wrongful termination. Her remedies against her employer were only those found in PHRA.<sup>26</sup>

However, when an employee was denied recourse against her employer based upon allegations of sexual harassment in violation of the PHRA, only because the employer employed less than four persons, a claim was permitted to be pursued as an exception to the at-will employment doctrine.<sup>27</sup> The Pennsylvania Superior Court noted:

It is difficult to believe that the Legislature would first define certain acts as illegal via both the Constitution and statute, thus establishing a public policy unequivocally condemning such conduct, and then remove all judicial recourse for the victims of that conduct. We therefore agree with Appellant's contention that a public policy exception is appropriate for her situation. In this context we find persuasive the conclusion reached by the Third Circuit Court of Appeals that: "[a] discharge in retaliation for the refusal by a woman employee to succumb to sexual

advances would abridge a significant and recognized public policy against sexual discrimination in employment." To prevent an employee who is alleging sexual harassment from pursuing her claim in court only because her employer has less than four employees appears a direct contravention of a clear public policy on grounds both quixotic and arbitrary.<sup>28</sup>

#### Pennsylvania State Court Decisions

Employee plaintiffs have stated a cause of action based on the public policy at-will exception in the state courts in Pennsylvania in limited instances. In Reuther v. Fowler & Williams Inc.,<sup>29</sup> the employee was fired for electing to serve on a jury. Since individuals are required by statute in Pennsylvania to serve when called for jury duty in order to have citizens available for trials, the dismissed employee was permitted by the Pennsylvania Supreme Court to pursue an action against the employer after being discharged for having chosen to fulfill the required jury obligations.

Likewise, a violation of a clearly mandated public policy was found in the case of Hunter v. Port Authority,<sup>30</sup> wherein public employment was denied to an individual on the basis of a prior conviction for which a pardon had been granted. The Pennsylvania Supreme Court found that to do so constituted a violation of the Pennsylvania Constitution and would not be permitted.

Another lawsuit that did not uphold the right of an employer to fire an at-will employee due to a violation of public policy is Field v. Philadelphia Electric Company.<sup>31</sup> In Field, the employee had reported nuclear safety violations and was subsequently discharged. Since federal law mandated such disclosures, the Pennsylvania Supreme Court permitted the at-will employee to bring suit against the employer. In distinguishing Gear, the Supreme Court noted that the employee was an expert, knew about nuclear regulatory regulations, and knew that the

company's actions were not in compliance. Furthermore, the court found it significant that the risks of radiation were clear.

Additionally, the Pennsylvania Supreme Court found a violation of public policy in the case of Kroen v. Bedway Sec. Agency, Inc.<sup>32</sup> An employee has been wrongfully discharged for refusing to submit to a polygraph test. Pennsylvania had adopted an anti-polygraph statute that permits employers to require employees to submit to a polygraph under very limited circumstances, none of which applied to the dismissed employee. Consequently, the Pennsylvania Supreme Court held that the employee's suit against the offending employer should not be dismissed.

The Superior Court in Pennsylvania in 1995 added a fifth scenario to the rare victories for dismissed at-will employees in the case of Highhouse v. Avery Transportation.<sup>33</sup> While the Pennsylvania trial court rendered judgment in favor of the defendant employer, the Pennsylvania Superior Court reversed, holding that "constructive discharge of an at-will employee may serve as a basis for tort recovery if the employer has made working conditions so intolerable that an employee has been forced to resign."<sup>34</sup> The Pennsylvania Superior Court determined that "if the employer discharged (the employee) because he had made a claim for unemployment compensation during a period when he was not working and earning income, the discharge will constitute a violation of public policy and will support a tort claim for wrongful discharge."<sup>35</sup> The Superior Court concluded that the right of an employee to receive unemployment compensation is a benefit granted by the state, enacted to alleviate the hardships attendant upon unemployment. Moreover, the Superior Court noted that the Pennsylvania Unemployment Compensation Law mandates that agreements to waive, release, or commute rights under this law are invalid.<sup>36</sup> Discharging an employee in retaliation for filing an

unemployment compensation claim was also found to be a violation of public policy in the 1995 case of Ray Kovitz v. K-Mart Corp.<sup>37</sup>

Conversely, two weeks following the Pennsylvania Superior Court's decision in Highhouse in 1995, a Pennsylvania trial court in Shick v. Shirey<sup>38</sup> held that Pennsylvania state law did not recognize a wrongful discharge claim against an employer arising from an employee's firing in an alleged retaliation for filing for workers' compensation benefits. The trial court dismissed this lawsuit prior to trial, holding that the employee failed to state a recognized cause of action in Pennsylvania.

In its Shick v. Shirey decision, the Superior Court upheld the trial court's decision and, likewise, decided that Pennsylvania does not recognize a cause of action for firing someone for filing for workers' compensation benefits because the Pennsylvania Workers' Compensation Act does not contain any language prohibiting it.<sup>39</sup> Allowing employers to be the masters of their own businesses constitutes, according to the Pennsylvania Superior Court, an equally compelling public policy argument against recognizing such a cause of action. This intermediate appellate court opted to focus on the right of the employer to operate the employer's business and to emphasize what had been previously suggested in prior rulings – that judicial modification of the at-will doctrine was ill-advised.<sup>40</sup>

In an abrupt turnabout, the Pennsylvania Supreme Court in 1998 overturned the Shick decision rendered by the Pennsylvania Superior Court. The Supreme Court in its Shick v. Shirey<sup>41</sup> decision ruled that an at-will employee who was allegedly fired in retaliation for pursuing rights under the Pennsylvania Workers' Compensation Act states a claim for wrongful termination. Although not specifically prohibited by the Act, the Pennsylvania Supreme Court decreed that the broad remedial purpose of the Pennsylvania Workers' Compensation Act

would be defeated if employers were permitted to lawfully fire employees in retaliation for pursuing their statutory rights for workers' compensation benefits.

However, there exists many more cases in Pennsylvania in which the Courts have refused to find public policy exceptions. When an employee was fired after complaining about the manner in which his department was operated, resulting in financial waste, he had no claim against his employer for a violation of public policy.<sup>42</sup> There was no violation of public policy when an employment was terminated after a person actively sought a position with a competitor.<sup>43</sup> Likewise, it was found that when a supervisor and those under his supervision could no longer co-exist, and the supervisor was fired, the supervisor had no cause of action against his employer.<sup>44</sup> A claim that there existed a violation of First Amendment rights, when an employee placed an ad in a competitor's newspaper, also has failed.<sup>45</sup>

When a doctor's employee reported an alleged rape of a woman who was in a facility, she was dismissed. The Superior Court up-held the right of the employer to dismiss the employee without violating any well-enunciated violations of public policy, due to the fact that no duty in the law, regulations, or code of professional ethics required the disclosure.<sup>46</sup>

In the case of McLaughlin v. Gastro Intestinal Specialists<sup>47</sup> the Pennsylvania Supreme Court refused to find that firing an employee in retaliation for reporting an alleged safety violation of OSHA was a violation of public policy. The Court emphasized "A plaintiff must do more than show a possible violation of a federal statute..."<sup>48</sup>

However, the Supreme Court of Pennsylvania, following the guidance language enunciated in Shick, included a violation of public policy where a supervisor was fired for not dissuading a

subordinate from seeking worker's compensation benefits in 2005.<sup>49</sup>

### Federal Law

While the Pennsylvania State Courts have been reluctant to expand public policy exceptions, it appears that Federal Courts have adopted a much more expansive approach than the Pennsylvania State Courts, regardless that the Federal Court are interpreting Pennsylvania law.

Cases in which public policy violations have been found to exist in federal courts include Novosel v. Nationwide Insurance Co.<sup>50</sup> In Novosel, the plaintiff had been employed by Nationwide for approximately fifteen years. When he was fired, he was being considered for promotion and had steadfastly advanced previously, without negative comment or event. When Nationwide in 1981 solicited the plaintiff to seek supporting signatures for passage of the "No-Fault Reform Act", plaintiff refused. He was later terminated and claimed the termination was due to the refusal and constituted a violation of his federal First Amendment rights.

The Third Circuit agreed holding that Pennsylvania law permits a cause of action where the firing abridges a significant and recognized public policy. The Federal court analogized protections afforded public employees regarding political activities and held, as a matter of public policy, employees in the private sector should enjoy the same.<sup>51</sup>

In Borse v. Pierce Goods Shop, Inc.<sup>52</sup> a Federal Court found a violation of public policy where an employee was fired for refusal to consent to urinalysis and a property search. She contended that the search constituted an invasion of privacy. The Federal Court concluded that to require the plaintiff to sign a consent form in which she would agree to drug testing constituted a possible violation of her right to privacy under Pennsylvania law. It was determined that if a discharge was related to a

substantial and highly offensive invasion of privacy, then that discharge would be actionable.<sup>53</sup>

In the case of Perks v. Firestone Tire and Rubber Co.<sup>54</sup> the plaintiff's employer terminated employment because the plaintiff refused to submit to a polygraph examination. The Federal Court found the termination to be a violation of public policy, not unlike the violation found when an employee is discharged for jury duty.<sup>55</sup>

Additional cases where Federal Courts have found public policy exceptions to exist include:

Woodson v. AMF Leasureland Centers Inc.<sup>56</sup> wherein a barmaid was fired for not serving liquor to a visibly intoxicated person;

McNulty v. Borden, Inc.<sup>57</sup> in which allegedly an employee refused to engage in illegal price-fixing; and

Kilpatrick v. Delaware County Society for Prevention of Cruelty to Animals.<sup>58</sup> In Kilpatrick the employee claimed the employment termination was caused due to reports of occupational safety;

Brown v. Hammond.<sup>59</sup> The plaintiff in Brown was terminated for refusal to perform an improper activity – billing paralegal time as attorney's time;

Paralegal v. Lawyer.<sup>60</sup> The paralegal plaintiff was terminated for testifying against an attorney.

It has specifically been recognized by a Federal Court that Pennsylvania courts decline to follow the expansive decisions of the Federal Courts.<sup>61</sup> Although strong argument exists supporting the contention that the Federal Courts in Pennsylvania are more inclined to find violations of public policy than the Pennsylvania State Courts, the finding of violations are not without exception.

In the case of Bruffet v. Warner Communications, Inc.,<sup>62</sup> the plaintiff brought suit based on a claim of handicap discrimination, a violation of PHRA.<sup>63</sup> The court ruled no public policy exception would be found for three reasons. First, Pennsylvania is a state which takes a constrictive view of the public policy exception. Second, to allow the suit would circumvent the required administration procedures of the PHRA. Third, Pennsylvania cases allowing exception to at-will employment based on public policy exceptions involve instances where statutory remedies did not exist.<sup>64</sup>

An additional public policy exception was not cut out again in the case of Smith v. Calgon Carbon Corp.<sup>65</sup> Smith claimed he was dismissed for reporting to his supervisors environment pollution caused by his company. The court held against the plaintiff stating he did not claim he was fired for violating a positive law, nor had he claimed he was fired for performing a duty required by statutory law.<sup>66</sup>

Other Federal cases in with the Pennsylvania plaintiff was unsuccessful include: Clark v. Modern Group Ltd.,<sup>67</sup> wherein an employee refused the order to not report reimbursed auto expenses as income; Franhel v. Warwick Hotel,<sup>68</sup> where the employer- father, fired his employee-son when he refused to divorce his wife; and Redick v. Kraft, Inc.<sup>69</sup> when an employee was immediately discharged after giving two weeks notice.

## Conclusion

There remains in Pennsylvania a burden upon employers, and also upon employees, to know precisely what constitutes public policy in Pennsylvania. What is, or is not, public policy continues to be ambiguous. What sources can serve as ground to establish public policy limiting the right to fire-at-will remains nebulous. Can an employer terminate

employment safely, without fear of a lawsuit, because an employee smokes at home? Is it permissible and within the employer's rights to fire an employee for unhealthy eating? These and similar type questions remain unanswered in Pennsylvania, and create confusion and uncertainty in the workforce.

A possible solution may be for the Pennsylvania legislature to provide specific guidelines concerning when and under what circumstances, an employer is not justified to terminate an at-will employment worker. However, there presently exists no such discernable activity in Pennsylvania.

<sup>3</sup> Yetter v. Ward Trucking Corp., 585 A.2d 1022, 1025; appeal denied, 600 A. 2d 539 (1991).

<sup>4</sup> McLaughlin v. Gastro Intestinal Specialist, 750 A. 20 283, 290 (2000).

<sup>5</sup> 42 U.S.C.A. Sec. 2000 et seq. (WEST 2007).

<sup>6</sup> 29 U.S.C.A. Sec. 2601 et seq. (WEST 2007).

<sup>7</sup> 29 U.S.C.A. Sec. 621 et seq. (WEST 2007).

<sup>8</sup> See, e.g., National Labor Relations Act, 29 U.S.C.A. Sec. 158 (a) (1) (3) and (4) (1988).

<sup>9</sup> 43 Pa. Cons. Stat. Ann. Sec. 951 et seq. (WEST 2007).

<sup>10</sup> 18 Pa. Cons. Stat. Ann. Sec. 9101 et seq. (WEST 2007).

<sup>11</sup> 75 Pa. Cons. Stat. Ann. Sec. 1619 et seq. (WEST 2007).

<sup>12</sup> Clay v. Advanced Computer Applications, Inc., 559 A. 2d 917, 918 (1989).

<sup>13</sup> 1 W. Blackstone, Commentaries 425 (1969).

<sup>14</sup> See, e.g., Adams v. Fitzpatrick, 26 N.E. 143 (1891).

<sup>15</sup> Wood, H.G., Master and Servant (1877).

<sup>16</sup> 208 U.S. 161 (1908).

<sup>17</sup> Henry v. Pittsburgh & Lake Erie R.R. Co., 21 A. 157 (1891).

<sup>18</sup> See Note 1, Yetter.

<sup>19</sup> See Note 2, McLaughlin.

<sup>20</sup> Id. at 288.

<sup>21</sup> Id.

<sup>22</sup> Id.

<sup>23</sup> Reuther v. Fowler & Williams, 386 A. 2d. 119 at 121 (1978).

<sup>24</sup> 319 A. 2d. 174 (1974).

<sup>25</sup> Id.

<sup>26</sup> Note 21, Reuther.

<sup>27</sup> Weaver v. Harpster & Shipman Fin Servs., 885 A.2d. 1073 (2005).

- <sup>28</sup> Id. At 1077.
- <sup>29</sup> See Note 21. Reuther.
- <sup>30</sup> 386 A. 2d. 119 (Pa. Super. 1978).
- <sup>31</sup> 419 A. 2d. 631 (Pa. Super. 1980).
- <sup>32</sup> 565 A. 2d. 1170 (Pa. Super. 1989).
- <sup>33</sup> 660 A. 2d. 1374 (Pa. Super. 1995).
- <sup>34</sup> Id. at 1376.
- <sup>35</sup> Id. At 1378.
- <sup>36</sup> Act of Dec. 5, 1936, P.L. (1937) 2897, art. VII Sec. 701, 43 P.S. 861.
- <sup>37</sup> 665 A. 2d. 833 (1995).
- <sup>38</sup> Clarion County, No. 452 C.D., July 24, 1995, 25 D & C 4<sup>th</sup> 481 (1996).
- <sup>39</sup> 691 A. 2d. 511 (Pa. Super. 1997).
- <sup>40</sup> See Darlington v. General Electric, 504 A. 2d. 306 (Pa. Super. 1986).
- <sup>41</sup> 716 A. 2d. 1231 (Pa. 1998).
- <sup>42</sup> Rossi v. Pennsylvania State University, 489 A. 2d. 828 (1985).
- <sup>43</sup> McCartney v. Meadowview Manor, Inc., 508 A. 2d. 1254 (1986).
- <sup>44</sup> Turner v. Letterkenny Federal Credit Union, 512 A. 2d. 1280 (1986).
- <sup>45</sup> Martin v. Capital Cities Media, Inc., 511 A. 2d. 830 (1986).
- <sup>46</sup> Hennessy v. Santiago, 708 A. 2d. 1269 (Pa. Super. 1998).
- <sup>47</sup> Note 2. McLaughlin.
- <sup>48</sup> Id. At 288.
- <sup>49</sup> 883 A. 2d. 511 (Pa. 2005).
- <sup>50</sup> 721 F. 2d. 894 (3d. Cir. 1983).
- <sup>51</sup> Id. 896.
- <sup>52</sup> 963 F. 2d. 611 (3d. Cir. 1992).
- <sup>53</sup> Id. At 622.
- <sup>54</sup> 156 F. 2d. 1363 (3d. Cir. 1979).
- <sup>55</sup> Id. At 1366.
- <sup>56</sup> 842 F. 2d. 699 (3d. Cir. 1988).
- <sup>57</sup> 474 F. Supp. 1111 (E.D. Pa. 1979).
- <sup>58</sup> 632 F. Supp. 542 (E.D. Pa. 1986).
- <sup>59</sup> 810 F. Supp. 644 (E.D. Pa. 1993).
- <sup>60</sup> 783 F. Supp. 230 (E.D. Pa. 1992).
- <sup>61</sup> Smith v. Carbon Calagon Corp., 917 F. 2d. 1388 (3d. Cir. 1990).
- <sup>62</sup> 692 F. 2d. 910. (3d. Cir. 1990).
- <sup>63</sup> See Note 7.
- <sup>64</sup> See Note 58. Bruffet at 919.
- <sup>65</sup> See Note 59.
- <sup>66</sup> Id. 1345.
- <sup>67</sup> Clark v. Modern Group Ltd., 9 F. 3d. 321 (3d. Cir. 1993).
- <sup>68</sup> 881 F. Supp. 183 (E.D. Pa. 1995).
- <sup>69</sup> 745 F. Supp. 296 (E.D. Pa. 1990).

---

Thomas L. Bright, Shippensburg University of Pennsylvania

Richard L. Coffinberger, George Mason University

# BLENDING STRATEGIC, PROJECT, AND SYSTEMS/PROCESS MANAGEMENT IN SUCCESSFUL EFFORTS TO ACHIEVE AACSB ACCREDITATION/REACCREDITATION

Alan L. Brumagim, Ph.D., Kania School of Management, University of Scranton

Cynthia Cann, Ph.D., Kania School of Management, University of Scranton

---

## Abstract

The strategic efforts of achieving or maintaining AACSB accreditation is a complex process with many stakeholders. Formal project management tools are rarely used despite research (Thomas & Mullaly, 2009) and practical experience showing that project management techniques improve project execution and success. After all, these AACSB-related efforts are a strategic project.

Some of the most useful project management tools for the AACSB accreditation/ reaccreditation efforts include: the scope statement (aligned with AACSB standards), the work breakdown structure (WBS), and the activity precedence list.

Systems analysis methods can also aid in these strategic efforts when used in conjunction with project management tools. High level systems analysis and documentation expand on and organize the more detailed documentation of efforts often provided in accreditation/ reaccreditation reporting.

This paper will demonstrate the use of these tools and techniques and suggest their utility for both managing and communicating what will hopefully be a successful accreditation/ reaccreditation effort.

---

## Introduction

Many business schools are working toward Association to Advance Collegiate Schools of Business (AACSB) International accreditation. Even more schools are or will be working toward developing the processes and operating policies needed for accreditation maintenance. The purpose of this article is to demonstrate how project management and systems analysis tools can be used to aid in the overall accreditation or reaccreditation process. Additionally, and as important, use of these tools will provide a communications framework that can simplify the review process for the accreditation team and help faculty, staff, administrators, and other stakeholders to understand the high level processes needed to meet AACSB standards. For convenience this paper will use the term "accreditation" rather than "accreditation/ reaccreditation."

The accreditation process is a complex, time-consuming, and resource-consuming effort. When performed successfully it results in the continuous improvement of the school in a way that aligns with

the university's and school's missions. As such, accreditation can be viewed as an important strategic effort for a school of business. This is important to recognize because the project and systems tools described here are particularly useful for strategic efforts. This is not to suggest that they are not useful for managing non-strategic and lower level projects or the analysis of very detailed processes. Strategic thrusts, however, often require more care and coordination in ensuring that their implementation accomplishes the overall goals, objectives, and strategic plans. The tools and techniques described and demonstrated here can improve these efforts.

## AACSB Standards

The AACBS accreditation effort involves the successful implementation of up to 21 separate standards. A given school may be required to complete fewer standards depending on the programs they offer. For example, standard 21 relates to doctoral programs. Obviously if a school of business does not offer a doctoral program then standard 21 would not apply to their accreditation process.



Standards are flexible enough to allow schools of business to meet a standard in a way that is consistent with the university's and school's missions. For example AACSB (2008) standard 10 states:

The faculty has, and maintains, intellectual qualifications and current expertise to accomplish the mission and to assure that this occurs; the school has a clearly defined process to evaluate individual faculty member's contributions to the school's mission. (p.43)

Despite the flexibility built into the standards, significant guidance for each standard is provided. For example, under "Standards for Business Accreditation with Interpretive Information" (p. 17) the following sections relate to standard 10:

Basis for judgment

Guidance for documentation

Academically qualified faculty members

Professionally qualified faculty members

Expectation of the standard regarding qualifications

Development to maintain qualifications

Expectation of the standard regarding maintenance of qualification, and

Intellectual contributions and faculty qualifications

The interpretive information is quite useful. Some of the information is very specific. For example, under the "basis for judgment" section (1), it specifically states that at least 90% of the faculty resources are either academically or professionally qualified. Additionally the interpretive information includes sample worksheets appropriate to help satisfy the standard. Other sections such as "intellectual contributions and faculty qualifications" (section 8) are less specific. This section states that "schools should have clear expectations for the intellectual contributions responsibility of individual faculty members" (p. 48). This can lead to significant and sometimes heated discussion among the faculty as to what the intellectual contribution policies should be for the school. It is not uncommon for AACSB visitation members or consultants to suggest the policies that other schools have adopted. For example, some non-doctoral schools adopt a "two-publication and two- presentation over a five-year

rolling period" requirement. This discussion was intended to highlight the complexity, judgment, and involvement of a wide number of stakeholders in addressing but one standard for accreditation.

Bringing additional complexity to these processes is the fact that concepts often transcend AACSB standards. Take the potential need to have a documented governance structure plan. Standard 1, in part, states "The review process includes appropriate stakeholders." This implies the need for a governance structure plan to ensure the inclusion of appropriate stakeholders. Standard 15 states that "Normally, the curriculum management process will result in undergraduate and master's level general management degree programs." This again implies the need for a documented governance structure plan. We contend that project management and systems analysis techniques, employed at a high level, will help to structure these overlapping issues on the way to successfully achieving AACSB accreditation.

#### Project Management Tools: The Scope Statement

Perhaps the best set of standards for project management is documented in the Project Management Institute's (PMI) *A Guide to the Project Management Body of Knowledge (PMBOK Guide.)* Three of the project management tools, described in the PMBOK Guide (2004), that most directly relate to the AACSB accreditation process will now be discussed.

According to the PMBOK guide (2004) the "Project Scope Statement states what work is to be accomplished and what deliverables need to be produced" (p. 76.) A deliverable is "Any unique and verifiable *product, result, or capability* to perform a *service* that must be processed to complete a process, phase, or product. Often used more narrowly in reference to an external *deliverable*, which is a deliverable that is subject to approval by the project sponsor or customer." (Italics included in original, p. 358.) Although not a focus of this paper, the scope statement also contains other elements such as the project objectives, a product/service description, project assumptions, and preliminary project risks, to name but a few (p. 112.)

Applying the scope statement deliverable concept to accreditation, the AACSB standards are a part of the scope statement. These standards provide a clear understanding of what is included and what is not included in the accreditation project. However, *The AACSB International Eligibility Procedure and Accreditation Standards for Business Accreditation* (2008) does not identify, require, or recommend the creation of either a scope statement or related deliverables as defined by the PMI.

Table 1 outlines the results of a process to match deliverables to AACSB standards, which results in the creation of part of a scope statement. Of course the purpose is not just to create a scope statement, but to aid in the process of achieving AACSB accreditation. As we continue these benefits should become more obvious. Notice that Table 1 is merely a partial overview of deliverables and linkages to standards for illustrative purposes only.

Many people when faced with a project, such as accreditation, are action-oriented. There is a tendency to immediately engage in actions or tasks. PMI standards suggest that prior to action more thought should be given to planning at a very high level of conceptualization and to determine exactly what is to be delivered. For example, AACSB standard outline what must be done and project leaders implicitly work toward these results. It is extremely important to make these implicit efforts and the high level plans for achieving them explicit. This is critical on large, complex, or strategic projects. In the context of AACSB accreditation, this is also very important since, as shown previously, standards transcend deliverables.

Deliverables are identified by taking each standard and considering exactly what must be produced to satisfy that standard. Although it is sometimes appropriate to derive these deliverables with a group of people, we recommend that a single person create at least the initial list of deliverables to maintain logical consistency. This effort takes some experience-based skill and can easily get off track in a group setting. Each of the items that must be produced becomes a deliverable and should be

numbered and cross-referenced to standards as shown above in Table 1. An aid to developing deliverables is to use nouns (things) rather than verbs (actions). The project management process is often iterative so that subsequent project management tasks often results in the revision of the original deliverable list.

Examining AACSB standards 1 and 11, shown at the bottom of Table 1, raise an interesting issue. Both standards call for the creation of a process. Standard 11 calls for the explicit documentation of a standard process and such process documentation requirements are implicit in standard 1. Therefore, should a process plan be identified as a specific deliverable in Table 1? Although judgment is required in making this decision, we propose that such process plans should be included as deliverables (although not shown in Table 1 due to space considerations.) However, it is important that the deliverable should be called something such as "Completed process plan." Using or developing processes (verbs) are not deliverables. Systems analysis techniques, which will be described shortly, provide useful tools for actually developing, using, and communicating these processes.

#### Project Management Tools: The Work Breakdown Structure (WBS)

The WBS, like the scope statement, is deliverable-oriented (nouns not verbs). It provides a more detailed view of the deliverables, while at the same time providing a direct linkage with the top level of deliverables from the scope statement. According to the PMBOK Guide (2004): "The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team, to accomplish the project objectives, and create the required deliverables. The WBS organizes and defines the total scope of the project. The WBS subdivides the project work into smaller, more manageable pieces of work, with each descending level of the WBS representing an increasingly detailed definition of the project work." (p. 112)

The WBS is often drawn as a diagram, in some ways not unlike an organizational chart. A WBS can also be created as a list as shown in Table 2 below. Notice

the numbering scheme. Also recognize that sub-deliverables, taken as a whole at a lower level, must exactly and completely describe the deliverables or sub-deliverables at the next higher level of the WBS.

There is no single correct result when decomposing the scope deliverables into the WBS (Haugen, 2002.) For example, consider Table 2 sub-deliverables 1.1.6 and 1.2.8. These identify a requirement to have an updated log as part the AACSB (2008) standards for the Mission Statement (or equivalent) and the Completed Strategic/Financial Plans, respectively. Note that the sub-deliverables of "1.3 Completed Governance System Plan" do not include an item similar to 1.1.6 and 1.2.8. Instead a higher level deliverable such as "1.24 Updated Process Log" could be used when following the technique used in 1.3. Either approach is correct so long as it is being applied consistently throughout the WBS. This advice is not followed in Table 1 since it was created for illustrative purposes.

Before illustrating the final project management tool, the activity precedence list, we will turn to a discussion of systems analysis techniques.

#### Systems Analysis Tools:

##### The Responsibility Work Process Flowchart

Systems analysis has a long history dating back to the 1950s (Forrester, 1968). Some of the initial work conceived of inputs passing through a process and resulting in an output (the IPO model). Similar to the WBS, a basic IPO figure can be decomposed. Therefore a specific process can be conceptualized at a lower level as a series linked IPO sub-systems which make up the higher-order process. In the 1990s this basic model was used in the very popular business reengineering efforts (Hammer and Champy, 1993). Reengineering techniques were used to analyze and radically reorganize activities and processes within an organization. Peter Senge (1990) used systems dynamics techniques to conceptualize organizational activities as a series of circular paths which have either reinforcing or limiting effects on the results of complex processes. These basic systems concepts have been incorporated into the more recent

lean manufacturing techniques (Carreira, 2005) which examine processes across organizations.

One major advantage of systems thinking is that it aligns nicely with cross-functional teams and helps to overcome "functional silos." An example of a functional silo in an organization might be the marketing division which is more concerned with the vertical (according to the organizational chart) protection of marketing people than serving the customer. Cross-functional teams can be used to help break down these functional silos. The IPO model is inherently horizontal rather than vertical and can help the organization to better serve the customer by focusing on output products or services. Although outside the scope of this paper, these techniques have been briefly outlined to illustrate the continued development of systems thinking.

In the context of this paper we illustrate a responsibility-based work process flowchart shown as Figure 1. First, the various groups or individuals that are involved in the creation of the deliverable and sub-deliverables are identified. The final deliverable is shown in Figure 1. Once this has been done the basic flows between groups or individuals are identified with arrows. These arrows represent the final flows of sub-deliverables, ultimately resulting in the final deliverable. Each sub-deliverable number is listed next to the arrow.

As can be seen, some groups produce multiple sub-deliverables (e. g., the business faculty and committees.) At the same time not all activities result directly in a sub-deliverable (e. g., the university planning committee.) Dashed arrows represent major consultation linkages which are important in the creation of sub-deliverables. The letters shown on Figure 1 are activities that the related group or individual must perform in order to create a sub-deliverable. These activities and their recommended sequence will be discussed in relation to Table 4. Iterations within and between the individuals and groups are common, but not shown in Figure 1. The number of these iterations will depend upon the school involved and their level of experience with the accreditation process. Concentrating on final flows of

sub-deliverables provides for clarity of management and simplicity of communication.

Figure 1 can be read by locating the lowest deliverable (1.1.1) and following the paths to each higher deliverable until reaching the end of the path (1.1.5). Updating the log (1.1.6) transcends all flows and is therefore not on a path.

To summarize, activities (A, B, C) produce a sub-deliverable (1.1.1) which then produce the need for further activities and so on, until the final deliverable is created.

A separate systems figure should be created for each deliverable from the scope statement. Although a single flowchart could be created for multiple deliverables, the result is often difficult to interpret and provides little benefit over a collection of single deliverable flowcharts.

The sub-deliverables listed in Table 3 below are derived from an analysis of the flowchart (Figure 1) and not from the completed WBS (Table 2). This will provide for a comparison of two similar but separately created WBSs. We will provide this comparison shortly.

As we mentioned at the beginning of this section, systems flowcharts can be decomposed into lower level systems charts. Although outside the scope of this paper, "the business school faculty and standing committees" would be a natural candidate for the development of a more detailed systems chart, showing the interactions between various committees and with the faculty as a whole. Having this supplemental flowchart, rather than expanding Figure 1 would preserve the clarity of the high-level systems flowchart shown above.

#### Combining Project Management and Systems Analysis Techniques

Once the flowchart has been developed the sub-deliverables can be arranged in a WBS similar to Table 2. However, as mentioned before, this WBS shown as Table 3 is derived from the flowchart.

An activity precedence list, shown as Table 4, summarizes additional analysis of the activities identified in Figure 1. In reality, the activity precedence list and the process flowchart are developed simultaneously. As mentioned before, a practical technique is to develop the WBS using nouns. The activity precedence list, on the other hand, uses verbs to document actions to be taken.

Table 4 identifies each activity and the "immediate" predecessor(s) or activities that must be finished before that activity of focus can be started. For example the university planning committee must "A. begin the periodic university strategic planning process" before it can "B. revise the university mission statement." Note that this relationship is not directly captured in Table 3. Although this example is fairly obvious, this technique is extremely useful for documenting more complex relationships between activities.

Notice that Table 4 relates activities or actions directly to sub-deliverables (i.e., the activity letters match their related WBS numbers shown in column 1.) This is meant to insure that no activities are forgotten and that no activities are outside the scope of the deliverables being completed.

Column 2 letters match those shown in Figure 1. In the third column, only the "immediate" predecessor activity or activities are listed. For example, faculty and committee tasks D – conducting faculty mission and goals workshop, and F – reviewing and revising business school mission by faculty, must precede H – the approval of the revised mission by the AACSB steering committee. In this case it is not necessary to reflect the predecessor activity C – University President's review process of mission statement as a part of activity H. This would be redundant. To repeat, only immediate predecessor activities need be listed. If an activity has no predecessor, then column three should contain dashes as shown with activity A. An activity with no precedence can either indicate an activity that starts the overall process or an activity that can be completed at any time during the process.

Two additional points merit attention. First, notice activity "F" in Table 4. Both conducting workshops

"D" and developing a draft mission "E" must be completed before the faculty can review and revise the mission "F." An activity can have multiple immediate predecessors. Second, notice that activities "H" and "G" are not in logical order. Review of the mission by the AACSB steering committee (H) follows approval by the dean (G) in the table although the flow is reversed in Figure 1. However, the activity precedence list is technically correct because column 3, the predecessor activities are accurate. Nevertheless, it is recommended that the activities be listed in a logical order for ease of use.

The development of a project activity precedence list is also the next step when using the decomposition technique shown as Table 2. Since we are primarily interested in illustrating these systems and project management techniques, only a single activity precedence list will be shown.

#### Comparison of the Two WBSs

The first approach using decomposition to develop a WBS is the most widespread method used by project managers and the standard promulgated by the PMI. But how does it compare with the WBS derived from systems analysis? Table 5 shows this comparison.

It is not being suggested that when using these tools, both methods of developing a WBS should be completed and contrasted. Instead we suggest that the subtle differences outlined here will inform the reader on the importance of carefully constructing a WBS when using either method. We prefer the use of the standard decomposition technique. We then use systems flowcharts to inform the development of the activity precedence list.

Having said this, let us continue on to the comparison. Notice that the two WBSs are very similar. The last three items are identical. One should be aware that the WBS numbering using standard decomposition techniques does not imply the order of completion of sub-deliverables. However, although sub-deliverables can be put in any order, they are often documented in a logically order for ease of use.

There are a few differences between the two methods. Using the standard decomposition technique (left side of Table 5), "1.1.3 Completed workshops with faculty on development of mission" is a specific sub-deliverable. This deliverable is not shown when using the systems analysis technique (right side of Table 5.) Although the workshops are not shown as a deliverable, they are shown as an activity (item D. in Table 4) so the two methods are consistent, if not identical.

On the other hand, the systems analysis derived sub-deliverable 1.1.2 specifically addresses the delivery of "business school draft strategic goals to inform the business school mission." Under the decomposition technique this is not addressed at all. The concept of strategic goals being used to help develop the mission is not considered. In fact, using the decomposition technique the related sub-deliverable is listed under a completely different deliverable; "1.2 Completed Strategic and Financial Plan." The specific sub-deliverable is shown in Table 2 as 1.2.5. Inherent in this result is the assumption that strategic goals would not be used to inform the mission. We highlight this not to suggest a correct answer, but merely to suggest the need for careful assessment when producing the WBS. It also suggests the benefits of systems analysis.

Another difference between the two WBSs is that the systems analysis method does not address "input received from internal and external stakeholders" as reflected under the decomposition method. This is not a weakness of the systems analysis technique, but merely suggests that the preparation of the flowchart might have needed more thought. If a decision was made that other stakeholder review was not needed for the mission statement, then this decision should be explicitly documented as a note to the systems flowchart. Again, these tools are consistent with the AACSB philosophy of explicit documentation.

#### Levels of AACSB Documentation

In order to successfully achieve AACSB accreditation, a significant amount of documentation is needed. There is clearly an emphasis on documenting processes and continuous improvement

efforts. Yet it is not uncommon for this documentation to focus on detailed processes and minimize high level documentation, such as that provided by the project and systems tools outlined in this paper. A typical example of detailed documentation supporting the accreditation effort is shown as Table 6.

As can be seen from Table 6, the process description of a single committee is quite detailed and comprehensive. And this is only one of many committees whose processes need to be documented. In addition, all relevant results or approved business school policies created by each committee must be incorporated into the accreditation documentation along with a timeline which shows when each document was completed and approved. School policies and school processes (as opposed to committee processes) also need to be described, both those that were existing and those that were created as part of the accreditation process. Furthermore, data and summary information identifying the current position or results of the school's efforts must be documented. An example of this would be detailed documentation of the current percentage of academically or professionally qualified faculty. These are needed to show adherence to AACSB standards.

### Summary

This paper has attempted to demonstrate the utility of using project management (Gido & Clements, 2006) and systems analysis techniques (Cavaleri & Obloj, 1993) to aid in the business school's strategic efforts to achieve AACSB accreditation. When compared with the volume of detailed documentation required for accreditation, the time involved in using the tools presented here is minimal. Yet, widespread use of these tools in industry suggests their benefit for organizing complex projects, such as AACSB accreditation efforts.

There are major benefits in using these tools. Documentation provided by these tools allows those coordinating the accreditation effort to see the big picture. Since different AACSB standards are often related to each other, the creation of a scope

statement provides for the derivation of deliverables that do not overlap. This provides the coordinator with a clearer picture of exactly what needs to be completed, often increasing the efficiency of the accreditation process. Related to this benefit, is that the flexibility inherent in the AACSB standards can be more easily tailored to the requirements of a specific school. A teaching-centered school and a research-centered school would inherently have different deliverables while complying with the same standards. Developing a scope statement early in the accreditation process helps explicitly describe what would need to be completed for the successful accreditation of each school.

The use of the WBS and the systems flow diagram allows for deeper analysis of the process before engaging in specific accreditation activities. An example of this related to the consideration of which stakeholders to include in the creation of a deliverable. At one school it was decided that it was most appropriate to include both staff and students not only in the business school's mission development, but in the creation of its strategic goals as well. In all likelihood it is most probable that the same issues and decisions would have surfaced under a less structured methodology, but given the complex nature of accreditation the use of these tools increases the efficiency of the entire process. Additionally, it is easier to document any changes that are subsequently made. Changes can be tracked to specific sub-deliverables providing structure to the change process. Although outside of the scope of this paper, this change tracking is best accomplished with a formal configuration control and management process.

Without a scope statement to identify deliverables, an analysis of potential changes on various standards would be needed. This would be a more cumbersome process and result in documentation that might be more difficult to follow.

These tools not only aid in the performance of accreditation activities, but also provide an excellent communications mechanism. The visiting accreditation team can see a clear and organized

effort that links the standards to specific applications of those standards (given their flexibility) and then to recognize increasingly detailed levels of documentation. This aids in organizing and understanding the very large amounts of detailed documentation required in the accreditation review process. Communication with other stakeholders can also be enhanced. For example, the University president can examine the scope statement and perhaps the WBS, in order to achieve a clearer understanding of what is occurring. There would most likely be no need for the president to sift through detailed documentation. Furthermore, the interpretation of the standards as shown by the deliverables would be obvious.

A final benefit is that this more structured process can be used to model and capture lessons-learned for future reaccreditation efforts. This is not to suggest that the documentation compiled currently by business schools is not structured. Observation suggests that schools are very organized in their accreditation efforts and documentation. Yet, we feel strongly that the tools outlined here can further improve both current and future efforts.

As can be imagined, it takes experience with these tools to use them skillfully. Derivation and decomposition of deliverables can be performed in various ways, some ways more useful than others. One source of assistance may come from a local chapter of the Project Management Institute.

## References

AACSB International Eligibility Procedures and Accreditation Standards for Business Accreditation (2008),

[www.aacsb.edu/accreditation/process/documents/](http://www.aacsb.edu/accreditation/process/documents/)

AACSB STANDARDS Revised Jan08.pdf viewed on October 21, 2008.

*A Guide to the Project Management Body of Knowledge, Third Edition* (2004), Newtown Square, PA: PMI.

Carreira, Bill (2005), *Lean Manufacturing That Works*, NY, NY: AMACOM.

Cavaleri, S. & Obloj, K. (1993), *Management Systems: A Global Perspective*, Wadsworth Publishing: Belmont, CA.

Forrester, J. W. (1968), *Principles of Systems*, Waltham, MA: Pegasus.

Gido, J. & Clements, J. P. (2006), *Successful Project Management, Third Edition*, Mason, OH: Thompson/Southwestern.

Haugan, G. T. (2002), *Effective Work Breakdown Structures*, Vienna, VA: Management Concepts

Senge, P. M. (1990), *The Fifth Discipline*, NY, NY: Doubleday/Currency.

Thomas, J. & Mullaly, M., (2009) *Researching the Value of Project Management*, PMI: Newtown Square, PA

---

Alan L. Brumagim, Ph.D, is an Associate Professor of Management in the Kania School of Management at the University of Scranton. His research interests include project management, Chinese business practices, and business sustainability.

Cynthia Cann, Ph.D. is an Associate Professor of Marketing in the Kania School of Management. She served as Interim Associate Dean for the school. Her research interests focuses strongly on the various aspects of business sustainability. She has led the school's recent successful AACSB reaccreditation effort.

Table 1 – Partial Overview of Deliverables to Related AACSB Standards  
(The Scope Statement)

<u>Deliverables</u>		<u>AACSB Standards</u>																				
		StrategicStandards (1-5)						Participant Standards (6-14)							Assurance of Learning Standards (15-21)							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1.1	Mission Statement	X	X	X																		
1.2	Strategic & Financial Plans			X	X	X																
1.3	Governance Structure Plan	X							X	X		X	X			X						

Sample AACSB Standards (2008)

[//www.aacsb.edu/accreditation/process/documents/AACSB\\_STANDARDS\\_Revised\\_Jan08.pdf](http://www.aacsb.edu/accreditation/process/documents/AACSB_STANDARDS_Revised_Jan08.pdf)

Standard 1: The school publishes a mission statement or its equivalent that provides direction for making decisions. The mission statement derives from a process that includes the viewpoints of various stakeholders. The school periodically reviews and revises the mission statement as appropriate. The review process involves appropriate stakeholders (p. 19.)

Standard 11: The school has well-documented and communicated processes in place to manage and support faculty members over the progression of their careers consistent with the school's mission (p. 52.)



Table 2 – Partial Work Breakdown Structure Derived Directly from  
AACSB Reaccreditation Deliverables/Standards Table 1

### 1.1 Mission Statement

- 1.1.1 Input received from internal and external stakeholders
- 1.1.2 Mission statement aligned with university mission
- 1.1.3 Final workshop with faculty on development of mission
- 1.1.4 Preliminary mission statement
- 1.1.5 Approved mission statement by Dean
- 1.1.6 Updated reaccreditation activity log

### 1.2 Completed Strategic and Financial Plan

- 1.2.1 Completed plan based upon stakeholder review
- 1.2.2 Financial plan aligned with strategic plan
- 1.2.3 Final alignment with Middle States Standards
- 1.2.4 Written strategic plan
- 1.2.5 Completed strategic goals reviewed by faculty and staff
- 1.2.6 Completed SWOT analysis by faculty and staff
- 1.2.7 Written strategic and financial plans
- 1.2.8 Updated reaccreditation activity log

### 1.3 Competed Governance System Plan

- 1.3.1 Established advisory board
  - 1.3.1.1 Charge of board
  - 1.3.1.2 Operating policies
  - 1.3.1.3 Descriptions of duties
  - 1.3.1.4 Membership and schedule
- 1.3.2 Established school committees structure
  - 1.3.2.1 Fit with strategic plan
  - 1.3.2.2 School policies on committee operations
  - 1.3.2.3 Committee assignments
  - 1.3.2.4 Committee charges
  - 1.3.2.5 List of committees

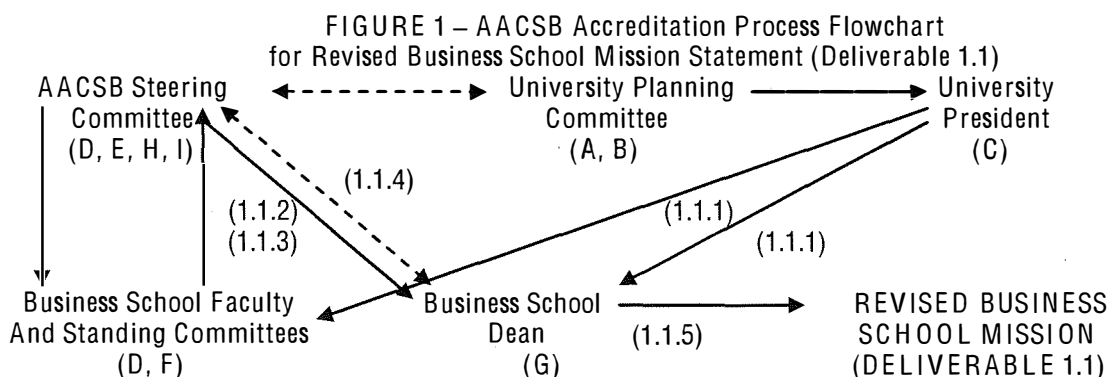


Table 3 – Partial WBS Derived Directly from AACSB Accreditation  
Process Flowchart (Figure 1)

- 1.1 Mission Statement
  - 1.1.1 Revised university mission
  - 1.1.2 Business school draft strategic goals to inform business school mission
  - 1.1.3 Faculty approved draft business school mission
  - 1.1.4 Completed draft business school mission
  - 1.1.5 Dean approved mission statement
  - 1.1.6 Updated accreditation activity log

TABLE 4 – AACSB Reaccreditation Project Activity Precedence List  
Detail for Business School Mission Statement (Deliverable 1.1)

Sub-Deliverable	Activity	Predecessor Activities
1.1.1	A) Working on the periodic university strategic planning process	----
1.1.1	B) Revising of university mission statement	A
1.1.1	C) Reviewing and approving of University mission statement by president	B
1.1.2	D) Conducting faculty mission and goals workshops	C
1.1.3	E) Preparing draft business school mission	C
1.1.3	F) Reviewing and revising business school mission by faculty	D,E
1.1.5	G) Approving revised business school mission by the dean	H
1.1.4	H) Reviewing, revising, and approving business school mission by AACSB Steering Committee	D,F
1.1.6	I) Updating reaccreditation process log	C

Table 5 – Comparison of Alternative WBSs

	Sub-deliverables from Table 2 Mission (Standard Decomposition)		Sub-deliverables from Table 3 Mission (Systems Analysis)
1.1	Mission Statement	1.1	Mission Statement
1.1.1	Input received from internal and external stakeholders	1.1.1	Revised university mission
1.1.2	Draft mission statement that is aligned with university mission	1.1.2	Business school draft strategic goals to inform the business school mission
1.1.3	Completed workshops with faculty on development of mission	1.1.3	Faculty approved draft school mission
1.1.4	Preliminary business school mission statement	1.1.4	Preliminary business school mission statement
1.1.5	Dean approved mission statement	1.1.5	Dean approved mission statement
1.1.6	Updated reaccreditation process log	1.1.6	Updated reaccreditation process log

Table 6 – AACSB Steering Committee Processes

1. The AACSB Committee will normally meet once each semester, or as needed.
2. Normally, the chair of the committee will be the KSOM Associate Dean. For Academic year 200\_ – 200\_, Drs. \_\_\_\_ and \_\_\_\_ will co-chair the Committee.
3. The chair will determine the meeting agendas.
4. A list of action items/deliverables/projects needed to fulfill the charge of the committee will be developed at the beginning of each semester and recorded on the form shown as Attachment \_\_. The chair will guide the prioritization process and assignment of the action items.
5. The chair will add, delete, re-prioritize, or otherwise modify the action item list, as needed, during the semester after discussing the changes during a committee meeting or if communicated to all committee members by email.
6. The action plan will be updated to reflect approved and completed action items on a continuous basis.
7. An end of semester progress review of the semester plan will be facilitated by the chair. Necessary modifications to the action plan will be made. At the end of each academic year, a self-report will be documented of the committee's progress and sent to the Dean.
8. All meeting minutes and related documents will be emailed to committee members within 4 days of each meeting. Comments or corrections are due back to the author (rotating committee members will prepare minutes) within 4 days of receipt. If comments are not received back within this timeframe, approval will be assumed. The author will decide specific modifications to the documents including discussing specific items with those making comments, as needed.
9. The chair will send the approved meeting minutes and other approved documents to the Associate Dean for posting on the web site within one week of receipt.
10. The chair will coordinate the assignment/volunteering of appropriate action items (see #3 above) to members of the committee for independent work outside of the regularly scheduled meetings and appropriate due dates will be determined.
11. Independently completed work by committee members will be delivered at least two days before the meeting to the chair in order to be put on the meeting agenda for committee review. Where necessary, the author(s) will independently completed work will be reviewed, discussed, and accepted/rejected by the committee. Minor revisions will follow process #6 above.
12. Discuss the effort/ document with the chair prior to the next meeting.
13. As indicated on the meeting agenda, any non-independently assigned action items will be completed by the committee during the meeting.
14. The chair will be responsible for recommending at least one person to attend critical AACSB International Conferences/Seminars on a continuous basis.
15. The membership of the committee will be reviewed at the beginning of each academic year. Changes to the membership will be facilitated through an announcement to KSOM stakeholders that a position is available. All stakeholders will be given the opportunity to apply for that position. The final decision as to who will serve will be made by the current chair.

# ADJUSTABLE RATE MORTGAGES: IS THE "COST OF FUNDS RISK" ASSUMED BY THE BORROWER?

Joshua Buch, La Salle University

Kenneth Rhoda, La Salle University

---

## Abstract

Prior to the early 1980s the dominant mortgage type was the 30 year Fixed Rate Mortgage (FRM). In 1982, The Alternative Mortgage Transaction Parity Act (AMTPA) was passed. It allowed mortgage lenders to introduce new mortgage instruments such as adjustable rate mortgages (ARM's). The original purpose of this new instrument was to assist lending institutions in managing "cost of funds" risk ARM's clearly transfer the cost of funds risk from the lender to the borrower. The Risk-Return Trade-Off axiom, states that We won't take on additional risk unless we expect to be compensated with additional return. This paper is an attempt to examine this axiom and to see if ARM borrowers actually realized a lower average mortgage rate over the life span of their loans, as compared to the rate on FRMs, which existed at the time the loans were originated. In other words, since the ARM borrower assumed the cost of funds risk, was he or she rewarded by paying lower average mortgage rates than would have been paid by those choosing FRMs?

---

## Introduction

The three main risks facing mortgage lenders are: "cost of funds" (or Gap) risk, credit/default risk, and prepayment risk. Cost of funds risk is the potential inability of the lender to match rising liability costs with asset returns. Credit/default risk is associated with the inability of borrowers to pay outstanding debt. Prepayment risk is the potential loss associated with a borrower refinancing a loan during periods of falling interest rates.

Prior to the early 1980s the dominant mortgage type was the 30 year Fixed Rate Mortgage (FRM). In 1982, The Alternative Mortgage Transaction Parity Act (AMTPA) was passed. It allowed mortgage lenders to introduce new mortgage instruments such as adjustable rate mortgages (ARM's). The original purpose of this new instrument was to assist lending institutions in managing "cost of funds" risk. As stated by Mills and Gardner, "It was clear from the financial problems of the thrift industry during 1980-82 that widespread usage and acceptance of ARMs were needed if lenders were to achieve the portfolio flexibility that would enable them to survive another period of relatively high interest rates"<sup>1</sup>

AMTPA specifically states that: "The Congress hereby finds that:

- (1) Increasingly volatile and dynamic changes in interest rates have seriously impaired the ability of housing creditors to provide consumers with fixed-term, fixed-rate credit secured by interests in real property, cooperative housing, manufactured homes, and other dwellings;
- (2) Alternative mortgage transactions are essential to the provision of an adequate supply of credit secured by residential property necessary to meet the demand expected during the 1980's"<sup>2</sup>

ARM's clearly transfer the cost of funds risk from the lender to the borrower. The risk-return trade-off axiom, as described in a popular corporate finance text reads as follows: "We won't take on additional risk unless we expect to be compensated with additional return."<sup>3</sup> In other words, if a borrower assumes the risk of an adjustable rate mortgage, he or she should be compensated with a lower average cost over the life of the loan.

This paper is an attempt to examine this axiom and to see if ARM borrowers actually realized a lower average mortgage rate over the durations of their loans as compared to the rate than would have been paid on FRMs that existed at the time the loans were originated. In other words, since the ARM borrower assumed the cost of funds risk was he or she rewarded by paying lower average mortgage rates

than would have been realized by those choosing FRMs?

### Methodology

Data on ARM rates were available starting with January 1984. Average realized ARM rates for various assumed mortgage lives were calculated using the following assumptions:

1. ARM rates adjust annually
2. The rates adjust to an index. The index used was the one-year T-Bill rate. Other indexes include the LIBOR and the Fed Funds rate.
3. The adjusted ARM rates were the T-Bill rates at the time of the adjustment plus 2.75%. The maximum annual adjustment was plus or minus 2%.
4. The maximum adjustment in ARM rates over the lives of the mortgages was plus or minus 6%.

Geometric averages were then calculated for the original and adjusted rates given assumed lives of 10, 9, 8, 7, 6 and 5 years. For example, if the life was 10 years, it was assumed that the borrower made payments over that period and then either refinanced or paid off the loan. As is shown in Appendix I, the average mortgage life span is between 5-10 year.

A summary of the findings is found in the appendix.

### Summary of the Outcomes and Conclusions

Among the major changes that took place in the mortgage industry since the early 1980s is the phenomenon of refinancing. The fact is that, currently, the average mortgage life span is somewhere between five and ten years (see Appendix I). Hence, in this study, the authors calculated the average annual adjustable mortgage rate for assumed mortgage life spans ranging from 5 to 10 years. These rates were then compared with the existing FRM rates at the mortgage initiation date.

It is very difficult to reproduce the very large spreadsheet used for these calculations. This

spreadsheet will be shown and explained by the authors during our presentation. Tables #1 and #2 present a small portion of the outcomes. Chart #1 is a summary of all the outcomes.

Table #1 presents the monthly outcomes for 1984 for six different mortgage life spans. For example, if one borrowed using a 30-year FRM in January 1984, the annual cost, regardless of the mortgage life span, was 13.37%. However, if one took out an ARM in January 1984 and held it for five years, the actual realized annual rate was 10.3%, or 3.07 % lower than the FRM rate. If the same loan was held for six, seven, eight, nine, or ten years, the annual realized rate was 10.54%, 10.55%, 10.41%, 10.07%, and 9.68% respectively.

If the loan was originated during any of the 12 months of 1984 and if it was held for between five and ten years, in all cases the borrower of the ARM realized a lower average annual rate than the FRM that existed on the loan origination date.

Table #2 presents the same outcomes for loans that were originated on the month of January for each year from 1984 till 2000. Clearly, in most cases, the ARM averaged better than the FRM. Also, for ARMs that were originated on January and lasted 10 years, the cost always averaged better than that for an existing FRM. However, this was not always the case for 5 or 6 year ARMs. In other words, while it seems that more often than not, the ARM averaged below the relevant FRM, it seems that ARMs with longer durations (9 or 10 years) were more efficient to the borrower.

Chart #1 is a summary of all the observations. Clearly, the FRMs exceeded the average realized ARM rates in most cases. Notable exceptions are the years 1987, 1994, 1996 and also 1998-1999.

Table #3 presents a statistical summation and comparison of all the outcomes. The first two rows show the range of the advantage ("minus") and disadvantage ("plus") of ARMs over FRMs for the various life spans. For example, if one borrowed using an ARM from 1984 until 2000 (a span of five years), the largest advantage realized was

-4.32% and the disadvantage was +0.75%. The 10 year life span seemed to be more advantageous because the largest difference was -5.14% while the worst case scenario was only a +0.50%.

It seems that, while in all cases the ARM borrower realized an average overall advantage, the longer the life span the better. A mortgage held for 5 or 6 years had an average advantage of -1.21% (A 1.21% average lower annual rate as compared to the existing FRM ); the average advantage over the 10 year life span was -1.81%.

Overall, 142 starting dates were analyzed for a 10 year assumed mortgage life. In only 10 months or 7% of the time were the FRMs advantageous. For all of the 202 starting dates for the 5 year loans, FRM borrowers realized an advantage only 34 times (17% of the cases). Again, it seems that while, generally speaking, the risk-return trade-off was proven correct, the mortgages with 9-10 years life spans were better for the borrower.

The standard deviations of the outcomes again help in proving that the ARM borrower was rewarded for assuming the cost of funds risk. Assuming that the data are normally distributed (which may or may not be the case), the 10 year borrower had a 95% chance that the loan will cost him/her between 0.6% to 3% below the existing FRM.

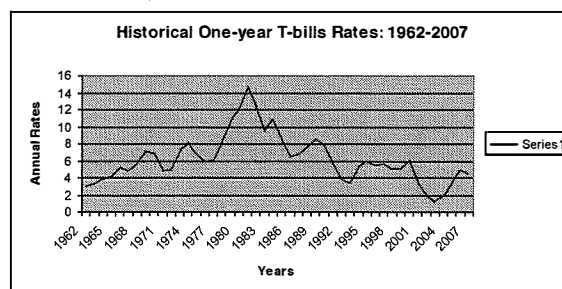
#### Limitations of the Study and Additional Comments

It is obvious that the potential advantages (or disadvantages) that ARM borrowers have as compared to FRM borrowers is a function of the trend of interest rates and the initial gap between FRM and ARM rates on the origination date.

Based on our assumptions, if the original gap between FRM and ARM rates is 6% or higher, ARMs are guaranteed to be preferred to FRMs. The smaller the gap the less the advantage. The lifetime of the mortgage also has an impact. The longer the mortgage is outstanding, the better the advantage,

The other major variable is the overall trend in interest rates. This paper analyzed the period from

1984 to 2004, a period during which interest rates generally declined from a record high in the early 1980s to relatively low levels in the mid 2000's. (See the chart below.) An interesting question is this: would the same results hold during rising interest rate periods? We suspect they would be different. Further study is obviously necessary.



#### Appendix I: Average Mortgage Life Span

Mortgage refinancing and declining mortgage lives are phenomena that began in the late 1980s. Currently the typical life span of a mortgage averages between five to ten years.

The authors asked HSH Associate for information on the average life span of mortgages. Their reply was: "With regards to actual life of loan terms, we know of no definitive source"<sup>4</sup>.

Based on the following sources we concluded that the average mortgage life span is between 5 to 10 years:

- "Average mortgage life is seven years"<sup>5</sup>
- "A 10 year period is the historical assumption of the average life of a mortgage loan"<sup>6</sup>
- "30-year mortgages have traditionally been considered to have approximately a twelve year average life"<sup>7</sup>.
- "The average life of a mortgage is only 8 years" (fsbpekasi.com/loan-tips.html)
- "Average mortgage length is about seven and a half years" (monstermoving.com)
- "Most mortgages last seven years" (realtimes.com)
- "the average length of time that homeowners stay in their home in the United states is just

over six years" (Modern Woodmen of America.com)

- "The average length of a mortgage is less than five years" (thinkgling.com).

Thus we assume that the average duration of home mortgages is between five and 10 years.

#### Appendix II: The Typical ARM Loan is Riskier than the Typical FRM Loan. Or: Lenders traded off the Cost of Funds Risk for Credit Risk

An examination of Charts A1-A5 in the Appendix proves the following points:

1. The average ARM loans are much larger than typical FRM loans.
2. A larger percent of non-conforming loans are ARM loans as compared to FRM loans.
3. The larger the loan the better is the probability that it is an ARM loan.
4. ARM loans have larger Loan-to-Value ratios. (Smaller down payments, less equity).
5. More new homes are financed by ARMs as compared with used homes. Since prices of new homes are higher than used homes, the borrower with an ARM is assuming a larger loan amount.

#### Additional Notes

This study was originally aimed at examining the risk-return trade-off hypothesis. However, due to the current upheaval in financial markets an added observation is worthwhile. It seems that while the ARM lender eliminated the cost of funds risk, he assumed a much larger default risk. As Appendix #2 indicates, the typical ARM loan is larger than the average FRM loan, and the larger the mortgage the better the probability it is an ARM loan. The typical

ARM loan has a higher loan to price ratio. In other words, the borrower has less equity in the house which makes this loan more risky. Also, more new homes were financed by ARM loans than existing homes. New homes are usually more expensive than existing homes so, again, the typical ARM loan is larger.

Recent market data also indicate that larger proportions of sub prime mortgages were ARM loan and larger percent of ARM loans are in default as compared with FRM loans.

In conclusion, the typical ARM loan is larger than the typical FRM loan; the ARM borrower has less equity in the property; the larger the loan the more likely it is to be an ARM. All this implies that the ARM loans increase the credit /default risk facing lenders. The lender issuing ARMs trades off the "cost of fund risk" for default risk which explains, in part, the current crisis.

---

<sup>1</sup> Mills Dixie L. & Gardner Mona J. "Consumer Response to ARMs: Implications of Evidence from Illinois and Wisconsin" The Journal of Consumer Affairs, Vol. 20, No. 1, 1986, p.78

<sup>2</sup> Garn-St Germain Depository Institutions Act of 1982, Section 801 of title VIII of the Act of October 15, 1982 (Pub. L. No. 97--320; 96 Stat. 1545), effective October 15, 1982

<sup>3</sup> Keown et Al Foundations of Finance, Prentice Hall, 3<sup>rd</sup> ed., 2000, p.13

<sup>4</sup> Keith T. Gumbinger, Vice President HSH Associates, April 6, 2005

<sup>5</sup> Frame W. Scott & Wall Larry in Economic Review, Federal reserve Bank of Atlanta, Jan. 2002.

<sup>6</sup> From: The Federal Housing Finance Board web site

<sup>7</sup> The State Department Federal Credit Union web site

---

Joshua Buch is a Professor of Finance at LaSalle University, Philadelphia, Pennsylvania

Kenneth Rhoda is an Associate Professor of Finance at LaSalle University, Philadelphia, Pennsylvania

Table 1:  
Realized Average Annual Costs of ARM's For Mortgage Lives From 5 to 10 years  
Compared to Fixed Rate Mortgages, Monthly for 1984

Loan Origination Date	Assumed Life of the Mortgage						FRM
	5yr	6yr	7yr	8yr	9yr	10yr	
Jan-84	10.30	10.54	10.55	10.41	10.07	9.68	13.37
Feb-84	10.27	10.46	10.51	10.33	9.96	9.57	13.23
Mar-84	10.49	10.65	10.71	10.52	10.16	9.75	13.39
Apr-84	10.39	10.61	10.69	10.50	10.12	9.70	13.65
May-84	10.37	10.59	10.66	10.46	10.08	9.68	13.94
Jun-84	10.30	10.44	10.50	10.33	9.96	9.59	14.42
Jul-84	10.35	10.40	10.44	10.26	9.90	9.53	14.67
Aug-84	10.48	10.56	10.55	10.30	9.87	9.50	14.47
Sep-84	10.58	10.64	10.62	10.36	9.92	9.53	14.35
Oct-84	10.53	10.57	10.53	10.25	9.80	9.43	14.13
Nov-84	10.34	10.37	10.33	10.04	9.63	9.30	13.64
Dec-84	10.34	10.36	10.28	9.97	9.57	9.25	13.18

Please note that this is for one year (1984). Our study spanned the period from 1984-2004 and the above table is an illustration of our results.

Table 2:  
Realized Average Annual Costs of ARM's For Mortgage Lives From 5 to 10 year  
Compared to Fixed Rate Mortgages for each January: 1984 to 2000

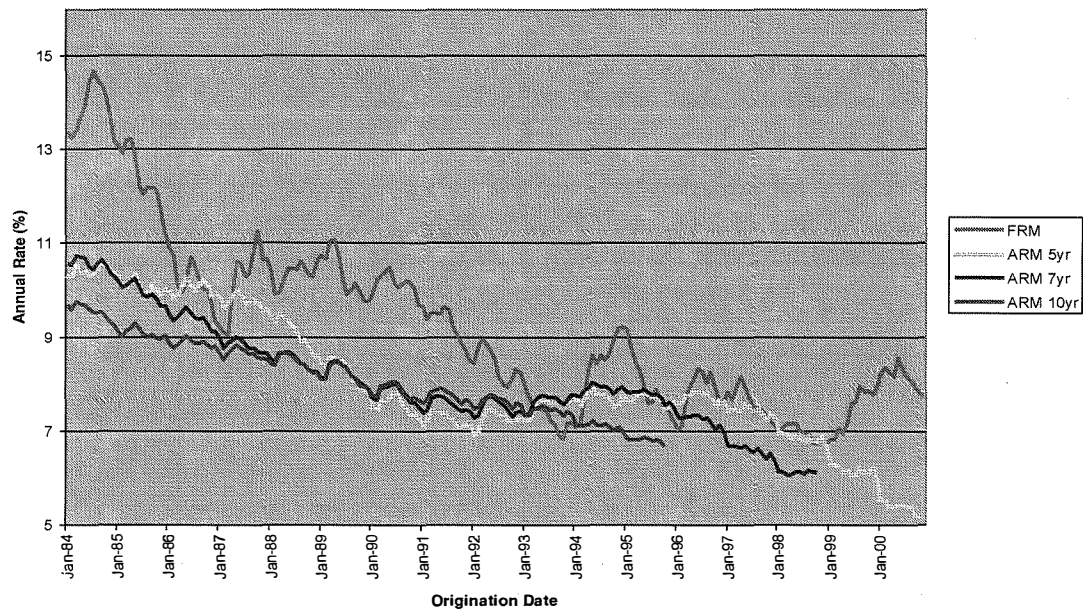
Loan Origination Date	Assumed Life of the Mortgage						FRM
	5yr	6yr	7yr	8yr	9yr	10yr	
Jan-84	10.30	10.54	10.55	10.41	10.07	9.68	13.37
Jan-85	10.09	10.22	10.05	9.67	9.27	9.00	12.92
Jan-86	9.85	9.71	9.33	8.92	8.66	8.74	10.71
Jan-87	9.64	9.20	8.76	8.49	8.59	8.50	9.08
Jan-88	9.29	8.76	8.45	8.47	8.38	8.37	9.89
Jan-89	8.33	8.04	8.13	8.07	8.09	8.09	10.65
Jan-90	7.45	7.64	7.65	7.73	7.77	7.73	10.2
Jan-91	7.21	7.29	7.43	7.51	7.50	7.65	9.37
Jan-92	6.99	7.20	7.32	7.34	7.52	7.51	8.76
Jan-93	7.23	7.37	7.38	7.58	7.56	7.35	7.68
Jan-94	7.52	7.51	7.72	7.68	7.43	7.09	7.15
Jan-95	7.63	7.85	7.79	7.49	7.11	6.79	8.83
Jan-96	7.61	7.58	7.27	6.86	6.54		7.08
Jan-97	7.47	7.13	6.68	6.34			7.65
Jan-98	6.97	6.48	6.12				7.04
Jan-99	6.29	5.91					6.81
Jan-00	5.49						8.33



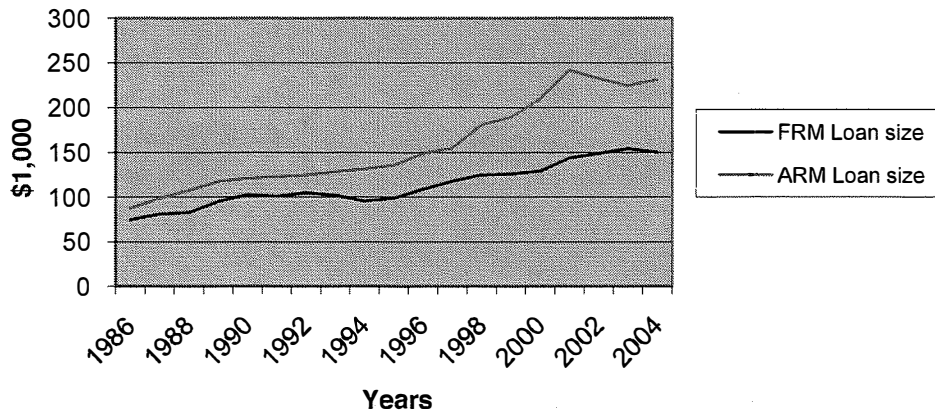
Table 3: Summary of Outcomes

The loan Life Span	<u>5 years</u>	<u>6 years</u>	<u>7 years</u>	<u>8 years</u>	<u>9 years</u>	<u>10 years</u>
The largest annual advantage of ARM over FRM	-4.32	-4.27	-4.23	-4.41	-4.77	-5.14
The largest annual advantage of FRM over ARM	0.75	0.67	0.73	0.88	0.78	0.50
Average Difference Between FRM and Calculated ARM Annual rates	-1.21	-1.21	-1.37	-1.50	-1.65	-1.81
StDev	1.18	1.07	1.04	1.08	1.17	1.21
Number of observations	202	190	178	166	154	142
No of Periods ARM>FRM	34	26	21	13	12	10
Percent No of Periods ARM>FRM	17%	14%	12%	8%	8%	7%

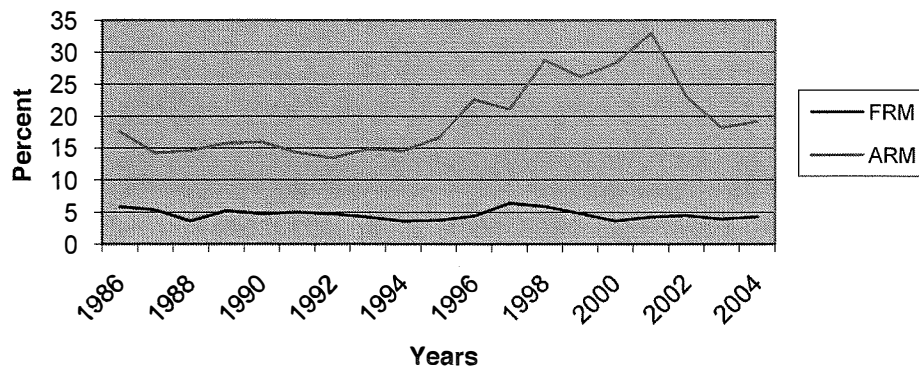
Chart 1  
ARM vs. FRM Rates



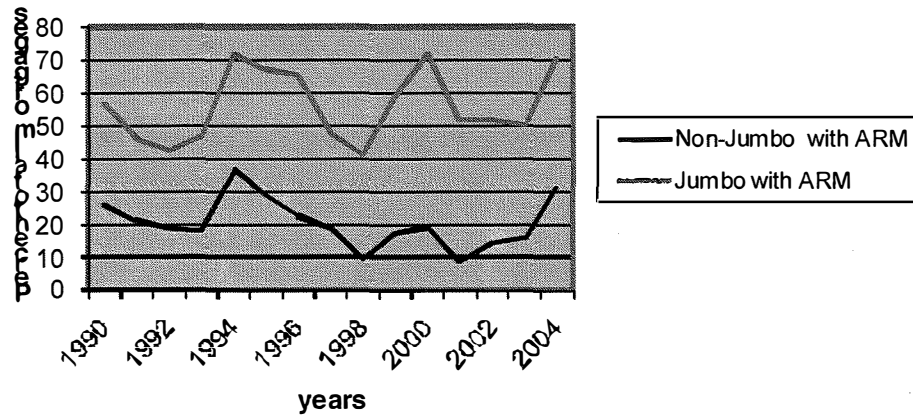
**Chart A1**  
**FRM and ARM Loan size Comparison**



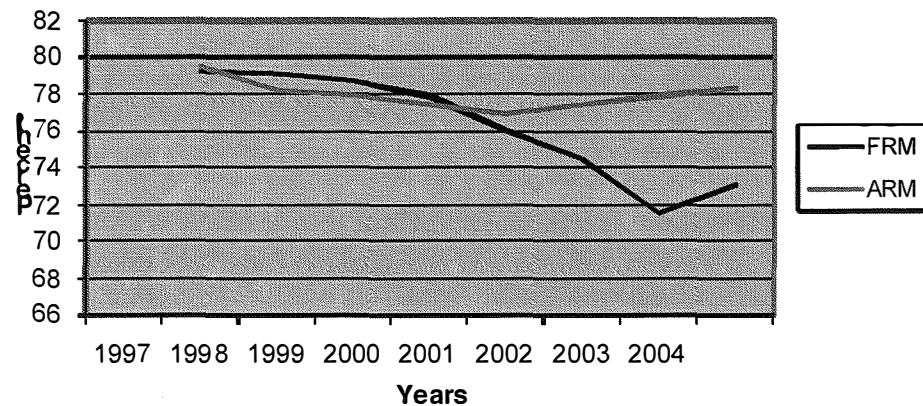
**Chart A2**  
**Proportions of Loans exceeding Conforming Loan limits**



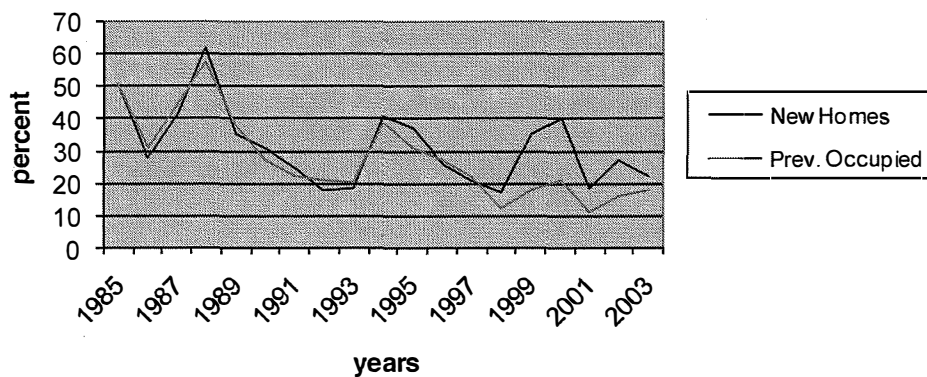
**Chart A3**  
Proportion of ARM of total mortgages by loan size



**Chart A4**  
FRM and ARM Loan-to-Price ratios



**Chart A5**  
Percent of ARM originated by major lenders: New and Previously occupied homes



# IDENTIFYING AND DEVELOPING THE ELUSIVE M-COMMERCE CUSTOMER

Marlene E. Burkhardt, Juniata College

---

## Abstract

When asked, most individuals claim that they will never engage in mobile commerce (m-commerce). Despite this claim, many are already making purchases using their cell phone. This article describes who is most likely to use m-commerce based on an analysis of e-commerce attitudes and behaviors. Findings suggest the important role of social behavior in m-commerce purchases. Variables including the belief that m-commerce will be helpful, worth the cost, and easy to use and additional variables related to that the ability to discern quality and cost savings on-line were also related to m-commerce. Implications for developing and marketing future m-commerce applications are addressed.

---

## Introduction

As recently as ten years ago you would be hard pressed to find someone making purchases on the internet and few would agree that they would ever be willing to do so. We see much the same climate today regarding cell phone commerce. Oddly enough, some of those stating that they are unwilling to make purchases using their cell phone have already done so by downloading ringtones and games. This irony could be the key to determining who, what, where and why people would be willing to make purchases using cell phones. This paper helps to find possible answers to some of these questions by collecting and analyzing data on purchasing behavior, attitudes toward technology, and social relationships.

## Background

The future of marketing includes a focus on technology, permission marketing, and social relationships. It has long been established that social networks influence our attitudes and behaviors. In particular, when new technology is introduced, networks determine adoption and technology related attitude formation (Burkhardt, 1994). However, it has also been determined that we form social networks with others with whom we share attitudes and behaviors. It is important to determine what role these theories play in marketing today. The term homophily is used to address the tendency of individuals to associate with others who are similar to themselves along some common attribute, attitude, or value (Lazarsfeld and Merton, 1954). Those who share a hobby may form a users group around that

interest. People with children of a similar age may decide to form a friendship. They may also engage in similar purchasing behavior.

Thanks to the internet, social network groups are no longer limited by distance. Virtual chat rooms or on-line fan clubs offer ways to interact without requiring personal presence. Cell phones, text messaging, and instant messaging also provide ways to interact with others with whom we share interests and attitudes. These technologies and interaction partners may also play a role in how we make purchases as well as what we decide to buy. Those with whom we interact may help to develop our attitudes and behaviors toward mobile commerce particularly when this transaction is different than traditional internet transactions. In other words, although many may be willing to make purchases through the internet, an important question remains. This question is whether or not individuals are willing to engage in commerce using their cell phone even without internet access. Text message purchasing with address and payment information established in an account prior to purchase is one scenario.

The recursive nature of the social influence/interaction relationship has been investigated by analyzing direct communication. Specifically, research has investigated this relationship by assessing text messaging, instant messaging and cell phone directory social networks (Burkhardt et. al, 2006). This work has practical application to the field of marketing as it is valuable to assess the diffusion process regarding use and attitudes for technology marketing opportunities. However, the purchasing decision process is much

more complicated with a myriad of additional variables playing a role in the likelihood of engaging in m-commerce. This research helps to identify the roles that several of these variables play in the m-commerce decision.

### Hypotheses

Previous research (Burkhardt, et. al, 2006) has demonstrated that individuals who are listed in one's cell phone directory or individuals who text message one another develop similar attitudes regarding cell phones. Similarly, this research theorizes that social interaction plays a large role in the likelihood of engaging in commerce using one's cell phone. Ease and value of the technology required in m-commerce is also likely to play a role in the purchasing decision. In addition, other variables related to purchasing behavior such as cost and quality assessments are also hypothesized to be related to likelihood of m-commerce.

Dependent variables examined in cell phone attitude similarity research (Burkhardt, et.al, 2006) were modified to analyze mobile commerce attitudes. Specifically, it is hypothesized that the likelihood of making a purchases using your cell phone is related to the belief that m-commerce:

- ▶ H1: Increases your social life
- ▶ H2: Is easy
- ▶ H3: Is worth the money
- ▶ H4: Is helpful in daily life

It is also hypothesized that the likelihood of engaging in m-commerce is related to the belief that the individual:

- ▶ H5: Can determine quality on-line
- ▶ H6: Is fearless about buying products on the internet
- ▶ H7: Believes products are cheaper on internet
- ▶ H8: Uses the internet to keep in touch with friends and family

### Procedure

In order to investigate who is likely to engage in m-commerce, survey data was collected by a group of cyber marketing students at a small liberal arts college. These students were asked to solicit friends

and relatives to take part in the study. Each student was asked to find five peers and five individuals who are over 30 to complete an on-line survey. Likert-scale items asked the respondent to strongly agree or strongly disagree (on a scale of 1 through 5) with each statement developed to measure the variables under study. The sample size is 203 respondents. Data was analyzed to determine what contributes to the likelihood that one is willing to make purchases using their cell phones.

### Results

Using correlation analyses (Table 1) we identified associations between likelihood of cell phone commerce and the variables identified in H1, H2, H3, and H4. Variables in H5 through H8 (Table 2) are also significantly related to likelihood of cell phone commerce. T-tests showed no significant differences for age or gender.

Findings indicate that individuals in general are admittedly unlikely to make purchases using their cell phones (mean of dependent variable is 4.06 on scale from 1 to 5). However, significant differences can be found analyzing the dependent variable, likelihood of engaging in m-commerce. Specifically individuals are more likely to engage in cell phone purchasing behavior if they believe that mobile commerce will likely improve their social life. In addition, they tend to believe that m-commerce is worth the money, easy to use, and helpful in their daily life. These individuals are not afraid of using new technology and feel that they can determine the quality of a product using the internet and furthermore, that they can garner cost savings through such purchases. They use the internet to keep in touch with family and friends.

In addition to the hypothesized relationships significant correlations were found among likelihood to use m-commerce and other variables. Specifically, it was found that those more likely to engage in m-commerce enjoy shopping on the internet and find it safe and enjoyable ( $r=.20$ ). They are excited about the endless possibilities and information on the internet and they get bored with repetition ( $r=.20$ ). These individuals use the power of the internet to be

more productive and more competitive on the job ( $r=.20$ ) as well as to help with daily activities and hobbies ( $r=.19$ ).

Many correlates identify the highly social nature of those likely to use m-commerce. These individuals use the internet to help family and friends to become more productive and successful ( $r=.41$ ). They are also more likely to meet new people on the internet in chat rooms ( $r=.15$ ) and when game-playing ( $r=.21$ ). In addition to using chat rooms and gaming on the internet, they are also more likely to read on-line news or magazines ( $r=.22$ ), conduct business related work on-line ( $r=.23$ ), use the internet to look for tickets or reservations ( $r=.18$ ), find job opportunities on-line ( $r=.33$ ), and visit message news groups ( $r=.29$ ).

Results of step-wise regression analysis using the variables of the first four hypotheses, only the belief that mobile commerce increases one's social life was entered into the equation ( $R=.79$ , adjusted  $R^2=.23$ ,  $p<.001$ ) due to multicollinearity. A separate stepwise regression analysis that used additional hypothesized variables entered social life first followed by the belief that the quality of a product is discernable on-line ( $R=.51$ , adjusted  $R^2=.26$ ,  $p<.001$ ).

### Discussion

Overall, support was found for the hypotheses under study. In particular, social relationships were identified as paramount in the mobile commerce decision. It is important to note that although people in general are unlikely to use their cell phone to make purchases, as with internet commerce, it will happen. Consequently, it is important to examine the variance in response of the dependent variable. It is possible that those who are less adamant about the likelihood of making a mobile commerce transaction will become early adopters of such transactions.

Now that we identified correlates of those more likely to use m-commerce we can conjecture potential implications for m-commerce applications. In particular, m-commerce applications would benefit if they were based on social relationships not just the individual. Before proceeding, we need to

understand other successful socially based product purchases. An excellent case study can be made of my mother's purchase habits.

I am convinced that anyone interested in marketing to the masses should meet my mother. She single handedly blows away complex marketing models. Let me explain. When preparing for a new semester of cyber marketing I came across research analyzing a computer printer purchase. Variables such as quality and speed were elaborately analyzed. While these factors understandably come into play with such a purchase, there was no mention of social aspects, bargain analysis, or freebies. These later variables play prominent in the purchase behavior of my mom. She purchased a printer based on what type of printer her friends purchased albeit including brand, speed, and functionality and the piece de resistance was a free digital camera with printer purchase. The cost was low as well! So, obviously someone out there knows how to market to my mother. This same equation can carry over into a myriad of other purchases from low end to high end products and services. The question here is, can and how do we carry this over to purchases using cell phones. We can understand this by looking at one very successful application named Cha Cha.

Cha Cha is a mobile text search engine. Individuals can text questions to Cha Cha and receive answers based on numerous Cha Cha experts. (Google offers a similar application through T-Mobile.) The m-commerce comes into play because ads relevant to the question accompany the answer often along with related products or services often accompanied by discounts. The social aspect of this lies in how people use the service. Instead of individual searches, many users are with a group of friends who often help with the question. It is likely that one of these individuals may be interested in the sale or in particular the discount offer. Regardless, the fun and social aspects associated with using Cha Cha produces viral marketing for the service. Few mobile marketing applications are as successful. However, this application stops short of providing cell phone commerce applications. The technology to realize this extra step toward this end is already available.



Instead of text messaging for a coupon or discount, a credit, debit, or bank transaction can be processed by creating an account with the company. This is presently accomplished by cell phone service providers such as Verizon. Simple text to payment services that provide your payment information or provide a code that will allow for payment processing are possible opt-in payment alternatives.

Simple "opt-in" advertising messages may be insufficient to stimulate buying behavior. The addition of a social aspect to the commerce may play a key role. "Location, location, location" is also important in mobile marketing. GPS data is sufficiently accurate enough to provide "real time" advertising offers. These offers can target certain profiles, at certain times of day (e.g., restaurants may want to target lunch and dinner hours), with motivational discount offers. As with initial internet purchases, security of payment information remains a high concern. However, if the store is around the corner and willing to make a traditional transaction, payment can occur the old fashioned way. Actual mobile purchases using text messaging (without requiring internet access on your mobile phone) can try to overcome security concerns with guarantees of security, motivational cost savings, and perhaps even purchase assurance from friends, relatives, and

coworkers. The ease of prepayment and pickup will provide for a faster purchase transaction.

Overall, socially driven, inexpensive, quality assured, time and location sensitive transactions in a secure environment are the types of transactions customers are comfortable making. The extent to which m-commerce is able to provide such a transaction will determine the likelihood of its use.

### References

- Burkhardt, M. E. 1994. Social interaction effects following a Technological Change: A longitudinal investigation. *Academy of Management Journal*, 37, 869-898.
- Burkhardt, M. E., Miceli, G., Kimmel, T. Leonard, J., and Russell, W. "Which Network Determines Cell Phone Attitudes?" Association of Pennsylvania University Business and Economics Faculties (APUBEF) Fall 2006 Proceedings.
- Lazarsfeld, F. and Merton, R.K. Friendship as a social process: a substantive and methodological analysis. In: M. Berger, Editor, *Freedom and control in modern society*, Van Nostrand, New York (1954), pp. 18-66.

---

Marlene E. Burkhardt, Ph.D. is a Professor of Information Technology and Business at Juniata College. She has published articles and book chapters on the diffusion of new technology including those appearing in *Administrative Science Quarterly* and *Academy of Management Journal*. Her research interests include technology in the workplace, cyber marketing and managing new technologies.

## Appendix

Table 1  
Correlation Matrix

Variable	Mean	S.D.	1	2	3	4	5	6	7
1. Use M-Commerce	4.06	1.21							
2. Increase Soc. Life	3.56	1.39	.48**						
3. Easy to Use	3.77	1.38	.39**	.85**					
4. Worth Money	3.40	1.38	.39**	.76**	.77**				
5. Helpful	3.56	1.35	.46**	.85**	.81**	.88**			
7. Search Job Opps.	4.89	2.18	.33**	.36**	.31**	.28**	.30**	.27**	
8. Play Games	4.92	1.81	.38**	.47**	.43**	.45**	.48**	.41**	.51**

\*p < .05; \*\*p < .01

Table 2  
Correlation Matrix

Variable	Mean	S.D.	1	2	3	4	5	6	7
1. Use M-Commerce	4.06	1.21							
2. No Fear E-Commerce(R)	2.58	1.10	-.18**						
3. Lower Price Belief	3.98	0.95	-.24**	.12					
4. Quality Belief	2.56	1.20	.22**	.29**	.08				
5. Family/Friends	4.01	1.20	.21**	.02	.02	-.09			

\*p < .05; \*\*p < .01



ASSESSING THE EFFECTIVENESS OF A BUSINESS SIMULATION  
AS A CAPSTONE INTEGRATING TOOL  
John Buttermore, Slippery Rock University

---

Abstract

The capstone course in most undergraduate business schools is designed to help graduating seniors understand the relationships between the functional work performed in discrete departments of a business organization, such as marketing or finance. The pedagogy may include case analysis, lecture and class discussion on business strategy and policy topics.

Our school recently adopted a business simulation that is provided by a third party developer. This simulation is now the centerpiece in the capstone course. This approach was adopted in order to enhance students' knowledge and understanding of business processes, and the functionally integrated manner in which most businesses operate. This paper reports on student perceptions of effectiveness in achieving this goal, issues that arose including questions of academic freedom, and the changing role of the instructor in a classroom focused on experiential learning.

---

Introduction

Most undergraduate business programs use a curricular model fashioned on discrete departments or disciplines. In such a model, students select a major, such as finance or marketing that reflects a specific functional area of a business organization and is taught by faculty who've specialized in that discipline. Students must also take a prescribed set of business core courses, generally referred to as a common body of knowledge, that are function-specific, usually taught by faculty in each discipline. Because the actual practice of business blurs these functional divisions, many schools use a capstone, or final course to help graduating seniors appreciate the interaction of various departments in day-to-day operations. One tool available to faculty is a business simulation, in which students are formed into teams that become companies competing against each other for market share, profits, and growth in a closed industry.

Simulation Chosen

The experiential learning tool the faculty chose, as the best option to help students integrate discrete business functions into business operations, was a business simulation. Simulations are widely used. It's reported that 95% of Association to Advance Collegiate Schools of Business (AACSB)-accredited schools and more than 60% of large companies use a simulation in some form (Faria, 1998). Simulations create a realistic business decision-making environment in the classroom without the monetary

risks of operating a for-profit enterprise (Doyle & Brown, 2000). Simulations help students develop and improve critical thinking and decision-making skills. They can provide a dynamic, competitive, and imperfect environment, typical of business situations. And experiential learning offers higher levels of student participation, and thereby higher levels of learning (Boyatzis, Cowen, & Kolb, 1995).

A business simulation called "Capstone" provided by Capsim, Inc. of Northfield, IL was selected after a team of faculty reviewed various commercial offerings. Capstone offered a high-growth, closed industry environment. The simulation can be administered either individually, or as team-run companies. Decisions are required in each round (which represents a single year of operation) in many different areas of the firm, including R&D, marketing, production, finance, human resources, and total quality management (TQM). Capstone offers many training options for both faculty and students, it is widely used in business academia, it provides online and telephone support, and it's reasonably priced.

Student Feedback

Student response to the adoption of an experiential simulation was very positive. Comments after the first pilot semester included the following:

"This course gave me a better understanding of how accounting, management, and finance come together."

The strengths of this class were the simulation and the group experience that comes with the class... I just wish it was longer."

"Excellent course using the Capstone simulation versus writing another business plan."

I think this course gives students their greatest opportunity to gain real-world experience in the classroom. I feel confident now in fields I didn't major in."

These comments were typical of the entire group. Students were appreciative of the chance to work on their decisions in class, and also commented favorably on the greatly reduced role of the lecturer in this model. A spirit of competition pervaded the classroom, particularly in the later rounds, as students stayed after class to view the results, and worked on weekends to try to get ahead of "the competition."

#### Concerns about the Simulation

The adoption of a business simulation was not without problems. After all, this represents a major change for both students and faculty. Both groups were affected by the steep learning curve that accompanied the adoption of a business simulation. Not only were students and teachers expected to deal with synthesizing the contents of a course, now they were also expected to learn the mechanics of the simulation. It soon became apparent that time was needed to 'learn' the rules of the game, and to understand the limits and restrictions on decision entry. Only after both groups became comfortable with these data entry issues was it possible to understand the application of different business strategies and their outcomes.

#### Faculty Concerns

Since the capstone course in this curriculum is common to all students, multiple sections meet each semester. For faculty used to teaching in a specialized area, the interdisciplinary nature of the simulation meant questions and issues arising outside their expertise could be problematic, but needed to be addressed. The adoption of this simulation also raised concerns among faculty about changes in pedagogy. The 'game' couldn't be fit into an existing course very well, because of the amount of time required to

both learn how it works and use it to demonstrate business principles. This meant, for some, giving up traditional lecture classes and replacing them with business laboratories, where the students spend the class periods working together on their simulation decisions, while the instructor assumes the role of coach or consultant for each of the teams.

The issue of academic freedom also arose. Does faculty have the right to choose content and delivery of a course? And how can multiple sections of the same course be assured consistent delivery of course outcomes and objectives without a specific set of goals? These questions are still being addressed at the time of this writing, although it is believed that in the case of core courses, content, objectives, and outcomes are the purview of the entire department, not individual instructors or discrete disciplines.

#### Student Concerns

The business simulation requires a high level of student engagement. Some students are not conditioned to this enhanced participation, and find they need to change their approach to class to be successful. Students also find they need to 'brush up' on long-forgotten principles from different functional areas they may have been exposed to many semesters before. Teams tended to struggle early on in organization and division of responsibilities. Most groups began the simulation huddled around a single screen, making each decision as a group. This method seemed to provide comfort to the group, but proved to be very inefficient. In later rounds, teams divided up the decision-making responsibilities, either functionally, or based on markets or segments of operation in order to meet the increased amount of analysis required for decision making in later rounds.

#### Conclusions

Based on self-reported student perceptions, the adoption of a business simulation in the capstone business policy course has been an early success. Students report more interest in the class, higher levels of overall engagement, and seem to appreciate the experiential aspects of the course, versus a lecture-based class. Students also claim a better

understanding of the interdependencies of the various functional areas of a business.

The course is used as an assessment platform because it offers one last chance at a cross-section of the entire student body of the business school. As such, students experience both direct and indirect measures of knowledge. The simulation provides an imbedded individual assessment tool that measures students' understanding of individual business functions as well as business processes that cut across functional areas. This mechanism provides feedback on how students compare to other students in schools around the globe. What remains undetermined is the actual learning impact of the experiential simulation versus the more traditional lecture course it replaced.

A teaching circle is being established to help individual instructors deal with questions of course setup and administration, as well as pedagogical issues. It is believed that this free exchange of ideas and experiences will help all instructors reach a comfort level with the many changes this adoption has precipitated. Initial and follow-up training for all instructors in the mechanics of the simulation is also helpful. And tutoring classes, or labs, will be established next semester to help struggling students.

Students generally are very positive about the course change. Generating the same positive outlook among the faculty teaching the course is a slower process, but must be achieved for the program's ultimate success.

### References

- Boyatzis, R.E., Cowen, S.S., Kolb, D.A., and Associates. (1995). *Innovation in professional education: Steps on a journey from teaching to learning*. Jossey-Bass: San Francisco.
- Doyle, D., & Brown, F.W. (2000). Using a business simulation to teach applied skills—The benefits and challenges of using student teams from multiple countries. *Journal of European Industrial Training*, 24(6), 330-336.
- Faria, A.J. (1998). Business simulation games: Current usage levels— An update. *Simulations & Gaming*, 29(3), 295-308.
- Management Simulations, Inc. (2008). *Capstone student guide*. [Brochure]. Northfield, IL

---

Mr. Buttermore is in his fifth year (third year tenure-track) as an instructor in the School of Business at Slippery Rock University. He came to academia following more than 30 years as a business practitioner. Mr. Buttermore received his Master of Business Administration degree from Seton Hall University and is pursuing a doctorate in Administration and Leadership Studies at Indiana University of Pennsylvania. His research interests include the gap between business education and practice, and the impact of experiential learning on student outcomes.

RESULTS OF A LAPTOP SURVEY AT A PENNSYLVANIA COLLEGE  
USING ROGERS' THEORY OF DIFFUSION OF INNOVATION  
W. R. Eddins, York College of Pennsylvania

---

Abstract

This paper presents the results of a survey based upon Rogers' theory of diffusion of innovation. The survey was administered to faculty who participated in a pilot laptop program. The findings should inform management in higher educational settings and assist them in planning the allocation of information technology, faculty support, and training.

---

Introduction

Computer technology adoption and usage is often left to individual faculty members at colleges and universities. In these settings, the question often arises as to which faculty members will use a novel technology for instructional purposes. This is an important management question because the answer will impact planning of educational resources such as the availability of software licenses, the allocation of computer platforms, and the provision of Information Technology (IT) support and training, to name a few.

Research in IT theory provides several models that address this issue. See Table 1 for a synopsis of three of the models discussed here. Davis' Technology Acceptance Model (TAM) postulates that the primary drivers to the adoption and usage of a new technology in IT are the perceived usefulness and the perceived ease of use of the technology. Perceived usefulness is defined as the degree that using a particular IT tool enhances performance on the job and perceived ease of use is defined as the degree that using the IT will be effortless (Davis 1989). Implied, but not addressed directly in these definitions, are a social system that rewards the adopter and one that informs the user of the characteristics of the tool (i.e. difficulty in learning, complexity, appropriateness to the job). TAM has informed much research in IT; however, some feel that it may be over-emphasized in that the individual is focused upon at the detriment of research into developmental issues, and systematic, organizational, and social contexts (Benbasat and Barki April 2007).

The second model is Thompson et al's (1991) Personal Computer Utilization Model (PCM) which

focuses upon the role of experience in the adoption of computer technologies, social norms and the consequences of the use of an IT tool such as fitness to the job, complexity, and long-term consequences. More recent work by Thompson et al (1994) hypothesizes that experience may act as a moderating influence on the decision to adopt an IT tool. That is, as the experience of the user increases, then ease of use, for instance, becomes less important than other factors, such as social norms (use of the tool by peers) and personal development.

The third model is Rogers' (2003) Theory of the Diffusion of Innovation (TDI). Rogers' definition of diffusion makes clear the major constructs of his model: "Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers 2003, p. 5). More recently, Moor and Benbasat (1996) have extended Rogers' research into the field of IT. They add and validate constructs specific to IT including the relative advantage and ease of use of computer tools.

The research into this area is heavily influenced by research in psychology including theories of human behavior (Sheppard et al. 1988); psychological theories of motivation (Vallerand 1997) and planned behavior (Ajzen 1991); and theories in cognition and social contexts (Bandura 1986). Other research has its roots in management science studies and includes the relationship between the task to be performed and the technology (Goodhue 1995); and the role between the technology and the work place (Davis et al. 1989). Finally, the interested reader may wish to consult Venkatesh et al. (2003) for an excellent

review of the research into the adoption and usage of IT technologies.

This paper reports the results of a survey that was administered to faculty members using Rogers' theory of the diffusion of innovation.

### Discussion

During the fall semester of 2007, the Instructional Resources Committee (IRC) at a college in south-central Pennsylvania was given the task to survey the recipients of laptops or notebook computers (Eddins 2007). This survey was based upon Rogers' TDI theory. The survey used two helpful resources in its construction (Sahin and Thompson 2006, and Mitra et al. 1999). The objectives of the survey follow:

- Identify IT support and training requirements.
- Advertise the use of computer-based innovations in the classroom.
- Augment institutional research in the area of teaching technologies.
- Provide experience to the IRC in outcomes assessment techniques.

The remainder of the section reports the results of that survey. The next section describes the design of the survey. Following is a section that makes observations based upon the analysis of the survey results. The last section gives lessons learned.

### Survey Design

The survey is divided into eight sections (Eddins 2007). Due to the number of questions on the survey, it was deemed important to automate the collection of data using computer tools. The survey software that was provided to the IRC is a web poll package developed for the college. Unfortunately, the polling software cannot handle surveys with many questions. As a result, the survey was implemented as several separate polls which roughly corresponded to the sections in the survey. See Table 2 for a list of the sections and/or polls in the survey.

The respondents were faculty members who were assigned laptop or notebook computers in the fall of 2007. Twenty-four faculty members responded to this survey. A total of thirty faculty members were

assigned laptops or notebooks. However, all questions were not answered by respondents. As a result, some questions have less than twenty-four responses.

The first and second polls are combined for discussion purposes and include the same questions related to computer software use. Both polls ask participants to rate their usages of software applications on desktop or laptop computers. The first poll asks participants to answer questions from the perspective of their current use of desktop computers whereas the second asks the respondent to take the perspective of their expected use of laptop or notebook computers in answering the poll. Answers to this question were based upon a Likert scale with the choices being never, rarely, sometimes, often and very often. See Table 2 for the questions in Polls 1 and 2.

The third poll asks questions regarding the participants' frequency of access to computers for instructional purposes. Answers to this poll are based upon the same Likert scale as answers to polls one and two. The fourth poll looks into access limitations of faculty to computers for instructional purposes. Answers to polls four, five and six are based upon a Likert scale with choices being strongly disagree, disagree, neutral, agree, and strongly agree. The fifth poll looks at participants' attitude toward computers as tools for instructional purposes. The sixth poll questions participants' feelings about the support received from the Information Technology (IT) group for instructional purposes.

The seventh poll places participants on Rogers' adopter curve by asking them to answer a statement that best describes them in terms of their use of computers for instructional purposes. Answers to this poll classify participants into one of Rogers' adopter groups (innovators, early adopters, early majority, late majority, and laggards). Finally, the last poll asks participants demographic questions.

### Survey Observations

This section summarizes the findings of the survey. Averages of the responses were generated for each

question. If the reader is interested, the writer can provide more detail upon request.

A Chi-square analysis of the questions in polls one and two indicates that there is no significant difference between participants' use of desktop computers and their expected use of laptop computers. See Figure 1. However, IT can expect continued high usage of word processing, classroom management software, email, internet content browsers, Windows, and the college portal. High usage is defined as an answer of often or very often to questions regarding software use in polls one and two. Increased usage of all applications is a potential outcome for all applications except the Macintosh operating system.

Responses to poll three indicate that high levels of usage by faculty of computers for instructional purposes in the office, at home, and possibly in the classroom can be expected. High usage is defined as answers of often or very often to questions regarding use. Moderate levels of usage by faculty can be expected in the computer labs, and in the library or media center. Moderate level is defined as answering poll questions with a response of rarely or sometimes.

Responses to poll four show that there are no areas where faculty felt strongly that they had insufficient access to computers for instructional use. Strongly felt is defined as answering questions in this poll as agree or strongly agree. However, there are a couple of areas that tended above neutral which may indicate a slightly negative response. First, some faculty felt that there are not enough software licenses. Second, some faculty felt that there is a lack of support for integrating computers into the curriculum.

The analysis of poll five indicates that faculty members have a favorable view of the use of computers in the following areas: computers improve the quality of teaching; computers fit well with the way they like to teach; learning to use computers is easy; they feel comfortable using computers; computers make learning easier and more efficient; the use of email gives easier access to colleagues, administrators, and students; and they are not fearful of using computers. A favorable view is defined as

answering questions with the choice of agree or strongly agree. On the other hand, participants were neutral regarding the following topics: they prefer to deliver lessons using computers; they expect all faculty members to use computers for instructional purposes; computers increase their workload; and that students expect faculty members to use computers for instructional purposes. A neutral response is defined as choosing neutral to these topics on this poll.

Poll six examines participants' feeling toward the support they receive from IT and the social context of the college. For instance, they disagreed with the idea that colleagues discourage the use of computers for instructional use (answered strongly disagree or disagree). They feel that the current three year rotation policy of computers is appropriate (answered strongly agree or agree). All of the other responses were neutral. However, it should be noted that borderline responses (Choice Id  $\geq 2.50$  but less than 3.00) occurred in the following areas: that many faculty use computers for instructional purposes; that they receive timely technical support and maintenance; that they have access to workshops and/or training on computer use; that the administration feels that computers are important for instructional purposes; and that colleagues share information and ideas about computer use.

The responses from poll seven indicate that the majority of participants (56%) are innovators or early adopters according to Rogers' adopter curve. In fact, eighty-three (83%) of the respondents are classified as innovators, early adopters, or early majority adopters.

Poll eight describes participants as follows:

- Male (59.1%) versus female 40.9%),
- Associate professors (54.5%), assistant professors (40.9%) and full professor (4.5%),
- Have a computer at home (87.5%),
- Have a computer in their office (83.3%),
- Are fairly young (69.6% are less than fifty years old),
- And, that half have taught in higher education for less than 15 years (50%).



In summary, the college can probably expect continued high usage of certain applications, particularly desktop, email, and browsers. In fact, there may be a slight increase due to faculty members being able to take their laptops home. On the other hand, moderate usage of faculty using computers in computer labs, the library and/or media centers can be expected. In general, faculty members are satisfied with their access to computers for instructional purposes, the support that they receive from IT, and the three year rotation policy. In terms of the social context of an educational organization, faculty participants feel that computers improve teaching, and that computers makes learning easier and communication more effective.

On the other hand, there are areas that can be improved. Some felt that there should be more licenses for software, and that more training can be provided particularly in integrating computers into the curriculum. In terms of the social context, some faculty members feel that computers, as instructional tools, are not very important to the administration, other faculty, and students. This finding is to be expected given that the college culture stresses the importance of classroom instruction.

Finally, these faculty members represent an initial group of innovators. They should be able to provide leadership and mentoring to faculty members who will received future laptops, particularly in their departments. They are mostly male, young, have computers at home, and are computer literate.

#### Lessons Learned from the Survey

The most important lesson learned concerns the software used to automate the participants responses. Since polling software was used, the survey responses were made more difficult to gather, analyze, and interpret. In fact, certain statistical procedures could not be employed, such as cross-tabs to generalize answers based upon responses to demographic questions. An alternative approach to automating surveys is open-source software such as the Questionnaire Programming Language (QPL). QPL is a product of the Government Accounting

Office that is maintained and updated regularly. It can be found at <http://qpl.gao.gov>.

However, most lessons are positive. IT management is to be congratulated on their administration of resources in most cases. There are areas of improvement, but this exercise represented by this survey is an important one to continue for the college and the IRC. Finally, Rogers' theory of the diffusion of innovation is an important model for assessing the potential impact of introducing and planning the support for the adoption of instructional technology in an educational setting.

#### Conclusion

There should be more research into the application of Rogers' theory of diffusion of innovation. For instance, Groff and Mouza (2008) propose a framework based upon individual, social, and organizational needs in an educational setting. If their framework is validated, it may be able to predict whether an innovative technology will be adopted in an educational setting; and if adopted, it may be able to assist management to predict support required by adopters (training, technical needs, and mentoring).

More effort needs to go into integrating the models discussed here specifically in higher educational institutions. While the research of Venkatesh et al. (2003) begins the process of model integration, they focus mostly upon the use of technology for productivity enhancements in the office, and not on educational settings where the adoption of technology is usually voluntary. Since enormous sums are spent on technology in higher education, this effort should be well worth the time.

#### Bibliography

- Ajzen, I. 1991. "The Theory of Planned Behavior." Organizational Behavior and Human Decision Processes, vol. 50, no. 2.
- Bandura, A. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice Hall, Englewood Cliffs, N.J.

Benbasat, I. and H. Barki. (April 2007). "Quo vadis, TAM?" Journal of the Association for Information Systems, vol. 8, issue 4, article 3. Downloaded on June 20, 2007 from <http://jaais.aisnet.org>

Davis, F.D. 1989. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." MIS Quarterly vol. 13, no.3.

Davis, F.D., Bagozzi, R.P., and Warshaw, P.R. 1989. "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models." Management Science, vol. 35, no. 8.

Eddins, W.R. October 2007. "Designing a Laptop Survey at a Pennsylvania College: A Precursor to Introducing Innovative Technologies." Northeastern Association of Business, Technology, and Economics. Downloaded on Thursday, July 24, 2008 from <http://www.nabet.us/Archives/2007/NABET%202007%20Proceedings.pdf>

Goodhue, D. L. 1995. "Understanding User Evaluations of Information Systems." Management Science, vol. 41, no. 12.

Groff, J., and Mouza, C. 2008. "A Framework for Addressing Challenges to Classroom Technology Use." Association for the Advancement of Computing in Education Journal, vol. 16, no. 1.1

Mitra, A., T. Steffensmeier, S. Lenzmeier and A. Massoni. 1999. "Changes in Attitudes Toward Computers and Use of Computers by University Faculty." Journal of Research on Computing in Education, fall 1999, vol. 32, no. 1.

Moore, G. C. and Benbasat, I. 1996. "Integrating Diffusion of Innovations and Theory of Reasoned

Action Models to Predict Utilization of Information Technology by End-Users." In Diffusion and Adoption of Information Technology, K. Kautz and Pries-Hege (eds.) Chapman and Hall, London.

Rogers, E. M. (2003). Diffusion of Innovations (5<sup>th</sup> ed.). New York: Free Press.

Sahin, I. and A. Thompson. Fall 2006. "Using Rogers' Theory to Interpret Instructional Computer Use by COE Faculty." Journal of Research on Technology in Education, vol. 39, no. 1.

Sheppard, B. H., Hartwick, J., and Warshaw, P. R. 1988. "The Theory of Reasoned Action: a Meta-Analysis of Past Research with Recommendations for Modifications and Future Research." Journal of Consumer Research, vol. 15, no. 3.

Thompson, R. L., Higgins, C. A., and Howell, J. M. 1994. "Influence of Experience on Personal Computer Utilization: Testing a Conceptual Model." Journal of Management Information Systems, vol. 11, no. 1.

Thompson, R. L., Higgins, C. A., and Howell, J. M. 1991. "Personal Computing: Toward a Conceptual Model of Utilization." MIS Quarterly, vol. 15, no. 1.

Vallerand, R. J. 1997. "Toward a Hierarchical Model of Intrinsic and Extrinsic Motivation." In Advances in Experimental Social Psychology, M. Zanna (ed.), Academic Press, N.Y.

Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D. 2003. "User Acceptance of Information Technology: Toward a Unified View." MIS Quarterly, vol. 27, no. 3.

---

William R. Eddins is an associate professor. He teaches computer information systems courses in higher education. He also consults in the analysis, design, and project management activities in the development of multi-media and web-based systems, and accounting projects. Special thanks is given to Dr. Mary Meinsenhalter and Brenda Adams for their invaluable assistance in computerizing the survey.



# Appendix A

Table 1 – Summary of Research into Models of User Adoption of Information Technology

Reference	Model	Core Model Constructs	Contextual Focus
Davis 1989	Technology Acceptance Model (TAM)	Perceived usefulness and perceived ease of use	Individual adopter
Thompson et al 1991 and 1994	Personal Computer Utilization (PCU)	The role of experience of novices and expert users; and some social factors	Individual adopter and social norms
Rogers 2003 and Moore and Benbasat 1996	Theory of the Diffusion of Innovation (TDI)	Communication channels, time, social context, relative advantage, and ease of use	Individual adopter and the social organization

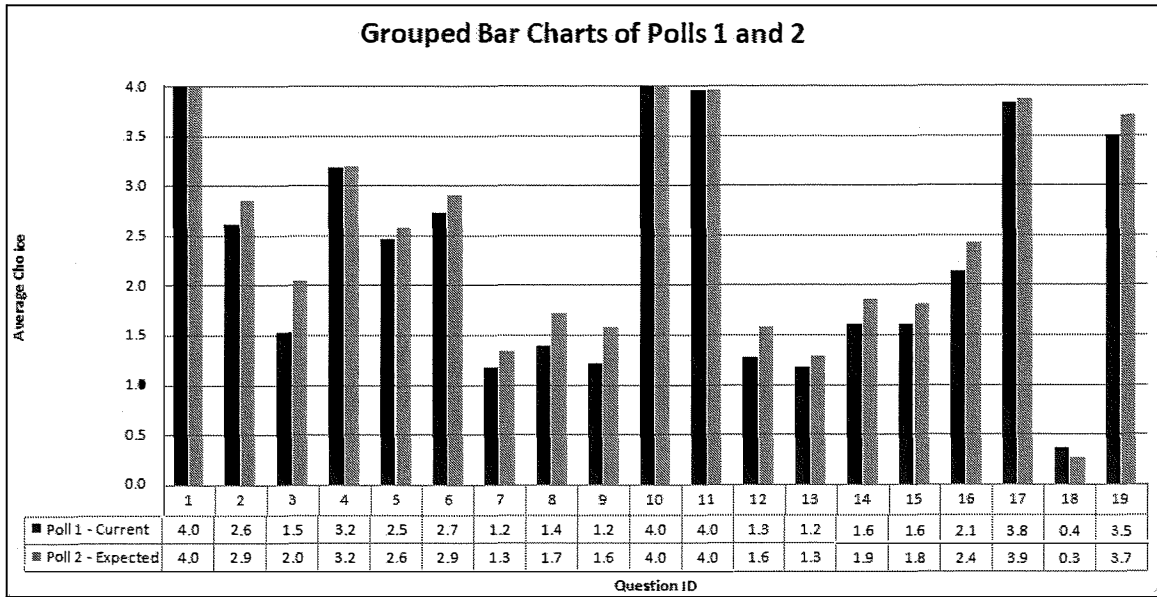
Table 2 – Sections/Polls in Survey

Poll Id	Poll Text
1	Current Desktop Computer Use
2	Expected Level of Laptop Use
3	Frequency of Computer Use
4	Computer Access Limitations
5	Attitude Towards Computers
6	Computer Support Feedback
7	First Use of Computers
8	Demographic Information

Table 2 – Questions in Polls 1 and 2

I use the following application ...	Never	Rarely	Sometimes	Often	Very Often
1) Word Processing					
2) Spreadsheets					
3) Database Management					
4) Classroom Management					
5) Graphics					
6) Presentation					
7) Authoring					
8) CD-ROM, DVD, or Web-based Interactive Content					
9) Website Design Software					
10) Email					
11) Internet Content					
12) Data Analysis Software					
13) Simulations and Games					
14) Collaboration software					
15) Tutorials					
16) Discipline-specific Programs					
17) Windows Operating System					
18) Macintosh Operating System					
19) College portal					

Figure 1 - Grouped Bar Chart of Polls 1 and 2



# INVENTORY EFFICIENCY IN PENNSYLVANIA FIRMS: A TIME-SERIES ANALYSIS

Enyang Guo, Millersville University

Gary Leinberger, Millersville University

---

## Abstract

Much work and investment has gone into the area of inventory efficiency in American firms since the rising challenge of Japanese firms in the 1980's. Just-in-time (JIT) and other techniques have been a mainstay of American consulting and a focus of American analysis, and inventory efficiency has improved until recently. However, many firms are presently showing declining inventory efficiency (measured by inventory turns). Recent studies on the "bullwhip effect" and rising costs of transportation may explain why firms have recently been showing reduced levels of inventory efficiency.

This study looks at how effective Pennsylvania firms have been in implementing these inventory control systems as shown through their financial statements and how they compare to national trends.

---

## Introduction

This is a preliminary study of 17 industrial companies (as defined by Standard and Poor's Research Insight, i.e., Compustat) from Pennsylvania over a nearly twenty year period. This model will later be expanded to investigate approximately 250 Pennsylvania firms.

Inventory represents an expensive, and from a financial standpoint, a non-earning asset for firms. Firms must constantly balance the costs of inventory (investment costs, storage costs, movement costs, spoilage costs, obsolescence costs, etc.) against the costs of stock-outs. Lower inventory levels also reduce borrowing, and hence reduce interest, leading to improved profitability.

Lower inventory levels, in addition to these traditional financial costs cited above, also drive quality. Alles, Amershi, Datas, and Sarkar (2000) suggest that reduced inventories improve process reliability, product quality and cost.

Inventory changes over time are also important from a macro-economic viewpoint. Joseph, Larrain and Singh (2008) suggest that inventory fluctuations have accounted for a sizable portion of the changes in the U.S. GDP during recessions over the past fifty years. They also suggest that the process of inventory adjustment to sales surprises is subject to numerous distortions, including money illusion.

Inventory levels tend to be rather variable over time, but generally have shown a downward trend, evidenced by increases in the inventory turnover ratio. Chen, Frank and Wu (2005) reported that U.S. manufacturing companies showed about a 2% reduction in inventories per year over the period 1981 to 2000. The reduction was mainly due to work-in-process inventory (down 6% per year) with no reduction in finished goods. This rate of reduction over the 20 year period suggests a doubling in inventory turns.

Chen (2005) also reported that firms with abnormally high inventories have abnormally poor long-term stock returns, while firms with slightly lower than average inventories had good stock returns. Firms with the lowest inventories had only ordinary returns. If true, this presents a difficult problem of separating firms into two groups (good inventory efficiency versus poor inventory efficiency). As it appears there are three groups, with the last two (slightly below average inventories and lowest inventories) being particularly hard to categorize.

In "Inventory Turnover" (2005) the Manufacturing Performance Institute reported that, for the three years ending in 2007, 52% of U.S. companies increased their inventory turnover rate and 24% showed that their turnover remained steady.

Finally, a Traffic World article, Inventory's New Dimensions" (2008) suggests that increasing

transportation costs, due to the tripling of fuel costs in the 1990's, has eroded much of the earlier progress in this area.

The purpose of this study is to examine in detail the inventory level changes over time in Pennsylvania firms to ascertain if these firms are following national trends, and if there is an overall trend of decreasing inventory levels. An additional focus is to develop a general model for further investigation of all the companies in Pennsylvania.

In particular, this study looks at how Pennsylvania companies compare in terms of inventory variability versus sales variability, inventory versus sales, and how Pennsylvania firms compare to recent national trends in inventory effectiveness.

### Literature Review

Singh (2008) details the important of inventory efficiency as part of a firm's working capital management. His empirical model suggests that firms can reduce inventory levels by 10-20% without any effect on production or sales.

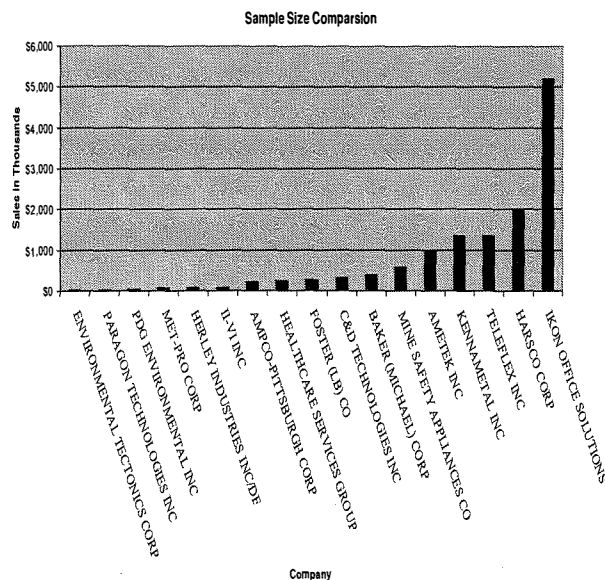
Inventory levels obviously vary over the business cycle, and are affected by the time required to replace or use up inventory when sales do not match projected sales. As a result, the variability of inventory tends to exceed the variability of sales. Khan and Thomas (2008) used a generalized equilibrium business cycle model to allow for endogenous inventories of intermediate goods. They concluded that inventory investment is pro-cyclical, co-moves with final sales, and that the cyclical variability of total production exceeds the cyclical variability of sales. Their baseline model accounted for 64% of the measured cyclical variability.

The changes in demand, and hence the level of required inventory, is also affected by what Caloiero, Strozzi, and Zaldivar Comenges (2008) call the "bullwhip effect". This is the phenomenon of amplification and distortion of demand in the supply chain for firms not directly selling to the final consumer. This bullwhip effect can lead to misestimation of required inventory levels when sales

estimates change, and hold-over stocks of inventory when sales collapse. Since firms not directly selling to the consumer get much of their information from their buyers, there can be considerable lags in receiving information on demand level changes. Data Sample

The data sample is taken from Compustat<sup>lxvii</sup> and is comprised of 17 companies classified as industrials (as defined by Compustat). Industrials are generally firms that are in the middle of the supply chain, supplying manufactured goods to firms closer in the supply chain to final customers. Originally there were 36 companies in the sample, but companies with less than 18 years of data, or having years with unavailable data were removed from the sample. The companies in this sample vary widely in size and industry.

Name	Primary SIC	SIC Description
AMETEK INC	3823	INDUSTRIAL MEASUREMENT INSTR
AMPCO-PITTSBURGH CORP	3460	METAL FORGINGS AND STAMPINGS
BAKER (MICHAEL) CORP	8711	ENGINEERING SERVICES
C&D TECHNOLOGIES INC	3690	MISC ELEC MACHY, EQ, SUPPLIES
ENVIRONMENTAL TECTONICS CORP	3690	MISC ELEC MACHY, EQ, SUPPLIES
FOSTER (LB) CO	5051	METALS SERVICE CENTERS-WHSL
HARSCO CORP	3390	MISC PRIMARY METAL PRODUCTS
HEALTHCARE SERVICES GROUP	7340	SVCS TO DWELLINGS, OTH BLDGS
HERLEY INDUSTRIES INC/DE	3812	SRCH, DET, NAV, GUID, AERO SYS
I-VI INC	3827	OPTICAL INSTRUMENTS & LENSES
IKON OFFICE SOLUTIONS	5040	PROF & COML EQ & SUPPLY-WHSL
KENNAMETAL INC	3540	METALWORKING MACHINERY & EQ
MET-PRO CORP	3564	INDL COML FANS, BLOWRS, OTH EQ
MINE SAFETY APPLIANCES CO	3842	ORTHO, PROSTH, SURG APPL, SUPPLY
PARAGON TECHNOLOGIES INC	3530	CONSTR, MINING, MATL HANDLE EQ
PDC ENVIRONMENTAL INC	4955	HAZARDOUS WASTE MANAGEMENT
TELEPLEX INC	3841	SURGICAL, MED INSTR, APPARATUS



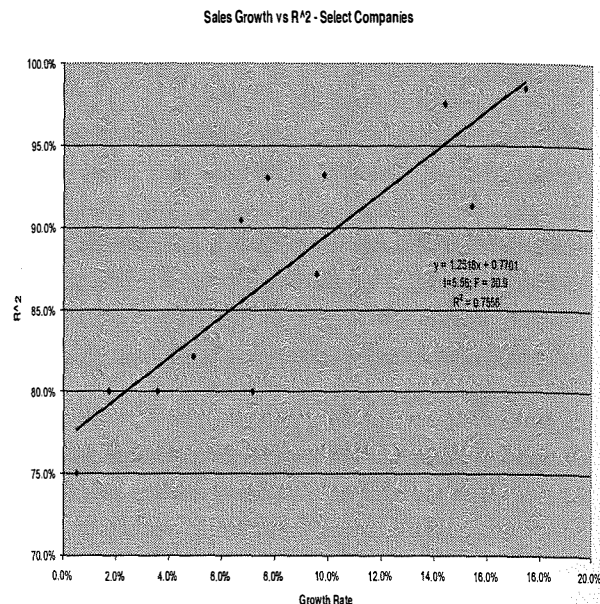
These companies are generally in the middle of the production stream, providing goods and services to the sellers to the final consumer. Their inventory levels are tied to the sales to the final consumer, filtered through the demand from the final producer.

#### Analysis of the Sample

##### Regression of Sales versus Inventory

The level of inventory should be affected by the level of sales and for many of the companies such a relationship does exist with significant  $t$  and  $F$  statistics at a very high level (99.9%). The  $R^2$  for most companies was fairly high but with a great deal of variability. (See Table 1 at end of paper.)

In particular, when sorting the data based on the  $R^2$  of the regression there were two groups, those over a 75%  $R^2$  (12) and those below a 58%  $R^2$ . Removing the lower group and regressing the  $R^2$  against sales growth illustrates that higher growth seems to imply a stronger relationship between sales growth and inventory level.



This might mean that these companies can better control their inventory levels because of the higher sales growth, or that their industries are better able to forecast demand. Forecasting of demand for intermediate producers is more difficult than for consumer retailers, as the changes in sales must move through the system from retailer to product producer to the intermediate supplier of components. Differences in the production "chain" may explain much of the ability of an intermediate producer to adjust inventory to sales.

##### Variability of Inventory versus Sales

Khan (2008) noted that the cyclical variability of total production exceeds the cyclical variability of sales. In our sample, the ratio of the coefficients of deviation of sales and inventory were calculated and over half the sample (58%) supported Khan (2008), with the coefficient of deviation for inventory being greater than the coefficient of deviation for sales. In the remainder, most of the companies had a coefficient of deviation for inventory nearly as high as the coefficient of deviation for sales. (See Table 2 at end of paper.)

It is interesting to note that the range of inventory to total assets is, on average, about 20% of firm assets.

This would imply that improvements in inventory efficiency would have significant effects on returns.

### Trends in Inventory Turnover

The Manufacturing Performance Institute report (cited earlier) of 52% of all U.S. companies increasing their inventory turns (defined as COGS/Inventory) appears to be a reasonable estimate of the situation in Pennsylvania firms in this sample. Over the past twenty years 53% of the Pennsylvania firms in the sample showed an increase in inventory turns. The following chart shows the percentage increase in inventory turns for the past twenty years, sorted by % Changes in Turns. (See Table 3 in the appendix.)

However, over the past three years (2005 to 2007), only 35% of the sample firms showed an increase in inventory turns, but in all but one case the increase was trivial. Further, 82% of the sample had ending turns (in the years 2005 to 2007), which were lower than their peak turns during the past twenty years. It appears that Pennsylvania firms, in general, showed increasing inventory turns until about 2004, but declining performance in inventory efficiency since then.

The effect of higher turns appears to have no effect on profitability of the firm. Regressions of inventory turns against profits on sales showed no explanatory power and only in two of the seventeen regressions were the inventory turns variable significant.

### Conclusions and Discussion

This study of a small sample of Pennsylvania firms has shown some interesting facets of inventory efficiency. As would be expected, the results are mixed, with at present no real inkling of how to break the sample into groups that allow discernment of trends. The small sample size also precludes enlightenment on proper grouping. A major issue is how to properly measure success in handling inventory as Chen (2005) has shown that poor handling of inventory does result in lower stock performance. However, companies with below average inventory are rewarded in the market with

higher stock returns, but companies with very low inventories levels receive only normal returns.

It does appear that most of the Pennsylvania firms' inventory levels are affected by their sales, with a high degree of significance. There also appeared to be two groups, with the larger group having  $R^2$  s of over 75%, with a strong relationship between sales growth and inventory level. A higher sales growth would give a firm more opportunity to adjust their inventories relative to their sales.

The study also showed that over half the Pennsylvania firms (58%) also followed national trends with higher variability in inventory than in sales. Even those firms with a lower variability in inventory than sales were generally close in inventory variability relative to sales variability.

The performance of Pennsylvania firms has followed, in general, the improvements in inventory turnover shown on the national level. Over half the firms in the sample increased their inventory turns over the period on average, but only 35% showed improvements in inventory turns over the past three years (2005-2007).

It does appear that over the period of 1980 to the present, inventory efficiency has generally increased nationally, and in Pennsylvania firms, up until about 2003. Then the high transportation costs starting in the early 1990's and the later "bullwhip effect" began to erode these gains, finally leading to reductions in inventory efficiency in the last few years. Pennsylvania firms have in general followed these trends, with significant variation between firms. A larger sample should help better define these trends.

### Bibliography

- Alles, M., Amershi, A., Datas, S., and Sarker, R. (2000). Information and Incentive Effects of Inventory in JIT Production. *Management Science*, 46, 12, 1528-1544.
- Caloiero, G., Strozzi, F., and Zaldívar Comenges, J. (2008). A supply chain as a series of filters or amplifiers of the bullwhip effect. *International Journal of Production Economics*, 114, 2, 631-645.



Gunasekaran, A., and Kobu, B. (2007). Performance measures and metrics in logistics and supply chain management: a review of recent literature (1995-2004) for research and applications. *International Journal of Production Research*, 45, 12, 2819-2840.

Hong, C., Frank, M. Z., and Wu, O. Q. (2005). What Actually Happened to the Inventories of American Companies Between 1981 and 2000? *Management Science*, 51, 7, 1015-1031.

Inventory Investment. *Controller's Report*, (2008). 3, 6-7.

*Inventory's New Dimensions*. *Traffic World*, (2008). 272, 33, 18-21.

Inventory Turnover. *Controller's Report*, (2005). 11, 6.

Khan, A., Thomas, J. K. (2008). Inventories and the Business Cycle: An Equilibrium Analysis of (S,s) Policies. *The American Economic Review*, 97, (4), 1165-1188.

Joseph, A., Larrain, M., Singh, E. (2008). Forecasting Real Inventories and the Anomaly of Money Illusion. *Business Economics*, 43, 1, 19-30.

Singh, Pradeep (2008). Inventory and Working Capital Management: An Empirical Analysis. *ICFAI Journal of Accounting Research*, 7, 2, 53-73.

---

<sup>lxxvii</sup> Standard and Poor's Research Insight

---

Enyang Guo is an associate professor of finance at Millersville University. She received her Ph D in Finance from Virginia Tech. Her other research interests are multinational corporate finance, capital structure and corporate restructuring, and Chinese financial markets.

Gary Leinberger is an associate professor of finance at Millersville University. He received his PhD from Oklahoma State University. His other research interests are capital structure, inventory management, and educational methodologies.

Table 1

				Inv.			Sales	Coef. Of Dev	Inv./Sales
	Average	Average	Std Dev	Coef. Of	Average	Std Dev	Coef. Of	Ratio of	Greater
Company	% Inv/TA	Inv.	Inv.	Dev.	Sales	Sales	Dev.	Inv./Sales	than 1
AMETEK INC	14.7%	\$128.70	\$58.41	0.45	\$999.96	\$400.85	0.40	1.13	1
AMPCO-PITTSBURGH CORP	19.9%	\$46.21	\$10.75	0.23	\$206.97	\$56.15	0.27	0.86	
BAKER (MICHAEL) CORP	20.4%	\$30.94	\$25.57	0.83	\$389.40	\$158.38	0.41	2.03	1
C&D TECHNOLOGIES INC	21.8%	\$48.44	\$23.58	0.49	\$313.45	\$145.56	0.46	1.05	1
ENVIRONMENTAL TECTONICS CORP	34.1%	\$10.08	\$3.83	0.38	\$25.47	\$7.25	0.28	1.34	1
FOSTER (LB) CO	34.7%	\$49.93	\$19.30	0.39	\$271.19	\$72.25	0.27	1.45	1
HARSCO CORP	14.3%	\$213.26	\$68.29	0.32	\$1,972.48	\$663.22	0.34	0.95	
HEALTHCARE SERVICES GROUP	6.8%	\$7.46	\$3.67	0.49	\$238.35	\$163.02	0.68	0.72	
HERLEY INDUSTRIES INC/DE	23.6%	\$25.55	\$23.68	0.93	\$63.56	\$54.81	0.86	1.07	1
II-VI INC	15.3%	\$15.74	\$17.46	1.11	\$81.50	\$77.87	0.96	1.16	1
IKON OFFICE SOLUTIONS	11.3%	\$374.09	\$139.59	0.37	\$5,213.02	\$1,458.13	0.28	1.33	1
KENNAMETAL INC	22.4%	\$267.45	\$132.09	0.49	\$1,344.55	\$682.77	0.51	0.97	
MET-PRO CORP	21.6%	\$12.40	\$3.67	0.30	\$62.59	\$20.82	0.33	0.89	
MINE SAFETY APPLIANCES CO	18.2%	\$93.23	\$22.84	0.24	\$580.76	\$183.77	0.32	0.77	
PARAGON TECHNOLOGIES INC	20.0%	\$3.78	\$2.50	0.66	\$32.13	\$13.23	0.41	1.61	1
PDG ENVIRONMENTAL INC	15.9%	\$2.82	\$1.95	0.69	\$36.49	\$24.45	0.67	1.03	1
TELEFLEX INC	20.5%	\$246.84	\$127.26	0.52	\$1,364.20	\$795.20	0.58	0.88	
Mean	19.7%							Total	10
Std. Deviation	7.04%								58.82%

Table 2

	Regression				
	R <sup>2</sup>	t-stat	Sign.	F- test	Sign.
AMETEK INC	93.00%	15.83	*	250.678	**
AMPCO-PITTSBURGH CORP	80.00%	8.56	*	73.344	**
BAKER (MICHAEL) CORP	52.00%	4.31	*	18.65	**
C&D TECHNOLOGIES INC	80.00%	8.6	*	74.096	**
ENVIRONMENTAL TECTONICS CORP	55.00%	4.5	*	20.601	**
FOSTER (LB) CO	80.00%	8.37	*	70.215	**
HARSCO CORP	14.75%	1.76		3.114	
HEALTHCARE SERVICES GROUP	91.30%	13.75	*	189.245	**
HERLEY INDUSTRIES INC/DE	97.50%	26.7	*	714.037	**
II-VI INC	98.50%	34.1	*	1165.6	**
IKON OFFICE SOLUTIONS	75.00%	7.372	*	54.34	**
KENNAMETAL INC	87.10%	11.012	*	121.26	**
MET-PRO CORP	90.40%	13.023	*	169.59	**
MINE SAFETY APPLIANCES CO	82.10%	9.097	*	82.772	**
PARAGON TECHNOLOGIES INC	17.90%	1.929		3.722	
PDG ENVIRONMENTAL INC	57.70%	4.962	*	24.628	**
TELEFLEX INC	93.20%	16.154	*	260.961	**
	t- test	*	Significant at 99.9% level		
	F test	**	Significant at 99.9% level		

Table 3

Company	% Change in Turns	Mean Turns
PARAGON TECHNOLOGIES INC	173.09%	8.21
HARSCO CORP	121.96%	6.85
KENNAMETAL INC	59.62%	2.90
PDG ENVIRONMENTAL INC	46.12%	12.81
HEALTHCARE SERVICES GROUP	35.59%	25.46
MINE SAFETY APPLIANCES CO	23.58%	3.80
AMPCO-PITTSBURGH CORP	20.00%	3.27
MET-PRO CORP	17.37%	3.21
IKON OFFICE SOLUTIONS	0.48%	9.43
HERLEY INDUSTRIES INC/DE	-9.94%	1.71
C&D TECHNOLOGIES INC	-13.78%	4.86
FOSTER (LB) CO	-15.80%	4.88
TELEFLEX INC	-24.72%	3.52
AMETEK INC	-26.73%	5.91
BAKER (MICHAEL) CORP	-27.58%	13.44
ENVIRONMENTAL TECTONICS CORP	-44.56%	1.86
II-VI INC	-58.96%	3.23



# FIRM GROWTH RATES AND FINANCIAL CHOICES IN PENNSYLVANIA FIRMS -- AN EMPIRICAL STUDY ABOUT THE PECKING ORDER THEORY

Enyang Guo, Millersville University  
Gary Leinberger, Millersville University

---

## ABSTRACT

How do firms make their financial choices when they seek growth? Are the financial choices affected by firms' operating characteristics and unique competitive advantages? We follow the Pecking Order Theory to examine 250 Pennsylvania companies during the period of 1988 – 2007. Our empirical results can be summarized as follows: First, firms' asset growth is positively related to the change of long term debt and the increase of operating cash flow, but there is a negative relationship between asset growth and equity growth. Moreover, the patterns of the financial choices when firms seek growth do vary across different industries. Second, firms' financial choices are affected by their operating characteristics. Firms with larger holding of tangible assets, larger size and larger asset turnover tend to have larger debt ratio; firms' financial leverage is negatively related to the holding of intangible assets and non-debt tax shield. Our findings reflect that liquidity and trade-off assumptions influence firms' financial decision. Finally, the statistically significant negative relation between profitability and financial leverage revealed in our test supports the Pecking Order Theory that the larger the operating earnings, the less the need for external debt financing. It is clear that firms prefer internal financing to external financing, and debt to equity financing.

---

## INTRODUCTION<sup>1</sup>

How do firms make their financing choices when they are seeking growth? Are the financing choices affected by firms' operating characteristics and unique competitive advantages? Myers (1984) developed the Pecking Order Theory which suggests firms prefer internal financing to external financing when faced with new asset financing. When firms have to use external financing, debt is preferred to equity. While there is some consensus on Myer's theory, tests of the Pecking Order Theory have been unable to reveal the first-order importance in explaining a firm's financial choice. Our study is an empirical test of the Pecking Order Model based upon a study of 250 Pennsylvania firms during the period of 1988 – 2007.

The purpose of our study is to investigate firms' financial choices as they seek business expansion, and explore if the Pecking Order Theory explains their financial choices. Moreover, our study illustrates that a firm's financial choices are driven by its operating characteristics. A firm's asset tangibility, operating profitability and shareholders equity status determine financial structure.

Our test results find that firms' asset growth is positively related to the change of long term debt and the increase of operating cash flow, but negatively related to equity growth. Further, the patterns of the financial choices when firms are seeking growth do vary across different industries. Equity financing seems a last resort for new capital for all the firms in the test; however, consumer manufacturing industries and retail/wholesale industries tend to utilize debt financing when they are seeking new capital for asset expansion while high tech industries and high tech service industries tend to be self-sufficient with internal operating cash flows to support their growth. Moreover, the financial choices are affected by firms' operating characteristics. Firms' debt ratio is positively related to tangible asset holdings, asset turnover, and firm size. Debt ratio is negatively related to the non-debt tax shield, the relative size of intangible assets, and the net cash flow generated from operating activities. The statistically negative relationship between profitability and financial leverage revealed in our test confirms our hypothesis that the Pecking Order Theory helps explain financial choices. The larger potential of operating earnings offset the needs for external debt financing, and firms prefer internal financing to external financing.

## LITERATURE REVIEW

Corporate capital structure theory has long been debated in the finance literature. Miller and Modigliani (1958) originally present a theoretical approach that posits, in a tax-free world, that debt has no value for firms but when corporate tax is introduced it changes the cost of capital calculations. Later, Miller and Modigliani (1963) show that corporate tax is an important determinant of capital structure. They suggest that a firm's financial policy goal is to optimize the balance between its borrowing cost and borrowing benefit, that is, the tradeoff between the marginal benefit from tax shields and marginal cost of possible bankruptcy.

Long and Malitz (1983) and Myers (1984) explain that a firm's financial choice depends on the type of assets a firm holds. Their studies find a negative correlation between borrowing and investing in intangible assets (growth through innovation) and a positive correlation of borrowing with purchases of tangible assets (long-term fixed asset expansion). Zantout (1997) provides similar evidence showing the relationship between a firm's debt ratio and its research and development induced abnormal stock returns. Titman and Wessels (1988), Harris and Raviv (1991), and Song (2005) report preponderant evidences that a firm's operating characteristics determine its financial choices, and illustrate the intricacy of asset structure (tangibility), firm size, non-debt shields, expected future cash flows, and market competitive advantage (uniqueness) in the capital structure.

Jensen (1986) indicates a positive correlation between profitability and leverage if the market for corporate control is effective, and a negative correlation if it is ineffective. On the other hand, Myers (2001) reveals it is not always the case that profit-maximizing firms prefer to have high debt interest tax shields. Studies by Baskin (1989) and Rajan and Zingales (1995) show an inverse relationship between profitability and leverage, and related their findings to agency cost hypothesis.

The Pecking Order Theory can be viewed in terms of the information asymmetric hypothesis developed by Fama and Jensen (1983). Myers (1984) and Shyam-

Sunder and Myers (1999) explain the tendency of managers to stay on the side of existing shareholders who are more informed about the stock than new investors. Friend and Lang (1988) show that the debt ratio is negatively related to management's share holding and Berger, Ofek and Yermack (1997) cross-sectional analyses verify entrenched CEOs seek to avoid debt. Berger and di Patti (2005) test the corporate governance theory's prediction that leverage affects agency costs and thereby influences firm performance, and Harvey, Lins and Roper (2004) reveal, in their study, the presence of potential endogeneity between debt, ownership structure and value when expected agency costs are high.

### Data Sample, Variable Definitions, and Test Models

The data sample is from COMPUSTAT database. We include all Pennsylvania listed firms, excepting for financial and utility firms, during the period of 1988 – 2007. A total of 250 firms are in the sample.

Our study consists of two parts: in the first part of the study, we investigate firms' financial choices when they are seeking growth; in the second part of the study, we explore if a firm's financial policy is driven by its operating characteristics, tax trade-off, and shareholders' equity status.

To investigate firms' financial choices when they are seeking growth, according to the Pecking Order Theory, we hypothesize that a firm's asset growth is driven by the growth of its operating cash flow, and supported by its long-term debt financing. The variable proxies that reflect both internal and external financing resources are the net cash flow from operating activities, notes payable, long term debt, and common equity. Thus, a firm's asset growth is the function of operating cash flow growth, long-term debt growth, short-term debt growth, and equity growth. The first empirical model in our test is expressed as follows:

$$\begin{aligned} \text{Asset Growth} & \quad (1) \\ & = f(\text{Operating Cash Flow Growth, Long-Term Debt Growth, Short-Term Debt Growth, and Equity Growth}) \end{aligned}$$

Where

$$\text{Asset Growth} = [\text{Asset}_{t=0} / \text{Asset}_{t=2}]^{1/3} - 1;$$

$$\begin{aligned} \text{Operating Cash Flow}^2 \text{ (OCF) Growth} \\ = [\text{OCF}_{t=0} - \text{OCF}_{t=1}] / \text{OCF}_{t=1}; \end{aligned}$$

$$\begin{aligned} \text{Long-Term Debt (LTD) Growth} \\ = [\text{LTD}_{t=0} - \text{LTD}_{t=1}] / \text{LTD}_{t=1}; \end{aligned}$$

$$\begin{aligned} \text{Short-Term Debt}^3 \text{ (STD) Growth} \\ = [\text{STD}_{t=0} - \text{STD}_{t=1}] / \text{STD}_{t=1}; \end{aligned}$$

$$\begin{aligned} \text{Equity Growth} \\ = [\text{Common Equity}_{t=0} / \text{Common Equity}_{t=2}]^{1/3} - 1. \end{aligned}$$

To match the time sequence that is reflected in a firm's financial decision, we use a 3-year geometric average to measure asset growth against the annual change in the growth of operating cash flow, long term debt and short term debt. Similarly, we use a 3-year geometric average of equity growth because of the relative static position in a firm's common equity. Follow the Pecking Order hypothesis, we expect Operating Cash Flow Growth and Long Term Debt Growth are positively related to firms' Asset Growth while Common Equity Growth does not show a significant relationship to the Asset Growth.

To control possible influence of aggregate economic conditions that might affect firms' growth and financial choices, we include two macro- economic variables into our test, namely annual change in the prime interest rate and log term of GNP. Thus, our second empirical model is defined as follows:

$$\begin{aligned} \text{Asset Growth} = & \quad (2) \\ & f(\text{Operating Cash Flow Growth, Long-Term} \\ & \text{Debt Growth, Short-Term Debt Growth,} \\ & \text{Equity Growth, Change of Prime Interest Rate,} \\ & \text{and Log (GNP)}) \end{aligned}$$

We assume that a firm's operating characteristics drives its preferences in financial policy. Thus, we then further investigate whether there are patterns of financial choices across different industries. According to the primary SIC reported at the COMPUSTAT database, we divided the 250 firms into seven different groups:

Group A: Consumer products manufacture companies

Group B: Pharmaceutical and chemical industry companies

Group C: High tech industry companies including electronic equipment and medical equipment, etc.

Group D: Retail and whole sale companies

Group E: Service companies

Group F: Computer software companies

Group G: Other manufacture firms.

The first and second empirical models listed above are further tested according to the group classifications. We anticipate there would be different patterns of financial choices across different industry groups.

In the second part of our study, we explore if a firm's financial policy is explained by its operating characteristics and tax status. As larger firms and firms holding a larger portion of tangible assets in their total assets tend to borrow more, we use size of operating cash flow and size of sales as measurements for firm size. As Long and Malitz (1983) and Myers (1984) explain that a firm's financial choice depends on the type of assets a firm holds, we define asset turnover, tangible asset ratio and intangible asset ratio as proxies to express firm's asset characteristics. Following the trade-off theory by Modigliani and Miller (1963) that firms balance their financial policy between marginal benefit from tax shields and marginal cost of possible bankruptcy, we look into the impact of non-debt tax shield on firms' financial choices, and expect non-debt tax shield and debt tax shield are mutually related as the benefit for borrowing, and that balances the cost of possible bankruptcy associated with debt financing. We define non-debt tax shield as the ratio of depreciation to pre-tax income. The following is the third empirical model in our test and the definition of the variables used in the model:

$$\begin{aligned} \text{Long-Term Debt Ratio} & \quad (3) \\ & = f(\text{Asset Turnover, Tangible Asset Ratio,} \\ & \quad \text{Intangible Asset Ratio, Non-Debt Tax} \\ & \quad \text{Shield, Size (OCF), and Size (Sales)}) \end{aligned}$$

Where:

$$\begin{aligned} \text{Long-Term Debt Ratio} \\ = \text{Long-Term Liabilities} / \text{Total Assets} \end{aligned}$$

$$\text{Asset Turnover} = \text{Sales} / \text{Total Assets}$$

Tangible Asset Ratio  
= (Inventory + Fixed Asset) / Total Assets

Intangible Asset Ratio  
= R&D Expenses / Total Assets

Non-Debt Tax Shield  
= Depreciation / Taxable Income

Size (OCF<sup>4</sup>) = log (OCF)

Size (Sales) = log (Sales)

We expect Asset Turnover, Tangible Asset Ratio, Size (OCF) and Size (Sales) to have a positive relationship with the Long-Term Debt Ratio while there is a negative relationship between the Long-Term Debt Ratio and Intangible Asset Ratio, and Non-Debt Tax Shield.

## EMPIRICAL RESULTS

Table 1 report the regression results for the first and the second empirical models. Equations 1 to 6 are simple linear regressions between asset growth rate and the independent variable(s) of interest that define the hypothesized determinates of financial choices in the test. As it is expected, in Equation 1 and Equation 3, asset growth is positively related to long term debt growth and operating cash flow growth, and both are statistically significant. The result of Equation 2 show that short term debt growth (Notes Payable) is not a factor (the coefficient is statistically indifferent from zero). Moreover, as shown in Equation 4, there is a statistically significant negative relation between asset growth and common equity growth, indicating that the proportion of equity in firms' capital structure is declining as firms expand their assets and seek growth. The results shown in Equation 5 and 6 indicate that economic factors do not have significant impacts on the rate of asset growth.

Equation 7 is a multiple linear regression including all the aforementioned variables that reflect a firm's financial choices (the first empirical model) while Equation 8 adds two more macro-economic variables that control the influence of aggregate economic climate (the second empirical model), Change of Prime Interest Rate and Log (GNP). As the results

presented in Table 1, it reveals that all the variables in the test present consistent signs and statistical significance between the simple linear regressions and the multiple linear regressions, and the coefficients of the two control micro-economic variables remain statistically insignificant. The results shown in Table 1 support our hypothesis that firms' asset growth is driven by its operating profitability and supported by its long term debt financing. Common equity is the last resort for seeking external financing, and our result indicates firms' equity proportion in the capital structure is declining as firms expand their assets. The empirical results reported in our test, based on Pennsylvania companies, are supportive of the Pecking Order Theory. Firms prefer internal financing to external financing and debt to equity when they expand their asset base.

Table 1: Regression Results:

### Asset Growth vs. Financial Choices

Dependent Variable: Asset Growth Rate								
Independent Variable	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7	Equation 8
Intercept								
Coefficient	15.019	15.575	13.437	14.888	12.948	-198.963	12.261	-221.524
T-Value	6.04	6.15	5.24	5.9	1.22	-1.35	4.79	-1.43
P-Value	<0.0001	<0.0001	<0.0001	<0.0001	0.222	0.1778	<0.0001	0.1538
Long-Term Debt Growth Rate								
Coefficient	0.15336						0.14022	0.140
T-Value	4.15						3.81	3.8
P-Value	<0.0001						0.0002	0.0002
Short-Term Debt Growth Rate								
Coefficient		0.0554					0.05928	0.067
T-Value		0.33					0.43	0.41
P-Value		0.7398					0.6709	0.68
Operating Cash Flow Growth Rate								
Coefficient			16.639				14.475	14.275
T-Value			3.64				3.19	3.13
P-Value			0.0003				0.0015	0.0018
Equity Growth Rate								
Coefficient				-0.0137			-0.0133	-0.013
T-Value				-2.47			-2.46	-2.42
P-Value				0.0137			0.0141	0.0159
Prime Interest Rate Change								
Coefficient					0.0378			1.031
T-Value					0.26			0.69
P-Value					0.7917			0.4874
Log GNP								
Coefficient						54.184		57.159
T-Value						1.46		1.49
P-Value						0.146		0.1357
R-Square	0.0276	0.0002	0.0213	0.01	0.0001	0.0035	0.0537	0.0573
F-Value	17.22	0.11	13.22	6.12	0.07	2.12	8.58	6.1
(P-Value)	<0.0001	0.7398	0.0003	0.0137	0.7917	0.146	<0.0001	<0.0001

The first and the second empirical models are further tested by industrial groups and the results are reported in Table 2 and Table 3. Table 2 presents the details of the regression result while Table 3 summarizes the regression result and how they are aligned with the test hypothesis. Interestingly, none of the groups resemble identical pattern shown in Table 1. As Table 3 summarizes, Group A, B, C, and D (consumer products manufacture companies, pharmaceutical and chemical industry companies, electronic equipment and medical equipment companies, and retail/whole sale companies) show a significantly positive relation between asset growth and long term debt growth while also showing no relation from long term debt growth to asset growth for group E, F, and G (Service companies, computer software companies, and other manufacture companies). Group B, C, and F show a statistically significant positive relation between asset growth and operating cash flow growth while the others do not. The significant negative relation between asset growth and common equity growth is only presented for Group A and B. Moreover, there is a positive and significant relationship between asset growth and short term borrowing growth for Group B and E.

The results presented in Table 3 explain some interesting points: the patterns of the financial choices when firms are seeking growth vary across different industries. Equity financing seems a last resort for new capital for all the firms in the test (the coefficients for all the industry groups are negative or insignificant); nevertheless, consumer manufacturing industries and retail/wholesale industries tend to go to debt financing when they are seeking new capital for asset expansion. High tech industries (Pharmaceutical and chemistry, high-tech equipment, and Computer Software) look mainly to internal operating cash flows to support their business growth. Overall, the results in Table 3 are consistent with the general pattern reported in Table 1, though there are exceptions but they are statistically insignificant. There is a positive relation between asset growth and long term debt growth/operating cash flow growth while a negative relation between asset growth and common equity growth. There is also a positive relation between asset growth and short term

borrowing but it is not statistically significant except for group B (Pharmaceutical and Chemistry) and Group E (Service). Our results, again, confirm that firms prefer internal financing, and operating cash flow growth drives asset growth. When external financing is needed, debt comes before common equity.

Table 2: Regression Results: Asset Growth vs. Financial Choices by Industrial Groups

Dependent Variable: Asset Growth Rate							
Independent Variable	Group A	Group B	Group C	Group D	Group E	Group F	Group G
Intercept							
Coefficient	3.689	8.788	13.261	14.718	6.841	6.614	8286
T-Value	2.32	6.17	6.55	5.34	2.56	0.81	2.25
P-Value	0.0238	<0.0001	<0.0001	<0.0001	0.0337	0.4232	0.0296
Long-Term Debt Growth Rate							
Coefficient	7.572	4.041	1.434	0.1675	-19.796	-0.229	1.981
T-Value	3.59	2.23	1.61	11.04	-1.39	-0.82	1.13
P-Value	0.0006	0.0281	0.109	<0.0001	0.2005	0.4153	0.2655
Short-Term Debt Growth Rate							
Coefficient	0.411	0.089	0.0637	0.1405	9.433	0.256	-0.547
T-Value	0.94	1.99	0.43	0.68	2.28	0.43	-0.19
P-Value	0.3488	0.0495	0.6683	0.4989	0.0517	0.668	0.8529
Operating Cash Flow Growth Rate							
Coefficient	0.581	26.038	25.957	4.843	10.589	82.968	8.203
T-Value	0.4	3.96	4.79	0.89	1.56	5.04	0.69
P-Value	0.6935	0.0001	<0.0001	0.3774	0.1576	<0.0001	0.4918
Equity Growth Rate							
Coefficient	-0.0789	-0.2544	0.0378	0.0813	0.0524	-0.009	0.0712
T-Value	-7.72	-8.89	1.05	1.17	0.61	-1.62	1.09
P-Value	<0.0001	<0.0001	0.2948	0.2453	0.5585	0.1095	0.2795
R-Square	0.6131	0.4892	0.2497	0.6845	0.6671	0.3079	0.0727
F-Value	26.94	23.94	10.57	38.88	4.01	7.45	0.88
(F-Value)	<0.0001	<0.0001	<0.0001	<0.0001	0.045	<0.0001	0.482

Table 3: Summary of the Multiple Linear Regressions by Group

Group	Long-Term Debt Growth	Short-Term Debt Growth	OCF Growth	Common Equity Growth
Consumer				
A Product	+***	+	+	***
Pharmaceutical				
B and Chemistry	+**	+**	+***	***
High Tech				
C Equipment	+*	+	+***	+
Retail and Whole				
D Sale	+***	+	+	+
Service				
E Computer	-	+**	+	+
Software				
F Other	-	+	+***	-*
G Manufacture	+	-	+	+

\* is 10% statistical significance; \*\* is 5% statistical significance; and \*\*\* is 1% or less statistical significance.

Table 4 reports the result of tests of whether firms' operating characteristics explain their financial choices. Equation 9, 10, and 11 are regressions of numerous operating characteristics against the long term debt ratio. Equation 9 is formed by the variables expressing proxies for asset characteristics, which are asset turnover, tangible asset ratio, intangible asset ratio, and non-debt tax shield. Equation 10 tests the size variables, using size of sales and size of operating cash flow. Equation 11 combines Equation 9 and 10.

As the *P-Value* reported at the table, all the coefficients are statistically significant. It reveals that long term debt is positively related to asset turnover, tangible asset ratio, and size of sales while there is a negative relationship between long term debt and intangible asset. The result reflects that larger firms and firms holding a larger portion of tangible assets tend to borrow more, and this finding is in line with the liquidity assumption in the finance literature. Further, the result shows a negative relation between long term debt ratio and non-debt tax shield, expressing a mutual relationship between debt tax shield and non-debt tax shield. A higher debt ratio brings a larger debt tax shield that is offset by firm's non-debt tax shield. A firm's financial policy is to optimize the balance between its borrowing cost and borrowing benefit, that is, the tradeoff between marginal benefit from tax shields and marginal cost of possible bankruptcy due to incremental leverage.

Lastly, it is interesting that our finding also confirms a negative relation between long term debt ratio and size of net cash flow from operating activities, and that is consistent with the study of Baskin (1989) and Rajan and Zingales (1995) that show a negative relation between profitability and financial leverage. As Baskin, Rajan and Zingales relate their result with agency cost assumption, we bring it into alignment with the Pecking Order hypothesis. As firms have larger capacity to generate sizable operating earnings to support their asset growth, they are less likely to use external debt financing. Firms tend to prefer internal financing to external financing.

Table 4: Regression Results: Long Term Debt vs. Operating Characteristics

Dependent Variable: Long-Term Debt Ratio			
Independent Variable	Equation 9	Equation 10	Equation 11
Intercept			
Coefficient	0.12152	0.01156	0.02283
T-Value	4.84	0.38	0.62
P-Value	<0.0001	0.7063	0.5382
Asset Turnover			
Coefficient	0.0274		-0.0099
T-Value	2.32		-0.76
P-Value	0.0207		0.4455
Intangible Asset Ratio			
Coefficient	-0.33619		-0.27621
T-Value	-2.53		-2.03
P-Value	0.0114		0.0423
Non Debt Tax Shield			
Coefficient	-0.00302		-0.0031
T-Value	-1.83		-1.91
P-Value	0.0677		0.0559
Tangible Asset Ratio			
Coefficient	0.14758		0.14639
T-Value	3.39		3.38
P-Value	0.0007		0.0008
Size (Operating Cash Flow)			
Coefficient		-0.05961	-0.05733
T-Value		-7.51	-6.48
P-Value		<0.0001	<0.0001
Size (Sales)			
Coefficient		0.06702	0.05716
T-Value		7.83	5.78
P-Value		<0.0001	<0.0001
R-Square	0.0415	0.0539	0.3071
F-Value	11.87	31.32	9.23
(P-Value)	<0.0001	<0.0001	<0.0001

## CONCLUSION

Does financial choice and order of financing matter when firm seek business growth? We use the Pecking Order Theory to examine 250 Pennsylvania companies during the period of 1988 to 2007. Our empirical results can be summarized as follows: First, firms' asset growth is positively related to the change of long term debt and the increase of operating cash flow, but there is a negative relationship between asset growth and equity growth. Further, the patterns of the financial choices when firms are seeking



growth do vary across different industries. Equity financing seems a last resort for new capital for all the firms in the test; however, consumer manufacturing industries and retail/wholesale industries tend to go to debt financing when they are seeking new capital for asset expansion while high tech industries and high tech service industries look mainly to internal operating cash flows to support their growth.

Second, our results confirm that the financial choices are affected by firms' operating characteristics. Firms' debt ratio is positively affected by their tangible assets, and firms with larger size and asset turnover tend to borrow more. Firms' financial leverage tends to be negatively related to the holding of intangible assets and non-debt tax shield, reflecting that liquidity and trade-off assumptions influence firms' financial decision. The statistically significant negative relation between profitability and financial leverage revealed in our test supports the Pecking Order Theory that the larger the operating earnings, the less the need for external debt financing. It is clear that firms prefer internal financing to external financing, and debt to equity financing.

Overall, our result indicates while the Pecking Order Theory shows consensus in practice, there are different patterns across different industries. A firm's financial choice is driven by its operating characteristics. Asset tangibility, operating profitability, firm size and tax structure greatly affect a firm's financial policy.

#### References:

- Baskin, J., 1989. An Empirical Examination of the Pecking Order Hypothesis. *Financial Management*, Spring, 12, 1, 8--20.
- Berens, J.L., Cuny, C.J., 1995. The Capital Structure Puzzle Revisited. *The Review of Financial Studies*, Winter, 8, 4, 1185--1208.
- Berger, P. G., Ofek, E., Yermack, D.L., 1997. Managerial Entrenchment and Capital Structure Decisions. *The Journal of Finance*, Vol. LII, No. 4, 1411-1438.
- Berger, A.N., di Patti, E.B., 2005. Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry. *Journal of Banking and Finance*, 30, 1065-1102.
- DeAngelo, H., Masulius, R.W., 1980. "Optimal Capital Structure under Corporate and Personal Taxation. *Journal of Financial Economics*, 8, 3--29.
- Fama, E.F., Jensen, M.C., 1983. Separation of Ownership and Control. *Journal of Law and Economics*, 26, 2, 301--25.
- Fama, E.F., French, K.R., 1998. Taxes, Financing Decisions, and Firm Value. *Journal of Finance*, June, 53, 3, 819--43.
- Friend, I., Lang, I. H. P., 1988. An Empirical Test of the Impact of managerial Self-Interest on Corporate Capital Structure. *The Journal of Finance*, Vol XLIII, No. 2, 271-281.
- Harris, M., Raviv A., 1991. The Theory of Capital Structure. *Journal of Finance*, March, 46, 1, 297--355.
- Harvey, C. R., Lins, K. V., Roper, A. H., 2004. The Effect of Capital Structure When Expected Agency Costs Are Extreme. *Journal of Financial Economics*, 74, 3-30.
- Jensen, M.C., Meckling, W., 1986. Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure. *Journal of Financial Economics*, October, 3, 11--25.
- Leland, H., Toft, K.B., 1996. Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads. *Journal of Finance*, 51, 261--97.
- Modigliani, F., Miller, M.H., 1958. The Cost of Capital, Corporate Finance, and the Theory of Investment. *American Economic Review*, June, 48, 4, 261--97.

- Modigliani, F., Miller, M.H., 1963. Corporate Income Taxes and the Cost of Capital: A Correction. *American Economic Review*, June, 53, 3, 443--53.
- Myers, S.C., 1984. The Capital Structure Puzzle. *Journal of Finance*, July, 39, 3, 575--92.
- Myers, S.C., 2000. Outside Equity. *Journal of Finance*, June, 55, 3, 1005--37.
- Myers, S.C., 2001. Capital Structure. *Journal of Economic Perspectives*, 15, 2, 81--102.
- Parsons, Chris, Sheridan Titman, 2007. Capital Structure and Corporate Strategy. University of Texas, January 2007, working paper.
- Rajan, R.G., Zingales, L., 1995. What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance*, December, 50, 5, 1421--60.
- Song, H., 2005. Capital Structure Determinants: An Empirical Study of Swedish Companies. *Center of Excellence for Science and Innovation Studies Electronic Working Paper Series*, January, 25.
- Titman, S., Wessels, R., 1988. The Determinants of Capital Structure. *Journal of Finance*, March, 43, 1--19.
- Turac, M., 1998. Stochastic Cash Flows, Bankruptcy Costs, and Optimal Capital Structure. Department of Finance, Georgia State University, Working Paper.
- Zantout, Z. Z., 1997. A Test of the Debt-Monitoring Hypothesis: The Case of Corporate R&D Expenditures. *The Financial Review*, February, 32, 1, 21--48.

---

<sup>1</sup> The authors are grateful for the helpful assistance of Josh Weaver.

<sup>2</sup> OCF is net cash flow from operating activities in the cash flow statement;

<sup>3</sup> Short-Term Debt is notes payable in the balance sheet.

<sup>4</sup> OCF is net operating cash flow from operating activities in the cash flow statement.



---

Enyang Guo is an associate professor of finance at Millersville University. She received her Ph D in Finance from Virginia Tech. Her other research interests are multinational corporate finance, capital structure and corporate restructuring, and Chinese financial markets.

Gary Leinberger is an associate professor of finance at Millersville University. He received his PhD from Oklahoma State University. His other research interests are capital structure, inventory management, and educational methodologies.

# CLOSING THE LOOP: ASSURANCE OF LEARNING AND ORGANIZATIONAL LEARNING IN BUSINESS EDUCATION

David H. Hartley, Clarion University

---

## Abstract

Institutions of higher education have been accused of not engaging in organizational learning (Brown, 1997). One way schools have to learn about themselves is through assessing student outcomes. The Association to Advance Collegiate Schools of Business International (AACSB International) recently implemented assurance of learning standards across all accredited business programs. The AACSB International standards on assurance of learning and the assurance of learning plans from two business schools were evaluated for their emphasis on organizational learning. Interviews were conducted with two business school deans and the key leaders of three school's assurance of learning efforts. A content analysis of this data revealed the standards, the assurance of learning plans and the implementation of the plans contributed to organizational learning.

---

## Introduction

Hill (1999) proposed that institutions of higher education find organizational learning difficult yet, to maintain long term success, they must engage in organizational learning. Lopez, Peon and Ordas (2006) define organizational learning as a dynamic process of creation, acquisition and integration of knowledge aimed at developing the resources and capabilities that allow the organization to achieve better performance. Organizational performance in institutions of higher education may be measured by addressing input vs. output from a quantitative, resource focused, model (Fernando and Cabanda, 2007). Another performance measure may be assessed from the educational outcomes of the students (Hill, 1999). It is the organizational learning centered around the institutional assurance of learning plans that is the focus of this article.

Planning for, developing and implementing assurance of learning plans is a fairly recent initiative in business programs accredited by the Association to Advance Collegiate Schools of Business, International (AACSB International). In 2003, the AACSB International adopted assurance of learning standards requiring their accredited institutions to establish curriculum assessment plans that included learning goals, expected student outcomes, assessment and evaluation of those outcomes and a

system to "close the loop" by applying what was learned by the outcomes assessment to the curriculum (White, 2007). The cycle of establishing learning goals, collecting data on student outcomes related to these learning goals, assessing the outcomes data and developing and implementing change initiatives to improve student outcomes would seem to follow the organizational learning loops described by Agyris and Schoen (1978).

The purpose of this initial study is to understand how a group of similar business schools have addressed assurance of learning through their assessment plans and determine the extent to which the implementation of these plans has facilitated organizational learning. From understanding how these schools implement their assessment plans and how they use the data gathered in the assessment process, methods may then be developed to provide a more comprehensive look at how closing the loop with assurance of learning plans may provide a catalyst for organizational learning within a business education setting. This study may be of value to those seeking to understand and enhance organizational learning in higher education settings.

## Organizational Learning

Organizations as a collective of individual learners learn when they have in place systems that enable

them to process information similar to individual learning (Lipschitz, Proper, and Oz, 1996). Barlett & Ghoshal (1998) maintain that only when an organization has developed the capacity to transfer, share, and develop the dispersed individual-level knowledge will the organization benefit from organizational learning. This process implies that there is some level of interaction between the individuals in the organization as part of the learning process stepping away from individual silos of information and sharing knowledge across organizational domains.

"It is a paradox not lost on many in higher education that while the corporate world has embraced organizational learning, higher education lags significantly behind." (Brown, 1997, p. 5). Freed (2001) contends that many institutions of higher education, while organizations filled with learners, are not engaged in organizational learning. Roadblocks to organizational learning may come in the faculty perception of organizational learning as a fad (Kezar, 2005), the reluctance of tenured faculty to change, the entrenched nature of institutional traditions (Freed, 2001), the loosely coupled nature of the university as an organization (Clark, 1983), and dysfunctional processes where one fails to take scientific inquiry from the classroom and apply it to the organization to which they belong (Brown, 1997). Dill (1999) indicates the public and the federal government are putting pressure on higher education institutions for academic accountability and it is this pressure that is encouraging these institutions to engage in organizational learning in an effort to improve their core processes of teaching and learning.

In response to public pressure for educational accountability, the AACSB International increased the emphasis on assurance of learning by reforming its standards on program assessment from less than 10% to fully one-third of its accreditation standards in 2003 (Michel, 2007). Business schools are required to establish curriculum assessment plans based on their stated mission and vision (AACSB Intl., 2008). These curriculum assessment plans are to include overarching learning goals that support the

mission and vision of the school, learning objectives that support the learning goals, indicate where and how to measure these goals, include the assessment of these outcomes and use the results as a component in the school's continuous improvement efforts (Martell and Calderon, 2005) (see figure 1, Program Assessment in the Appendix). The AACSB International espouses faculty participation in this process as critically important to the success of the program (AACSB International, 2008). In addition to faculty participation, assessment planning, implementation, and success depend on supportive leadership and dedicated budget allocations (AACSB International, 2008).

As of 2007, business schools were expected to have a mature assurance of learning plan in place where outcome assessment data was being used to "close the loop" and feed back into informing the school's continuous improvement efforts (Hollister and Koppel, 2008). This model of assessing organizational outcomes and using the information derived from these assessments for organizational improvement seems to indicate organizational learning should be taking place within these AACSB International accredited institutions.

In evaluating organizational learning in higher education, Schechter (2008) addressed elements of organizational learning as mechanisms. Schechter further asserted that these mechanisms may be employed to advance organizational learning in the educational setting. Schechter's (2008) organizational learning mechanisms are: 1) Analyzing information; 2) storing-retrieving- putting to use information; 3) receiving-disseminating information; 4) seeking information. Schechter (2008) proposed through building these mechanisms into the educational institution, the organization takes a strong step toward becoming a learning organization.

### The Learning Organization

The construct of organizational learning has received the attention of many researchers (Cangelosi and Dill, 1965; Argyris and Schoen, 1978, 1996; Fiol and Lyles, 1985; Huber, 1991; and Garvin, 1993). Common to all of these treatments is information

received and its influence on change within the organization (Prange, 1999). When information is received and it is processed through a narrowly focused paradigm resulting in incremental change it is described as single loop learning (Argyris and Schoen, 1978). When information is received and it is evaluated in a much broader organizational/programmatic sense where basic organizational assumptions and paradigms are challenged it is considered to be indicative of double loop learning (Argyris and Schoen, 1978).

Argyris and Schoen (1978) looked at the differences in organizational learning when compared to the organization's official stance on learning within the organization. Organizations with an emphasis on organizational learning described in official publications yet most frequently engaged in incremental change are termed Model 1 theories in use organizations. Organizations with an emphasis on organizational learning as described in official publications and frequently engaged in deeper, more fundamental change as a result of knowledge development are considered to be Model 2 theories in use organizations. Argyris and Schoen (1978) evaluated these differences as the difference between theories espoused and theories in use. For Argyris and Schoen (1978) the connection between the organization's position on learning and its practices was the tipping point between organizational learning and the learning organization.

In combining the Model 1 and Model 2 organizations (Argyris and Schoen, 1978) with the presence of organizational learning mechanisms (Schechter, 2008) educational institutions may be evaluated for their capacity as a learning organization. Organizations that demonstrate a commitment of leadership and fiscal support to program assessment (AACSB International, 2008), display mechanisms that parallel those proposed by Schechter (2008), yet only support the organizational learning process as it relates to incremental changes in curriculum or other assessed constructs would be considered Model 1 organizations or organizations that demonstrate single loop learning. Those institutions that demonstrated a commitment of leadership and fiscal

support to program assessment, displayed organizational learning mechanisms and weighed the assessment results as part of a holistic organizational review would be seen as Model 2 organizations or organizations that demonstrate double loop learning. It is the tie in with how the results of outcomes assessment have been used to implement change within the organization where the differentiation between the different models may be exposed.

### The Research Questions

With the difficulties of implementing organizational learning in higher education settings, and in light of Argyris and Schoen's (1978) presentation of Model 1 and Model 2 theories in use organizations the following research questions (RQ) are proposed:

*RQ1a:* Do the AACSB International standards for assurance of learning as amplified through the assurance of learning seminar support the use of seeking, receiving, analyzing, disseminating, using, storing and retrieving data as part of assurance of learning planning and implementation by business schools?

*RQ1b:* Do the assurance of learning plans as implemented by business schools describe the mechanisms of seeking, receiving, analyzing, disseminating, using, storing and retrieving data?

*RQ2:* Has the outcomes assessment process at these institutions resulted in single or double loop learning?

### Method

Within the context of the higher education setting, an understanding of organizational learning may occur through the analysis of documentation and through interviews with the people involved. Lopez, Peron, and Ordas (2006) indicate that training is a fundamental element in learning organizations. Hill (1999) cites a case study at Ball State University where the involvement of faculty is a critical element in higher education learning organizations. Dever (1997) asserts the critical role of the educational institutions leadership as fostering an environment for the transformation to a learning organization.

The two plans reviewed addressed the organizational learning mechanisms in similar ways to those of the accrediting body. These plans addressed specific learning objectives, expected learning outcomes and the specifics of where in the curriculum these outcomes would be measured. The schools addressed the analysis portion from different directions based on their own unique approach. Three of the four purpose statements for assurance of learning from one school addressed dissemination of the information and "creating an ongoing school-wide dialog on effective practices" Both schools address improvement loops based on assessment outcomes, analysis, feedback on possible improvement efforts and implementation of improvements.

When addressing storing and retrieving data, one program specifically limited access to the raw data to only the under graduate curriculum committee; the committee charged with the responsibility of conducting the analysis of the collected data. This school addressed the disseminating of the results through the annual report via the department chairs and in general faculty meetings. For both programs, the storage of the data was the responsibility of the committee conducting the analysis.

One program presented a diagram in their assurance of learning plan that appeared to present double loop learning as an outcome of this process. There was a loop showing the outcomes assessment process as improving student learning and a second loop off of the first that demonstrated how the school was also engaged in improving their assurance of learning processes. The other school presented an outcomes chart that graphically showed how the outcomes were used to feed back into the learning objectives citing specific outcomes results and implemented improvement efforts.

*RQ2:* Has the outcomes assessment process at these institutions resulted in single or double loop learning?

*Single loop learning.* In the review of single loop learning the organizational learning mechanisms were used to evaluate the information from the interviews.

*Seeking.* During the interviews, representatives from each school addressed the major tasks necessary to develop and implement their assessment plans. A variety of methods are currently employed to assess learning from national standardized testing to a faculty developed comprehensive examination, simulations and imbedded measurements within specific courses. In addition to seeking information about their students, this process also brought about discussions with the other non-business programs across the campuses. One program seized the opportunity presented by the faculty in the English department to replace the second semester English composition course with a specific business writing course that serves as the second semester English composition requirement for all business majors.

*Receiving and analyzing.* The receiving and analysis process addressed during the interviews indicated a close adherence to the process as outlined in the school's plan. One school indicated that the department representatives on the curriculum committee were responsible for collecting and providing initial analysis of the assessment data gathered from any measures imbedded within their department's courses. The analysis of the data for one program is presented to the department chairs first and only after the chair's recommendations are addressed is the formal analysis process completed. Another program provides the completed report to the dean of the business school after the committee's analysis is completed..

*Disseminating.* Lunch appears to be a common thread in the dissemination of the outcomes assessment reports or in engaging faculty members on assurance of learning topics and gaining feedback on possible assessment measures. Once approved, either a copy of the report is provided to the faculty at large, or the report is briefed by the assessment committee to a general faculty meeting. In all cases, attempts were made to engage the faculty in both the process and in providing feedback on the analysis of that time period's outcomes assessment report.

*Using.* As each program is slightly different, with slightly different learning objectives, the

implementation of the assessment results also took on a unique program-specific response. One program, after recognizing there was an undesirable gap between their goal for quantitative and accounting skills and the outcomes, implemented a series of faculty workshops on integrating more quantitative and accounting work throughout the course. Another school, facing a similar dilemma, with the collaboration from the mathematics department, altered the curriculum to require all graduates to complete three quantitative courses during their program. As mentioned earlier, one school responded to the assessment results by exchanging the second semester English composition course for a focused business writing course for all business majors.

*Storing and retrieving.* The interviews revealed that each school followed their protocols for storage of the assessment information as outlined in their assessment plan documents. The schools took different approaches to providing access to the data. One school held the assessment data in the confidence of the assessment committee; only providing copies of the assessment reports.

*Double loop learning.* One of the markers identified during the assurance of learning seminar that served as an indicator of a cultural attitude change toward assessment was when faculty members, not directly associated with the assessment process initiate their own inquiry into the assurance of learning data. Currently, in all three schools, there appears to be little voluntary interest among the faculty in evaluating the assessment data for either self improvement or for possible pedagogical research. Information from the outcomes assessment process has been used to remodel course curricula, shore up weak areas in the curriculum, pick up new faculty lines, and foster cross campus collaboration. This reluctance may stem from those attributes identified by Kezar (2005) and Freed (2001) of the perception that assurance of learning is a fad or the entrenched nature of faculty toward change.

There have been efforts to involve the faculty as a whole. One program, in developing their writing rubric, broke the student writing samples up into 5

packets of 10, then had all the faculty grade a packet. This is attributed as a significant event that established the importance of the process and its requirement for full participation.

Implementing the assurance of learning process did provide opportunities for organizational learning above the analysis and feedback loop associated with the learning outcomes. Faculty members were involved in seminars, briefings, and in the assessment planning process. Members were involved in developing learning goals and objectives.

### Conclusion

It appears that the implementation of the AACSB International assurance of learning standards has improved organizational learning at member institutions. Schools now have in place a program that provides feedback on the school's performance on key student learning outcomes. These intuitions are actively implementing curricular changes based on the outcomes assessment data. The results of the analysis of the outcomes assessment are being disseminated throughout the faculty and opportunities for faculty education to address outcomes shortfalls have been developed. In some cases, the results of the outcomes assessment have contributed to collaborative efforts with other programs on campus. The mechanisms of seeking, receiving, analyzing, disseminating, using, storing and retrieving data are well represented in the official documentation from the accrediting body, the school's assurance of learning plans, and in the assurance of learning practices in which the schools engage.

The organizations studied do not indicate in their assessment plans a position on becoming a learning organization. The assessment plans are structured in a single-loop learning form where the assessment outcomes inform curricular changes, but do not reach much further than that. These plans identify the four areas of Schechter's (2008) organizational learning mechanisms in one way or another but do not address double loop learning. The AACSB-International assessment standards, viewed as a whole, require business schools to engage in strategic planning and self-assessment. In this process, outcomes from the

assurance of learning efforts may play a role in this self-assessment process. Whether this self-assessment process leads to developing business schools into learning organizations remains to be seen.

*Limitations.* Confining the study to assurance of learning plans and the relative newness of the implementation of these plans may have impacted the depth of understanding from this study. Assurance of learning is only one quality initiative contained in the AACSB International standards. Continuous improvement and closing the loop are integral parts of the current AACSB International lexicon. The standards address continuous improvement throughout the program and thus, by addressing only assurance of learning, areas where the organizations are engaged in double loop learning may be missed. The relative youth of the assurance of learning plans also impacts the reliability of the data and thus the utility of the analysis in making wholesale curricular changes.

Another limitation to this study was the time-frame for data collection. The summer presents difficulties with accessing the faculty at large. Their assessment of the assurance of learning process and what they have learned would provide much greater understanding to this study.

The implementation of assurance of learning programs appears to have resulted in improving organizational learning, not only from the outcomes, but also as a by product of developing the assurance of learning plans themselves. There is still room for growth in building an assessment culture within the organization. Should this assessment culture become a reality, these schools may be on their way to becoming learning organizations.

#### References

- AACSB (2007). *Maintenance of Accreditation Handbook*. retrieved April 11, 2008 from: [http://www.aacsb.edu/accreditation/process/documents/Maintenance\\_Accreditation\\_Handbook.pdf](http://www.aacsb.edu/accreditation/process/documents/Maintenance_Accreditation_Handbook.pdf)
- AACSB (2008). Assurance of Learning Seminar materials.
- Argyris, C. & Schoen, D. A. (1978). *Organizational Learning: A theory of Action Perspective*. Reading, MA: Addison-Wesley.
- Argyris, C. & Schoen, D. A. (1996). *Organizational Learning II*. Reading, MA: Addison-Wesley.
- Brown, J. S. (1997). On becoming a learning organization. *About Campus*, January-February, p. 5-10.
- Cangelosi, V. & Dill, W. r. (1965). Organizational learning. Observations toward a theory. *Administrative Science Quarterly*, 10, 175-203.
- Clark, B. R. (1983). *The Higher Education System*. Berkley: The University of California Press.
- Cresswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Dever, J. T. (1997). Reconciling educational leadership and the learning organization, *Community College Review*, 25(2), 57-63.
- Dill, D. D. (1999). Academic accountability and university adaptation: The architecture of an academic learning organization. *Higher Education*, 38, 127-154.
- Fernando, B. I. S. & Cabanda, E. C. (2007) Measuring efficiency and productive performance of colleges at the university of Santo Tomas: a nonparametric approach, *International Transactions in Operational Research*, 14(3), 217-229.
- Fiol, C. M. & Lyles, M. A. (1985). Organizational learning. *Academy of Management Review*, 10, 803-813.
- Garvin, D. A. (1993). Building a learning organization. *Harvard Business Review*, 71, 78-92.
- Hill, I. B. (1999). The use of assessment in organizational learning. *Assessment Update*, 11, 6, 1-5.



Hollister, K. K. & Koppel, N. B. (2008). Curricular changes in response to assurance of learning results in information technology. *Journal of American Academy of Business, Cambridge*, 13, 287-293.

Huber, G. P. (1991). Organisational learning: the contributing processes and the literature. *Organization Science*, 2, 88-115.

Kezar, A. (2005). What campuses need to know about organizational learning and the learning organization. *New Directions for Higher Education*, 131, Fall, 7-22.

Lipschitz, R., Proper, M., & Oz, S. (1996). Building learning organization: The design and implementation of organizational learning mechanisms. *Journal of Applied Behavioral Science*, 32, 292-305.

Lopez, S. P., Peon, J. M. M., & Ordas, C. J. V. (2006). Human resource management as a determinant in organizational learning, *Management Learning*, 37, 215-239.

Martell, K. (2007). Assessing student learning: Are business schools making the grade. *Journal of Education for Business*, 82, 189-195.

Martell, K., & Calderon, T. G. (2005). Assessment in business schools: What is it, where we are, and where we need to go now, in the AACSB International's *Assessing Student Learning: Are Business Schools: Best Practices Each Step of the Way*.

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage.

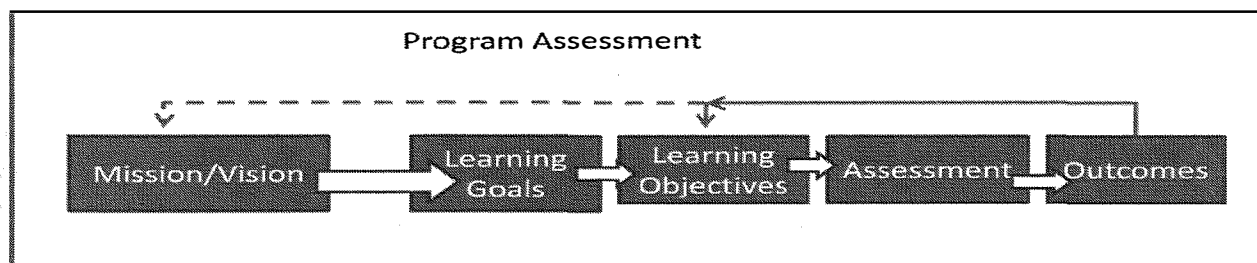
Prange, C. (1999). Organizational learning: Desperately seeking theory in Easterby-Smith, M., Burgoyne, J., & Araujo, L. (1999). *Organizational Learning and the Learning Organization*. Thousand Oaks, CA: Sage.

Schechter, C. (2008). Organizational learning mechanisms: The meaning, measure and implications for school improvement, *Educational Administration Quarterly*, 44, 155-186.

Watkins, K. E. & Marsick, V. J. (1993). *Sculpting the Learning Organization: Lessons in the Art and Science of Systemic Change*. San Francisco, CA: Josey-Bass.

White, B. J. (2007). Perspectives on program assessment: An introduction. *Journal of Education for Business*, 82, 187-188.

Appendix  
Figure 1. Program Assessment



David Hartley currently serves as the Assistant Dean in the College of Business Administration at Clarion University of Pennsylvania. Mr. Hartley is also a PhD student at Regent University. Mr. Hartley's research interests in the area of human resource development include organizational learning, self-directed learning, developing life-long learners, and assessing the return on investment of HRD initiatives. Mr. Hartley is a 20 year veteran of the United States Army.



## MICRO-FINANCING – A POWERFUL TOOL FOR ELEVATING POVERTY

Mehdi Hojjat, Neumann College

---

### Abstract

Eradicating world poverty is within the reach of each one of us. Microfinance has started a global movement. Almost fifty million of the world's poorest families now put microloans to work. There are more than a hundred programs that use the Grameen model to break through poverty. However, with three billion people living on less than two dollars a day, the untapped market for microfinance remains vast. Microfinance is an effective anti-poverty strategy that can create an impact that lasts well beyond the original investment.

---

#### 1. Poverty: A Global Epidemic

As the divide between the wealthy and poor nations becomes increasingly wider, an ever-increasing number of people feel the effects of poverty. Many agencies attempt to quantify poverty as a measure of income, typically as one to two dollars a day. The Office of the United Nations High Commissioner for Human Rights (2002) expresses poverty in a more tangible fashion as "a human condition characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights."

The global statistics for poverty are staggering. In their quantification of poverty, Eichfeld and Wendt (2006) stated that in 2001, 2.7 billion people were attempting to survive on less than \$2.15 per day and one billion of those people were actually making less than \$1.08 per day. While we live in relative comfort here in the United States and the Western world, over 47% of the population of the world struggles to survive. The problem of poverty affects basic human conditions. Since the 1980's, the increasing void between rich and poor has also been contributing to this problem

#### Causes of Poverty

Direct causes of poverty vary by region in specificity but on a general level, there are common causes. The geography can determine the wealth of a people by determining their accessibility to natural resources

for food or economic output in the form of mineral wealth or oil. Political situations can cause unequal distribution of wealth where a disproportionate minority controls a great majority of the economic wealth of a region (Lokollo, 2006).

Globalization is an additional contributing factor to the increasing number of rural poor in the world. Industrialized nations are getting wealthier and poorer nations are marginally improving.

A common misconception of poor people is that they lack a desire to save money and want to spend all that they earn. Research shows that this is not true. The poor do show a strong desire to save for the same things that others save for, such as, emergencies, investment, sickness, disability, education, future consumption, and retirement. Typically, when there is a lack of safe investment in areas with high levels of poverty, jewelry and livestock become typical forms of savings. In addition to the lack of quality savings, the rural poor do in fact have a high demand for credit. Common sources of credit for the poor are larger financial institutions that typically deal in large loan amounts which are out of reach to people with poor collateral and therefore high credit risks, and smaller lenders that charge exorbitant interest rates. These factors make obtaining credit very difficult to people in overwhelmingly poor areas. The cycle of poverty becomes self-perpetuating (Lokollo, 2006).

#### *Failures of common remedies*

Through the mid to late twentieth century, the favored approach to alleviating the situation of

poverty in the world was a top-down approach. Governments and charity organizations would invest large sums of money and resources in large-scale projects meant to give employment and provide a benefit to the poor but more typically, windup benefiting the corrupt governments run by the elite minorities (Eichfeld & Wendt, 2006).

### Microfinancing

A young economist from Bangladesh while leading his students on a field trip in 1976 observed a typical example of the cycle of poverty. A woman making bamboo stools had been utilizing a typical means of financing her business endeavor. She had been making mere pennies per stool due to the terms of her loans of raw materials from a trader. The trader would dictate a purchase price for the final product. Again, this was placing Sufiya Begum, the stool maker, in a cycle of perpetual poverty. She could not be in business without the support of the trader but because of the terms of her loan, she would never make enough profit to be able to expand her business and have a more comfortable lifestyle. The analysis of this situation by Dr. Yunus led him to develop and experiment with a new concept called Microfinancing. With just \$27 from his own pocket, Dr. Yunus had made loans to forty-two basket weavers in Bangladesh. This very small infusion of capital allowed these basket weavers to prosper, become more self-sufficient, and eventually brings them out of extreme poverty (Eichfeld & Wendt, 2006).

This experiment and other research led Dr. Yunus to theorize that the primary target for these micro-loans should be women. The systems that he developed to ensure a higher rate of return are to loan money based on social networks of support. These networks are more effective when they comprise mostly of women. The poverty rate among women is typically higher than that of men due to social discriminations. Women are also more likely to repay the loans and invest their profits towards the benefit of their families and businesses (Eichfeld & Wendt, 2006).

Over the next several years, Dr. Yunus expanded his successful experiment in to the creation of Grameen

Bank in 1983, which has become enormously successful in its mission of helping overcome extreme poverty. The successes of Grameen Bank and other organizations that have used this formula have earned Dr. Yunus numerous awards, including the Nobel Peace Prize, which was shared by Grameen Bank.

### 2. Microfinance Institutions (MFIs)

A microfinance institution is the lender that directly supplies a loan, credit, or other financial service to a borrower. In most cases, the lender tends to be a bank, credit union or other financial organization. Borrowers work with the microfinancing institutions (MFIs) directly, but there may also be another organization that also interacts with the MFI. These intermediaries can be private donors or government, non-government (NGO), and global organizations that assist with funding, setting up and overseeing programs, or offering advice.

According to World Bank Statistics, there are approximately 7,000 microfinance institutions worldwide and they only reach 4 percent of the people in need of assistance. Most microfinance institutions will lend out funds to borrowers with at certain interest rate. Some institutions have interest rates that vary according to what the funds are going towards. For example, Grameen Bank charges 20% interest on any funds that generate income for the borrower. For student loans, Grameen Bank only charges 5% interest and 8% interest for housing loans (Grameen, 2007).

Lending out finances to individuals without any collateral is high risk and commercial banks tend to stay away from this type of practice. Data from the Micro Banking Bulletin reported that 63 of the world's top microfinancing institution had an average rate of return of 2.5% of its total asset. This does compare favorably to that of commercial banks and will hopefully entice them to create microfinancing projects (UNCDF, 2007).

United Nations

The United Nations has a branch called the United Nations Development Program (UNDP), which is their global development network. This is the world's largest multilateral source of development (Wikipedia, 2007). The UNDP is set-up to connect least developed countries (LDCs) to knowledge, resources, and experience to assist them in living a better lifestyle. By providing microfinance assistance to people (mostly women) in developing countries, the UNDP is helping them attain two of the Millennium Development Goals, eradicating poverty, and promoting gender equality.

The United Nations also developed a fund, which offers a unique combination of investment capital, capacity building, and technical advisory services to promote microfinance in the LDCs called the United Nations Capital Development Fund (UNCDF, 2007). Prior to microfinancing, there was no means of acquiring any sort of financing from commercial banks. As stated earlier, the borrower having no collateral and the risk of non-payment was too risky for a commercial lender. The UNCDF focuses its microfinance development on the development of an inclusive financial sector that will have financial institutions competing for business by offering a variety of financial services to borrowers (UNCDF, 2007). The goal is for people in rural areas, women, individual entrepreneurs, and small businesses that are already established to have access to microfinancing institutions and the services they provide. These MFIs will be local and include all types of services, so traveling to different cities or villages for different needs will not be necessary.

An Investment Committee decides where to disperse grants and credits, gained from donations, based on proposals by microfinancing institutions. In this type of scenario, the United Nations strategy is to create an environment in which individuals and businesses can utilize the services financial institutions offer to customers in more developed countries (UNCDF, 2007).

#### *Grameen Bank*

The Grameen Bank was inspired by the Bangladesh Famine of 1974. The founder, Muhammad Yunus

thought that by issuing small loans under \$30 to a number of families that they could manufacture and sell products in order to get themselves out of poverty. With the success of these first few loans, distributed to people in the village of Jobra, he broadened the scope to the entire country of Bangladesh. In 1983, the project became a formal bank under special law and the Grameen Bank was born.

The Grameen Bank is an actual microfinancing institution where as the United Nations was the driver that enabled MFIs to be accessible to borrowers in LDCs. The United Nations did not actually distribute any loans or other financial services directly to individuals or businesses. The Grameen Bank offers loans to people without any collateral but there are a few stipulations. First, borrowers must be in a group of five. The first two individuals are offered loans and if they make their payments on time, the other two receive their loans, and if all four are compliant, then the fifth person receives their loan (Grameen, 2007). The Grameen Bank is successful for a number of reasons. First, they are quite selective with which individuals and projects they choose to loan funds to. Second, each individual in the group of five is confronted with peer pressure to make sure they make their payments and don't default. If someone defaults, the group doesn't have to make the payment, but it looks bad for the other four. In the beginning of the process, if either of the first two borrowers defaults, the others are denied their loans. Women have especially been successful in this program, not only for repayments, but also for the ability to identify potential entrepreneurial opportunities and take advantage of them. Women have become less dependant on their husbands and incredibly account for 97 percent of all borrowers (Grameen, 2007). The success follows the philosophy that by injecting credit into the economy, "there will be investment, more income, more savings, more investment, and more income". They also incorporate a set of values in their banking system called the 16 Decisions. These decisions are all self-help values that are to be used to improve one's standard of living. They include ideas such as

prosperity, strong work ethic, efficient and effective farming, and living in sanitary conditions.

Since the conception of the project back in 1976, The Grameen Bank has become the model of a successful microfinance institution. The total number of borrowers is now over 7 million and it has disbursed over \$6 billion, \$5.4 billion of which has been repaid. In the past year, Grameen Bank has disbursed over \$730 million, which equates to \$61 million per month. The Grameen Bank is entirely self-sustained and in 1995, it decided it didn't need anymore external donations or funding. In 2005, Grameen Bank made a profit of \$15 million and transferred it all to a Rehabilitation Fund to cope with disaster situations. In return, the company is exempt from paying corporate income tax. The borrowers own 94 percent of the bank and the government of Bangladesh owns the remaining 6 percent (Grameen, 2007).

The Grameen Bank continues to grow, as there are now over 2,300 branches and 21,000 employees worldwide. It has also expanded into over two dozen enterprises represented by the Grameen Family of Enterprises (Grameen, 2007). The Grameen Bank system is copied by other institutions worldwide because of their success and is called the Grameen Foundation (Grameen, 2007). In 2006, the Grameen Bank and its founder Muhammad Yunus were jointly awarded the Nobel Peace prize for their microfinancing concept.

#### *Kiva.org*

Kiva is the world's first person to person microfinance lending marketplace. Through the Kiva.org website, potential lender can sponsor a business of their choosing. Kiva is not a microfinancing institution. It is a non-government organization (NGO) that works with existing MFIs to gain access to entrepreneurs from LDCs.

The concept originated from Matthew and Jessica Flannery in the spring of 2004. They were both working in Africa when they realized the success of hundreds of small business, which were started by the Village Enterprise Fund (VEF), and the impact they

had on their communities (Kiva, 2007). They were fascinated by the success stories of these entrepreneurs and impressed with their hard work and entrepreneurial spirit. The couple wanted to find a way in which individuals could directly assist a business or business ideas from people in LDCs. In March 2005, Kiva began to raise loans for seven businesses in Uganda and from there it took off. Kiva now utilizes PayPal for the transfer of funds to and from the actual MFIs.

Kiva relies on their partnership with their 40 MFIs to find entrepreneurs and handle the dispersal of funds and repayment. Kiva doesn't charge interest on their loan to the borrower, but the MFI does. The borrower repays the MFI in monthly installments and once the total loan amount is repaid, the MFI sends one lump sum back to the lenders account. The lender can then either cash out or lend out the money again.

Currently, Kiva has over 50,000 users that have lent out to almost 8,000 entrepreneurs. On the Kiva website, a user can pick from many different businesses and entrepreneurs. The total loan amount each borrower is requesting along with the amount they've currently received is there with the description of each entrepreneur.

Kiva has a repayment rate of 100 percent. They are a non-profit organization, but do receive financial support from investors and corporate sponsors to cover operating costs. In 2007, Kiva will charge the MFIs they work with a 2 percent interest rate to cover these costs.

### 3. Operational Aspects of Microfinancing

Microfinancing is practical and successful at providing opportunity to poor communities. It is becoming an accepted form of revitalization in countries that suffer from poverty. However, microfinancing is not a one size-fits-all system that is useful in all cases. According to the Consultative Group to Assist the Poor (CGAP), microfinancing is not always the answer, because it is not the best tool for everyone or every situation. People in extreme poverty, with no income or means of repayment, need other types of support before they enter into a

repayment program. In some cases, other alternatives could work better to alleviate poverty. For these reasons, when deciding if microfinancing is the correct procedure, many elements should be considered to assure successful and fruitful results (CGAP.org, 2003)

The MF project should contribute to the long-term development of helping communities. This is not a temporary measure. Certain regions have people that are too poor or they have incomes that are too undependable to enter MF's. These extremely poor people are living below the poverty line. They require safety-net programs that can help with basic needs. Grants, scholarships, employment-training programs and infrastructure improvements are solutions that can work to accommodate some of these impoverished beneficiaries.

However, once it is established that the community is a candidate for MF, there are other factors to consider. The economic environment itself needs to be receptive to the Microfinancing concept. Barriers to entry, free and fair competition and mechanisms to address market failure, are necessary components to a successful MF plan. Governments that are unstable or regions that will not support the goals of MF cannot be successful, therefore should not be pursued. In addition, populations that are geographically dispersed, have a high incidence of disease, or use a barter system rather than cash payments are not suitable for the Microfinancing project (CGAP.org, 2003).

Subsequently, when the suggested guidelines are met, the effort to move ahead with Microfinancing is encouraged. One of the major components for a successful Microfinancing project is the ongoing *commitment* that the lender must make to the poor. The financial institution is advised to revisit their MF business plan as it relates to their mission of serving the poor. When the community is offered the MF project, teaching skills to manage money, asset building and community-wide improvements must be followed by extensive training and support. Lenders should monitor both the growth potential of the individual and the

quality of their management team. The organization previously mentioned, CGAP.org, is a good reference for lenders to use for the guidelines and key principals of Microfinancing.

The objective of MF is simple and relies on collaboration from both the lender and the client. It is the principal of Microfinancing that access to financial services will open the possibilities to create a better life for the poor. For this reason, the most important principal of Microfinancing is to encourage asset building. It is important to remember that poor people save differently than those with disposable income. Saving techniques must be adapted to meet the poor's particular cash flow needs (CGAP.org, 2003). Teaching the proper way to save with Microfinancing projects will result in asset creation and the empowerment of the poor, particularly for women. When people are encouraged to save properly, the accumulation of assets will help them in times of strife.

Assets are items and a state of mind that poor people can acquire to improve the quality of their life. The rationale behind the emphasis for acquiring assets is to benefit the family and the community as a whole. Healthy drinking water, sanitary latrines, and adequate clothing are all the things that escape the reach of the poor. Basic necessities that many people take for granted would become easier for the poor to obtain once they rely on the assets that they have built. There are many different types of assets that people can work to obtain. The goal is for the poor people to have something to fall back in times of need. Physical assets are land, housing, supplies and equipment. In addition, animals that can be used as trade for items are also considered physical assets. Financial assets are also important and necessary to grow a business in order to provide a greater chance for success. Financial capital such as a small savings account, teaches responsibility and prepares people to save for the unexpected. On the other hand, human assets help to aid in the improvement of the entire family unit. The human asset will be measured by the ability of the children to receive an education and the ability of all family members to receive quality

healthcare. Finally, there is the social asset component. Each community participating in MF is expected to enrich the community and work hand and hand to build friendships with similar networks to achieve successful results. Global poverty exists because people are deprived of opportunity and the methods of saving. Most people are willing to work hard to obtain the necessary assets to help their families and their community. When poverty-stricken people have the knowledge and the support to acquire assets, their lives can be changed for the better. The asset-building model helps to empower the people. It brings personal freedom in order to make significant changes in their life and consequently the lives of their families.

In the beginning of the project, members are set with goals to help them move toward a positive and successful experience. In order to assure progress with the MF program, lenders must be willing to perform yearly evaluations to judge if the community is truly climbing out of poverty. The members of the MF project are considered to have moved out of poverty if the family fulfills the following criteria (Grameen, 2007):

- Each member of the family is able to sleep off the floor
- Family members drink pure water and uses sanitary latrine
- Children over the age of six years are going to school
- Family members have adequate clothing for every day use
- Families can afford to take all necessary steps to seek adequate healthcare

The Microfinancing goals are ongoing and will take years of follow-up and re-investment in the community. The eradication of poverty will not be achieved overnight by providing the poor with financial opportunities. However, by extending Microfinancing help to those in need, poverty can at least be significantly reduced.

#### 4. Success Stories

The struggle against global poverty can seem daunting and even overwhelming. The many success microfinance stories really prove that Microfinance is an effective anti-poverty strategy. Microfinance helps lift the world's poorest people out of poverty with dignity. These small loans from the microfinance organizations help the poor start self-sustaining businesses to escape poverty. Microfinance has proven itself as a powerful force in village-based development around the world. It empowers the villagers, especially women, bringing economic success to once impoverished families. Successful microfinance operations in many countries have proved that financial services can be an effective and powerful instrument for poverty reduction by enhancing the ability of poor people to increase incomes, build assets, and reduce their vulnerability in times of economic stress. During our research, we discovered numerous examples of success stories throughout the globe. Microfinance now reaches the world's poorest people across four continents. Tremendous progress has been made since its creation. Indeed, microfinance has grown into a powerful force for social change. We have highlighted some examples from countries in Latin America, Middle East/North Africa, South Asia, and Sub-Saharan Africa.

##### *Latin America and the Caribbean*

We looked at Mexico for a success story. The need for microfinance is huge in Mexico. Mexico is Latin America's second most populous country. This country faces serious poverty and income issues with nearly 10 million people living on less than \$1 a day. While Mexico is one of the largest economies in the region, microfinance has only recently begun to make inroads in Mexico and outreach is still limited. The supply of microcredit is estimated to be less than eight percent of demand. Esmerelda Espinoza is one of many microfinance success stories in Mexico.

Esmerelda Espinoza is on her first loan of 1,000 pesos (\$91) and she hopes to take out a loan of 10,000 pesos (\$914) one day as her investment capacity grows. Esmerelda sells small items such as hair accessories and costume jewelry. She also makes



decorative flowers out of soda bottles. Esmerelda sells these goods on foot by going to markets in nearby towns.

### *Middle East/North Africa*

Poverty remains a critical problem in the Middle East and North Africa. It is estimated that 75 million people in the region live on less than \$2 a day, of which 10-20 million barely survive on less than \$1 per day. In addition, it is also estimated that only 10 percent of the region's potential microfinance market is currently being served. Egypt is the second most populous country in Africa and the most populous in the Arab World. Egypt has a population of approximately 76 million people. Where microfinance is available in Egypt, there is evidence that women are slowly moving their families out of poverty. The following success story is an example of a grandmother that finds hope after devastation.

**Hoda's story:** Hoda, a widow, is raising her grandson whose parents both passed away. At first she could not afford to send him to school because she was dependent on the income he brought in. After taking a microloan from Grameen Foundation partner Al Tadamun, she is now able to send him to school. Hoda is diversifying her products by reselling women's apparel as well as by selling food she makes in her own home. She is known for her delicious chickpea soup.

### *South Asia*

South Asia consists of Pakistan, India and Bangladesh. In these countries one third of the population, this is approximately 440 million people that live on less than \$1 a day. Even though there are many obstacles that exist in reaching such a large number of people who have no access to financial services, microfinance has made an incredible difference. Because of its sheer size of the population living in poverty, India is strategically significant in the global efforts to alleviate poverty. India is said to be the home of one third of the world's poor. The demand for microcredit has been estimated at up to \$30 billion and the supply is less than \$2.2 billion combined by all involved in the sector. The story of a

woman named Ellevva is truly inspirational. She was a day laborer that turned micro-businesswoman.

**Ellevva's story:** Ellevva and her husband live in a small, one room house made of mud and sticks. Before taking a loan from SHARE, both worked as day laborers for meager wages. Usually Ellevva worked for 20rs per day and her husband worked for 40rs per day. They struggled to make ends meet. With her first loan, Ellevva purchased a buffalo that recently gave birth to a calf. It will now produce milk that Ellevva can sell in the market. With a second loan, she purchased two goats and some vegetables. It has only been eight months since her first loan; Ellevva can see the difference it has made in her life.

### *Sub-Saharan Africa*

It is truly amazing to know that 34 of the world's 48 poorest countries are in Africa and more than 300 million of the continent's 725 million people are estimated to live on less than a \$1 a day. The percentage of Africans living in poverty is more than 40 percent. We took notice of the hundreds of MFIs operating as savings and credit cooperatives across the country of Rwanda. Rwanda has a huge need for microfinance with its 52 percent of the population living on less than \$1 a day. The life expectancy is only 39 years old and health issues include AIDS and malaria. The microfinance industry in Rwanda contributes significantly to the provision of basic financial services. The remarkable story of Marie-Claire is giving way to Rwanda rising above the odds.

**Marie-Claire story** Life has not been easy for Marie-Claire. She had a son 17 years ago and then took in her brother's two children when he was killed in the 1994 genocide. Her husband died in 2003 of unknown cause. She remarried and had a daughter. After learning that her new husband drank too much, she left him. She then discovered that she had HIV. Marie-Claire decided to start a business and took a 20,000 franc (\$40) loan from Village Phone microfinance to open the Isimbi Restaurant. The profits from the restaurant help support the four children in her household and pay school fees.

Microfinance has changed her life. Marie-Claire is optimistic about her children's future. Marie-Claire talks about her present and future with a smile on her face. When a customer of her restaurant wants to make a phone call, she proudly takes them to a separate, private room where she has set up her Village Phone. Business turned out to be profitable enough for her to pay her phone loan off in 5 months. In addition to paying school fees for her children, she was able to buy land and the foundation for her new home with the profits from her Village Phone.

### 5. Successful Global Results

The World Bank commissioned a comprehensive study of microfinance in the early 1990s. They focused on three of the largest programs in Bangladesh: Grameen Bank, BRAC, and RD-12. The results of this study showed that the women who were clients of these three institutions increased their household consumption by 18 percent and that by borrowing and participating in microfinance programs, 5 percent of clients escaped poverty each year. Further research done, showed that clients of the MFI Zambuko Trust in Zimbabwe were found to have higher average monthly household incomes and lower poverty rates than non-clients. The results from Peru were also favorable. The results from Peru showed that clients of MIFI' earned \$266 more per household member per year than non-clients. Furthermore, in the Phillippines, 22 percent of the MFI ASHI's clients escaped poverty altogether, as opposed to two percent of non-clients. It is important to point out that MFIs have been found to generate another important benefit. Microfinance creates social capital by promoting horizontal and vertical networks of workers within a community. It also establishes new norms of behavior and fosters a new level of social trust.

In conclusion, eradicating world poverty is within the reach of each one of us. Microfinance has started a global movement. Almost fifty million of the world's poorest families now put microloans to work. There are more than a hundred programs that use the Grameen model to break through poverty. However, with three billion people living on less than two

dollars a day, the untapped market for microfinance remains vast. Microfinance is an effective anti-poverty strategy that can create an impact that lasts well beyond the original investment. Do you realize that the change in our pockets is what people will survive on? Each one of us can help eradicate world poverty by being a banker to the poor.

### References

- "AEI - Short Publications." <http://www.aei.org/default.asp?filter=all>. 2005. American Enterprises Institute. 15 Apr. 2007 <[http://www.aei.org/publications/filter.all,pubID.24913/pub\\_detail.asp](http://www.aei.org/publications/filter.all,pubID.24913/pub_detail.asp)>.
- "CGAP > Key Principles of Microfinance." <http://www.cgap.org/>. 2003. CGAP: Consultative Group to Assist the Poor. 01 Apr. 2007 <<http://www.cgap.org/portal/site/CGAP/menuitem.64c03ec40a6d295067808010591010a0/>>.
- CGPRT Crops. (2006, March). Multi-Faceted Inequality. *CGPRT Flash*, 4(3), p. 2.
- Daniels, John D., Lee H. Radenbaugh, and Daniel P. Sullivan. 11th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2007. 3-451.
- Eichfeld, R., & Wendt, H. (2006, November 4). *Building on Success: The Next Challenges for Microfinancing*. Retrieved from American Institute for Public Policy Research (AEI): <http://www.microfinancegateway.com/content/article/detail/35612>
- "Grameen Bank - Bank for the poor." <http://www.grameen-info.org/index.html>. 1998. Grameen Communications. 13 Apr. 2007 <<http://www.grameen-info.org/bank/GBGlance.htm>>.
- "Grameen Foundation - Fighting poverty with microfinance." [www.grameenfoundation.org/](http://www.grameenfoundation.org/). 2007. Grameen Foundation. 15 Apr. 2007 <<http://www.grameenfoundation.org/>>.
- "Grameen Model - Google Image Search." <http://images.google.com/images?>



'em up approach, in other words, is an easy sell given these two conditions.

The fill 'em assumption appears to be based in the belief that most people will get no more education and training than what they will obtain in their BBA. So, colleges should strive to give students all the business knowledge and skills in their BBA that they will need for the remainder of their business career -- that is, they strive to give each business student the education of a lifetime.

However, an unfortunate result of the "fill 'em up" practice is that most of our business students in their day-to-day study deal with ideas and skills that to them are distant, unfamiliar, and appear sometimes strange to them. Furthermore, and most importantly, many BBAs don't see the relevance, importance, or need for some, perhaps much, of their business education. They come to realize that roughly the same courses are required by other business colleges so they feel they have little choice.

Ad faculty, what we see in our classes is students who appear apathetic, bored and disinterested. "It's too much, too fast," we can imagine them thinking and feeling. One colleague says that BBAs engage in "bulimic learning"; another has said that students do a "memory dump" at semester end, that is promptly forgetting what they've done and worked with in their business courses, so there appears to be little long-term learning.

Since much of this paper comes from my teaching experience, let me add a personal note: In teaching organizational strategy, organization theory, and a few other business courses, I've sometimes wondered what benefit students get from the courses, aside from having to work hard at the tasks I assign them in the course. Although these courses and others can be easily justified as knowledge a well-rounded manager must possess, many students are bored and fail to see to relevance much less the importance of these courses, and I'm sure others, to their careers and lives.

Since the goal here is to fill 'em up, what do we fill 'em up with? The content of the BBA curriculum is the next topic.

## Mistake 2: One size fits all

Most of us who teach in a BBA program believe that all BBAs should have roughly the same foundational knowledge and skills related to business. We believe that there is body of knowledge in business -- as well as in its sub-disciplines -- that is generally accepted and that our BBAs should master. So what's wrong with that?

Let me offer a small story: As another faculty member and I left a Business School faculty meeting, we discussed the vote we just took to require our BBA students to study elementary statistics. In our brief conversation I expressed my unease and reluctance about requiring all our BBAs to take "stats."

Your immediate thought might be, "Of course each manager should understand simple statistics. Isn't statistics commonly used in business to do simple quantitative analysis? Furthermore, it would be embarrassing if one of our BBAs couldn't understand or use a little 'stats' on the job." My colleague's response followed this common support for, and defense of, a place for a statistics course in the BBA curriculum. By the way, his argument is also used to support the inclusion of many other courses in the business curriculum.

I briefly explained my unease to my colleague: Many of our students deeply dislike and very likely fear doing quantitative analysis. Even doing simple quantitative analysis like computing and interpreting financial ratios, for example, evokes deep distaste among many of my students. Furthermore, I said, those who dislike "numbers" will most likely throughout their career avoid a job that requires doing such work.

The unfortunate result of requiring that each BBA take a "package" of courses with little choice or discretion on his/her part is that they feel like they are offered a boiler plate curriculum, only parts of which are relevant to them or interest them. The student's reaction is likely one of bewilderment at the wide range, abstruseness, and remoteness of the courses s/he is required to study. It is no wonder, then, that the end result of this requirement is a response of

reluctance and resistance, along with boredom, to their business course work. Among ourselves we term this a "loss of student engagement" which we deeply bemoan. Our response is to experiment with classroom methods to counteract this disengagement and to overlook the broader curricular design issues involved.

Won't my proposal dumb down and water down the BBA curriculum? Let me say that the latter are goals I strenuously want to avoid. Rather, I am concerned about the broad pedagogic goals of business education: Is it to build the student's strengths or is it to insure uniformity of "product"? Is the goal of a business education to graduate students whose particular and unique strengths have been developed? Or is it to assure that all leave with their BBA having mastery of roughly similar knowledge and skills?

Said differently with a sports metaphor, is the goal of BBA education a group workout – or should it be a matter of one-on-one training? In other words, is it a matter of uniformity or of individual differences? Clearly this choice between broad educational objectives is consequential since the former choice will push our efforts toward developing an appropriate and acceptable curricular "package" to be offered to all. The choices and preferences of the individual will be marginal. [Incidentally, the latter view – give 'em all the same package – nicely supports our current outcomes assessment philosophy.]

If by contrast our concern is to presume and value individual differences, our curricular efforts will go to developing individual strengths whether they are quantitative, social, leadership, verbal, or some combination of these. The student's strengths and interests will guide the faculty's advising rather than curricular requirements for graduation.

As a last note on this topic, let me add that the question of curricular goals becomes particularly important when outcomes assessment enters the picture. What do you measure? If your interest is in the extent to which the knowledge of a group of students conforms to a common standard, your interest will be in the progress of groups. This is our current practice. We aggregate student achievement

by variously defined groups and we compare their progress as a group to the group goals. Our two business accrediting bodies require that we follow the above approach.

By contrast, if our interest is in the progress of individuals, then we will measure and compare the progress of individuals against their own goals. We will be interested in making sure that individual students are meeting their own goals and in the process developing their particular strengths and interests, and perhaps developing new ones.

### Mistake 3: Just the facts

So we've filled our students' toolboxes with a variety of knowledge and skills. To what end? To earn a decent, preferably better than that, living, you respond, to make good careers for themselves. Isn't that reason enough, you add.

Professional schools, whether they specialize in social work, law, or architecture, have a clear, easily understood purpose that they tell themselves and their students. What do business schools tell their students about their purpose? Asked differently, to what large, overarching organizational and social ends should the BBA work towards?

Why is this question of institutional purpose important? An organization's purpose, ends, or goals strongly influence members' behavior and activities to reach them. Purpose, etc. influence what students see as permissible or acceptable means to use.

So what do business schools tell their students about the essential nature of their jobs and of the principal goals of profit organizations in society? Business schools share our society's lack of clarity and uncertainty about these answers. Their response is to lay out a menu of choices for students and as a result give students mixed, confusing messages. In brief, business schools have two broad answers as to organizations' and managers' broad purposes.

In some of our courses we tell business students that organizations have one major goal. Let me illustrate with examples from finance/accounting, marketing, operations, behavioral studies, and human resources courses.

In finance and accounting courses, that goal is said to be to maximize the welfare of investors or owners. This goal may be announced or may be implicit. So if the student accepts this goal as being paramount, organizational and managerial activity ought to minimize costs, including labor, and maximize revenue.

In another course, such as marketing or operations, the student may be told that the top value ought to be to increase customers' welfare; therefore, organizational and managerial activity to increase service or product quality --and to improve the operations processes which allows that higher quality to be obtained -- are paramount goals.

In a few other courses, the behavioral and human resource courses, it is implied that employee welfare is most important so the organizational and managerial activities of properly selecting, training, assessing, and developing employees is most important. Human resources are thought to contribute to organizational success and are therefore the most important goal.

So several BBA courses tell the student what the one most important organizational value ought to be, and therefore what he should strive to work for on behalf of his/her organization. Unfortunately, this most important organizational value may shift with the subject taught.

A very different approach, usually taken in courses dealing with the organization's role in society or perhaps those dealing with laws that regulate organizational action, takes a much broader and more nuanced view of organizations and their role in society. The BBA student is told that organizations exist to manage society's resources wisely; that organizations function amidst many interested stakeholders; and that the principal task of the organization -- and therefore of managers -- is to achieve and maintain a balance of the conflicting forces on the organization that these various stakeholders exert.

Given these possible answers -- one goal or a balancing of conflicting goals --, our society hasn't clearly and with certainty answered the question as to

what the for-profit organization's supreme value ought to be. So it should be no surprise that business schools also don't have a clear answer. By and large business schools have constructed a value-free curriculum, one in which organizations are seen as producers of goods or services, and management is seen as a generic activity -- the nature of the product or service or the transformation process used to create it isn't all that important as long as the organization conforms to relevant laws. So assembling cars, operating a nursing home, or running a call center are seen as morally equivalent activities.

Business schools believe that if they lay out the possible alternative values, students will on their own and with the help of their employer arrive at a satisfactory and socially acceptable profile of values. Such a value-free stance allows the business school to maintain a neutral stance, and avoid offending any stakeholder or employer of its graduates. However, what is a graduate to think when confronted with a question of to outsource or not, a question which touches very strongly on the future of employee or community welfare as well as the greater social welfare? Which value in this situation does he advance?

Our students' response -- in this situation and others -- not surprisingly is quite different from we had hoped for. Presented with this array of conflicting values throughout their business education, most BBAs subscribe to the simplest and most apparently appealing view as to what the organization's most important value should be: The organization, and therefore its managers as its principal servants, exists to maximize owner/shareholder wealth.

Yet this is an answer that is increasingly uncomfortable to offer and is very easy to question. It is also one likely to be closely scrutinized in the days ahead. In view of what's happened recently in the financial services industry and its effects on the US and global economy, however, it's likely that our country will begin to re-think its view of profit organizations. If that happens, business schools will need to re-think what they teach their students about the role of organizations and managers in society.

## How could BBA curricula look?

### A few alternatives

In summary then, BBA programs give our students too much, with too little choice, and without a firm idea as to what it's all for. There are, however, alternatives to our current BBA "package."

**1. Fill 'em Up.** Train and educate BBAs for their first job, and perhaps second job, only.

Let's leave the sweeping and abstract courses for a latter part of students' career after they've had a chance to see some dilemmas up front and posed some questions to themselves. Some subjects require some, or perhaps considerable, business maturity and are best left for the middle part of peoples' career. These include ethical, macro-organizational, and strategic questions.

This prescription also implies that the courses we offer our managers-to-be should be oriented to help them at the beginning of their career. Courses should be practical and concrete and help them do their day-to-day tasks.

**2. One Size Fits All.** Let students choose as many of their business courses on their own as practicable; give them as much leeway as possible in such choices.

There often isn't much leeway offered to students in their major courses, especially in specialist majors such as human resources, finance, accounting, or information technology. Such majors certainly need a core of knowledge and skills upon which there is quite a bit of agreement. Often there's little debate about the content of such majors.

However, when it comes to the foundation courses, those all business students take in common, we can give students considerable discretion. Let students go with their interests. Some may strongly favor "word" courses such as behavior, organization theory, human resources and the like; others, "numbers" courses

such as finance, statistics, and management science. In any case, let's let students be guided by their own interests.

**3. Just the Facts.** With respect to the fundamental values of business, let's present a more unified and thoughtful front to students.

Tell students that organizations and managers exist to serve society and that organizations and managers need to be responsible in their actions with respect to their various stakeholders, including employees. Owners'/investors' interests are only one of the various interests involved; others' interests are more important.

Who knows? Such curricular changes may bring us eager and happily hardworking students.

### Summary

Well meaning, we strive to give our BBAs too much, too soon. We give them too much of what they don't want and can't use, often at a point in their career when they aren't ready to receive it. And other than wishing them good luck in their search for a job in which they can use this knowledge and these skills, we don't give them a firm idea as to what this is all for.

The result is that they are often confused, often reluctant, and sometimes resistant learners. We as their teachers confront this confusion, reluctance, and resistance in each class. We vainly fight this ennui in each class.

As faculty and administrators our answer may be to give our students less but to give them more of what they need for their first job, presented in an overarching, meaningful framework. As a result we might find them to be much more attentive and willing students. Perhaps they'll even be grateful.

---

Gabriel Jaskolka is an Associate Professor of Management at Tiffin University, Tiffin, Ohio.

# PROCESS THEORY APPROACHES IN SME ORGANIZATIONS TO ENTERPRISE RESOURCE PLANNING SYSTEMS (ERP) IMPLEMENTATION LIFECYCLES

Robert L. Kachur – Richard Stockton College of New Jersey

Ajantha Herath – Richard Stockton College of New Jersey

---

## Abstract

Enterprise Resource Planning Systems (ERP) have become the defacto IS system for major organizations during the past 15 years. The Small and Medium Sized (SME) marketplace is the focus market segment for software developers, consultants and researchers. The implementation of ERP systems have seen perilous times as organizations encountered numerous problems, financial strains, organizational difficulties, organizational cultural challenges, resulting in successful implementations but also failures to the extent of bankruptcy filings.

This paper will examine the various process theory methodologies available to ERP implementation project teams, Champions, consultants and software vendors as alternative approaches for a successful implementation. Selection of an ERP and a guiding process methodology is more crucial to the SME organizations that typically face more organizational, financial, cultural, and technical constraints than large-scale organizations. These process theory methodologies have their genesis in classic MIS SDLC, yet the different models have diverse beginning and end phases, and inclusions.

---

## Introduction

In the current global economy environment, "SMEs' performance is essential for the development of any country's economy" and provide the foundation for future economic growth and prosperity with their growth into large enterprises (Abouzeedan and Busler, 2004). Statistics indicate that historically most new businesses do not survive the first five years of operations (Castrogiovanni, 1996; Monk, 2000).

There would be a very positive impact on the global economy if a higher proportion of these fledgling enterprises survived and grew into global economy competitors (Monk, 2000). Part of this ability to compete and survive is based on the ability of the enterprise to create, analyze and ultimately utilize business information systems about its operations to provide quality leadership in products, improve business processes, enhance its supply chain, and create better customer relationships (Schubert & Leimstoll, 2007).

From an enterprise research perspective, small and medium sized enterprises (SMEs) are the leading segment of organizations that provide a wide variety of researchable theories and experiences. Not only are these organizations crucial to industrial economies, but also demonstrate operational qualities that promote cause and effect relationships that are proving to be enormously interesting to researchers (Katz, Aldrich, Welbourne and Williams, 2000).

The majority of ERP systems were implemented in large-scale organizations in the mid to late 1990's to the current day and generally were done to: 1) overcome the millennium date problem (often known as the Y2K initiative), 2) resolve issues of disparate systems within the organization, 3) resolve poor quality/visibility of information, 4) resolve lack of business processes and/or systems not integrated, 5) replace obsolete systems, 6) assist in integrating acquisitions, and 7) resolve issues of lack of support for organizational growth (Deloitte, 1999; Plant & Wilcocks, 2007).

Without due diligence, many organizations will find the ERP software system dictating the operational

aspects of the business (Bajwa, Garcia & Mooney, 2004). Consequently, the challenge for the adopting organization is to properly choose how various processes will be implemented within the programmatic (configuration) options. Furthermore, it is critical how these options are selected to maximize the efficiencies and effectiveness of the organization (Shanks, Parr, Hu, et. al., 2000). Given these factors, issues related to user satisfaction and perceived usefulness in the ERP implementation must be considered (Zviran, Pliskin, & Levin, 2005). Even considering the highly configurable nature of ERP systems (Bancroft, Seip & Spregel, 1998), the inherent data structures, programming code, and existent assumptions about business processes can impose a behavior on organizations that many management teams will find difficult to adopt (Piszcalski, M., 1997; Al-Mashari, Al-Mudimigh & Zairi, 2003).

A significant number of organizations, for existing legitimate managerial reasons: financial, personnel, infrastructure resource limitations, etc. have not considered adoption of a new or upgraded system (Adam and O'Doherty, 2000). It is important to note that simply having an accounting information system (AIS) is not the equivalent of implementing a true ERP for the enterprise. AIS are typically a component, module, or subsystem of a complete ERP system.

Some level of SME organizations were compelled, or were in a position to be strongly influenced by a vendor/client relationship in their value chain to adopt a particular system, even though it may not be the most appropriate fit. Some SME organizations may be legal units of some larger organization and may be essentially forced to adopt a particular enterprise solution to remain within the strategic goals of the parent organization. It has been suggested by other researchers (Sistach et. al. 1999; Sistach and Pastor, 2000) that this phenomenon may also occur in Supply Chain Management (SCM) situations and other modules.

There are numerous factors affecting successful implementation of ERP programs into any

organization. These have not been fully identified and described for the SME market, although many studies have addressed these factors for the larger scale market. A recent research effort (Argyropoulou, Ioannou, & Prastacos, 2007) specifically addressing SME implementations, reported that these organizations were much more likely not to use a structured methodology for implementation. Further the study reported that SMEs were either not familiar or unsophisticated with techniques such as business process reengineering (BPR) and change management.

The Data Envelopment Analysis (DEA) model was developed in 2004 to help mid-size organizations select ERP systems to best assess costs with capabilities/services to evaluate relative performance. Most SME firms lack the technical and financial resources to make the appropriate selection of ERP software. Historically SME IS professionals often used software selection guides or surveys to choose an organizational software package (Fisher, et. al., 2004).

### Small and Medium Enterprises (SME)

Many organizations are aware of limiting factors, subsequently cautious and hesitant to implement new ERP solutions due to well publicized problems and failures, and the financial and technical resources necessary. However, SME organizations are in a unique position to leverage this risk and financial commitment with a significant opportunity to gain a considerable competitive advantage and exploit future system evolutions by adopting ERP "best practice" systems (Wang, Ragsdale, & Schuler, 2006).

### SME organizations – marketplace definition

The market segments for software products, particularly ERP solutions, are differentiated into several strata including: large organizations, SME organizations, and SMB markets. There are no generally accepted definition parameters of SMEs in the United States, including the federal government (Ou, 2006).



The following distinctions in market profiles are adopted for this paper and were sourced from the *Journal of Accountancy* (Johnston, 2003). *Large organizations* typically implement full ERP software applications and have annualized sales in excess of \$500 million, and have more than 500 employees. *Small to medium enterprises* (SME) have sales up to \$500 million, and have no more than 500 employees. This stratum represents more than 84,000 U.S. companies. *Small to medium businesses* (SMB) have sales up to \$100 million, and have no more than 100 employees. This represents more than 516,000 companies in the U.S. SME organizations that have < 500 employees and <\$500 million in annualized sales is the focus and definition adopted within this research.

#### SME organizations – ERP perspectives and challenges

In a report released in March 2006, *Thinking big: Midsize companies in the United States and the challenges of growth*, the Economist Intelligence Unit interviewed 240 U.S. senior executives from a total 3,722 global midsize company business executives using similar SME segment parameters. These firms indicate an aggressive expansion of their customer base using a strategy of product and service diversification to secure new geographic (global) markets. The keys to successfully infusing this strategy are: improved operating efficiency, excellent work force, and *critically efficient information technology infrastructure* (Ramaswani, Holloway & Kenny, 2006). The executives identified growth priorities substantially influenced by a strong IS environment and information systems. The executives indicate IS are critical to enabling growth (76%), and a deficiency of talented staff (36%) to manage the growth and constraints such as resistance to change and lack of technical skills, are major impediments to IS investment (Ramaswani, Holloway & Kenny, 2006).

The Aberdeen Group (2006) provided their *ERP in the Mid-Market* benchmark report. Their definition of SMEs was much larger but findings were similar in most regards, but did focus more on the larger

companies that tended to be financially and organizationally related to larger Fortune 1000 and S & P 500 type organizations. There were noteworthy analytical points, such as the correlation between ERP functionality utilized and company size. Their analysis demonstrated that functionality rose steadily and peaked at the \$100-\$250 million size organization (the typical definition of an SME), and then dropped. They concluded these companies did not have unlimited resources like their larger competitors, but have sufficient resources to maximize their implementations value and have learned to leverage these investments, with a greater incentive for productivity and efficiency (Aberdeen Group, 2006).

#### ERP implementation

##### *Historical perspective*

In a classic MIS article, Kydd (1989) suggests that "failure to address the uncertainty and equivocality that exist during the development and implementation of a new management information system is a major reason why projects fail". *Implementation* as a process has different definitions and connotations, spanning from the fully encompassing process of selection and ultimate upgrades years hence, vs. a very narrowly defined step in one project phase. This paper will adopt the broader, fully encompassing process approach definition that includes a complete process theory ERP lifecycle.

Supporting research indicates a sound IT strategy is linked to a full understanding of any organization's business strategy. "IT strategy is the alignment of the information technology infrastructure and investment with the business' strategic direction" (Norris, Wright, et. al., 1998). ERP popularity can be traced to greater global organizational activity, mergers and acquisitions, short product life cycles, and system disaster fears from older legacy systems (Bingi, Sharma, & Godla, 1999).

There are a number of primary reasons to implement an ERP system (Nadkarni & Nah, 2003). ERP can integrate disparate domestic and global systems

under one enterprise operation, resulting in one consolidated database and the elimination of "islands of automation" (Kerr, 1988) that so politically and operationally plagued IS systems in the 1975-2000 time frame. Secondly, the "Y2K" date bug was effectively eliminated, and the organization/enterprise was expected to benefit with greater functionality and improved business processes; although fueling the original efforts, this not no longer exists as a major implementation factor.

Too often ERP solutions were viewed by a majority of enterprises as a panacea for their organizational ills. Many of these implementations were failures (at one point in the late 1990's the failure rate was approaching 70% by some professional estimates) for any number of reasons, while some implementations were limited successes. There were many implications to managements of these organizations and they also had a profound effect on the accounting functions and financial and managerial reporting efforts. The literature reports have identified countless successes and failures. Some have been such monumental failures that lawsuits were filed and some organizations have been forced into bankruptcy proceedings (e.g. FoxMeyer Drugs driven into bankruptcy, 1998) from the subsequent business difficulties. Several implementations like Hershey's have seen copious financial losses while others encountered extensive costs when the realization that the software would not fit the organization's needs, similar to Dell's circumstances (Bingi, Sharma, & Godla, 1999; Esteves, & Pastor, 1999; Shang, & Seddon, 2000; Umble, & Umble, 2002).

ERP systems have taken a more dramatic role than originally envisioned in the early 1990s. Organizations are rapidly being tested and asked to respond with qualified and well-trained professionals utilizing complex information systems (ERP) to meet not only the daily informational and operational needs, but also an ever-expanding governmental compliance initiative, e.g. SOX 404 compliance. Consequently, managements are facing an increasingly dedicated technological environment with significant challenges. In the last 18 years (1990 – present), information technology provided a

methodology for contemporary organizations to integrate supply, production, and delivery processes. Prior competitive advantage in these organizations was persistently maintained with the previous deployment of technology into physical assets and excellent balance sheet management, but this could no longer be the champion of growth and management (Kaplan & Norton, 1996; Swanson & Ramiller, 2004).

A fully integrated ERP effectively defines the tasks and objectives of an organization. "The information age organization operates with integrated business processes that cut across traditional business functions. It combines the specialization benefits from functional expertise with the speed, efficiency, and quality of integrated business processes" (Champy & Hammer, 1993). Additionally "all employees must contribute value ... by the information they can provide. Investing in, managing, and exploiting the knowledge ... has become critical to the success of information age companies" (Kaplan & Norton, 1996; Jacobs & Whybark, 2000). In contrast to ERP, *legacy systems* are long-tenured, non-ERP, dedicated mainframe systems where each organizational subdivision may have its own dedicated computer system, often not integrated with other systems. Historically these have also been referred to as "islands of information" or "islands of automation" (Kerr, 1988).

ERP has been historically touted as cheaper to purchase and install/maintain than to classically construct legacy systems that are replaced, thus appearing to be a panacea to large and complex organizations (Nah & Delgado, 2006). ERP are perceived to be highly flexible and adaptable. History has proven ERP can generate organizational behavior restrictions, and behaviors that organizations did not expect. The discipline of the programming code, the DBMS complex data structure, the intricate integration of applications, and built-in assumptions of normal business processes, can and have taxed and frustrated many organizations.

#### **"First/Second/Third Waves"**



The "First Wave" of ERP implementation presented a fundamental transformation of any organization. Adoption and implementation of ERP systems experienced the "First Wave" as a far-reaching scope of business processes impact, and generates a paradigm change to businesses/organizations simply due to the magnitude of the changes. The efforts were predominately focused on the technical aspects of the implementation, i.e. software, infrastructure, basic training initiatives. However the business process changes envisioned and deemed necessary usually generated low priority. Hence, business process changes and operational enhancements were fundamentally deferred and became the major factors of the "Second Wave".

Marketers, researchers, practitioners, and software vendors coined the "Second Wave" and "Third Wave" of ERP implementations during the past 8 years. These characterize the time frame in the system implementation and operation, after the base system has been installed, and the "go live" point has occurred, and refer to major updates and enhancements to the software. These normally include business processes such as the implementations of Customer Relationship Management (CRM) and Supply Chain Management (SCM) modules. These efforts all provide *value-added* contributions to the ERP system and take the organization to the point of leveraging the system for overall operational and financial gains, i.e. ROI opportunities and value chain optimization (Hawking, McCarthy & Stein, 2004; Stein, Hawking, & Foster, 2004, 2003; Smith, & Fingar, 2003; Deloitte Consulting, 1999).

In summary, companies were seeking *efficiency* benefits, higher-order *effectiveness* benefits, and ultimately *transformation*. Transformation is the ability of an organization/strategic business unit to fundamentally change how they conduct their business and associated processes (Deloitte Consulting, 1999).

#### Success and failure parameters

The ERP implementation efforts suggest an essential issue: "the key questions about enterprise systems

from the perspective of an adopting organization's executive leadership are questions about success" (Markus & Tanis, 2000). These questions are also posed by others (Davenport, 2000a, 2000b; Deloitte Consulting, 1998; Markus & Tanis, 2000; Ross & Vitale, 2000) all noting the multidimensional accrued benefits of these systems, running the spectrum of operational improvements to enhanced decision support systems for strategic goals.

Deloitte Consulting (1998) published a study that was based on in-depth interviews of 62 Fortune 500 companies, and although not an academic composition, it is accepted in the ERP industry, academics and professionals serving the industry as a benchmark publication in ERP implementation efforts. The study concludes: "Until now, conventional wisdom saw going live as the end. In sharp contrast to this view, our study uncovers at least two distinct waves of ERP enabled enterprise transformations. The First Wave refers to the changes to an organization that include and accompany going live with ERP. The Second Wave, on the other hand, refers to the actions that are taken after going live that help organizations achieve the full capabilities and benefits of ERP enabled processes" (Deloitte Consulting, 1998).

Success in information systems (IS) implementations has long been a focus of academic research efforts (Lyytinen & Hirschheim, 1987; DeLone & McLean, 1992, 2003; Ballantine et. al., 1996). Others research efforts focused on the measurement of success, antecedents and explanations of success or failure (Markus, Axline, Petrie & Tanis, 2000; Koh, Soh, & Markus, 2000). The exigency affiliated with success or failure in ERP systems results from the inherent risks and colossal costs, sometimes rivaling the expected benefits of these systems. In many cases, failures have led to losses and bankruptcies (Bulkeley, 1996; Davenport, 1998; Bingi, Sharma, & Godla, 1999; Esteves, & Pastor, 1999; Markus & Tanis, 2000; Ross & Vitale, 2000; Shang, & Seddon, 2000; Davenport, 2001; Umble, & Umble, 2002).

There are different dimensions, e.g. technical, financial, economic, operational or strategic that can

be assessed to measure success in ERP implementations (Markus, et. al., 2000). Success can and should be measured at different time points (Larsen & Myers, 1999) to assess value, with evidence pointing to changing levels, e.g. early failure but later success. Paradoxically, research indicates performance slides after initial implementation with moderate to severe business disruptions (Ross & Vitale, 2000).

#### ERP implementation – lifecycle models

The literature on ERP lifecycle models is somewhat dispersed with the resulting absence of a generally accepted enterprise lifecycle model (Rosemann, 2003). This is curious considering the extensive research conducted on systems analysis and design and software development without a significant effort towards the management of enterprise systems (Gable et. al., 1997; Klaus, Rosemann, & Gable, 2000). Currently, there are a number of software development models, (e.g. waterfall model, spiral model), but no standardized ERP lifecycle model. There is a concentration on implementation issues and critical success factors both in the literature and the trade press (Bingi, Sharma, & Godla, 1999; Holland, Light & Gibson, 1999; Stefanou, 1999; Sumner, 1999; Nah, Lau & Kuang, 2001; Umble, Haft, & Umble, 2003). Process theory in a case study (Koh, Soh & Markus, 2000) was contrasted with variance theory utilizing a ERP process model. Several authors (Shanks et. al., 2000; Markus & Tanis, 2000; Nah & Delgado, 2006; Plant & Willcocks, 2007) stress the point that an ERP implementation project is best conceptualized as a business project and not simply the installation or update of an innovative technology.

Cooper and Zmud (1990) developed one of the first ERP related models that includes the following six lifecycle stages in an ERP implementation: 1) *initiation phase* – establishing the business case and identifying the problems and opportunities, 2) *adoption phase* – gain organizational support for the implementation effort, 3) *adaptation phase* – acquire the system, installation, maintenance, 4) *acceptance phase* – system has complete functionality and user

training completed, 5) *routinization phase* – normal operations in daily activity, and 6) *infusion phase* – incremental organizational effectiveness.. These stages have similarities to other researcher-developed models and as they are examined, these lifecycle models tend to have between three and six phases. Each of these phases' success can be gauged and evaluated by a series of defined metrics including factors of human and organizational learning.

There are numerous highly referenced alternative ERP lifecycle models emanate from, Bancroft, (1997); Bancroft, Seip and Sprengel, (1998); Gable, Scott and Davenport, (1998); Esteves and Pastor, (1999); Holland and Light (1999); Holland, Light and Gibson, (1999); Parr, Shanks and Darke, (1999); Markus and Tanis (2000); Parr and Shanks, (2000); Ross and Vitale, (2000); Sandoe, Corbitt, and Boykin (2001); and Ahituv, Neumann and Zviran (2002). Essentially, all of the above models distinguish similar, but not entirely identical phases; additionally, they group and name these phases differently.

Bancroft (1997) proposed a lifecycle model with an emphasis on the initiating phases starting with focus to the actual implementation. Gable, Scott and Davenport (1998) created a different approach with an initial focus on the consulting effort, through implementation to phases of training and knowledge transfer. Esteves and Pastor (1999) have six phases also, but they included a final phase, *retirement* dealing with the next evolution of the ERP software. Markus and Tanis (2000) compressed the lifecycle model down to four phases of *chartering, project, shakedown, and onward and upward*. Finally, Ahituv, Neumann, and Zviran (2002) developed a four-phase model, including *selection, definition, implementation, and operation* that closely resembles the actual implementation phases expected in SMEs.

#### Structured lifecycle models – process theory basis

The implementation of an ERP system is the result of many phases of organizational, professional and consulting firm review and analysis. Often this is a structured format similar to the MIS concept of SDLC. Some of these phases become nebulous and overlap during the actual implementation projects.

Implementation is often confusingly referred to as the entire adoption, installation, and operational process of bringing an ERP system online, yet alternately can refer to the single phase within the overall project where the software system becomes operational.

Cooper and Zmud's (1990) phases of *adaptation, acceptance and routinization* are discussed by many researchers and practitioners as the "Second" and "Third Waves" of ERP implementation and post-implementation activity. Alternative ERP lifecycle models create a full spectrum of grounded theory: Esteves and Pastor (1999), Markus and Tanis (2000) and Ahituv, Neumann and Zviran (2002). Substantively, all four models address near identical phases, although grouped and titled differently.

#### Process Theory Approach – ERP Lifecycle Models

There are a number of ERP lifecycle models identified in the literature. Included in this detail review are a representative group that are chosen because of their multiple references in other literature or their inclusion of different phases of the lifecycle model: 1) Cooper and Zmud (1990) advocate a six phase model, similar to SDLC, but with different and more descriptive names for the phases and some differences as to where various sub-phases should be included, 2) Esteves and Pastor (1999) advocate a six phase model very similar to classic SDLC models, 3) Ahituv, Neumann and Zviran (2002) developed a four phase model, including selection, definition, implementation, and operation, and 4) Markus and Tanis (2000) developed a simpler four phase system, that essentially merged most of the above phases.

#### ERP lifecycle model – Cooper and Zmud

The Cooper and Zmud (1990) model identifies six phases: initiation, adoption, adaptation, acceptance, routinization, and infusion. This approach looks upon IS implementation from a general perspective and is somewhat similar to Esteves and Pastor, but with different nomenclature.

The lifecycle model includes six phases of ERP implementation during its life in an organization (see Figure 1).

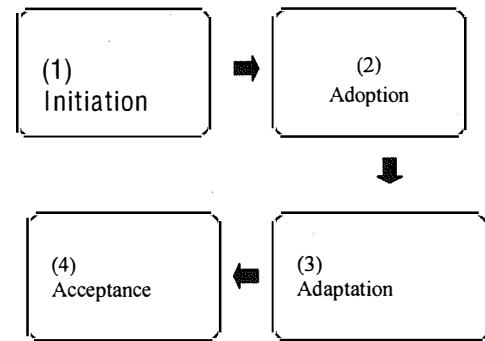


Figure 1. ERP Lifecycle model – Cooper & Zmud

The *initiation phase* is characterized by identifying the organizational problems and opportunities for IS solutions. Likewise, these are seen as "push" "pull" alternatives. "Push" as a result of new technological innovation and "pull" as a result of an organizational need. The *adoption phase* has various activities and negotiations occurring to acquire and solidify organizational support for the implementation effort of the IS solution. The *adaptation phase* has the actual system developed or acquired, installed and maintained. This is the main core of the implementation process and requires great managerial, financial and human resources support. The *acceptance phase* sees the system operated as a live system with complete feature functionality, including user and system training. Acceptance however does not assume full operational functioning, just acceptance that the system meets all operational compliance factors. The *routinization* assumes that the IS system, in this instance the implemented ERP system is now operated in daily activity. The *infusion phase* assumed incremental organization effectiveness as a result of normal system operation. The system is used to its fullest potential.

#### ERP lifecycle model – Esteves and Pastor

Esteves and Pastor (EP) (1999) suggested an ERP lifecycle model, representing the various phases that an ERP system would chronologically implement in an organization. The lifecycle is structured in phases going through the whole ERP project and functional life: adoption decision, acquisition, implementation, use and maintenance, evolution, and retirement.

The lifecycle model includes six phases of ERP implementation during its life in an organization (see Figure 2).

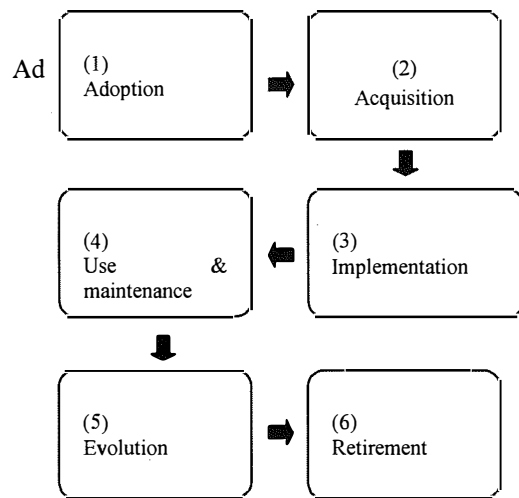


Figure 2. ERP Lifecycle model – Esteves & Pastor

The *adoption decision* represents the time when management determines that a new ERP system is necessary for any number of reasons. The phase includes systems requirements definition, the desired goals and benefits, and the impact of the ERP system adoption. The *acquisition* relates to the decision of system choice as a result of the systems requirements definition in the adoption phase. This also considers the system that needs the least amount of customization. The *implementation* deals with the actual adoption of the system into the computer infrastructure and any customization necessary to make the system functional. This phase is also characterized by the greatest degree of training. The *use and maintenance* deals with the functionality, usability and adequacy of the system to the organization. Post implementation issues include required maintenance, updates, correction of malfunctions both programmatic and option selection, systems operational optimization and overall general improvements. The *evolution* represents the period when additional capabilities are integrated into the ERP system for additional benefits. The evolution phase has benefits both “upwards” and “outwards”. The *retirement phase* deals with the period when an ERP solution no longer

meets organizational goals and objectives and needs to be replaced (Esteves & Pastor, 1999).

#### ERP lifecycle model – Ahituv, Neumann, and Zviran

This model developed by Ahituv, Neumann, and Zviran (2002) is a blended model of traditional SDLC, Prototyping and Application Software Package purchase approaches. This model is comprised of four phases: selection phase, definition phase, implementation phase, and operation phase. There are many overlays and consistencies with the previous three models, and is probably most closely related to the Esteves and Pastor ERP lifecycle model, with some phases combined.

The Ahituv et. al. model is similar to the others, but has various detailed activities identified in each of the phases. It is a blended approach of three traditional system development models the authors defined, Information System Life Cycle (The Waterfall Model) and very much like classic SDLC, Prototyping Model that is the antithesis of SDLC and creates a prototype system for further development, and Application Software Package Model that is related to the purchase of a preexisting system.

The authors also identified a series of characteristics that would influence the selection of an ERP lifecycle model for development methodology: system complexity, system strategic importance, system flexibility, application scope, technological infrastructure, organizational process changes, intensity of relationship with vendor, employment of external consultants, and users’ involvement.

The lifecycle model includes four phases of ERP implementation during its life in an organization (see Figure 3).

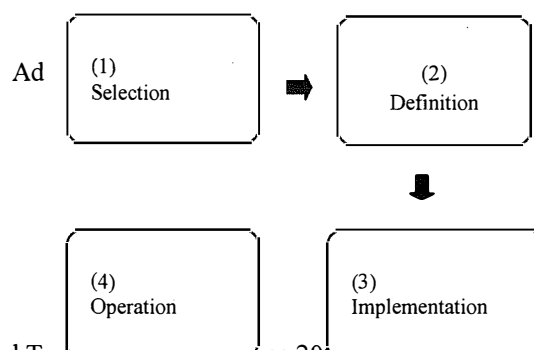


Figure 3. ERP Lifecycle model – Ahituv, Neumann, & Zviran

The first or *selection phase* identifies the most appropriate ERP package and includes the definition of project objectives, collection of vital information about systems, vendors, and consulting firms, needs analysis, feasibility study, contract negotiation and signing. The second or *definition phase* is the shortest in duration and includes all preparatory activities for the following implementation phase. The third or *implementation phase* is the predominant phase of the ERP lifecycle and is designed to provide maximum organizational efficiency and effectiveness plus financial rewards upon movement into the operation phase. The phase is characterized by the iterative implementation of various system modules passing through activities to either add processes or organizational layers to the accomplished project objectives. The fourth and final phase is the *operations phase*. Here the system is brought to normal operations and is the longest of the phases, potentially lasting multiple years.

#### ERP lifecycle model – Markus and Tanis

The Markus and Tanis (2000) lifecycle model created a unique phasing approach unlike the other models. Their proposed ERP lifecycle model reflects a more streamlined and simplified approach. Their life cycle consists of four phases: chartering, project, shakedown, and onward and upward. These phases have more commonality with the Cooper and Zmud lifecycle model than with Esteves and Pastor's approach. They obviously combine some elements into broader categories, and thoroughly ignore any retirement and replacement issues.

The lifecycle model includes four phases of ERP implementation during its life in an organization (see Figure 4).

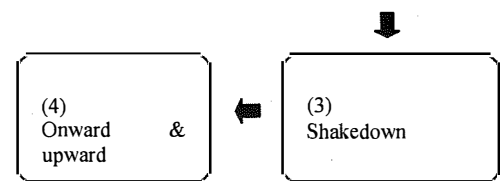
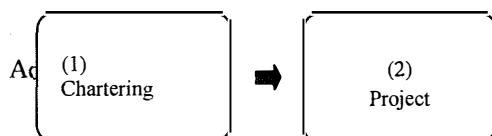


Figure 4. ERP Lifecycle model – Markus & Tanis

The *chartering phase* is the first in the process and includes all elements related to the original vision to adopt or upgrade an ERP system. This includes the feasibility studies, initial system design and selection process of the overall implementation process. The scheduling and planning for the system implementation is completed and all project leaders, champions and consultants are selected. This effectively is the combination of at least the first two phases in the other lifecycle models.

The second or *project phase* includes all installation and most implementation issues. The system is rolled out to the users, all training occurs for users and systems personnel, all data conversion activity occurs along with required acceptance testing and any integration with existing legacy systems. This includes parts of a number of other phases in each model.

The third *shakedown phase* has a definite time line delineated by the point of normal operations commencement by all users, though the point of when normal daily routine activity begins. Essentially this extends through all bug fixes and performance fine-tuning resulting in a stabilized functional system.

The fourth *onward and upward phase* assumes that the system has reached normalcy, i.e. routine and efficient operational status. This phase includes all time from this initiation point until the system is replaced or upgraded. When these events occur, it is assumed that the process restarts at the beginning of the lifecycle similar to Cooper and Zmud. Key elements of this phase include assessing the actual and perceived benefits as a result of the implementation process, advancing the training and

skill sets of the users and upgrading the software plus instituting all business process improvements.

The interesting element of the Markus and Tanis model is that all implementation and upgrade operations can use each of the four stages of the model. Any upgrades will begin again with the chartering phase and stage through all phases until completion.

The Markus and Tanis model is generally accepted as the simplest to understand and reference. It provides a well-delineated set of phases and also includes the contingency for upgrading of the system and replacement with a new evolution of IS systems. The Ahituv model could be the closest to what the real world has migrated into over the past ten years and has the most detailed structure and would also be an effective choice. This option would probably be more appropriate in large scale ERP implementation efforts since these enterprises are characterized as more complex and have more resources, both human and financial, to utilize in the implementation. Attempting to utilize this approach in the SME marketplace could burden the enterprise and the implementation team to a greater degree than is appropriate for the SME scale.

### Summary

SME certainly have different constraints than the large-scale organizations that led the ERP marketplace for many years. SME do not have the same financial resources, in-house technical competencies, and often have unique organizational cultures, all generating greater risk for any attempted ERP implementation. There are countless studies of critical success factors to promote a positive result in these efforts. Choosing a process theory approach combined with vendor tools, an exceptional ERP implementation team, a strong project Champion, and most importantly management commitment promote a successful project.

The process theory approach should help the project team and executive management understand and plan for the various stages the implementation will progress through. Some SMEs will be forced to take

steps such as the "big bang approach" rather than a "phase-in" approach because of some of the constraints. But in all cases, this is a significant undertaking for any organization, and without a good structured plan based on one of the process theory models, organizations will do little to promote risk aversion in their implementation efforts.

### References

- Aberdeen Group, (2006). *ERP in the Mid-market: an Aberdeen benchmark report*. Aberdeen Group, Boston, MA.
- Abouzeedan, A., & Busler, M., (2004). Typology analysis of performance models of small and medium-size enterprises (SMEs). *Journal of International Entrepreneurship*, 2(1), 155-177.
- Adam, R., & O'Doherty, P., (2000). Lessons from enterprise resource planning implementations in Ireland—towards smaller and shorter ERP projects. *Journal of Information Technology*, 15, 305-316.
- Ahituv, N., Neumann, S., & Zviran, M., (2002). A system development methodology for ERP systems. *Journal of Computer Information Systems*, 42(3), 56-67.
- Al-Mashari, M., (2003). A process change-oriented model for ERP application. *International Journal of Human-Computer Interaction*, 16(1), 39-55.
- Al-Mashari, M., Al-Mudimigh, A. & Zairi, M., (2003). Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research* 146(2), 352-364.
- Argyropoulou, M., Ioannou, G., & Prastacos, G., (2007). Enterprise Resource Planning implementation at Small and Medium Sized Enterprises: an initial study of the Greek market. *International Journal of Integrated Supply Management*, 3(4).
- Bajwa, D. S., Garcia, J. E., & Mooney, T. (2004). An integrative framework for the assimilation of enterprise resource planning systems: phases, antecedents, and outcomes. *Journal of Computer Information Systems*, 44 (3), 81-90.



- Ballantine, J., Bonner, M., Levy, M., Martin, A., Munro, I. & Powell, P., (1996). The 3-D model of information systems success: the search for the dependent variable continues. *Information Resources Management Journal*, 9(4), 5-14.
- Bancroft, N., (1997). *Implementing SAP R/3: how to introduce a large system into a large organization*, 2<sup>nd</sup> edition, Prentice Hall.
- Bancroft, N., Seip, H. & Spregel, A., (1998). *Implementing SAP R/3*, Greenwich, CT: Manning Publications Inc.
- Bingi, P., Sharma, M., Godla, J., (1999). Critical issues affecting an ERP implementation. *Information Systems Management*, 16(3), 7-15.
- Bulkeley, W., (1996). A cautionary network tale: FoxMeyer's high-tech gamble. *Wall Street Journal Interactive Edition*.
- Castrogiovanni, G., (1996). Pre-startup planning and the survival of new small businesses: theoretical linkages. *Journal of Management*, 22(6), 801-823.
- Champy, J. & Hammer, M., (1993). *Reengineering the corporation: a manifesto for business revolution*. New York: HarperBusiness.
- Cooper, R., & Zmud, R., (1990). Information technology implementation research: a technological diffusion approach, *Management Science*, 36(2), 123-139.
- Davenport, T., (1998). Putting the enterprise into the enterprise system, *Harvard Business Review*, July/August, 1998, 121-131.
- Davenport, T., (2000a). *Mission Critical: Realizing the Promise of Enterprise Systems*, Boston: Harvard Business School Press.
- Davenport, T., (2000b). The future of enterprise system-enabled organizations. *Information Systems Frontiers*, 2(2), 163-180.
- Deloitte Consulting, (1999). ERP's second wave – Maximizing the value of enterprise applications and processes. *Deloitte Consulting – A global research report*.
- DeLone, W.H. & McLean, E.R., (1992). Information systems success: the quest for the dependent variable, *Journal of Management Information Systems*, 3(1), 60-95.
- DeLone, W.H. & McLean, E.R., (2003). The DeLone and McLean Model of information systems success: a ten-year update, *Journal of Management Information Systems*, 19(4), 9-30.
- Economist, The, (2006). Thinking big: midsize companies in the United States and the challenges of growth. *Economist Intelligence Unit*, New York. Retrieved from the Internet, [http://i.i.com.com/cnwk.1d/html/itp/sapp\\_EIU\\_US\\_Midsize\\_companies.pdf](http://i.i.com.com/cnwk.1d/html/itp/sapp_EIU_US_Midsize_companies.pdf)
- Esteves, J. & Pastor, J., (1999). An ERP lifecycle-based research agenda. *1<sup>st</sup> International Workshop on enterprise management resource and planning systems, EMRPS*, Venice, Italy, 359-371.
- Fisher, D., Fisher, S., Kiang, M., & Chi, R., (2004). Evaluating Mid-level ERP Software, *Journal of Computer Information Systems*, Fall, 38-45.
- Gable, G, Scott, J., & Davenport, T., (1998). Cooperative EWS life-cycle knowledge management. In the proceedings of the 9<sup>th</sup> Australasian Conference on Information Systems, Edmundson, B. and Wilson, D. (eds), September 29 – October 3, Sydney.
- Gable, G., Heever, R., Erlank, S., & Scott, J., (1997). Large packaged software: the need for research. Proceedings of the 3<sup>rd</sup> Pacific Asia Conference on Information Systems, 1-5, April, Brisbane.
- Hawking, P., McCarthy, B. & Stein, A., (2004). Second Wave ERP Education. *Journal of Information Systems Education*, 15(3), 327-333
- Holland, C.P., & Light, B., (1999). A critical success factors model for ERP implementation. *IEEE Software*, May-June, 30-36.

- Holland, C.P., Light, B. & Gibson, N., (1999). A Critical Success Factors Model for Enterprise Resource Planning Implementation. In Pries-Heje, Ciborra, C., Kautz, K., Valor, J., Christiaanse, E., Avison, D., and Heje, C. (eds.), *Proceedings of the 7th European Conference on Information Systems*, Copenhagen, Denmark, 273-297.
- Jacobs, F. & Whybark, D., (2000). *Why ERP? – A Primer on SAP implementation*, New York: McGraw Hill.
- Johnston, R., (2003). A strategy for finding the right accounting software, *Journal of Accountancy*, September, 196(3), 39-46.
- Kaplan, R., & Norton, D., (1996). *The Balanced Scorecard*, Boston, MA: Harvard Business School Press.
- Katz, J., Aldrich, H., Welbourne, T., & Williams, P., (2000). 'Guest Editor's comments: special issue on human resource management and the SME: toward a new synthesis', *Entrepreneurship Theory and Practice*, 25(1), 7-10.
- Kerr, S., (1988). Islands of automation: networks emerge to connect them. *Datamation*, March 1, 57.
- Klaus, H., Rosemann, M., & Gable, G., (2000). What is ERP? *Information Systems Frontiers*, 2(2), 141-162.
- Koh, C., Soh, C., & Markus, M., (2000). Process theory approach to ERP implementation and impacts: the case of Revel Asia, *Journal of Information Technology Cases and Applications*, 2(1), 4-23.
- Kydd, C., (1989). Understanding the information content in MIS management tools. *MIS Quarterly* 13(3), 277-290.
- Larsen, M., Myers, M., (1999). When Success Turns into Failure: A Package-Driven Business Process Re-engineering Project in the Financial Services Industry, *Journal of Strategic Information Systems* (8), 395-417.
- Lyytinen, K. & Hirschheim, R., (1987). Information systems failures – a survey and classification of the empirical literature. In *Oxford Surveys in Information Technology*, Zorkocsy, P. I. (ed.) Oxford University Press, Oxford, 4, 257-309.
- Markus, M. & Tanis, C. (2000). The enterprise system experience-from adoption to success. In *Framing the domains of IT research glimpsing the future through the past*, Zmud, R., Pinnaflex Educational Resources, Cincinnati, OH, 173-207.
- Markus, M., Axline, S., Petrie, D., & Tanis, C., (2000). Learning from adopters' experience with ERP: problems encountered and success achieved, *Journal of Information Technology*, 15, 245-265.
- Monk, R., (2000). Why small businesses fail? *CMA Management*, 74(6), 12-13.
- Nadkarni, S. & Nah, F., (2003). Aggregated causal maps: An approach to elicit and aggregate the knowledge of multiple experts. *Communications of AIS*, 2003(12), 406-436.
- Nah, F. & Delgado, S. (2006). Critical success factors for ERP implementation and upgrade, *Journal of Computer Information Systems*, 46(5), 99-113.
- Nah, F., Lau, J., & Kuang, J., (2001). Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, 7(3), 285-296.
- Norris, G., Wright, I., Hurley, J., Dunleavy, J., & Gibson, A., (1998). *SAP – An Executive's comprehensive guide*, New York: John Wiley & Sons.
- Ou, C., (2006). Banking and SME financing in the United States. *Conference proceedings: International Comparisons in the Financings of SME's in Developed Nations*, Warwick School of Business, University of Warwick, Coventry, UK, April 4-5, 2006.
- Parr, A. & Shanks, G., (2000). A model of ERP project implementation. *Journal of Information Technology*, 15(4), 289-304.



- Parr, A., Shanks, G., & Darke, P., (1999). Identification of necessary factors for successful implementation of ERP systems. In *New Information Technologies in Organizational Processes*, Ngwenyama O., Introna, L., Myers, M., and DeCross, J. (eds.), Boston, MA: Kluwer Academic Publishers, 99-119.
- Piszcalski, M., (1997). Lessons learned from Europe's SAP users, *Production*, 109(1), 54-60.
- Plant, R., & Willcocks, L., (2007). Critical success factors in international ERP implementations: a case research approach. *Journal of Computer Information Systems*, Spring, 60-70.
- Ramaswani, R., Holloway, N., & Kenny, M., (2006). *Thinking big: Midsize companies in the United States and the challenges of growth*, Economist Intelligence Unit, New York.
- Rosemann, M., (2003). Enterprise system management with reference process models (eds.) *Second-Wave Enterprise Resource Planning Systems: Implementing For Effectiveness*. Cambridge University Press, Cambridge.
- Ross, J., & Vitale, M., (2000). The ERP revolution: surviving versus thriving. *Information Systems Frontiers*, 2(2), 233-241.
- Sandoe, K., Corbitt, G., & Boykin, R., (2001). *Enterprise Integration*. New York: John Wiley & Sons.
- Schubert, P., Leimstoll, U., (2007). How SMEs strive to achieve competitive advantage with IT-Supported business processes: an empirical study. *21<sup>st</sup> Bled eConference, eCollaboration: overcoming boundaries through multi-channel interaction*. Bled, Slovenia, 114-127.
- Shang, S., & Seddon, P., (2000). A comprehensive framework for classifying the benefits of ERP systems. In *Americas Conference on Information Systems*.
- Shanks, G., Parr, A., Hu, B., Corbitt, B., Thanasankit, T. & Seddon, P., (2000). Differences in Critical Success Factors in ERP Systems Implementation in Australia and China: A Cultural Analysis, *Proceedings of the 8th European Conference on Information Systems*. Vienna, Austria, 537-544,
- Sistach, F., & Pastor, J., (2000). Methodological Acquisition of ERP Solutions with SHERPA. *World Class IT Service Management Guide*, edited by J. van de Bon, March, 225-233
- Sistach, F., Pastor, J., & Fernandez, L., (1999). Towards the Methodological Acquisition of ERP Solutions for SMEs. *1st International Workshop on Enterprise Management Resource and Planning Systems EMRPS*, Venice, Italy, 35-51
- Smith, H. & Fingar, P., (2003). *Business Process Management (BPM): the Third Wave*. Tampa, FL: Meghan-Kiffer Press.
- Stefanou, C. (2000). The Selection Process of Enterprise Resource Planning ERP Systems. *Americas Conference on Information Systems AMCIS*, Long Beach, CA
- Stein, A., Hawking, P., & Foster, S., (2003). Second Wave ERP: local implementation challenges. *IFIP Conference*, Athens, 2003.
- Stein, A., Hawking, P., & Foster, S., (2004). Second Wave ERP education. *Journal of Information Systems*, Fall, 2004.
- Sumner, M., (1999). Critical Success Factors in Enterprise Wide Information Management Systems Projects. *Proceedings of the Americas Conference on Information Systems*, Milwaukee, Wisconsin, 232-234.
- Swanson, E. B., & Ramiller, N. C., (2004). Innovating Mindfully with Information Technology, *MIS Quarterly*, 28(4), 553-583.
- Umble, E. & Umble, M., (2002). Avoiding ERP implementation failure, *Industrial Management*, January/February, 44(3), 25-33.
- Umble, E., Haft, R., & Umble, M., (2003). Enterprise resource planning: Implementation procedures and

critical success factors. *European Journal of Operational Research* 146(2), 241–257.

Wang, R., Ragsdale, J., & Schuler, I., (2006). *Trends 2006: ERP applications for SMBs*, Forrester Research Inc., Cambridge, MA.

Zviran, M., Pliskin, N., & Levin, R., (2005). Measuring user satisfaction and perceived usefulness in the ERP context. *Journal of Computer Information Systems*, 45

---

Robert L. Kachur – Richard Stockton College of New Jersey

Ajantha Herath – Richard Stockton College of New Jersey

# DRIVING NFL FAN SATISFACTION AND RETURN INTENTIONS WITH CONCESSION SERVICE QUALITY

Brian V. Larson and Ross B. Steinman, Widener University

## ABSTRACT

Sport organizations have begun to focus on assessing quality. Rising ticket prices, skyrocketing team costs for owners, and increasing competition from other entertainment entities make service quality central. SERVQUAL, as applied to an NFL gameday concession experience is discussed in this paper. Studies were conducted at two separate NFL games where total of 558 respondents reported assessments of service quality and important dependent variables. The results help to clarify the impact of key service quality drivers on fan satisfaction and return intentions. Results are reported and conclusions and recommendations are drawn dealing with how fans respond to the key dimensions of service.

### I. Introduction

Every year millions of fans flock to their favorite sporting event. The way that they determine the quality of their game day experience is becoming increasingly important to venue managers, fans, and concession vendors. As ticket prices continue to increase, so do fan expectations. In addition to the event itself, which is out of the marketer's control, many elements affect the fan's experience: parking, variety of merchandise, stadium atmospherics. The concession experience is one of the most influential and controllable though. First class service and selection is expected from customers to match the premium ticket prices.

For instance, while food vending is just one event element it is an enormous complementary component that helps teams maximize total revenue (Coates and Humphreys, 2007). The average fan in regular seats will spend nearly \$20 at each NFL event on standard concessions (Team Marketing Report 2005). It is estimated that \$9 billion is spent on foodservices at sporting events annually (King, 2004); \$2 billion is from the NFL's suite/club seating alone (Cameron, 2004), a relatively new revenue stream. Suite holders are typically charged between \$145 and \$250 per person. In short, it has become apparent that a regular hotdog was not going to do the trick (Buzalka, 2000).

Moreover, the team, venue, and concession service providers have only limited opportunities to establish

a relationship of high quality exchanges because of relatively brief sport seasons. For example, with the NFL, "You only have 10 games to make an impression on your guests" says Hans Williamson, president of the sports and entertainment group for Levy Restaurants (Cameron, 2004). Give the rising costs and limited number of contacts, each point of customer contact becomes more critical.

Professional sporting events are also becoming increasingly costly for owners as the expenses of the game (e.g., player salaries, equipment, maintenance, and new venues) continue to escalate. For sport managers increasing the game day experience's value is a primary concern and critical for the organization's survival. For team marketing professionals, understanding the variables that affect the service quality perception is a key input into their resource allocation and strategic marketing decisions.

For the providers, who have been outsourced to create the service, it is vital to continually improve the service because their business customer (the team or venue) demands it and has the luxury of seeking contracts with other providers if service quality isn't good enough. The number of qualified vendors capable of serving at major venues has intensified the competition for stadium and arena contracts. If a vendor fails to satisfy the team's fans, then the team can readily choose another food service provider. Good suppliers must provide outstanding service like ARA's innovative hand-held ordering devices for club level seat holders at the Alamodome.

In this sense then, service quality is important to the fan as a valued part of the game day experience, to the team as an important attribute of the total sport product sold to the fan, and to the outsourced supplier as a business-to-business differentiation tool.

This paper will measure service quality perception as it applies to an NFL team's concession experienced by fans. This will be done by using the RATER model of service quality. These factors will then be used as predictors of key outcomes in a regression model. We begin with a literature review of sport service quality assessment and then discuss the outcome variables to establish hypotheses. We report the execution of an empirical study where the dimensions of service are explored and assessed. The paper concludes with a presentation of the results and discussion. Implications are suggested.

## 11. Service Quality Assessment in Sport

As with other service industries, in the sport industry it is not enough produce adequate service encounters but crucial for a company to hire, train and motivate employees to consistently provide quality service. To do that, it is important for a company to listen to what exceptional service means to customers and incorporate feedback into the company's vision and training programs. Because a sport venue's income comes primarily from fans, their assessment should be considered as the main evaluation index of service quality. The accepted way to measure customer perceptions is to use the SERVQUAL model to identify and understand customer expectations. The SERVQUAL model is increasingly seen in sport (Crilley et al., 2002).

SERVQUAL, the service quality assessment tool Parasuraman, Zeithaml and Berry (1988) first used to measure how customers perceive the quality of service being provided, has proven to be robust across services. The original SERVQUAL model contains 22 questions that measure the expectations consumers have about service quality and the perceptions of what is actually delivered during their experience. These 22 questions are broken down into five dimensions. Easily remembered with the acronym RATER, it includes the dimensions on

which service quality are assessed: Reliability, Assurance, Tangibles, Empathy, and Responsiveness. By using a Likert scale ranging from "Strongly Disagree" to "Strongly Agree," service perceptions can be gauged by asking the customers questions related to the five dimensions (Hudson, 2004). Each of these dimensions is discussed as they apply to sport.

*Reliability* is the service quality dimension that measures the ability to perform the service dependably and accurately (Parasuraman et al., 1988). It has been called the most important dimension. When an employee is trained for a specific job, it includes making sure the customer's satisfaction is the top priority. This should include the proper way to greet a customer, provide helpful information to service the customer and how to accurately address questions the customer may have. If the employee does not know how to accurately answer the customers question, they should be trained how to find the correct answer (Czaplewski, 2002). Questions asked of service customers in the past included: Do you receive what you ordered? Does the staff provide this service consistently under all conditions?

*Assurance* is the service quality dimension that measures the knowledge and courtesy of employees and their ability to convey trust and confidence (Parasuraman et al., 1988). Job training should include providing lessons that empowers employees to make the right decisions. This not only shows that the company hiring the employees has faith in them but that they are an important part of the organization. This has positive benefits for the customer. For example, corrections are made instantly when services rendered do not meet expectations. An example of a question used to measure assurance might be, "Staff appeared well trained to handle the job."

The *Tangibles* dimension takes into consideration the appearance of physical facilities, equipment, personnel, and communication materials. Proper product and service execution are important for customer satisfaction. The execution should be

appealing to the consumer and the facilities should be clean, well lit, and comfortable. Training the employee to handle the job correctly and to look the part affect this dimension. Facilities and human elements should be designed to appeal to the customer's senses. A question might be "The employees were neat in appearance."

*Empathy* is the service quality dimension that measures the perceived caring, the individualized attention that the employees provide to each customer. Providing service that goes above and beyond the expected service levels occurs when an employee displays empathetic qualities. Empathy is difficult to instill in an employee because of its intimate nature. It manifests itself in smiles, personal attention, and clear communications. Firms can hire individuals who possess this quality and incorporate empathy training to build upon this trait. The following statements might measure the dimension of empathy: "The staff seemed happy to provide service," or "The staff seemed thankful for my patronage."

*Responsiveness* is the service quality dimension that measures the willingness to help customers and to provide prompt service. Therefore, it is important to instill in employees that they need to respond readily to customers needs, but also in a manner that demonstrates their willingness to help. Customers feel a high quality service provider is able and eager to give prompt and satisfactory service. The following questions could be used to measure responsiveness: "The staff displayed willingness to help," or "The staff provided prompt service."

### III. Key Sport Outcomes and Hypotheses

One potential application of SERVQUAL is to determine the relative importance of the five dimensions in influencing customers' outcomes. Two outcomes regularly collected from customers are satisfaction with the experience and future behavioral intentions.

*Satisfaction with the overall experience* "...the quality of the subjective product—the service

experience—is the true outcome of a service interaction," (Solomon et al. 1985, p.101).

Marketers have proposed a number of definitions for satisfaction. For the most part, satisfaction is an emotion as argued by Nyer (1998). Spreng, Mackenzie, and Olshavsky define it as "the emotional reaction to a product of service experience (p. 17). Marketing research has concentrated on associating consumer cognitions with satisfaction. "Everything has to be perfect for the fan—not just on the field or courts or ice, but on the retail side as well," (Drewes quoted in King 2004, p. 17). The ideal fan experience is based on how well the many different service dimensions compare to the fan's expectations. In their role, sport fans and customers can be thought of as having expectations. When a sport service experience element, one of the SERVQUAL dimensions, fails to meet the cognitive expectation it should affect the overall concession stand experience. This is because service quality can be viewed as a critical antecedent of customer satisfaction. The first set of hypotheses is concerned with the importance of the five dimensions (RATER) of the SERVQUAL model in influencing satisfaction with their sport service experience. The following are predicted:

*H1A:* High levels of Reliability predict overall concession stand experience.

*H1B:* High levels of Assurance predict overall concession stand experience.

*H1C:* High levels of Tangibles predict overall concession stand experience.

*H1D:* High levels of Empathy predict overall concession stand experience.

*H1E:* High levels of Responsiveness predict overall concession stand experience.

*Behavioral intentions* refer to the individual's anticipated or planned future behavior (Ajzen, 1987). Marketers are interested in intentions primarily because of its link to purchasing behavior. Although consumers' self-reported intentions do not perfectly predict future behavior most academic studies use consumers' self-reported intentions as the proxy

criterion variable. Similarly, companies often rely on consumers' intentions to forecast (Chandon, Morwitz, and Werner, 2005).

In the context of this research, if fans do not receive the sport service experience they expect, they might go elsewhere. Therefore, it is important that the NFL team understands their customers' behavioral intentions. Doing so will enable the NFL team to retain their customers; research has demonstrated that satisfied customers often become loyal customers (Hallowell, 1996). These loyal customers in turn tend to buy more products and are less price sensitive when making consumption decisions. It is also cheaper to service them because they are intimately familiar with the offerings and processes (Coyles and Gokey, 2005). Given the importance of word-of-mouth in marketing, it is likely they will share their experiences with others, thus effectively socializing new customers to the sport service experience. This is invaluable to organizations as they can now attract new customers without making a significant expenditure.

One would expect that at a sporting event, where customers are in a sense "captive," reaching, attracting, and, importantly, retaining customers would not be a costly endeavor. Although there are a limited number of concession stand options at sporting events, customers still have the ability to exercise and express their intent to return to the concession stand. For example, season ticket holders might choose to reduce the amount they purchase from the concession stand. A more extreme example is that these individuals refrain from making concession stand purchases. Instead, they decide to consume food and/or beverages before or after the event. Therefore, it is of interest to determine the importance of the five dimensions (RATER) of the SERVQUAL model in influencing behavioral intentions. The following are predicted:

*H2A:* High levels of Reliability predict intent to return to concession stand.

*H2B:* High levels of Assurance predict intent to return to concession stand.

*H2C:* High levels of Tangibles predict intent to return to concession stand.

*H2D:* High levels of Empathy predict intent to return to concession stand.

*H2E:* High levels of Responsiveness predict intent to return to concession stand.

#### IV. Methodology

The study utilized a mall-intercept technique at an NFL team's stadium during two 2005 regular season afternoon games (both beginning at 1:00 EST). Twenty field researchers were divided into five teams to cover the stadium systematically and approached attending fans at random who had recently exited a concession stand within a research team's assigned area. Respondents from all areas of the stadium—upper concourse, club level, and main concourse—were solicited. Data were collected beginning three hours before kickoff, when concession areas opened, until just after halftime when the flow of fans visiting the concession stands slowed. Respondents were approached by field researchers, invited to participate in the survey, and offered a food coupon to promote participation. A total of 558 usable surveys were collected.

*Measures* - The survey used to measure customer service includes all 5 dimensions of the RATER model with approximately 3 to 5 questions per dimension (totaling 17 items). Five-point Likert scales ranging from "Strongly Agrees" to "Strongly Disagrees" were used which allowed for the measurement of the difference between customers' expectations and perceptions of the actual service rendered (Brown, Churchill, and Peter 1993). The single page survey finished with multiple standard demographic questions.

Questions were developed based on the original RATER model (Parasuraman et al., 1988) and in partnered cooperation with the host management team to capture pertinent issues crucial to their specific business environment. It is not uncommon to adapt service quality assessment items to accommodate specific industry needs, and may even

be necessary to collect more pertinent information (Eastwood, 2005).

To test for the effect the service quality factors had on each key dependent variable, we performed a regression analysis using the five dimensions of the SERVQUAL instrument as independent variables to predict overall quality perceptions and return intentions. Two items from the questionnaire were used as dependent variable measures: 1) "My overall concession stand experience was positive." and 2) "I will return to this concession again."

## V. Results

*Participants* – A total sample of 558 respondents reported their assessment of service quality at two separate NFL games. There were fewer females (23.7%) than males (76.3%). The respondents ranged in age from 11 to 81 years; however, the majority of respondents (90.0%) were between 18-69 years of age ( $M = 36.22$ ;  $SD = 14.18$ ). Most of the respondents were Caucasian (82.3%). The next largest race represented was African-American (8.6%). The average annual household income reported by the solicited fans was \$126,906. However, approximately 75% of the respondents reported making less than this amount. The median annual household income was \$85,500. Most respondents reported higher education levels; less than 24% reported having less than "some college" as the highest education level completed.

The behaviors of the fans were also collected. On average, fans reported to have visited the concession area 4.4 times during the game. Slightly more than one-quarter (26.6%) of those visits occur before the game begins. Furthermore, the respondents either attended or expected to attend about five to six games ( $M = 5.49$ ) over the course of the season. Approximately 44.6% of the respondents planned to attend at least five games.

*Service Quality Assessment* – The 17 items used to assess quality perceptions held by fans were first organized into the five dimensions and then tested for Cronbach reliability (see Table 1). Examination of the values indicates that the reliability for four out of

the five dimensions is well above .80. The reliability of the Assurance dimension was lower than the other dimensions but met accepted reliability standards.

TABLE 1: Reliabilities and Descriptive Statistics of the RATER Dimensions

Dimension	Cronbach $\alpha$	M e a n	
		Quality Rating	Standard Deviation
Reliability	.81	4.17	.87
Assurance	.60	3.66	.87
Tangibles	.88	3.98	.77
Empathy	.89	3.92	.97
Responsiveness	.84	4.03	.95

For each of the dimensions, the averages and standard deviations were computed. As the results above indicate, the Reliability dimension was rated the most positively by the NFL team's fans with a 4.17 on a scale of 1 to 5. This finding—that Reliability is the most important dimension—is consistent with Berry et al. (2003). In order of mean quality rating, the remaining SERVQUAL dimensions were Responsiveness, Tangibles, Empathy, and Assurance respectively.

To assess the importance of the five dimensions in influencing customers' overall quality perceptions, regression analyses were performed. The individual dimensions of the SERVQUAL instrument (RATER) were entered to predict overall quality perceptions. The following item from the questionnaire was used to assess customers' satisfaction: "My overall concession stand experience was positive." Results are noted in Table 2.

TABLE 2:  
"My overall concession  
stand experience was positive."

Dimension	Standardized Coefficient	Significance Level	Adj. $R^2$
Reliability	.10	.02	



Assurance	.05	.16	.71
Tangibles	.42	.00	( $p < .01$ )
Empathy	-.02	.68	
Responsiveness	.39	.00	

The Tangibles, Responsiveness, and Reliability dimensions were statistically significant predictors of customer satisfaction ("My overall concession stand experience was positive."). In terms of the relative importance of the five dimensions in predicting overall quality, Tangibles was the most critical dimension. Responsiveness and Reliability were the second and third most important dimensions respectively. The fourth most important dimension was Assurance; Empathy was the least important dimension. The Assurance and Empathy dimensions were not statistically significant predictors. Overall, the adjusted  $R^2$  was statistically significant suggesting that the RATER dimensions predicted customer satisfaction at the concession stand. Thus, there is support for hypotheses 1A, 1C, and 1E, whereas hypotheses 1B and 1D are not supported.

TABLE 3:  
"I will return to this concession again."

Dimension	Standardized Coefficient	Significance Level	Adjusted $R^2$
Reliability	.20	.00	
Assurance	.04	.36	
Tangibles	.35	.00	.56
Empathy	.01	.92	( $p < .01$ )
Responsiveness	.25	.00	

A similar pattern of results emerged for the regression analysis performed on the behavioral intentions outcome variable ("I will return to this concession again."). Results are shown in Table 3. The Tangibles, Responsiveness, and Reliability dimensions were again statistically significant predictors, and Tangibles was the most critical dimension. The Responsiveness, Reliability, and Assurance dimensions were the second, third, and

fourth most important dimensions, respectively. Empathy remained the least important dimension. The Assurance and Empathy dimensions were not statistically significant predictors. There is support for hypotheses 2A, 2C, and 2E, while hypotheses 2B and 2D are not supported.

Overall, the similar pattern in results suggests that the Tangibles, Responsiveness, and Reliability dimensions are crucial elements in ensuring fan customer satisfaction and behavioral intention. However, the relatively small magnitudes of the regression coefficients for Assurance and Empathy and their lack of statistical significance in predicting these outcome variables should be interpreted with caution. Both Assurance and Empathy did have strong, positive correlations with the dimensions of Tangibles, Responsiveness, and Reliability. It is plausible that their relative importance in the regression analyses may have been masked somewhat by possible multicollinearity (see Appendix). Therefore, while Assurance and Empathy are the least important of the SERVQUAL dimensions, their lack of statistical significance does not mean that they are unimportant.

## VI. Conclusion

Gauging customers' perceptions of the service quality undoubtedly is important to companies to help retain customers. Sport firms are no different. Returning fans and customers will lead to additional sales to help an organization grow. Recently, sport organizations have begun to focus on hearing customers' service quality concerns in order to change and modify employee training. To ensure quality service, organizations must have the tools to assess and control service quality. Every employee who comes in contact with a fan/customer must possess the right skills to respond quickly and effectively to all needs. Though this might be considerably harder for sport organizations which rely on volunteer help so often, teams must train each employee how to provide great service and how that service plays an important role in customer retention (Keele, 1994).



Our study is an early effort to apply the RATER model to a professional sport service setting. In doing so, we adapted a scale to work within a sport service environment and tested it. The results establish a link between key predictor variables, the five dimensions of SERVQUAL, and vital organizational outcomes. To some extent, the results are consistent with the literature examining the relative importance of the five dimensions in predicting service experience outcome variables. Previous research has demonstrated the relative importance of the Reliability, Assurance, and Tangibles dimensions in predicting the service experience (Parasuraman et al., 1988). In this research effort, the Reliability, Tangibles, and Responsiveness dimensions were significant predictors of satisfaction with the sport service experience; Reliability, Tangibles, and Responsiveness were also significant predictors of behavioral intentions. The finding that Responsiveness—instead of Assurance—is a significant predictor of satisfaction and future behavioral intentions seems to indicate that prompt service at a sporting event is essential, perhaps more than the professional sport firm realizes.

Benchmarking sport service quality and key predictors is a possible next step. Replicating the survey and methodology across sport organizations could allow for valid and reliable comparisons previously not witnessed.

## REFERENCES

- Ajzen, I. (1987). Attitudes, traits and actions: dispositional prediction of behavior in personality and social psychology, in Berkowitz, L. (Eds), *Advances in Experimental Social Psychology*, Academic Press, New York, NY.
- Black, B., (2000, August). The application of SERVQUAL in a district nursing service. Retrieved March 15, 2005, from [www.touchmedia.co.uk](http://www.touchmedia.co.uk)
- Bougie, R., Pieters, R., & Zeelenberg, M. (2003). Angry customers don't come back. They get back: The experience and behavioral implications of anger and dissatisfaction in services," *Journal of the Academy of Marketing Science*, 31, 377-393.
- Brown, T., Churchill, G., & Peter, J.P. (1993). Research note: Improving the measurement of service quality. *Journal of Retailing*, 69, 127.
- Buzalka, M., (2000), Catering to the suite life. *Food Management*, 35, 54-58.
- Cameron, S., (2004). The frill of it all. *Amusement Business*, 116, 14-15
- Chandon, P., Morwitz, V. G., & Werner, J. R. (2005). Do intentions really predict behavior? Self-generated validity effects in survey research. *Journal of Marketing*, 69, 1-14.
- Coyles, S. & Gokey, T. C. (2005). Customer retention is not enough. *Journal of Consumer Marketing*, 22, 101-105.
- Czaplewski, A.J., Olson, E., & Slater, S. (2002). Applying the RATER model for service success. *Marketing Management*, 11, 14-18.
- Coates, D. & R. Humphreys, B. R. (2007). Ticket prices, concessions and attendance at professional sporting events, *International Journal of Sport Finance*, 2, 161-170.
- Crilley, G., Murray, M., Howat, G., March, H. & Adamson, D. (2002). Measuring performance in operational management and customer service quality: A survey of financial and non-financial metrics from the Australian golf industry, *Journal of Leisure Property*, 2, 369-380.
- Dolezalek, H. (2004, July). Boot camp brewhaha, *Training*, 41, 17.
- Eastwood, D., Brooker, J., & Smith, J. (2005). Developing marketing strategies for green grocers: An application of SERVQUAL. *Agribusiness*, 21, 81.
- "How to create a Service Quality Survey/ How to build a Service Quality Survey". Retrieved March 15, 2005, from

<http://www.surveyz.com/howto/how%20to%20build%20service%20quality%20surveys.html>

Hallowell, R. (1996). The relationships of customer satisfaction, customer loyalty, and profitability: an empirical study. *International Journal of Service Industry Management*, 7, 27-42.

Hudon, S. & Graham, A., (2004). The measurement of service quality in the tour operating sector: a methodological comparison. *Journal of Travel Research*, 42, 305-312.

Keele, (1994). Keeping the customer Satisfied. *Health Manpower Management*, 20, 11.

King, P., (2004). Home park advantage. *Nation's Restaurant News*, 38, 17.

Nitecki, D. SERVQUAL: measuring service quality in academic libraries. Retrieved March 15, 2005 from <http://www.arl.org/newsltr/191.servqual.html>

Nyer, P.U. (1998). The effects of satisfaction and consumption emotion on actual purchasing behavior," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 11, 62-68.

Parasuraman, A., Zeithaml, V., & Berry, L., (1988). Servqual: A multiple-item scale for measuring consumer perception. *Journal of Retailing*, 64, 12-29.

Parasuraman, A., & Zeithaml, V., (2003). Ten lessons for improving service quality. *MSI Reports Working Paper Series*, 03-001, 61-82.

"The Rater Model"(2002). Monash University. Retrieved March 15, 2005 from [www.adm.monash.edu.au/cheq/support/rater\\_model.html](http://www.adm.monash.edu.au/cheq/support/rater_model.html)

Solomon, M. R., Surprenant, C., Czepiel, J.A., & Gutman, E. G. (1985). A role theory perspective on dyadic interactions: The service encounter, *Journal of Marketing*, 49, 99-111.

Spreng, R., MacKenzie, S., & Olshavsky, R. (1996). A reexamination of the determinants of consumer satisfaction. *Journal of Marketing*. v.60, Iss. 3, 15-33

Team Marketing Report. Retrieved January 10, 2006 from [http://www.teammarketing.com/fci.cfm?page=fci\\_nfl\\_05.cfm](http://www.teammarketing.com/fci.cfm?page=fci_nfl_05.cfm)

---

Brian V. Larson is an associate professor of marketing at Widener University

Ross B. Steinman is an assistant professor of psychology at Widener University.

## UNEMPLOYMENT AND UNDEREMPLOYMENT IN AFGHANISTAN

Muhammad Masum, Towson University

---

### ABSTRACT

Unemployment estimates on Afghanistan by various organizations widely varied, between 3.4% by C.S.O, and ADB for years 2000 to 2004, and 40% by ANDS for 2008. C.S.O continued to use the same LFPR as observed in 1979 Population Census to estimate Afghanistan's labor force for later years. Over the last 3 decades, however, Afghanistan went through more than two decades of devastating war causing massive dislocation of population, and half a decade of Taliban rule that debarred women to work outside their homes, which significantly influenced LFPR. The economic system also changed from that of centralized planning under socialism, to that of market economy, with changing roles of government. All these developments had profound implications for labor market outcomes for Afghanistan. Since the poor cannot afford the luxury of remaining unemployed for too long, open unemployment rate for Afghanistan might remain low, but underemployment in terms of time, income and recognition dimension significantly increased over the recent past as growth in output and employment, particularly in the formal sector fell far short of growth in labor force. A comprehensive labor force survey needs to be implemented as soon as possible to generate data on LFPR, employment status, and multiple dimensions of employment to serve as a basis for an appropriate employment policy and strategy for Afghanistan.

---

### 1.0 Introduction<sup>1</sup>

Afghanistan is a landlocked, mountainous, poor developing country strategically located on the historic silk route connecting South Asia, Central Asia and the Middle East. For a long time, it served as a buffer state between the Russian and the British empires. During the cold war era, by maintaining neutrality, it was able to mobilize substantial foreign aid from both USA and the former USSR, and other countries, to develop her basic infrastructure. After overthrow of monarchy, in 1973, Afghanistan became a republic. In 1978, a pro-Soviet military coup brought Peoples' Democratic Party of Afghanistan to power which changed the economic system from mixed economy to that of a command economy with the state taking responsibility of conducting all economic activities utilizing all human resources available within the country. In rural areas, after implementing radical land reforms, production was organized on the basis of cooperatives that employed all rural human resources. The urban human resources were similarly employed either in government service or in state owned enterprises. The problem of unemployment, therefore, hardly existed. Implementation of land reforms, however,

antagonized the powerful landed aristocracy who rose in revolt. To crush them, in 1979, Soviet help was sought which led to direct Soviet military involvement in Afghanistan against which developed a resistance movement led by the Mujahedins. The protracted war ultimately led to withdrawal of the Soviet forces in 1989, and collapse of the pro-Soviet regime in 1992, but peace remained elusive due to infighting between the Mujahedin leaders. In 1996, Taliban captured power. Although they were largely successful in restoring peace within the country their policies invited foreign intervention which led to their overthrow in 2001. Since then, Afghanistan, after more than two decades of protracted war that shattered her physical and socio-economic infrastructure, that caused roughly one quarter of her total population seeking refuge in foreign countries, has been engaged in rehabilitating her economy adopting a new economic system, that of market economy, under a democratic leadership, with generous financial and technical assistance from the international community. Afghanistan National Development Strategy (ANDS), a medium-term (2008-13) development plan has also been formulated. ANDS identifies unemployment and

underemployment as the key issue that needs to be addressed in Afghanistan. This paper, based on available evidences, attempts to throw some light on the employment situation in Afghanistan. A critical review of various estimates of unemployment rate in Afghanistan has been presented in Section 2. Based on certain assumptions, an attempt has been made to estimate the labor force in Afghanistan, presented in Section 3. Section 4 throws some light a few characteristics of the employed labor force and the nature of employment. Based on sectoral GDP growth rates and changes in employment, Section 5 comments on possible changes in employment situation in Afghanistan. Section 6 presents the concluding observations.

## 2.0 Unemployment Statistics on Afghanistan: A critical Review

In drawing a picture on employment situation of Afghanistan as at present, the greatest problem encountered, is, the lack of relevant and reliable data. The latest available population census of Afghanistan is of 1979 vintage, and there has never been any labor force survey, which generally is the primary source of most employment related data for any country. In various publications on Afghanistan, however, one may come across a number of unemployment estimates, ranging from 3.4% in 2004 (Asian Development Bank: Key Indicators of Developing Asian and Pacific Countries, 2007, p.160) to 40% in 2008 [Islamic Republic of Afghanistan: Afghanistan National Development Strategy (2008-2013) p. 40]. The above ADB publication also provides information on the size of the Afghan labor force for different years, the distribution of the employed labor force by sectors, and the annual change in labor force as given in Table 1 (all tables are presented in an appendix at the end of the article).

A close look at Table 1 reveals the following: Other than the population figures, which were possibly drawn from other sources, all other estimates regarding employment rate, unemployment rate, shares of different sectors in employed labor force, for years 2002-2004, were definitely not based on actual data, but were derived using certain

assumptions which too seem rather unrealistic. Moreover, there exist certain serious conceptual problems. Labor force data presented in Table 1 refers to the entire population between ages 10 to 59, which is at variance with internationally accepted definition of labor force. Industry's share in the labor force also seems to be distorted as quite a few sub-sectors which do not belong to industry were lumped under it.

Similar problems characterize employment data presented in publications of many other organizations as well.

International organizations like ADB or World Bank generally draw their data from national government statistical agencies. So, the source of any weakness of these employment statistics used and presented by these organizations in their publications can be traced to weaknesses of the respective national statistical agencies. Visiting the website of Central statistics Office (C.S.O) of Afghanistan, a table on Manpower (not available in the published document of C.S.O titled, "**Afghanistan Statistical Yearbook, 2007**") could be downloaded (Table 2 in the appendix).

A careful study of Table 2, with clarifications from the concerned official of C.S.O. revealed that:

1. The population and labor force characteristics of Afghanistan as reflected in the 1979 Population Census still serve as the basis of estimating the labor force in Afghanistan. LFPR for the entire population at 38%, [78.6% for the population in the working age (15-59) group] as observed in 1979 were applied to population estimates of subsequent years to determine the size of the labor force, called *employable population* in the table.
2. Of the *employable population*, although 92.7% were categorized as 'employed' in 1979, the corresponding figures for all the years from 2000 to 2002, were shown uniformly at 96.6%, the same figure cited by ADB, for 2004 as well.

3. *Undistributed employees* as mentioned in the table possibly referred to the unemployed, the corresponding unemployment rates for the above years being 7.3% for 1979, and 3.4%, for all the years, 2000 to 2004.

In 1979, when the population census was undertaken, Afghanistan was under communist rule. All able bodied men and women in the working age group other than full time students, and housewives, were expected to work. The government was responsible for finding job opportunities for all. All these factors accounted for an exceptionally high LFPR of 78.6% for Afghanistan, similar to other socialist countries in those days, which was in sharp contrast to LFPRs prevailing in the neighboring countries. In 1980, LFPRs in Pakistan and India were 58.0% and 62.4% respectively (ILO, 2008). Since then, millions of gallons of water have flowed through Amu Dariya. The people of Afghanistan experienced war for more than two decades with devastating consequences on their lives and living. Millions were uprooted from their homes. In search of greater security, some moved to other parts of the country, became internally displaced persons (IDPs), while others took refuge in the neighboring countries and became refugees. Under the Taliban regime that lasted for half a decade, from 1996 to 2001, the women were debarred from working outside their homes. At the end of the war, since 2001, the economy has been gradually returning to normalcy, but under a totally different economic system where private sector operating under market mechanism is expected to play the lead role with the government serving as a facilitator and a regulator, with no direct involvement in the provision of goods and services other than the public goods. All these developments definitely had significant influence on LFPR of the country, and continuing to use the 1979 LFPR to estimate the current size of Afghan labour force, does not make much sense.

Mentioned earlier, as the poor hardly can afford the luxury of remaining unemployed for too long, open unemployment rate, for most low income developing countries, are generally low. In the World

Development Report 2007, for Afghanistan, the World Bank puts forward, an unemployment rate of 3.9% for the age group 25-49, and 7.5% for the age group 15-24 ( 6.0% for males and 12.8% for females) for the year 2003. The above rates are not significantly different from her South Asian neighbors as shown in Table 5.

“Afghanistan: Labor Market Information Survey”, was conducted in 2003 by International Rescue Committee in association with the Ministry of Labor and Social Affair. It came up with certain interesting findings such as, overall unemployment rate in Afghanistan was estimated at 32%, varying from, 42% in the Central Region to 31% in the Northern Region, 29% in Eastern Region, and 26% in Western Region. Unemployment rate also observed to widely vary by age group, from 26% in the age group 16-25 to 42% in the age group, 45-60. The rate of underemployment (based on time utilized) was also estimated. For the country as a whole it stood at 33%, with considerable seasonal variation particularly for rural areas, in the range of 44% in winter to 20% in summer. The above estimates, however, were not based on actual data collected at the level of individual households. They simply reflected the perception of community leaders surveyed. “The shora’s were surveyed as to their estimation of unemployment rate amongst their communities”(IRC, 2003 p. 69). The above estimates, therefore, carry little significance for policy purposes, but they clearly indicate to wide regional variation and seasonal fluctuation, in the incidence of unemployment and underemployment, particularly for rural areas of Afghanistan.

### 3.0: Labor Force in Afghanistan: An Estimate

In the absence of any current actual age-sex-specific LFPR data for Afghanistan, until such data can be generated by a labor force survey, an alternative approach towards constructing labor force data for Afghanistan, could possibly be, application of age-sex-specific LFPRs of neighboring countries with more or less similar characteristics, to Afghan population figures in corresponding age-sex groups.

Afghanistan is a multi-racial, multi-ethnic country, with concentrations of different racial and ethnic groups in its different regions. Each ethnic group has its unique socio-cultural practices that influence its LFPR e.g. "Women in the eastern, central, northern and western parts of the country from non-Pashtun backgrounds... work more than women in the Pashtun areas in the South" (Ministry of Women Affairs- UNIFEM, 2008 p. 31). The major ethnic groups in Afghanistan being the Pashtuns and the Tajiks, it was considered reasonable to use LFPRs of Pakistan, the home of many Pashtuns, and Tajikistan, the home land of most of the Tajiks, to make two separate estimates of labor force for Afghanistan, presented below in Tables 3 and 4 respectively.

Table 3: Unemployment Rates: Afghanistan and Selected South Asian Countries

Countries	By Age- Group		By Gender, for the age-group 15-24	
	15-24	25-49	Male	Female
Afghanistan	7.5	3.9	6.0	12.8
Bangladesh	4.1	1.1	3.2	11.6
India	8.1	1.6	8.4	7.0
Pakistan	10.4	4.4	8.0	16.5

Source: World Bank: World Development report, 2007 pp. 275-6

Considering the socio-cultural similarity between southern and eastern regions of Afghanistan to Pakistan, and that of the northern region to Tajikistan, one may even consider taking a weighted average of the two estimates to derive an estimate of the labor force for Afghanistan. If equal weights are assigned to the above two estimates, the size of the labor force of Afghanistan for 2005 works out to be 6.84 million.

If there is no change in age-sex-specific LFPR, and population continues to grow for all age-sex groups by the same rate, (none of the above assumptions, however, are quite realistic in deed) labor force growth rate will match the population growth rate, which for Afghanistan has been estimated by UNFPA at 3.5% per annum for the period 2005-2010 (UNFPA: State of the World Population, 2007). Applying the above growth rate on the labor force for 2005, estimated earlier, the labor force of Afghanistan for 2008 can be estimated at 7.58 million, growing at 3.5% per annum which implies that there is a need to create an additional 265.3 thousand productive job opportunities in the current year itself, just to cater to the employment needs of the new entrants to the labor market, not to speak of addressing the problem of unemployment and underemployment prevailing at present.

#### 4.0 Characteristics of Employed Labor Force and Nature of Employment:

In the absence of a labor force survey, let us dive deep into the Report on the National Risk and Vulnerability Assessment (NRVA) Survey of 2005, the first ever nationally representative sample survey on Afghanistan, based on an appropriate sampling frame, conducted in recent times, to extract all relevant information that may throw some light on the multiple dimensions of employment of rural, urban and kuchi (nomadic) population of Afghanistan.

NRVA 2005, the second of its kind, conducted between June and August of 2005, is a national survey covering 30,822 households (23,220 rural, 5867 urban and 1735 kuchi) scientifically drawn, using appropriate sampling frame, from all 34 provinces (34 provincial rural domains, 10 urban domains and one aggregated domain for the Kuchi population). Relevant data, however, were collected not from all individuals (aged 6 or more) belonging to a household, as was done in case of NRVA 2003, but from male household heads/respondents mostly for income related data (14 in number), and from female respondents, mostly for food consumption/health related data (4 in number). The

above procedure, no doubt, contributed to ease in the collection of data, but necessary details, relevant for analyzing different aspects of employment, however, got lost.

Analyzing Tables 6-8, which show the relative contributions made by different economic activities to household income at different levels, national, provincial, rural and urban, we can draw the following conclusions:

1. For the country as a whole, agricultural activities (crop production including poppy cultivation, horticulture and livestock) have been reported by 74% of households as their income source.
2. For rural areas, for obvious reasons, the above percentage has been much larger, at 87.
3. Even in urban areas, 10% of households reported agricultural activities.
4. In several provinces, such as Nuristan, and Bamyan, agriculture has been reported by as many as 88% and 86% households respectively as their income sources. In Nuristan 88% of the households also reported livestock as their income source. The implication is that in some provinces, most of the households pursue crop production and livestock side by side.
5. In 2005, out of 34 provinces, in 24 provinces, households were engaged in opium, but their total number was not significantly large, 4% for the country as a whole.
6. In Hilmand province, however, 41% of all households were engaged in opium.
7. Livestock is a major economic activity for a high proportion of households in many provinces.
8. At the national level, only 5% of households reported manufacturing as an income source.

Only in 3 provinces, more than 10% of households reported manufacturing as an economic activity. The provinces were, Jawzjan (25%), Faryab (15%) and Balkh (12%).

9. One third of all households reported non-farm labour; and 27% reported trade and services.
10. In Kabul, for obvious reasons, the highest percentage of households, 53%, reported trade and services as their sources of income.
11. At the national level, 5% of the households reported remittances as their income source, which indicate to the importance of migration, both within, and out side the country.

To cope with risks and vulnerability that the Afghans have to confront every now and then, many Afghan households try to diversify their sources of income, which imply that the household members allocate their time to more than one activity; and different members of the same household engage themselves in different activities. At the national level, 55% of all households had a single income source (one of the eight sources mentioned earlier) while the rest of the households had two or more income sources. Of all households receiving their income from a single source, 29% received their income from trade and services, 29% from agriculture, 9% from livestock, and 26% from non-farm labor. Of the 35% of Afghan households which had two sources of income, the most common combination of income sources were, agriculture with (a) non-farm activities (22%), (b) livestock (22%) or (c) trade and services (11%). Households in the urban areas were more likely to combine trade and services with (a) non-farm labour (26%), (b) manufacture (15%) or (c) agriculture. The Kuchis were more likely to combine livestock with (a) non-farm activities (39%), (b) trade and services (10% and (c) agriculture (NRVA, 2005 p.79).



Having discussed the importance of different economic activities as sources of household income, let us try to find out from NRVA data, how much income did these economic activities generate which will throw some light on the income dimension of employment.

Forty-four percent of Afghan households perceived themselves as food insecure to different degree. The corresponding figures for rural, urban and Kuchi households, in 2005, according to NRVA, were, 48%, 28% and 40% respectively. Percentage of population below the poverty line, with calorie intake less than the minimum recommended, were 30% for the nation as a whole, 31% for the urban population, 30% for rural population, and 24% for the Kuchi population. The above percentages were particularly high for the rural population of Nimroz (71%), and Daykundi (52%).

#### 5.0 Sectoral GDP Growth Rates and Changes in Employment

A study of the composition of output of Afghanistan, and how it changed over the recent past, can shed some light on the changes taking place in the Afghan labor market.

In the absence of a labor force survey, it is difficult to ascertain the sectoral composition of the employed labor force in Afghanistan. The NRVA 2005 mentions of different income sources for urban, rural and Kuchi population of Afghanistan, but from the data it has generated, it is not possible ascertain what percentage of labor force have which particular activity as their major economic activity generating maximum income.

Different official documents present different sets of data, say, for example, for the share of agriculture in employed labour force of Afghanistan. Even the same document might mention different figures in the same chapter. Under the above circumstances, it might be reasonable to use the data regarding sectoral composition of employed labor force of Afghanistan, as provided in a published document by a respectable organization such as, the World Bank, as the starting point, and comment on changes that have taken place

in the structure of output and employment in the light of Table 9.

In 2003, contributing an estimated 53% to GDP (excluding drugs), agriculture (crop, livestock, forestry and fishery), according to World Bank, accounted for 67% of the employed labor force in Afghanistan. (World Bank, 2005 p.91). The same document mentions, "Afghanistan possesses a rudimentary manufacturing base with most factories in Kabul and a few major cities such as Herat and Mazar-i-Sharif. A significant component of current manufacturing is in traditional activities, such as carpet weaving, dried fruit production and processing, and other small scale activities." (World Bank, 2005 p.72). In that year, manufacturing's contribution to GDP (including opium) was, 9% (World Bank, p.7) or around 14% of non-opium GDP. Mining's contribution being negligible, it may reasonably be assumed that industry's (manufacturing and mining) contribution to employment would be around 10%. That means, the share of services sector would have been around 23% total employment in that year. According to C.S.O., in 2002, in public services, 207 thousand were employed. State enterprises employed another 116 thousand (Table 2). More than 2000 NGOs working largely in the areas of health, education and provision of humanitarian services had over 10000 employees in Afghanistan. (World Bank, 2005 p.73).

Having drawn a sketch of sectoral distribution of employed labour force as it existed in

Afghanistan around 2002/2003, let us now make some observations on possible changes that might have taken place in the employment structure of Afghanistan since then in the light of output data presented in Table 9, and other relevant statistics drawn from different sources.

Over 2002/03-2006/07 period, one may observe significant fluctuation in the agricultural output, particularly in cereal and livestock production, with a steady output level produced by horticulture, which implied that horticultural output was less vulnerable to changes in climatic factors compared to cereals and livestock.

Manufacturing output, with a concentration of food, beverage, and tobacco, steadily grew at a high rate since 2003/04, with total output increasing from 28 to 48 billion Afghanis between 2003/04 and 2006/07.

Construction sector recorded a boom. Value added in this sector increased from 12 to 32 billion Afghanis between 2003/04 and 2006/07.

Within the services sector, high rates of growth were achieved by hotels and restaurants; transport and storage; post and communication; financial services, personal, community and social services; government and other services.

Given the above growth rates in output experienced in different sectors, let us now focus on their employment implications.

Employment in the formal private sector enterprises, registered with Afghanistan Investment Support Agency (AISA), is presented in Table 10.

Afghan Investment Support Agency (AISA), however, feels that the employment data shown in Table 10 might have been understated to evade income tax. It however, points out that compared to earlier years, with greater access to capital, many firms switched to higher level of capital intensity, particularly for projects in the construction sector. That might have contributed to creation of less employment opportunities in subsequent years.

High rate of growth in hotels and restaurants might have generated some additional employment.

Employment in government service in 2006-07 was 304881 (C.S.O. 2007). It is not however clear whether the above figure includes employees of state owned enterprises (SOEs) which previously were shown separately. If the above figure includes employees of SOEs, despite increase in value added in government services resulting possibly from pay scale revision and implementation of PRR, total employment in government service (including SOEs) might have decreased.

Employment by NGOs, however, registered an increase. According to the Ministry of Economy with

which all NGOs (local and foreign) operating in Afghanistan need to register, NGOs (12014 local and 311 foreign) in Afghanistan, employed a total of 69,155 persons in 2008, of whom 2,083 were foreigners. It may, however, be mentioned that a number of basic services in health and education which were the primary responsibility of the government, are now being delivered by NGOs in Afghanistan.

The above rates of employment growth in various sectors of Afghan economy can hardly match the labor force growth experienced by the Afghan economy. The obvious implication is that there might have been an increase in open unemployment rate for the country, but higher rates of economic growth achieved in most sectors over this period would definitely be reflected in improvements in different dimensions of employment of certain socio-economic groups, while for others, the situation might have remained unchanged, or even worsened.

## 6.0 Concluding Observations

As no labor force survey was ever undertaken in Afghanistan, there do not exist at present any reliable labor statistics on Afghanistan. In order to have accurate data on the size of the labor force, its age-sex-structure, rural-urban distribution; level of employment, income, and productivity; employment status, nature of employment etc., a comprehensive labor force survey should be undertaken as soon as possible under the auspices of the Ministry of Labor in collaboration with CSO, and NRVA; with technical assistance from ILO; and funding from donors.

In order to effectively address the problem of child labor, particularly its hazardous forms, for collection of relevant information at the national level, the above labor force survey should also have a component on child labor.

## References:

ADB(2007): Key Indicators of Asian and Pacific Countries, 2007

CSO (2006): Afghanistan Statistical Yearbook, 2006

CSO (2007): Afghan Statistical Yearbook, 2007

ILO (2008): Key Indicators of Labour Market, 5th edition

IRC (2003): Afghanistan Labor Market Information Survey

Islamic Republic of Afghanistan (2008): Afghanistan National development Strategy (ANDS)

MWA-UNIFEM (2008): Women and Men in Afghanistan

NRVA(2005): MRRD: The National Risk and Vulnerability Assessment 2005, published in 2007

UNFPA (2007): State of the World Population

World Bank (2005): Afghanistan-State Building, Sustaining Growth, and Reducing Poverty

World Bank (2007): World Development Report, 2007

---

<sup>1</sup> Draws substantially from a recent report, Draft National Employment Policy and Strategy for Afghanistan prepared by the author for the Ministry of Labor, Social Affairs, Martyrs and Disabled, Government of Afghanistan, Aug.17, 2008

---

Dr. Muhammad Masum (born in 1949) has been a Professor of Economics at Jahangirnagar University, Dhaka, Bangladesh since 1988. On leave from his university, since 2006, he has been teaching in the Department of Economics at Towson University, USA. Dr. Masum obtained his B.A. (Honors), M.Sc., and Ph.D. in Economics from Dhaka University, Islamabad University, and Delhi School of Economics in 1970, 1972 and 1977 respectively. He was a Commonwealth Academic Staff Fellow at Oxford University (1983-84), a Visiting Fellow at Heidelberg University (1990) and a Thomas Jefferson Fellow at the University of California at Riverside (1993). He is a development economist by training with considerable teaching, research and consultancy experience both at home and abroad. He started his teaching career as a Lecturer in Dhaka University in 1973, and moved to Jahangirnagar as an Associate Professor in 1979. He also served as a Consultant to Bangladesh Planning Commission (1989), UN-ILO Advisor in Ghana (1994-95), and Executive Director of UCEP-Bangladesh (1998-99). On short term ILO assignments he traveled to Papua New Guinea, Vietnam and Afghanistan. He authored two books, co-authored one, and published a large number of papers and research reports. He is married, and has two sons.

## APPENDIX

Table 1: Labor Force of Afghanistan: ADB  
(thousand; fiscal year beginning 21 March)

	1990	2002	2003	2004
Labor Force <sup>a</sup>	6120 (100)	7707 (100)	7857 (100)	8230 (100)
Employed	5914 (96.63)	7447 (96.63)	7592 (96.63)	7953 (96.63)
Agriculture	4115 ( 69.58)	5181 (69.57)	5282 (69.57)	5534 (69.58)
Industry	905 (15.30)	362 (4.86)	369 (4.86)	387 ( 4.87)
Others	894 (15.12)	1904 (25.57)	1941 (25.57)	2033 (25.56)
Unemployed and unclassified	206	260	265	277
Unemployment rate (%)	3.0	3.4	3.4	3.4
Labor force annual change, %	1.9	1.9	1.9	4.6

Note: a: "The labor force data include the population between ages 10-59 years. Employed refers to the productive and non-productive sectors. The productive sector includes agriculture and industry (manufacturing, mining, small scale industries and handicrafts, construction and geology, and transport and communications). The nonproductive sector refers to other employed which include education and health, government departments, and public service."

Source: ADB (2007): Key Indicators of Developing Asian and Pacific Countries pp. 160, 164.

Table 2: Afghan Manpower: C.S.O.

	Unit	1979 1358	2000 1379	2001 1380	2002 1381
Population permanent (excl. Nomad)	000	13051.4	19532.7	19910.9	20297.8
Population ready to work (15-59)	000	6333.6	9431.1	9613.7	9800.5
Number of Human forces	000	4955.3	7416.6	7560.2	7707.1
Employable population	%	38.0	38.0	38.0	38.0
Human forces in population who can work	%	78.2	78.6	78.6	78.6
Human forces who are working	000	4591.9	7166.6	7305.4	7447.3
Above figure in Human forces	%	92.7	96.6	96.6	96.6
Active population in production, trade transport & communication	000	4073.5	6083.1	6200.9	6321.4
Agriculture, forest, livestock	000	3515.6 (76.56)	49.86.1	5082.6	5181.4
Active population in productive sector	%	81.4	82.0	82.0	82.0
Government sector	000	19.7	27.2	27.7	28.3
Industries including mining	000	231.8 (5.05)	348.6	355.3	362.2
People not in field of product	%	5.7	5.7	5.7	5.7
In Government and private sector	000	48.6	85.1	86.8	88.5
Construction sector	000	64.4	94.9	96.7	98.6
of which: Government project	000	47.1	76.6	78.0	79.6
Transport and communication	000	110.6	163.1	166.3	169.5
of which : public enterprises	000	13.6	53.1	54.2	55.2
Commerce	000	351.1	490.4	499.9	509.6
of which : public enterprises	000	31.0	59.2	60.6	61.8
Labor forces in other services	000	518.4	1083.6	1104.5	1126.0
Education	000	47.2	72.8	74.5	76.0
Public Health	000	13.2	20.9	21.4	21.8
Information & Culture	000	6.2	19.7	9.9	10.1
Government Institutions	000	100.6	151.2	154.2	157.2
Public Services	000	129.4	199.8	203.6	207.6
Other fields	000	221.9	629.1	641.3	653.8
Undistribution Employees	000	363.5	249.9	254.8	259.7
Labor forces in other services	%	7.3	3.4	3.4	3.4
Population who are busy around the houses (15-59)	000	2747.3 (4.34)	4165.0	4245.7	4328.2

Source: Website of C.S.O. Afghanistan

**Table 4: An Estimate of the Labor Force of Afghanistan, 2005, using Pakistan's Age-Sex-Specific LFPR**

Age-group	Male Population	Male LFPR	Male Labor Force	Female Population	Female LFPR	Female Labor Force	Total Labor Force
15+	6247611	83.2	5198012	5816770	32.6	1896267	7094279
15-24	2058316	70.8	1457288	1730713	22.5	389410	1846698
25-34	1196043	95.7	1144613	1423777	42.3	602258	1746871
35-54	1898824	96.2	1826669	1855868	40.6	753482	2580151
55-64	595075	80.6	479630	451806	32.5	146837	626467
65+	499353	47.7	238191	354606	18.2	64538	302729

Note: Age-sex-specific LFPRs of Pakistan for 2005 have been used.

Source: Ministry of Women/s Affairs and UNIFEM(2008): Women and Men in Afghanistan, 2008, and ILO (2008): Key Indicators of the Labour Market, Fifth Edition, 2008

**Table 5: An Estimate of the Labor Force of Afghanistan, 2005 using Tajikistan's Age-Sex-Specific LFPR**

Age-group	Male Population	Male LFPR	Male Labor Force	Female Population	Female LFPR	Female Labor Force	Total Labor Force
15+	6247611	62.3	3892262	5816770	46.3	2693165	6585427
15-24	2058316	37.5	771869	1730713	31.2	539982	1311851
25-34	1196043	87.5	1046538	1423777	61.9	881318	1927856
35-54	1898824	88.1	1672864	1855868	67.1	1245287	2918151
55-64	595075	52.8	314200	451806	18.4	83132	397332
65+	499353	6.1	30461	354606	3.4	12057	42518

Note: Age-sex-specific LFPRs of Tajikistan for 2005 have been used

Source: Ministry of Women/s Affairs and UNIFEM (2008): Women and Men in Afghanistan, 2008, and ILO (2008): Key Indicators of the Labour Market, Fifth Edition, 2008

Table 6: Sources of Income Reported by All Households (%) by Province

Provinces	Agriculture	Livestock	Opium	Trade and Services	Manufacture	Non-farm labor	Remittances	Others
Badakhshan	55	24	7	32	4	29	1	7
Badghis	59	51	1	7	7	5	1	13
Baghlan	45	21	4	30	7	29	2	3
Balkh	42	20	9	34	12	28	1	2
Bamyan	86	36	0	8	1	47	4	4
Daykundi	71	16	5	5	0	30	3	9
Farah	50	26	2	21	1	25	4	3
Faryab	53	27	3	25	15	31	6	4
Ghazni	57	49	0	17	2	28	18	7
Ghor	56	16	2	7	2	40	1	5
Hilmand	69	26	41	26	0	20	2	2
Hirat	36	20	0	21	4	46	4	5
Jawzjan	48	18	1	37	25	37	1	3
Kabul	11	3	0	53	6	27	1	9
Kandahar	28	8	4	29	2	34	5	10
Kapisa	62	19	0	32	2	36	15	9
Khost	46	38	1	45	4	25	8	2
Kunarha	74	48	1	33	2	28	11	6
Kunduz	66	27	0	28	6	15	1	4
Laghman	29	17	0	36	0	39	9	3
Logar	31	32	1	26	2	46	6	3
Nangarhar	48	14	4	31	1	38	9	6
Nimroz	14	26	0	32	1	17	4	15
Nuristan	88	88	1	4	0	14	7	5
Paktika	65	40	1	5	1	48	21	0
Paktya	59	44	0	19	2	49	11	17
Panjsher	38	37	0	29	1	51	1	3
Parwan	39	19	1	27	4	45	1	2
Samangan	36	15	1	17	8	28	3	9
Sar-i-pul	75	21	1	13	6	45	4	3
Takhar	60	18	3	23	4	38	3	5
Uruzgan	40	38	5	14	2	18	10	2
Wardak	43	21	1	24	1	45	16	6
Zabul	50	20	4	16	5	37	1	9
National	47	23	4	27	5	33	5	6

Source: NRVA, 2005 p.130



Table 7: Sources of Income Reported by Rural Households (%) by Province

Provinces	Agriculture	Livestock	Opium	Trade and Services	Manufacture	Non-farm labor	Remittances	Others
Badakhshan	56	21	7	32	4	28	2	7
Badghis	65	45	0	8	7	6	1	13
Baghlan	54	24	3	26	8	30	2	3
Balkh	61	29	12	21	11	25	2	2
Bamyan	86	36	0	8	1	47	4	4
Daykundi	71	16	5	5	0	30	3	9
Farah	56	17	3	24	1	24	4	4
Faryab	60	23	4	22	16	34	7	3
Ghazni	60	47	0	18	2	29	19	7
Ghor	60	10	2	8	2	42	1	5
Hilmand	70	25	41	26	0	20	2	1
Hirat	48	23	0	11	6	50	5	5
Jawzjan	67	16	1	26	31	38	1	3
Kabul	41	8	0	31	5	40	1	2
Kandahar	38	8	6	23	3	37	7	5
Kapisa	62	18	0	32	2	35	15	8
Khost	45	36	1	45	5	24	8	2
Kunarha	74	48	1	33	2	28	11	6
Kunduz	76	28	0	19	6	14	1	4
Laghman	29	17	0	36	0	39	9	3
Logar	39	16	0	30	2	46	8	3
Nangarhar	55	14	4	28	1	40	10	8
Nimroz	16	11	0	38	1	21	5	18
Nuristan	88	88	1	4	0	14	7	5
Paktika	66	39	1	5	1	48	21	0
Paktya	61	42	0	20	2	50	11	15
Panjsher	41	27	0	33	1	47	1	3
Parwan	43	12	1	30	4	49	1	2
Samangan	37	15	1	17	8	29	3	9
Sar-i-pul	75	20	1	13	6	45	4	3
Takhar	65	19	3	20	4	39	3	5
Uruzgan	42	37	5	14	2	16	10	2
Wardak	46	16	1	27	1	46	18	5
Zabul	52	15	4	17	4	38	1	0
National	57	25	5	21	4	34	6	5

Source: NRVA, 2005 p. 131

Table 8: Sources of Income Reported by Urban Households (%) by Province

Provinces	Agriculture	Livestock	Opium	Trade and Services	Manufacture	Non-farm labor	Remittances	Others
Baghlan	18	2	3	54	5	32	2	5
Balkh	7	3	2	58	14	35	1	3
Faryab	27	6	0	62	25	24	3	5
Hirat	5	1	0	52	1	38	1	6
Jawzjan	8	2	0	74	15	32	1	5
Kabul	3	0	0	61	6	22	1	11
Kandahar	8	1	1	43	2	27	0	21
Kunduz	34	21	0	58	7	20	9	6
Nangarhar	12	0	0	58	1	27	0	0
Takhar	20	1	0	46	2	39	6	3
Urban	7	2	1	58	6	27	1	9

Notes:

1. Agriculture refers to crop production for home consumption and sales of field crops; production and sales of cash crops (non-opium); production and sales of orchard products; and agricultural wage labour.
2. Livestock refers to livestock production for home consumption; shepherding; production and sale of livestock and associated products.
3. Opium income refers to production and sale of opium, and opium wage labour.
4. Trade and services refer to sales of prepared foods; salary/government job; small business; petty trade; cross border trade; firewood/charcoal sales; military service; taxi/transport; and rental income.
5. Manufacture refers to mills, handicrafts, carpet weaving; and mining.
6. Non-farm labour refers to other wage labour; and skilled labour,
7. Remittances refer to remittances from seasonal workers; remittances from family members living permanently away from home.
8. Others refer to pension; other military benefits; sale of food aid; begging,/borrowing

Table 9: Gross Domestic Product by Economic Activity at 2002/03 Constant Prices ( million Afghanis)

Sectors	2002/03	2003/04	2004/05	2005/06	2006/07
Agriculture	87610	102561	97534	104084	91541
Cereals and others	70144	84826	78441	85892	72750
Fruits	6035	6159	6319	6346	6708
Livestock	11431	11577	12774	11846	12083
Industry	38263	40612	53651	66448	80604
Mining and quarrying	264	256	493	580	639
Manufacturing	29178	28341	34499	41211	47969
Food, beverage, & tobacco	27659	26612	32493	38822	45227
Textile, wearing apparel & leather	277	393	305	541	619
Wood & wood product	29	35	84	84	96
Paper, paper product, printing, publishing	12	12	13	15	16
Chemicals, chem. Petroleum, coal, rubber, plastic	820	756	927	999	1149
Non-metallic mineral except petroleum & coal	369	504	587	651	748
Metal basic	12	31	91	101	114
Electricity, gas and water	121	174	163	196	199
Construction	8700	11842	18495	24460	31798
Services	68133	77483	90058	103239	122326
Wholesale & retail trade, restaurants & hotels	19282	17992	18967	20233	23079
Wholesale & retail trade	18035	16721	17400	18442	20840
Restaurants & hotels	1246	1271	1568	1791	2239
Transport, storage and communication	20313	29532	33343	36843	46637
Transport & storage	19554	28718	32277	35637	43477
Post and telecommunications	759	814	1066	1206	3160
Finance, insurance, real estate and business	1289	2069	2640	3185	3913
Finance	1256	2038	2605	3147	3871
Insurance	4	4	5	5	6
Real estate and business services	28	27	30	33	36
Ownership of dwellings	10650	11501	11992	12142	12749
Community, social & personal service	2160	2146	2522	2776	3332
Producers of Government Services	10000	9704	11366	18179	22045
Other Services	4439	4539	9227	9881	10572
Total	194006	220657	241242	273770	294472
Less: Imputed bank service charge	2570	4066	4691	7862	7964
Taxes on imports					
GDP at Market Prices	196576	224723	245934	281632	302436

Source: C.S.O. Afghanistan Statistical Yearbook, 2006, and 2007

Table 10: Employment in Enterprises Registered with AISA, 2003-2008

<b>Afghanistan Investment Support Agency</b>						
<b>Research and Policy Department</b>						
<b>Total Employment in enterprises registered with AISA, 2003-2008</b>						
<b>Sector</b>	2003	2004	2005	2006	2007	2008
<b>Total Employees</b>	<b>6,192</b>	<b>89,752</b>	<b>86,458</b>	<b>67,933</b>	<b>46,812</b>	<b>59,923</b>
<b>Domestic</b>	<b>3,549</b>	<b>55,008</b>	<b>71,477</b>	<b>42,656</b>	<b>38,151</b>	<b>48,608</b>
Construction	804	28,611	42,759	22,885	20,080	22,463
Services	1,593	8,701	7,175	5,032	8,279	3,025
Industry	1,042	16,580	20,508	13,736	9,003	22,836
Agriculture	110	1,116	1,035	1,003	789	284
<b>Foreign</b>	<b>2,643</b>	<b>34,744</b>	<b>14,981</b>	<b>25,277</b>	<b>8,661</b>	<b>11,315</b>
Construction	1,733	18,602	7,182	13,357	2,987	6,752
Services	910	14,656	5,741	8,997	4,106	4,209
Industry	0	1,467	1,844	2,469	1,149	324
Agriculture	0	19	214	454	419	30

Source: Research and Policy Department, AISA

Date: 04, August, 2008

# TEACHING STRATEGIC BUSINESS POLICY IN TODAY'S ENTREPRENEURIAL ECONOMY

Donald Mong, Slippery Rock University

---

## Abstract

This paper describes a research and immersion approach to teaching strategic business policy in today's entrepreneurial economy. Theoretically, the approach stems from any business's need, particularly any entrepreneurial business's need, to maximize cash flow. The paper asserts that most real-world strategic business policy decisions relate back to that cash-flow need, and that cash-flow maximization can therefore be used a unifying core in teaching diverse strategic business policy concepts to students. Pedagogically, the approach immerses students in the hands-on research, quantitative analysis, and writing needed for boardroom-level strategic business policy decisions. The approach has been successfully used at the undergraduate level at one of Pennsylvania's public-access universities.

---

## Introduction

This paper grew out of a desire to develop a teaching approach to strategic business policy that did four things:

1. provided students with a unifying core from which to identify and evaluate strategic business policy decisions (this core would be the centrality of cash flow maximization to the decisions of any business, particularly any entrepreneurial business);
2. showed the interplay of library-based research and legwork research in solving real-world strategic business policy problems;
3. strengthened the rigorous research, quantitative analysis, and writing skills needed for graduating seniors to become effective young managers in today's entrepreneurial economy;
4. helped graduating seniors to transition into the ambiguity and self-management pressures of those post-graduation job assignments.

A business policy course is usually taught to graduating seniors as a capstone business course (Arben, 1997; Schendel & Hatten, 1972). Students are expected to enter the course having completed all other required business courses and being able to draw on that previous knowledge. Thus, the purpose of a strategic business policy course is as much to synthesize previous learning from all business specialties — accounting, economics,

entrepreneurship, finance, management, and marketing — as to provide new skills.

The course is usually called business policy, a name which stems from 1912, when Arch Shaw first conceived the course at Harvard (Arben, 1997; Bailey, 2003). Shaw's purpose was to integrate previous learning. More recently, some authors have favored the name strategic management to emphasize that development of policy requires skills of its own—skills not found in any of the functional areas of a business (Schendel & Hatten, 1972). The teaching approach described in this paper is based on both integration and separation and therefore adopts the name strategic business policy in recognition of both approaches.

Section one of the paper explores the conceptual framework of the teaching approach by asking what makes certain decisions strategic. The section finds that strategic decisions are those that can put a company out of business. Companies can make a number of functional and public-image mistakes affecting profitability, but still remain in business. Once cash flow ceases, however, the company goes out of business. The need for cash affects any business (Govindarajan & Shank, 1986), but is especially pronounced in today's entrepreneurial economy (Opiela, 2006). Section one therefore finds that cash flow can be used as a unifying core from which most of a company's strategic decisions emanate.

Section two of the paper asks how we can build from that unifying core to provide students in a strategic business policy course with needed academic and employment skills. The section first looks at the historical pedagogy of business policy courses from early lectures and case studies (Arben, 1997), to simulations and class activities (Snow, 1976), to today's integrative computer games (Walters & Coalter, 1997; Wolfe, 1973). The section relies heavily on adapting business policy courses to the needs of the specific students taught (Hodgetts, Ezell, and Van Auken, 1976) and on teaching the course from the CEO's perspective (Denning, 1968). The section then suggests that we can improve the historical pedagogy by adding a research and immersion approach to it.

The section then looks at the research and immersion approach itself. Students are immediately immersed in a in a series of strategic problems, held to professional standards, and required to solve the problems through individualized research, rather than through reading a course textbook. This teaching approach initially shocks many students, who have been trained to read a textbook, listen to a lecture, and then write a paper. Yet young managers in a job setting do not have those luxuries. Young managers are usually given assignments, expected to research problems and propose solutions on their own, and told only after their reports are submitted whether those reports are acceptable. Effectively transitioning students to future jobs requires the teaching approach to do the same things, but also to provide the safety net of academic instruction and guidance.

Section three of the paper traces the teaching approach through its four modules. In the first module, students are provided with the conceptual framework, refreshed in individualized research and self-management skills, and started on professional writing assignments. In the second module, students conduct intensive research into an industry and recommend optimal structuring of a given business within that industry. In the third module, students cope with a series of outside pressures against that optimal structuring, including ethical dilemmas, regulatory concerns, and socio/political sensitivities.

In the fourth module, students draw together all strategic factors to research and recommend the optimal short-and-long-term cash-maximizing location for their company.

Finally, section four of the paper discusses very preliminary, anecdotal feedback and lessons learned from the teaching approach. Despite initial shock, most students express enthusiasm for the teaching approach, report that they willingly devote considerable time to the class, and improve their business writing and quantitative analytical skills from the approach. Initial reaction from employers and young alumni has also been positive. However, the approach is not without its tough stretches throughout the semester. Further, standardized assessment pressures, lack of faculty comfort with a non-standardized teaching approach, and faculty time needed for individualized guidance and evaluation all present challenges. This paper is thus being written far more as an invitation for further analysis, comparison, and improvement of the teaching approach, than as a finished product.

### Section One: Conceptual Framework

This section of the paper asks two key questions:

1. What is a strategic decision, as opposed to a purely functional decision?
2. Why do most strategic decisions relate back to the need to maximize cash flow, particularly in entrepreneurial companies?

Before we can fully answer those questions, we must first understand why a conceptual framework is important to a strategic business policy course. The first business policy course was taught at Harvard in 1912 (Arben, 1997; Bailey, 2003). The course was to be a capstone, integrating previous student learning from across a variety of business's functional areas (Arben, 1997; Bailey, 2003; Eldredge & Galloway, 1983). At the urging of the 1959 Ford and Carnegie reports, more business schools adopted policy courses to integrate cross-functional learning (Arben, 1997). The emphasis continued to be on integration until the 1970's, when some authors urged a recognition of the integration itself as a separate

discipline that required skills not found in any of the functional areas being integrated (Arben, 1997; Schendel & Hatten, 1972). These advocates adopted the name strategic management to distinguish their approach from the simple integration of traditional policy courses (Schendel & Hatten, 1972).

The original strategic management advocates were quick to acknowledge that their advocacy was intended to supplement, rather than replace the integrative function of traditional policy courses (Schendel & Hatten, 1972). Nevertheless, some strategists began to focus their efforts as much on understanding complex performance modeling of business entities, as on integrating cross-disciplinary learning (Arben, 1997; Betz, 2002; Porter, 1975). Most of the 20<sup>th</sup> Century was the heyday of big business, and complex entity modeling made sense when dealing with large, complex corporations. However, the entrepreneurial economy of the 21<sup>st</sup> Century (Kuratko, 2005) calls for a different understanding of strategy, one that will actually unify the integration of traditional policy with the separation of strategic management.

#### *What is a Strategic Decision?*

Strategic business policy decisions are often be complex, and a number of authors have adopted complex definitions of strategy. For instance, Betz (2002) focuses on complex modeling for the future, and Porter (1975) focuses on understanding complex industry structures. These definitions have the advantages of urging readers to understand the high-level nature of strategic decisions and to synthesize multiple inputs in their decision making. In the midst of the big business heyday, Denning (1968) adopted a similarly complex definition, focusing on the interplay of the organization and its environment. Yet, Denning also emphasized that the whole purpose of strategic decisions is to ensure the company's survival. The teaching approach described in this paper thus adopts a simple definition of strategy: A strategic decision is one that can put a company out of business.

This simpler definition is intended to constantly remind students and business executives to

differentiate the strategic from the functional. Why does that differentiation matter? It matters because of the not-seeing-the-forest-for-the-trees dilemma. One of the goals of strategic business policy courses is to make sure that business managers do not become so engrossed in the pressures of everyday management decisions that they lose sight of the larger forces affecting their businesses' survival.

The differentiation between the strategic and the functional does not imply that functional decisions – everyday decisions in such areas as accounting, economics, entrepreneurship, finance, management, and marketing – are unimportant. Bad functional decisions can cost a company a lot of money. Still, if the company survives, it can recoup many of those earlier losses through making good functional decisions in the future. Once the company goes out of business, however, it loses any hope of recouping losses. Failure is not temporary, as with bad functional decisions. Strategic failure is permanent. The simpler strategic definition thus seeks to focus attention on those few key decisions whose magnitudes are such that they can put a company out of business.

No one is saying that telling a strategic decision from a functional one is easy, or that strategic decisions do not arise from functional areas. For example, misjudging a client profile in a rapidly expanding market might lead to short-term functional losses. Misjudging that same client profile in a shrinking market might lead to strategic extinction. Think also of the dot.com boom and bust of the 1990's. Internet companies that were able to spend profligately during the boom suddenly found that even highly judicious spending during the bust could not save them.

How then do we tell which decisions are strategic? The authors who adopt complex definitions of strategy are absolutely right that we must eventually understand the complexity of strategic issues, consider inputs from multiple business and non-business areas, and synthesize comprehensive solutions to strategic problems. However, starting with complexity can cause us to become lost in the very trees that we are trying to rise above to see the



forest. We must therefore seek a unifying touchstone against which to measure strategic decisions. More often than not in the business world, that touchstone will be cash flow.

### *Why Cash Flow?*

In the end, the only thing that can put a company out of business is loss of cash flow. That loss might be caused by a number of different factors. For example, it might come because competitors entice a company's customers to abandon it, it might come because government regulations impose greater costs of doing business on the company, or it might come because the company's management is so corrupt or incompetent that it fritters away cash reserves. Yet, in the end, the only thing that can put a company out of business is the loss of cash flow.

Govingarajan & Shank (1986) said that cash was strategy's missing link, noting that many business decisions were made more on the sufficiency of cash to finance them, than on the recommendations of strategic models. As America's economy has moved to a more entrepreneurial one (Kuratko, 2005), the importance of cash flow has only increased. Opiela (2006) noted the cash crunch that drives most entrepreneurial decisions, especially in the entrepreneurial venture's early years. Cooley & Pullen (1979) and Grablowsky (1978) both studied the level of entrepreneurial focus on cash flow, finding that small companies need to be—and were—just as sophisticated in their cash flow management as larger, more complex companies.

Cash flow alone cannot describe every facet of a business. For example, Estep (1987) pointed out that cash flow alone could not predict long-term valuation of a company. Still, if one doubts the centrality of cash flow to strategic decisions, one need only look at the current 2008 economic crisis. The companies—large and small—with cash have survived. The companies without cash have not. Cash flow is what CEO's worry about each day, and it provides an easy-to-remember core for teaching strategic business policy to students.

## Section Two: Pedagogy

Section Two of the paper asks how we can use the conceptual framework of section one to provide students with needed academic and employment skills in a strategic business policy course. The section first looks at how policy and strategy courses have historically been taught, and then it looks at the core pedagogy of the research and immersion approach described in this paper.

### *Historical Pedagogy*

The pedagogy of business policy courses is almost 100 years old, and it can be viewed as having evolved with the changing structure of the American companies.

When Arch Shaw began teaching business policy courses at Harvard in 1912, the era of big business was still in its early days. Companies were organized into rigid bureaucracies, and Shaw's pedagogy was aimed at helping students to integrate previous learning from a number of specialties within the business curriculum. Today, those specialties might fit into accounting, economics, finance, management, and marketing. Shaw did something revolutionary for his day: He moved away from lectures, and replaced them with case studies (Arben, 1997; Bailey, 2003).

The original case studies were from guest senior executives, each of whom simply recounted a problem that they had encountered in the management of their business. By studying the problems and reflecting on interdisciplinary solutions to them, students were expected to formulate policies that could be used to prevent or solve similar problems in the future. Thus, Shaw called his course policy, rather than problems (Arben, 1997). The case study approach proved successful, and the first casebook was introduced at Harvard in 1951 (Arben, 1997). It continued to focus on a senior manager perspective for integrating previous learning.

Throughout the first three quarters of the 20<sup>th</sup> century, American businesses became larger and more complex. Policy course pedagogy focused

increasingly on understanding those businesses through complex modeling and attention to the interrelationships between business units and their environments (Denning, 1968; Porter, 1975). Policy continued to be used as a capstone course in business schools (Eldredge & Galloway, 1983), but authors began to see the course as a business specialty unto itself, rather than just an integration of previously learned business specialties. These authors adopted the name strategy, or strategic management, to focus attention on the separate skills needed to integrate functions across increasingly complex corporations (Schendel & Hatten, 1972).

To their credit, Schendel & Hatten (1972) cautioned that strategy courses must build upon the integrative purpose of traditional policy courses, rather than divorce themselves from it. Schendel & Hatten's stated purpose was to promote strategic thinking throughout the business curriculum, rather than waiting for a single capstone course to convey it to students. However, in this author's opinion, too many subsequent case studies began focusing on erudite thinking, rather than on integrating functional business skills in the ways in which graduating seniors would need to use them throughout their business careers.

The 1980's saw a shift toward entrepreneurial companies as the dominant force in the American economy (Kuratko, 2005). Case studies have continued to be used in policy courses (Gallagher, Stevenson, & Fordyce, 1998), but the pedagogy of choice has increasingly shifted toward computerized simulation games (Walters & Coalter, 1997; Wolfe, 1973). Walters & Coalter (1997) reported that games had advantages over case studies in holding student interest and in reinforcing functional skills while simultaneously teaching integrative skills. Yet those games with which this author is familiar tend to leave time for the students to engage in the reflective thinking promoted by strategic case studies. Perhaps today's entrepreneurial economy presents an opportunity for us to create a pedagogy that blends the best of both the case study and the games approaches.

Case studies were revolutionary for their day, as were simulation games. Likewise, separating strategy from mere integration made sense when American businesses were becoming increasingly large and complex in the 1970's. Yet today's entrepreneurial businesses are different. The businesses themselves might be simpler in structure, but that only means that each management employee of the company must be far more complex in his or her understanding of cross-disciplinary functions. The successful manager cannot just be a specialist in his or her own area; (s)he must understand the whole business with a sophistication that was required only of top managers in the big business era. Today's strategic business policy pedagogy must recognize that shift from its historical predecessors, yet today's pedagogy can find its basis in the writings of the past.

Hodgetts, Ezell, & Van Auken (1976) suggested that a contingency approach was needed in the pedagogy of business policy courses, one that adapted to the needs of the specific students being taught. Snow (1976) identified four ways of teaching policy: cases, simulations, in-class activities, and variations of the preceding three. Denning (1968) urged that policy be taught from the CEO's perspective. Finally, Schendel and Hatten (1972) urged that a successful business policy course should both integrate previous function learning and provide the new skills necessary for that integration. The research and immersion approach described in this paper draws on each of those authors and can help our pedagogy to achieve each of their goals.

### *The Research and Immersion Approach*

The research and immersion approach described in this paper draws from each of the four authors noted above. The approach itself will be described in greater detail in the next section of this paper, entitled Modules, but let us first understand how the approach sought to address the recommendations of each of the four authors.

Hodgetts, Ezell, & Van Auken (1976) urged that the pedagogy match the students. In our case, the teaching approach was to be used at one of Pennsylvania's public-access universities. The

students would be bright and hardworking, but few would begin their careers in the executive suites of their Ivy League counterparts. We needed to provide students with an understanding of how business's various specialties – accounting, economics, entrepreneurship, finance, management, and marketing – came together in a business and to prepare the students to advance into executive positions. Thus, I chose to teach the students at a higher management level than the jobs that they would be entering, but to emphasize the opportunities that the teaching approach could provide for future advancement.

Snow (1976) found that there were four basic ways of teaching a capstone course: cases, simulations, in-class activities, and variations of the preceding three. Convinced that our students would accept a non-traditional approach if shown that it could help them to climb the management ladder, I drew on my own experiences as a young manager. My fastest advancements had come when I was unexpectedly thrown into complex situations for which I had little training, and forced to research my way out of them. Thus, the research and immersion approach was born. The challenge was to ensure that the approach would not become just a collection of war stories, but rather a comprehensive integration of all areas of previous learning, coupled with an understanding of how senior managers develop business strategy.

Accordingly, four goals were adopted for the teaching approach:

1. to provide students with a unifying core from which to identify and evaluate strategic business policy decisions;
2. to show the interplay of library-based research and legwork research in solving real-world strategic business policy problems;
3. to strengthen the rigorous research, quantitative analysis, and writing skills needed for graduating seniors to become effective young managers in today's economy;
4. to help graduating seniors to transition into the ambiguity and self-management pressures of those post-graduation job assignments.

The unifying core would come from the conceptual framework of the teaching approach which was discussed in section one of this paper. Students could easily remember that strategic decisions were those that could put a company out of business, and that most strategic decisions could be related to cash flow. Denning (1968) had urged that strategy be approached from a CEO's perspective, and today's CEO's worry first about survival and cash flow. With that unifying core in hand, we would build outward toward increasingly complex strategic decisions. In doing so, we would eventually cover virtually all of the capstone topics commonly found in policy and strategy textbooks.

We would do so through a series of comprehensive, student-researched and student-written strategy memos and presentations. The memos would focus on key problems faced by a simulated company. To focus students on the public research sources available to businesses, and to show students the interplay between library-based and legwork based research, there would be no textbook or case studies used in the teaching approach. Students would essentially be creating their own case study with instructor guidance as the course progressed.

The teaching approach would simulate a professional workplace to emphasize that the same rigor of research, quantitative analysis, and writing skills needed for classroom success is also key to real-world strategic success. Effectively simulating that workplace would require students to work within ambiguity, to work with initially limited information from the instructor, and to work under time pressures. Students would be permitted to form their own teams to enhance interpersonal skills. Yet effective simulation would also require students to take accountability for their strategic decisions, since the teaching approach would progressively build on previous decisions made by the students themselves. While intense, this approach would need to provide the safety valves of personal support and academic guidance while teaching the students to behave as professional managers.

### Section Three: Modules

This section of the paper describes a step-by-step application of the teaching approach to a semester-long class. Students are immediately immersed in a series of strategic problems and required to solve them through individualized research, rather than through reading a course textbook.

The section traces the class through its four modules. The first module focuses on the instructor conveying the conceptual framework and providing common starting-point skills for the course. The second module focuses on students conducting intensive research into an industry and recommending optimal structuring norms for a given company within that industry. The third module focuses on students dealing with a series of outside pressures against that optimal structuring, including ethical dilemmas. The fourth module focuses on students researching and recommending the optimal cash-flow-maximizing location for their chosen business.

The first module does two things simultaneously. First, it conveys the conceptual framework of the teaching approach. Second, it refreshes or provides the research and organizational skills needed for the rest of the semester.

The theoretical core begins with the out-of-business and cash flow concepts discussed in earlier sections of this paper. The next step is to expand those concepts into a number of applications and develop a disciplined analysis to look at all facets of them. The teaching approach uses no textbook, but does rely on the *Entrepreneur's Guide: Starting and Growing a Business in Pennsylvania* for an outline of the 100+ items which an entrepreneur must consider in planning and running his or her company. In class, we categorize those 100+ items into three key questions:

1. Is there a market for what the company wants to sell?
2. Does the company have the right product and the right people within itself to compete in that market?

3. Can the company keep the cash flowing long enough to grow?

Other strategists might choose a different expression of those categories. For instance, other strategists might emphasize competitors within market or production processes within product. Regardless of the expression chosen, the point is to show students that each of the 100+ items in the *Entrepreneur's Guide* ultimately relates to cash flow. Financially, the same three questions asked above become:

1. How much revenue can the company take in?
2. How much of that revenue does the company have to expend to function?
3. How much cash is left?

For those who favor complex strategy books with a variety of topics, this approach might seem deceptively simple. Yet we often forget that the basic purpose of business is to make money. CEO's worry about cash flow, and relating it to each future strategic choice provides students with a common touchstone in their decision making. Businesses might not always choose the strategic option with the greatest cash maximizing potential—for example, for ethical reasons—but few companies will make a strategic decisions without asking what they will cost.

As stated, the second purpose of the first module is to refresh or provide the organizational and research skills necessary for the rest of the semester. The approach uses teams of 7-10 students to conduct research, but requires each student within those teams to write his or her own strategy memos. This approach is intended to promote both the teamwork and personal accountability that will be expected in future managers.

After speed-dating-like opportunities for each student to meet the rest of the class and discuss the skills needed to complete the semester, students form themselves into teams. Students are again reminded that self-management also implies self-accountability, since the semester's strategic decisions will be made on the research provided by

the students themselves. A visit from the University's business librarian refreshes the basic research resources available to the teams. The first research project is to select an industry upon which to base the semester's class, using hard research of its suitability to Western Pennsylvania, rather than personal interests.

Simultaneously, students apply to become strategic advisor to a CEO of a company within that industry. This initial writing project is intended to strengthen both the industry research, since a cover letter must show that knowledge, and concise writing skills. The initial assignment has the added advantage of helping graduating seniors to focus on job application skills.

The second module of the teaching approach intensifies student research into their chosen industry. Students thoroughly research the industry to recommend the optimal structuring of their company to their CEO. Those recommendations are to be based on qualitative and quantitative analysis of norms, ratios, standards, and trends within the industry. Sources include both the library-based, such as Standard & Poor's, Dun & Bradstreet, and IBIS World, and the legwork-based, such as trade associations and personal interviews with industry executives. Each student is then expected to write a hands-on strategic memo, rather than a mere book report of the research findings.

A three-week time frame for the assignment forces teamwork and lessens procrastination. The short time frame also forces students to learn to work within the ambiguity and uncertainty of the business world, since the instructor intentionally does not provide many lectures. However, after the instructor has reviewed the memos and provided extensive individual feedback, the entire class is led in a discussion of optimal structuring for their company. The class then comes to a consensus on that structuring. This point is where the research and immersion approach begins to meet that of traditional textbooks. After the discussion, students are expected to know what the ideal company within their chosen industry should look like. This memorized knowledge and the ability to write a

concise strategic memo are both tested by a comprehensive essay test at the end of the module.

The third module introduces a series of outside distractions to the ideal structuring of the company. These distractions include ethical dilemmas, political and regulatory roadblocks, and new socio-economic factors. This point is where the research and immersion approach truly intersects with traditional textbooks and case studies, which present individual challenges in series of learning objectives. By contrast, the research and immersion teaching approach described in this paper has first grounded students in the ideal, and then asked them to challenge each of their solutions to the outside distractions by judging what effect it will have on company survival and cash flow. As with previous modules, student teams research together, but each student writes his or her own strategy memo for this module.

Finally the fourth module brings together all of the semester's learning in a team siting project. Siting is the selection of the best location for a company within a region—in our case, within Western Pennsylvania. This module forces a review and synthesis of all of the strategic factors which a CEO must consider in developing his or her company's business policy. Location affects access to markets, suppliers, support businesses, employees, and support professionals. Location determines the level of competition for customers. Location determines the cost of land and physical facilities, taxes, regulatory compliance, and the political and community-based sensitivities with which the company must cope. Again, the effect on cash flow—both short-term and long-term—is the measurement used.

For this final module, the method of testing changes. Earlier modules utilized individual memos and tests. In this final module, students develop comprehensive team oral presentations to their CEO. The simulation is as close to a corporate boardroom as possible, with expectations of pre-meeting briefing memos, full business dress, 25-minute presentation time frames, and professional quality presentations. As in a real boardroom, the instructor continually questions and

challenges the student presenters. Afterwards, however, the instructor provides instant feedback, and the entire class usually wants to go out together for a celebration afterwards.

#### Section Four: Preliminary Feedback

Feedback on the research and immersion teaching approach described in this paper is preliminary and anecdotal, since the teaching approach has been applied to only five classes over two years. Usually, a longer assessment period would be used, but I have opted to write this paper far more as an invitation for further analysis, comparison, and improvement of the teaching approach, than as a finished product. It is my hope that others might try the teaching approach and report their own results. The feedback noted here is only for whatever guidance those instructors might wish to take from it.

Overall, the feedback on the teaching approach has been positive, with about 80% of students enthusiastically supporting the approach and the other 20% ranging from tolerating it to hating it. Students like the teaching approach primarily because it emphasizes real-world job skills, and the students report willingly devoting more time to the class than to their other classes. Nevertheless, students indicate that the amount of work and the initially high level of stress in adapting from traditional lecture classes are their primary reasons for not liking the teaching approach. Anecdotally, both potential employers and recent graduates have both expressed support for the teaching approach, although no attempt has been made at statistical assessment.

The keys to successful use of the approach seem to be these: First, the instructor must quickly establish the credibility of the approach toward strengthening future job skills. A reinforcing visit from the University's career planning director early in the first module seemed helpful in that regard, as did my own senior management experience in business. Second, self-selected teams are probably necessary to maintaining morale throughout the semester. The workload and ambiguity reach their peak during the second module,

and peer support often means more than instructor support. Third, the ambiguity of certain assignments is necessary to teach students to keep working through uncertain times, but most students hate it. The instructor must therefore make clear that grading accounts for incomplete information and the instructor must also periodically lecture to bring the whole class up to speed.

Finally, the instructor cannot lessen the academic rigor expected, or the whole credibility of the approach is lost. As in the business world, the instructor must therefore sometimes find ways to separate personalities from performance. In our case, simply sitting with students during library research time and participating in one or two out-of-class activities seemed to help both the more-gifted and the less-gifted students to continue their work commitment.

The teaching approach described in this paper is not without its drawbacks. Research leads different students in different directions, and so the instructor must be comfortable with new twists in classroom direction. This factor is compounded by the amount of time required for individualized student feedback and assessment. Further, the approach does not provide the built-in assessment tools of computerized simulation games. In this era of tight faculty time commitments, all of those factors should be considered before trying the teaching approach. Nevertheless, the research and immersion teaching approach provides an opportunity to truly prepare our students for the entrepreneurial management jobs that they will enter, and I hope that others will see fit to try it.

#### References

- Arben, P.D. (1997). The integrating course in the business school. *Business Horizons*, 40(2), 65-70.
- Bailey, J.R. (2003). The mind of the strategist. *Academy of Management Learning & Education*, 2(4), 385.
- Betz, F. (2002). Strategic business models. *Engineering Management Journal*, 14(1), 21-28.

- Cooley, P.L. & Pullen, R.J. (1979). Small business cash management practices. *American Journal of Small Business*, 4(2), 1-11.
- Denning, B.W. (1968). The integration of business studies at the conceptual level. *Journal of Management Studies*, 5(1), 1-28.
- Eldredge, D.L. & Galloway, R.F. (1983). Study of undergraduate business policy course at AACSB-accredited universities. *Strategic Management Journal*, 4(1), 85-90.
- Estep, T. (1987). Manager style and the sources of equity returns. *Journal of Portfolio Management*, 13(2), 4-10.
- Gallagher, J.G., Stevenson, D.P., & Fordyce, F. (1968). Case studies: Old idea, new methods. *Accounting Education*, 7, S49-S52.
- Govingdarajan, V. & Shank, J.K. (1968). Cash sufficiency: The missing link in strategic planning. *Journal of Business Strategy*, 7(1), 88-95.
- Grablowsky, B.J. (1978). Management of the cash position. *Journal of Small Business Management*, 16(3), 38-43.
- Hodgetts, R.M., Ezell, D.E., & Van Auken, P.M. (1976). A contingency approach to business policy pedagogy. *Academy of Management Proceedings*, 1976, 130-134.
- Kuratko, D.F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship: Theory and Practice*, 29(5), 577-597.
- Opiela, N. (2006). Keeping small business cash flow on track. *Journal of Financial Planning*, 19(7), 26-32.
- Porter, M.E. (1975). Note on the structural analysis of industries. *Harvard Business School Cases*, Sep1975, 1-19.
- Schendel, D.E. & Hatten, K.J. (1972). Business policy or strategic management: A broader view for an emerging discipline. *Academy of Management Proceedings*, 1972, 99-102.
- Snow, C.C. (1976). A comment on business policy teaching research. *Academy of Management Review*, 1(4), 133-135.
- Walters, B.A. & Coalter, T.M. (1997). Simulation games in business policy courses: Is there value for students? *Journal of Education for Business*, 72(3), 170-179.
- Wolfe, J. (1973). The comparative learning effects of a management game vs. casework in the teaching of business policy. *Academy of Management Proceedings*, 1973, 291-298.

---

Donald Mong is an assistant professor of law and entrepreneurship at Slippery Rock University of Pennsylvania.



## DOES YOUR TEACHING TOOLKIT INCLUDE THE WRITE STUFF?

Cori J. Myers, Lock Haven University  
Richard Van Dyke, Lock Haven University

---

### Abstract

This country's competitiveness and economic vitality rely on the ability of higher education institutions to ensure graduates possess the requisite knowledge, skills and abilities for the global marketplace. Businesses clamor for graduates with such skills as critical thinking, communication, interpersonal interaction, teaming and creative thinking. Educating today's diverse, technologically-savvy, and multi-tasking traditional-age college students--the millennial generation--requires a myriad of innovative learning activities to address various learning styles and preferences. This interactive workshop utilized the insights of the writing-across-the-curriculum movement (1970-present) to develop an effective model for reaching out to the millennial student. Participants also shared pedagogical practices currently used in the classroom.

---

### Teaching the Millennial Student:

Research indicates that millennial students share the following traits: technological literacy, reliance on social networking, collaborative disposition, structured lifestyle, openness to diversity, and preferences for learning by doing and experiencing (Oblinger & Oblinger, 2005; McGlynn, 2005; Kolb, 2005). When translated into classroom practice, the millennial's characteristics suggest that instructors should integrate active learning strategies and use of technology into course design as well as include group work and a sufficient variety of tasks to keep student's interest and attention. Such active learning strategies may include case studies, sharing personal experiences, role playing, simulations, peer teaching, and various writing assignments. At the same time, instructors will likely need to address this generation's structured lifestyle by providing courses with clear expectations and adequate feedback to guide learning activities.

### Writing-Across-the-Curriculum (WAC) and Course Design:

When selecting and sequencing active learning strategies, workshop facilitators argue, faculty will want to consider the effectiveness of formal and informal writing assignments not only to develop writing skills but also to provide opportunities for students to demonstrate understanding of new material and conceptualize applications for it. Kuh

(2003) reports that students who problem-solve, practice writing, and receive feedback tend to have greater knowledge gains and skill development. Writing assignments facilitate such learning outcomes as content knowledge, communication skills, and critical thinking skills (McLeod, 2001). Various in-class writing assignments can be paired with other learning activities providing an enjoyable, yet effective learning environment. Labeled writing to learn, this use of writing tasks that mix collaborative activity, written expression, and continuous feedback loops has been a hallmark of Writing-Across-the-Curriculum since its inception decades ago. More recent research confirms the wisdom of this approach suggesting that student involvement in the learning process and well-designed active learning strategies relate positively to such outcomes as knowledge acquisition, cognitive development, communication skills, interpersonal skills and group work, creative thinking, and educational attainment (Pascarella and Terenzini, 2005; Kember and Leung, 2005; Astin, 1984).

### Sharing Practices

Workshop facilitators presented practical tips for professors of today's business students by highlighting recent research and sharing writing-centered examples and experiences from their teaching practices. Specifically, the facilitators provided examples of writing assignments from a business writing course as well as a capstone seminar

in strategic management. The business writing course provided such informal writing opportunities as freewrites, threaded discussions, and peer reviews while including a wide variety of formal assignments from writing a business memo to a grant proposal. The strategic management course utilized such writing assignments as case studies, reflective papers, developing exam questions, chapter exercises, writing exercises (intended for students to improve writing style and mechanics), peer evaluations, and journals. In both courses, the facilitators found creative ways to use a combination of assignments that promote both write to learn and the more formal, graded write to communicate objectives. Workshop participants likewise shared successful learning strategies used in their courses.

### References

- Astin, A. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Bonwell, C., & Eison, J. (1991). Active learning: Creating excitement in the classroom. *ERIC Clearinghouse on Higher Education (ED340272)*.
- Kember, D., & Leung, D. (2005). The influence of active learning experiences on the development of graduate capabilities. *Studies in Higher Education*, 30(2), 155-170.
- Kolb, D. A. (2005). *The learning style inventory version 3.1*. Boston, MA: Hay Resources Direct.
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE. *Change*, 35(2), 24-32.
- McGlynn, A. (2006). Teaching millennials, our newest cultural cohort. *Education Digest*, 71(4), 12-16.
- McLeod, S. (2001). The pedagogy of writing across the curriculum. In G. Tate & K. Schick (Eds.), *A guide to composition pedagogies* (pp. 149-164). New York: Oxford University Press.
- Oblinger, D., & Oblinger, J. (2005). Is it age or IT: First steps toward understanding the net generation. In D. Oblinger and J. Oblinger (Eds.), *Educating the net generation*. Retrieved from <http://www.educause.edu/educatingthenetgen/EDUCAUSE>:
- Pascarella, E., & Terenzini, P. (2005). *How college affects students: A third decade of research*. San Francisco, CA: Jossey-Bass Higher & Adult Education.

---

Cori J. Myers is assistant professor of business administration at Lock Haven University of Pennsylvania (LHUP). She teaches primarily undergraduate courses in human resource management, international business, management concepts and strategies, and strategic management. Previously, she worked in private industry (hotel management) and held positions at LHUP in such areas as human resources, continuous improvement, strategic planning, and assessment. Her research interests include student learning styles, experiential learning, assessment and student learning outcomes, accountability, and organizational governance.

Richard Van Dyke is assistant professor of English at Lock Haven University of Pennsylvania. He directs the writing center, coordinates writing assessment, and teaches the full range of writing classes, including business writing. His research interests include place-based writing, digital rhetorics, and the relationship of writing to the circulations of global capital.

## RAISING THE MINIMUM WAGE: THE PENNSYLVANIA EXPERIENCE

Sanjay Paul, Elizabethtown College  
Brian Rossell, Elizabethtown College  
Tom Scheiding, Elizabethtown College

---

### Abstract

The Fair Minimum Wage Act of 2007 gradually raises the federal hourly wage from \$5.15 to \$7.25 by July 2009. In Pennsylvania, the state minimum wage increased from \$5.15 to \$6.25 on January 1, 2007, and further increased to \$7.15 in July 2007. Some exceptions were granted to smaller businesses in order to help them adapt to the new wage. By July 2009, the federal minimum of \$7.25 will be in effect. In this paper we study the employment and inflation effects of raising the minimum wage in Pennsylvania. We analyze the effects of the wage policy on unemployment in various labor market categories, and seek to establish whether employers have chosen to pass on the increased labor cost to consumers in the form of higher prices. Results suggest that the effects have been minimal.

---

### Introduction

The Fair Labor Standards Act of 2005 raised the federal minimum wage from \$5.15 per hour to \$5.85 per hour. The federal Fair Minimum Wage Act of 2007 continues this increase, to \$6.55 in July of 2008 and to \$7.25 in July of 2009. Pennsylvania enacted an increase in the minimum wage earlier than the federal government did. The Pennsylvania state minimum increased from \$5.15 to \$6.25 on January 1, 2007 and further increased to \$7.15 on July 2007. In the law, some exceptions were granted to smaller businesses in order to “ease in” to the new wage. However, all business would be paying \$7.15 by July of 2008. These changes to the minimum wage have been based on a belief that it improves the financial situation of the working poor. But is this really the case? Is this minimum wage increase really in the best interests of the working poor? Does the raise help to better their quality of life?

Socioeconomic theory on the question is mixed. Some economists are strongly in support of the minimum wage increase. In January 2007, Kline and Dompe surveyed 95 economists about their views on a minimum wage hike. The responses to the survey produced a U-shape – that is, a majority of those surveyed either strongly supported or strongly opposed minimum wage laws, with a scattering in the middle (Klein and Dompe 2007).

In a competitive market, the equilibrium wage is determined by labor supply and demand. In a free market, workers get paid what their services are worth—in other words, the value of the marginal productivity of labor. A minimum wage serves as a price floor, translating into a decrease in the quantity of labor demanded, but an increase in the quantity of labor supplied, resulting in higher unemployment of unskilled labor.

A basic question is whether an increase in the minimum wage limits poverty or increases it. Many in poverty qualify for government assistance, including free or discounted food or housing. If their earnings go up, this can mean losing out on much of that assistance – leaving them in a worse condition than before. George Stigler, one of the first economists to look at minimum wage’s effects on families, noted: “...society must determine, though its legislators, what minimum income should be guaranteed to each family” (Stigler 1946).

In this paper we investigate whether the higher minimum wage in Pennsylvania has created higher unemployment among certain labor market categories and whether these higher labor costs have been passed on to consumers. We find that the effects of the higher state minimum wage have been generally insignificant.

## Literature Review

The main focus of study here is on the full-time adult worker subject directly to the minimum wage. Neumark, Schweitzer, and Wascher (2004) showed that minimum wage increases adversely affect workers initially earning near the minimum wage, but have little impact on workers receiving a higher wage (426). Freeman (1996) and Yelowitz (2005) reached similar conclusions from their studies. How could the worker be harmed, though, even if his wage is increasing? Interestingly, many employment effects from the raise in the minimum wage are not directly related to the wage per hour.

### *Cost of Increased Productivity*

Undoubtedly, there must be some perceived benefit to the existence of the minimum wage, or else it would have been discarded decades ago. There are two distinct “benefits” to society that go along with a wage floor. The first, and most obvious, is the direct benefit to the worker in so much as having a greater income. This is clear and is where most perceive the purpose of minimum wage legislation to end. This is not totally the case, though. Another – and slightly less altruistic – purpose of the minimum wage is to increase productivity in the economy.

Stigler (1946) notes that “If a minimum wage is effective, it must therefore have one of two effects: first, workers whose services are worth less than the minimum wage are discharged; or, second, the productivity of low-efficiency workers is increased”. The thought of workers being callously fired is not necessarily palatable, yet the productivity increase may not rise just from their expulsion. Because of the increased cost of labor, Stigler believes that many techniques that were previously unprofitable will now work to the producer’s advantage. Total costs of production may rise, but they will rise less than they would had something not been substituted for the labor. Klein and Dompe (2007), when surveying current economists, found that 20 out of the 95 agreed with this statement – productivity would increase through

multiple channels, including higher worker effort, better processes or innovation, more investment in human capital, and less turnover. A study done by the State of Wisconsin also found this to be true – raising the minimum wage would increase work experience and reduce training costs due to less turnover (Wisconsin 2004).

### *Changes in Compensation*

Perhaps most directly visible to the minimum wage debate is the change in direct compensation that the workers achieve. After all, the increase in the minimum wage is supposed to have that effect – their hourly compensation should go up. This is clearly the case for those earning below the new minimum, but not so obvious for those workers earning slightly above the new rate.

In a study of the fast-food industry in Texas, Katz and Krueger (1992) found that firms who were already paying their employees above the new minimum still increased their wage rates by an average of 4.6%. This is partly due to the “work effort” effect – that is, firms who believe that higher relative wages produce higher-effort workers need to keep that high-effort incentive. Yelowitz (2005) saw no detectable wage gains.

### *Labor Substitution*

Freeman (1996) shows that a raise in the minimum leads to an increase in the quantity of labor supplied in the British labor market: “At £3, middle-class women and teenagers found the work unattractive, but at £4, they are willing to take minimum wage jobs.” Employers, possibly, could prefer to hire middle-class applicants instead of poor ones. If this tendency is expansive enough across the economy, then the increased minimum hurts the ones it was intended to help. Employment as a whole is not reduced, nor is the number of jobs, but the number of secondary-income earning workers is greater. In a study of Santa Fe, New Mexico, Yelowitz (2005) reaches the same conclusion: there is labor substitution towards teenagers.

### *The Hours Effect*

Along with the labor substitution comes the net effect on hours worked by the minimum-wage employee. Gramlich (1976) finds that, often, minimum wages reduce the level of full-time employment (especially among minorities) and increase part-time employment among teens and adult males. Brown (1982) found a 0-10% rise in teenage unemployment rates after a minimum wage increase, but a smaller net effect on the employment of young adult (ages 20-24) workers.

This evidence, however, is contradicted by Katz and Krueger (1992), who saw increased minimums boost full time employment in fast-food restaurants in Texas. This study was backed by Card and Krueger's (1994) study of fast-food establishments in New Jersey, which also saw a rise in employment effects. Another scenario is that some teens who remain employed after a wage hike tend to work more hours, thus offsetting the loss of jobs seen by others (Zavodny 2000).

In studying hours worked, Neumark (2004) finds that there is a significant decline in hours for those workers previously earning below the new minimum. However, for those workers earning 1.2 to 1.5 times the minimum, there is evidence for moderate increases in hours, leading him to conclude that the increased minimum forces higher-wage workers to work more hours, perhaps to offset the reduction in employment for low-wage family members.

### *Effect on Total Income*

Neumark (*ibid.*) shows that lower wage workers experience a wage increase with the raise of the minimum wage. However, due to an average decrease in hours worked and total employment, workers see tepid income gains. Very low-wage workers are not helped, and most likely hurt, by minimum wage increases. Hour reductions are the primary cause of income declines. Yelowitz (2005) found a similar result – his study shows a decline in job opportunities, longer times of

unemployment, fewer full-time jobs, and no income gains. Freeman (1996) believes that the minimum wage increase would lead employers to cut other benefits, like healthcare, that will make the worker worse off overall. Finally, when looking at those individuals specifically on welfare, Page (2002) found that a 10% increase in the minimum wage is likely to increase the number of cases of welfare between one and two percent.

An investigation of minimum wage effects cannot be complete without mentioning Card and Krueger's (1994) study of fast-food restaurants in New Jersey. Their study began after New Jersey's 1992 rise in the minimum wage from \$4.25 to \$5.05 per hour. After surveying 410 fast-food restaurants both before and after the hike, Card and Krueger were able to develop simple estimates of the effect of the higher wage on the worker and the level of employment. Before the minimum wage increase, the individual size of the fast-food stores in New Jersey in terms of employment was smaller than that of their Pennsylvania counterparts. These restaurants, though, grew relative to Pennsylvania after New Jersey's minimum wage increase. They found that the relative gain was over 13 percent, or an addition of 2.76 full-time employees per location.

More surprising is that, within New Jersey, those stores with the lowest wage rates saw the largest increase in employment. They found that employment expanded at the low- wage stores (those paying \$4.25, the previous minimum wage) but contracted at stores that were previously paying \$5 or more. This change was comparable to the change in Pennsylvania's employment along that same time period, thus adding to the validity of the Pennsylvania control group. The contraction is generally blamed on the general economic worsening of the mid-Atlantic states during the time period of the study. Nonetheless, especially when seasonal markets in New Jersey were removed from the study, there was a statistically significant positive increase in

employment relative to the increase in the minimum wage. Card and Krueger examined the data to see if any possible demand shocks existed which may have offset the negative employment effects. No demand shocks were found to be significant.

No reduction in employment was found after New Jersey's minimum wage increased. By surveying restaurants in both New Jersey and neighboring eastern Pennsylvania (which held the minimum wage to \$4.25 per hour), Card and Krueger saw no differences in employment rates. Teenage employment rates, typically thought to be the most affected by minimum wage hikes, were also unchanged. Concurrently, they also found that the minimum wage increase did nothing to affect the number of McDonald's franchises that opened in a particular state. Card and Krueger did find, however, that prices in New Jersey went up after the minimum increased – thus showing that the added cost of labor was passed on to the consumer. However, they found no evidence that prices increased more at the stores that were more affected by the minimum wage rise.

#### **The Minimum Wage's Effect in Pennsylvania**

According to data gathered by the Pennsylvania State House of Representatives (2007), the increase in the minimum wage would affect between 400,000 and 510,000 workers. This breaks down to be roughly 9.7 percent of Pennsylvania's total employment. Over 70 percent of these employees were adults over the age of 20, with 37.1 percent working full time while another 34.3 percent work between 20 and 35 hours per week. Macpherson (2005) conjectured that the increase in the minimum wage "would result in a loss of just over 10,000 jobs and impose a \$350 million hit on the Pennsylvania economy. Most of the economic cost – \$262.7 million – stems from increased labor costs for employers. A significant portion however, \$86.7 million, is the result of the lost income for the 10,000 employees who will lose their jobs. That more than half of the job losses

fall on those under 25 and almost 30 percent on those earning less than \$25,000 adds cruel irony to the consequences".

Our analysis focuses on the major industrial demographics of Pennsylvania's minimum wage employees. The largest percentage, 27.1 percent, are employed in retail trade. Another 23.2 percent are employed in leisure and hospitality. The third largest percentage, 5.2 percent, are employed in manufacturing (PA House 2007). Grocery stores, although technically considered retail trade, are the largest proportion of those establishments and are statistically unique enough to be looked at independently, as well. The most prominent occupations in the above industries are those of cashiers or salespersons (19 percent) or clerical workers (11 percent).

In 1938, the original level of the minimum wage was set at 50 percent of the average manufacturing wage. Since 1969, there has been a gradual decline in the minimum wage as a percent of the average wage. Pennsylvania's minimum wage as a percentage of average wage was at an all-time low in 2006 before the most recent wage increase. In order for the minimum wage to reach 50 percent of the average wage in Pennsylvania again, it would have had to be \$10.20 in 2007 (Commonwealth of Pennsylvania 2008). In 2007 dollars, the minimum wage was worth less in 2006 than at any other time in Pennsylvania since the 1950s. The wage in 1968, the year before the gradual slide began, had the highest purchasing power.

The minimum wage increase of 2007 raised the wages of the lowest paid percentile of Pennsylvania workers (Price 2008). Workers above the minimum wage have also seen wages increase. Inflation adjusted earnings, at every percentile, are down from where they were from 2001. Unemployment, while it has declined since the 2001 recession, is still above its pre-recession average level at 4.3%. Still, Pennsylvania's current unemployment rate, at 4.8 percent in

March, is still below the U.S. rate of 5 percent (BLS 2008).

### *Unemployment*

From January of 2004 until January of 2007, the total unemployment rate in Pennsylvania steadily decreased. From January 2007 to September 2007, the number of unemployed did rise, but only very slightly. The unemployment rate stayed relatively constant through 2007, rising only slightly in August (BLS 2008). However, other states have shown no difference in employment rates relative to the U.S. as a whole when minimum wages increased (PA House 2007). We find that Pennsylvania's unemployment rate is significantly lower than that of the United States for most of 2007. A two-sample t-test shows that the means of the two data are not equal.

Seasonally adjusted, the change in total Pennsylvania employment was positive both 1-month and 3-months out (up 2,700 and 8,200, respectively), although the growth was slower than the previous statewide average. National data, however, showed the same trends (Commonwealth of Pennsylvania 2008).

A majority of those workers earning at or below the minimum wage are female. Females make up a higher proportion of minimum wage earners than the overall female population of Pennsylvania. The wage increase in 2007 raised the specific proportion of males earning the minimum by 12 percent. Thus, the 2007 minimum wage increase pushed the demographic proportion of male-to-female minimum wage workers to about the level of the United States' average. Previous economists' arguments that minimum wage laws adversely affect minorities do not hold true in Pennsylvania – a vast majority of those making minimum wage (87 percent) are white; Africa-Americans and Hispanics combined total only 12 percent. The percentage of minorities earning the minimum wage, however, increased relative to the percentage of whites. Nearly 75% of minimum wage workers are between the ages of 16 and 34. The minimum wage increase

resulted in an increase in employment among teenage workers (from 25 percent of minimum wage workers to 33 percent), showing that perhaps there is labor substitution towards teenagers (Commonwealth of Pennsylvania 2008).

The unemployment rate for Pennsylvania as a whole declined in 2007. Female unemployment, however, increased a marginal 0.2 percentage points. The unemployment rate among teens increased dramatically, from 7.3 to 9.0 percent, even though the percentage of teens earning minimum wage increased. A rise in the minimum wage does show some negative employment effects towards teens. Again, as predicted, the minimum wage increase decreased the number of part-time employees, favoring substitution towards full-time workers, up 7 percent (*ibid.*)

### *Industry Analysis*

The 2007 wage increase most adversely affected the percentage of minimum earners in food service (down 13 percent) but increased those in retail trade (up 9 percent). The number of employed in Pennsylvania in these areas grew steadily from January of 2004 through January 2008 (Commonwealth of Pennsylvania 2008).

**Hospitality:** This sector includes all employees who work at hotels, motels and other forms of lodging establishments. These employees are bellhops, maids, reception clerks, and any other non-food based workers. This sector experienced a steady decline in employment since July 2007 – the time period where Pennsylvania's minimum increased from \$6.75 to \$7.15. Although this might suggest that the minimum is binding for the accommodation industry only at \$7.15, it is most likely due to seasonal trends as seen in previous years (BLS 2008). When seasonally adjusted, Pennsylvania leisure and hospitality showed stronger-than-average growth as opposed to the 10-year average (Commonwealth of Pennsylvania 2008).

**Retail trade:** The number employed in retail trade in Pennsylvania in 2007 was lower than that of



previous years. Taking into account seasonal changes, the numbers employed in January and July especially were lower than that of previous years (BLS 2008). However, the number of workers in the retail trade industry earning minimum wage or below increased from 9200 in 2006 to 37,500 in 2007, an increase of 9 percent as a percent of total employment.

Pennsylvania retail trade employment showed modest declines in the time frames of 1-month and 3-months after the January minimum increase (down 1,900 and 100, respectively). National retail trade employment grew more slowly than the national 10-year average, as well (Commonwealth of Pennsylvania 2008).

**Grocery Stores:** More than any other industry, employment in grocery stores is exceptionally volatile from month to month. Employment, however, steadily increased in the grocery industry in Pennsylvania since July 2007. There was an initial downturn in January of 2007—this could have been due to the first minimum wage increase or several other events, such as seasonal, post-holiday declines or industry-specific hardships (such as increases in food prices).

### *Other States*

In 2006 there were 23 states with higher minimum wages than Pennsylvania. After the wage increase in 2007, only 9 had higher rates (Commonwealth of Pennsylvania 2008). Job levels in states that increased their minimum wage tend to follow the typical job levels of the U.S. There were little discrepancies among earlier states surveyed, regardless of when their minimums increased.

### *Inflation*

Finally, we look at the aggregate prices in the economy to see whether or not the increase in the minimum wage was passed on to consumers. The data on this is mixed. Looking at the CPI for both Pennsylvania and the U.S., we see a definite spike in PA CPI in January 2007 (a difference of increase of 0.1% over the U.S.) rising all the way up to a difference of 0.4% in March. This higher-

than-average inflation, however, was not seen in July, after the second wage increase, when the CPI actually went down relative to the United States. Historically, the CPI in Pennsylvania tends to follow the same trends as the CPI of the US. This difference, therefore, might be significant. Most likely, producers were raising prices both as a reaction to the January wage increase and as a preemptive strike against the July increase. By the end of 2007, the CPI in Pennsylvania was back in line with the United States' average.

### *Conclusions*

The primary conclusion from this study is that employment was little affected in Pennsylvania after the minimum wage was increased. Some sectors tightened, some expanded, but almost all fell in line with what was happening in the nation as a whole. It must also be noted that those who make at or below minimum wage are a small portion of the total number of persons employed (between 9 and 13 percent of PA workers, compared to roughly 5 percent for the U.S. as a whole) and thus changes in their employment do not dramatically alter aggregate employment numbers. Even when examined on their own scale, the negative employment effects of the minimum increase are so small and affect such a small number of workers that the effects are generally still not felt.

Future research will focus on other variables linked to the minimum wage. Non-employment factors can often affect the minimum wage worker, including a reduction in healthcare benefits, a reduction in government assistance, and a reduction in secondary employment. It is very difficult to discern, by simply looking at employment numbers, how many minimum wage workers may have lost their second- or third-jobs. They are still employed, technically, but lose the extra income they would have previously received. Likewise, government assistance (such as discounted or free housing) is often cut off when income rises above a certain level – many part-time minimum wage workers may have seen

that it was better to not work than make too much money for their federal assistance. Large-scale worker surveys need to be attempted in order to fully understand these other factors.

### References

- BLS (2008). At-a-Glance Tables. <<http://www.bls.gov>>
- Brown, Charles et al. (1982). "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature*, Vol. 20, No. 2, pp. 487-528.
- Card, David and Alan B. Krueger. (1994). "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *The American Economic Review*, Vol. 84, No. 4, pp. 772-793.
- Card, David and Alan B. Krueger. (1995). *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton, N.J.: Princeton University Press.
- Commonwealth of Pennsylvania (2008). "Analysis of the Pennsylvania Minimum Wage Increases of 2007." Minimum Wage Advisory Board, PA Dept. of Labor and Industry.
- Freeman, Richard B. (1996). "The Minimum Wage as a Redistributive Tool." *The Economic Journal*, Vol. 106, No. 436, pp. 639-649.
- Gramlich, Edward M. (1976). "Impact of Minimum Wages on Other Wages, Employment, and Family Incomes." *Brookings Papers on Economic Activity*, Vol. 2, pp. 409-451.
- Katz, Lawrence F. and Alan B. Krueger (1992). "The Effect of the Minimum Wage on the Fast Food Industry." *Industrial and Labor Relations Review*, Vol. 46, No. 1, pp. 6-21.
- Klein, Daniel B. and Stewart Dompe. (2007). "Reasons for Supporting the Minimum Wage: Asking Signatories of the 'Raise the Minimum Wage' Statement." *Econ Journal Watch*, Vol. 4, No. 1, pp. 125-167.
- Macpherson, David A. (2005). "The Effects of the Proposed Pennsylvania Minimum Wage Increase." Commonwealth Foundation for Public Policy Alternatives.
- Neumark, David and William Wascher (1992). "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." *Industrial and Labor Relations Review*, Vol. 46, No. 1, pp. 55-81.
- Neumark, David et al. (2004). "Minimum Wage Effects Throughout the Wage Distribution." *The Journal of Human Resources*, Vol. 39, No. 2, pp. 425-450.
- PA House of Representatives. (2007). "Minimum Wage Facts: Pennsylvania Data." <[www.pahouse.gov](http://www.pahouse.gov)>. Accessed July 20, 2008.
- Page, Marianne E., Spetz, Joanne and Millar, Jane (2005). "Does the Minimum Wage Affect Welfare Caseloads?" *Journal of Policy Analysis and Management*, No. 2, pp. 273-295.
- Stigler, George J. (1946). "The Economics of Minimum Wage Legislation." *The American Economic Review*, Vol. 36, No. 3, pp. 358-365.
- Yelowitz, Aaron S. (2005). "How Did the \$8.50 Citywide Minimum Wage Affect the Santa Fe Labor Market?" Employment Policies Institute.
- Zavodny, Madeline (2000). "The Effects of the Minimum Wage on Hours of Work." *Labour Economics*, Vol. 7, No. 4, pp. 729-750.

---

Sanjay Paul is associate professor of economics at Elizabethtown College. Brian Rossell is an economics graduate from Elizabethtown College. Tom Scheiding is assistant professor of economics at Elizabethtown College.

## READABILITY OF INTERMEDIATE ACCOUNTING TEXTBOOKS

Kenneth J. Plucinski, State University of New York at Fredonia

---

### Abstract

Selecting a textbook for use in intermediate accounting courses can be a challenging task for faculty. Many criteria may be considered in such decisions, including a textbook's readability level. Using a widely-used readability index, this study analyzes the predicted readability of seven intermediate accounting texts. T-tests are performed to determine whether significant differences exist between the textbooks. The study finds no compelling evidence, in terms of readability, to choose any one of the texts over any other. These findings can be useful to adopters and editors of intermediate accounting textbooks.

---

### Introduction

The selection of a textbook for use in intermediate accounting courses is an important decision for faculty. Since the intermediate accounting course sequence is at the core of the typical accounting curriculum, all accounting majors are affected by their decision. But the text selection process is complicated by the large number of text attributes for faculty to consider. Such attributes may include: a text's pedagogical approach; coverage of material; exhibits, charts, and vignettes; end-of-chapter material; student and instructor supplements; and authors' reputations, as well as instructors' past experiences with the text. Faculty may also wish to consider a text's *readability*.

Readability may be defined as the degree to which a class of people finds certain reading matter compelling and comprehensible (McLaughlin, 1969). "Readability" should not be confused with "legibility," which refers to the ease of being read. Readability, in this context, refers to the qualities of writing which are related to reader comprehension. A variety of techniques have been used to predict readability, including several readability indexes (or formulas) which have been used widely since the 1950s. Examples of readability indexes include SMOG (developed by McLaughlin), Flesch Reading Ease, Flesch-Kincaid Grade Level, Gunning-Fog, and Fry.

Information on readability can be helpful to faculty when making textbook adoption decisions. Indeed,

one of the criteria to which faculty attach the most significance in those decisions is textbook comprehensibility (Smith & DeRidder, 1997), which can be predicted, at least in part, using a readability index.

### Literature Review

Little study of the readability of accounting texts has been undertaken over the last 25 years; only six such published studies are identified. Two of the studies, Traugh et al (1987) and Sullivan and Benke (1997), concerned introductory accounting texts only. The other four studies, Razek et al (1982), Adelberg and Razek (1984), Flory et al (1992), and Davidson (2005), concerned (at least in part) intermediate accounting texts.

Razek et al examined the readability of six intermediate and six advanced accounting textbooks; they found no significant differences among the intermediate books. Adelberg and Razek, using a very different methodology from the Razek et al study, found that the level of understandability varied significantly among some of the four intermediate accounting texts that they analyzed. The Flory study analyzed seven intermediate accounting texts and found little difference in the readability of the textbooks considered. Davidson considered the long-term trends of the readability of accounting textbooks, including that of 25 intermediate books published over five decades.

Since the Davidson study investigated trends over many years, it did not compare the readability of individual texts. And since the most recent readability study of individual intermediate accounting textbooks (Flory et al) is over 15 years old, and the textbook offerings have changed significantly since the Flory study, an update of the readability of intermediate accounting texts appears to be in order.

### Methods

One of the six accounting textbook readability studies completed in the last twenty-five years (Adelberg & Razek, 1984) used the Cloze Procedure. That procedure gauges readability by deleting every fifth word from passages, then measuring the reader's ability to restore the passages to their original form. The remaining five studies used readability indexes, specifically the Fog Index, Flesch-Kincaid Grade Level, or Flesch Reading Ease. These indexes use a formula based upon characteristics of text passages, such as average word length, average sentence length, and word complexity, to generate a readability score.

### Choice of Readability Index

This study uses the Flesch-Kincaid Grade Level for several reasons. Four of the six past studies used one of the Flesch measures. In addition, the most recent comparison of intermediate accounting texts, conducted by Flory et al, used a Flesch measure. Finally, since the Flesch-Kincaid index can be easily generated using word processing software, a large amount of text can be readily analyzed with results that are objective and easily replicated.

### Flesch-Kincaid Grade Level

The Flesch-Kincaid Grade Level has its roots in the Flesch Reading Ease formula developed in 1948 by Rudolf Flesch. In 1975, J. Peter Kincaid tested over 500 enlisted United States (U.S.) Navy personnel on a reading-comprehension test and also on passages from Navy training manuals. This enabled him to derive a version of the Flesch Reading Ease formula which yielded reading grade-level scores. The resulting Flesch-Kincaid Grade Level has since been adopted by the U.S. military services as the basis for

deciding whether technical manuals from suppliers meet their readability requirements (Pearson, 2002). The Flesch-Kincaid index is now one of the leading readability indexes. It is used extensively by the U.S. government and others, and it is included as a grammar-checking feature in the word processing software, Microsoft Word (MS-Word).

The Flesch-Kincaid Grade Level formula is based upon sentence length and word length. It rates text on a U.S. school grade level. For example, a score of 11.0 means that an eleventh grader can understand the document. The formula is:

$$(0.39 \times \text{ASL}) + (11.8 \times \text{ASW}) - 15.59$$

where:

ASL = average sentence length (the number of words divided by the number of sentences)

ASW = average number of syllables per word (the number of syllables divided by the number of words)

(Pearson, 2002)

This study uses MS-Word to calculate the Flesch-Kincaid Grade Level of select passages. The formula used by MS-Word is confirmed by agreeing the formula above to that specified in the MS-Word help file. The MS-Word calculation is then validated by manually applying the formula above to a 200-word passage and agreeing the result to that provided by the grammar-checking function in MS-Word.

### Selection and Adaptation of Text Passages

An exhaustive search of intermediate accounting textbooks currently being published in English by major publishers yields seven such books. Four of the texts are full-length, "traditional" intermediate accounting texts, averaging 1,351 pages per text. The remaining three texts are shorter, "abridged" texts, averaging 1,071 pages per text. The traditional and abridged texts are listed in Tables 1 and 2, respectively, along with each textbook's particulars. Six chapters are selected for analysis from throughout those texts.

The chapters (topics) targeted from the first half of the texts are those covering: balance sheet; inventory;

and, plant and equipment. The chapters (topics) targeted from the second half of the texts are those covering: stockholders' equity; income taxes; and, leases. This approach provides passages for analysis from throughout the texts, covering about 27 percent of each traditional text (33 percent of each abridged text), based upon an average of 22 chapters per traditional text (18 chapters per abridged text). The amount of text material thereby analyzed far exceeds that of any previous study of accounting textbook readability.

Digital (computer) files of each of the six target chapters of each textbook are obtained from their publishers or authors. All files are then converted or imported into MS-Word for analysis. The selection of material for analysis is driven by the topics rather than by the chapter. Each of the six topics generally appears in a chapter of its own; when it does not, only the target material is analyzed. For example, if a chapter includes the balance sheet and the statement of stockholders' equity, only the balance sheet material is analyzed. When a text devoted two chapters to a main topic (e.g., inventory, plant and equipment, or stockholders' equity in the traditional texts), only the first of the two chapters is analyzed.

Only the sentences in the body of the chapters are subjected to analysis. Appendices are excluded. Since the Flesch-Kincaid formula analyzes only sentences, all material in figures, exhibits, and headings is omitted from analysis. Since material in graphics and vignettes cannot be readily converted to plain text by word-processing software, it is also omitted. End-of-chapter material (e.g., vocabulary, review, problems) is omitted as well, since it is largely quantitative/tabular in appearance and does not match the textual nature of the Flesch-Kincaid index.

When a colon appears at the end of a sentence, it is replaced with a period when the sentence is originally followed by a calculation, list, figure, or journal entry. This is necessary because, in the Flesch-Kincaid calculation, MS-Word does not recognize a colon as the end of a sentence. Since calculations, lists, figures, and journal entries are removed from the text, a sentence with a colon preceding an entry, for example, would have been combined with the one

following the entry, thereby inflating the length of the sentence. In that case, replacing the colon with a period "ends" the sentence before the entry. Colons appearing in sentences that eventually ended in a period are unchanged.

After converting, importing and pruning all files, the spelling and grammar function in MS-Word is applied to all files to correct occasional errors that arise and then to obtain the Flesch-Kincaid Grade Level. The text matter in the target chapters is not just sampled; the entire text matter of each of the six target chapters of each textbook is subjected to the Flesch-Kincaid calculation.

## Results

### Comparison of Textbooks by Chapter

Table 3 shows the Flesch-Kincaid Grade Levels for the six target chapters in each of the textbooks. Mean grade levels for the six target chapters analyzed in each text are also shown. The results for the traditional texts are grouped separately from the abridged texts. Since the grade level indicates the U.S. school grade level required to understand a text passage, the lower the grade level the more readable the chapter.

An examination of Table 3 shows no clear trending in the overall readability levels of the traditional texts. The Kieso text is the most readable (has the lowest grade level) for four of the six chapters. However, the Spiceland text has the lowest grade level for the remaining two chapters and also has a mean grade level (13.5) that is very close to that of the Kieso text (13.3). The Nikolai and Stice texts have the highest grade levels; each has the highest individual chapter grade level for three of the six chapters; however, they have equal mean grade levels (14.1).

The abridged texts show similarly dispersed results. While the Norton text has the lowest grade level for four of the six chapters, the Warfield text has the lowest grade level for the two remaining chapters. However, the Warfield text has a mean grade level (13.3) that is very close to that of the Norton text (13.2). The Revsine text was the least readable (highest grade level) of the abridged texts for five of the six chapters examined.

### Overall Comparison of Textbooks

While some texts are more readable than others for select chapters, no one text is more readable (nor less readable) than the other texts for all six chapters. In addition many of the grade levels for each chapter, while different between texts, are very close to each other. Clearly, statistical tests are required to determine if significant differences exist between the texts overall (i.e., mean grade levels).

While the entire text of each target chapter is analyzed, those results constitute sample passages relative to the text overall. Therefore, T-tests are performed to determine whether significant differences exist between the textbooks overall. Independent-samples T-tests are performed on the sample means, without assuming equality of variances. Table 4 shows the p-values of differences between the grade level means of each textbook.

No significant differences exist between the mean grade levels of the traditional texts, at the .01 and .05 levels. The same is true of the abridged texts. At the .10 level (p-value of .087), the Kieso text is significantly more readable (lower mean grade level) than the Stice text; both are traditional texts. Also at the .10 level (p-value of .099), the Norton text is significantly more readable than the Revsine text; both are abridged texts. Finally, a significant difference exists at the .10 level (p-value of .086) between the Stice (traditional) text and the Norton (abridged) text.

Faculty are likely to consider only the traditional texts, or only the abridged texts, in their adoption decisions, in accordance with their course requirements. There were only two instances of a significant difference between two texts within the same category (traditional or abridged), and those differences were only significant at the .10 level. Therefore, in terms of readability, there appears to be no compelling evidence to prefer one text over another text in the same category.

The results of this study are consistent with past studies of the readability of intermediate accounting texts using readability indexes. Those studies, Razek et al (1982) and Flory et al (1992), both found little

or no significant differences among the intermediate accounting texts that they analyzed. Both studies used the Flesch Reading Ease Index, the precursor of the Flesch-Kincaid Index used in this study.

An interesting observation concerns the results of a study of the readability of introductory managerial and financial accounting textbooks also conducted by the author (and his co-authors). That study was conducted at about the same time as this study, using the same methods. In the introductory accounting textbook study, however, one text's overall predicted readability was found to be significantly higher than all of the other texts. Another text was found to be significantly less readable than all but one of the other texts (Plucinski et al, 2008).

### Conclusions

If faculty place substantial emphasis on readability in selecting an intermediate accounting textbook, they should strongly consider the results of this study. In terms of readability, there is no compelling evidence to choose any one of the texts over any other. Faculty can therefore base their text adoption decision entirely on other factors, such as a text's pedagogical approach, coverage of material, exhibits, and supplements.

Editors of intermediate accounting texts can also use these findings. There is more to comprehensibility of a subject than the readability of text matter. The diagrams, charts, demonstrations, calculations, and figures included in textbooks are intended to aid in the student's comprehension of the subject matter. Nonetheless, long, complicated sentences, while sometimes necessary, may hinder a student's comprehension when used extensively. Textbook editors may use these findings to set their expectations of authors of future intermediate accounting textbooks.

### Limitations

One limitation in this study concerns readability formulas in general. They assume that the lower the readability level the better; but an unrealistically low readability level may lead to lower transferability of the content. In addition, readability formulas *predict* readability; they do not *measure* it. More costly and

time-consuming techniques such as the Cloze Procedure are necessary to actually measure readability. While there have been many critics that questioned the validity and value of readability formulas, there is ample research to suggest that formulas, despite their faults, can predict whether one piece of text will be easier to read than another (Pearson, 2002).

Secondly, the results of this study should not be the sole basis for judging the appropriateness of a particular intermediate accounting textbook. Only the main body of each target chapter was analyzed in this study. The calculations, vignettes, journal entries, charts, exhibits, graphics, figures, and end-of-chapter material are excluded from analysis. Ancillaries such as instructor and student supplements are also not considered. It is likely that faculty will subjectively evaluate the effectiveness of this material separately from the main body of the textbook.

Finally, as Smith and DeRidder (1997) indicated, business faculty, when making a textbook selection, attach the most significance to comprehensibility to students, timeliness of text material, compatibility between text material and homework problems, and exposition quality of text, respectively. The first of those criteria, comprehensibility, is addressed (at least in part) by this study. Future studies might address comparisons of texts based upon the remaining criteria.

## References

- Adelberg, A.H., & Razeck, J.R. (1984). The cloze procedure: a methodology for determining the understandability of accounting textbooks. *The Accounting Review*, 59(1), 109-121.
- Davidson, R.A. (2005). Analysis of the complexity of writing used in accounting textbooks over the past 100 years. *Accounting Education: an international journal*, 14(1), 53-74.
- Flory, S.M., Phillips Jr., T.J., & Tassin, M.F. (1992). Measuring readability: a comparison of accounting textbooks, *Journal of Accounting Education*, 10, 151-161.
- McLaughlin, G.H. (1969). SMOG grading – a new readability formula. *Journal of Reading*, 22, 639-646.
- Pearson, P.D. (2002). *Handbook of reading research*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Plucinski, K.J., Olsavsky, J., & Hall, L. (2008, April). *Readability of introductory financial and managerial accounting textbooks*. Paper presented at the meeting of the Ohio Region, American Accounting Association, Dayton, OH.
- Razeck, J.R., Hosch, G.A., & Pearl, D. (1982). Readability of accounting textbooks. *Journal of Business Education (October)*, 23-26.
- Smith, K.J., & DeRidder, J.J. (1997). The selection process for accounting textbooks: general criteria and publisher incentives – a survey. *Issues in Accounting Education*, 12(2), 367-384.
- Sullivan, M.C., & Benke Jr., R.L. (1997). Comparing introductory financial accounting textbooks. *Journal of Accounting Education*, 15(2), 181-220.
- Traugh, H.M., Powers, O.S., & Adedokun, A.J. (1987). Readability of accounting principles texts. *Journal of Education for Business*, 63(1), 159-162.

---

Kenneth J. Plucinski, Assistant Professor of Accounting, Department of Business Administration, School of Business, State University of New York at Fredonia, E336 Thompson Hall, Fredonia, NY 14063. 716-673-4602 (Office), 716-673-3506 (Fax), [Kenneth.Plucinski@fredonia.edu](mailto:Kenneth.Plucinski@fredonia.edu)

---



TABLE 1. Traditional Intermediate Accounting Textbooks Analyzed

Authors	Kieso, Weygandt, Warfield	Nikolai, Bazley, Jones	Spiceland, Sepe, Tomassini	Stice, Stice, Skousen
Title	Intermediate Accounting	Intermediate Accounting	Intermediate Accounting	Intermediate Accounting
Edition	12	10	4	16
Year	2007	2007	2007	2007
Publisher	Wiley	Thomson	McGraw-Hill	Thomson
ISBN	978-0-471-74955-4	978-0-324-65192-8	978-0-073-21542-6	978-0-324-31214-0
No. of Pages	1416	1300	1248	1440
Chapter Nos.:				
Balance Sheet	5	4	3	3
Inventory	8	8	8	9
Plant & Equipment	10	10	10	10
Stockholders' Equity	15	16	18	13
Income Taxes	19	19	16	16
Leases	21	21	15	15

TABLE 2. Abridged Intermediate Accounting Textbooks Analyzed

Authors	Norton, Diamond, Pagach	Revsine, Collins, Johnson	Warfield, Weygandt, Kieso
Title	Intermediate Accounting	Financial Reporting and Analysis	Intermediate Accounting: Principles and Analysis
Edition	2	3	2
Year	2007	2005	2008
Publisher	Houghton-Mifflin	Prentice-Hall	Wiley
ISBN	978-0-618-56814-7	978-0-131-43021-1	978-0-471-73793-3
No. of Pages	989	1088	1136
Chapter Nos.:			
Balance Sheet	4	4	4
Inventory	8	9	9
Plant & Equipment	9	10	10
Stockholders' Equity	17	15	13
Income Taxes	16	13	15
Leases	14	12	17

TABLE 3. Computed Flesch-Kincaid Grade Levels of Textbook Chapters

	Textbook (Author, et al)						
	Traditional Texts				Abridged Texts		
Chapter Content	Kieso	Nikolai	Spiceland	Stice	Norton	Revsine	Warfield
Balance Sheet	13.9	14.2	13.7	13.8	13.9	14.5	14.2
Inventory	13.2	14.0	13.5	13.5	13.7	13.3	13.4
Plant & Equipment	12.7	14.1	13.8	14.5	13.7	13.7	12.4
Stockholders' Equity	12.3	13.2	13.0	13.5	12.3	13.9	12.3
Income Taxes	14.2	15.6	14.3	15.4	13.6	15.7	14.5
Leases	13.3	13.3	12.6	13.7	12.0	13.5	12.8
Mean	13.3	14.1	13.5	14.1	13.2	14.1	13.3

TABLE 4. T-Test Results: P-Values of Differences Between Textbook Grade Level Means

[illegible]

**Notes:** [T] - Traditional Text; [A] - Abridged Text.

\* Statistically significant difference at the .10 level.

# AN EXPLORATION OF THE RELATIONSHIP BETWEEN MOTIVATION AND THE INTENTION TO STAY IN A HIGHER EDUCATION PROGRAM

Tracy H. Porter, Cleveland State University

---

## Abstract

Retention within the higher education community is an area of great concern to many colleges and university administrators. It is a statistic which many institutions publish on behalf of their admissions department and one which they constantly look to improve. The following is a research study which looks into the relationship between motivation and the intent to stay in a higher education program. A model of the motivation for students to stay in an academic program developed by Young (2004) was used as the framework for this study. The specific motivational variables which will be utilized in this study are interest in coursework, role models, encouragement and age.

---

## Introduction

The decision of whether or not to pursue a college degree can be viewed as a very important step in career preparation as many careers require additional schooling beyond high school for entry. Still the decisions to not only pursue higher education but, to stay with a program until completion can often be difficult for many students. Studies have shown a university degree may enable a person to compete in a difficult market and their rate of unemployment is often lower than that of people with no higher education (NCVER, 1999; Lamb, 2001). Nationwide, more than half of those who enroll in public colleges or universities drop out before they earn a bachelor's degree (Worthen, 1998). At Lamar University in Beaumont Texas the school's enrollment has declined by 20% in recent years with a particularly low retention rate for freshmen (Montano & Utter, 1999). These students met all the admissions requirements for the schools in which they enrolled – the University of Nebraska or Ohio State, for example (Worthen). “While the percentages vary among institutions, it has been remarkably consistent overall” (Worthen, p. 62). Although many of the students make rational decision to leave higher education, most drop out because they have not developed the attitudes and skills necessary to become successful learners (Worthen). Unfortunately for many higher education programs retention is a key to the success of the student. The purpose of this paper is to determine the extent to which specific motivator variables influence the likelihood of students staying in a program of study.

### *The Problem with Retention*

The available research demonstrates the need to understand why student's retention issues in higher education should be addressed. According to Worthen (1998) “Those who don't earn a college degree are also more likely to commit a crime and die sooner than those who graduate” (p. 63). Worthen continues to stress the need to address higher education retention with the following

These people – who have already demonstrated to the satisfaction of the admissions office that they are capable of college work – join a workforce that many suggest is already undereducated. It's clear their earning will be significantly less than those who have a college degree. As citizens they are less likely to participate in the democratic process. They will pay less in federal, state and local taxes and are more likely to need support from government social services (Worthen, p. 63).

According to Worthen (1998) if we want to pursue of a truly global economy than a better educated workforce must be a top priority within American culture. Higher education needs to educate more people and more effectively than it is currently doing (Worthen). More students need to graduate and gain the knowledge, skills and attitudes of inquiry that encourages them to be continuous learners (Worthen). While there are many examples of bright, highly motivated students who are successful in college there are still too many who are not successful. Therefore colleges need to find ways to engage the equally bright, but less motivated, student in their pursuit of a degree. Certainly these students do not lack ability as they met the requirements to gain entry into the respective program. Perhaps the students

who are not successful do not know how to learn or are dealing with issues that could be better addressed by the college. As Worthen states, "They haven't discovered the rewards of delayed gratification or how to plan for the future beyond tomorrow" (p. 63).

According to Turner, Lesseig and Fulmer (2006) the proper motivation is key to success for any student. Many researchers agree that motivating students is a primary task of educators (Turner et al). Though most researchers seem to agree to there is no "magic bullet" to motivation (Cox, 2000). As stated previously the question is why do students choose to leave higher education when a great deal of time and often expense was spent on gaining entrance to the program. An understanding of student's motivations for pursuing higher education might allow some modification of student recruitment methods, institutional and teaching strategies and therefore increase retention overall (Bennett, 2004).

At one South African university the graduation rates were so low that the Department of Education began investigating the problem (Watson M., Mcorley, Foxcroft & Watson, A, 2004). According to the Minister of Education, Kadar Asmal, in his report of February 2001

Retention rates would have to improve from the current 15% to at least 30% over the next five years. It is thus imperative that those learners who will succeed academically are identified and their developmental needs addressed (Ministry of Education, 2001).

At what point might we face the same challenges in the United States? This is the problem which is being addressed throughout the world.

The research of Young (2004) regarding the motivations for students to stay in an academic program was used as the framework for this study. Here the problem of student retention was researched in depth and a practical framework of variables was offered as possible areas which could be addressed to improve on this problem. Young felt the key to student retention and success in any higher education program was motivation (Young). Therefore

motivation was studied through in-depth interviews and through these interviews the important motivating variables were discovered (Young).

### *The Theory Regarding Retention*

The motivation to learn has long been considered an important predictor of learning and training effectiveness (Campbell, 1989). Learning motivation has been defined as the willingness to attend and learn material presented in a higher education program (Noe, 1986). "Whereas ability accounts for what individuals can do, motivation to learn influences the decision-making processes determining the direction focus, and level of effort individuals will apply to a learning activity" (Noe, Wilk, Mullen & Wanek, 1997). Therefore how does motivation affect retention within the college programs?

It is generally agreed that motivation has an effect on student performance and learning (Turner et al, 2006). The more often students realize the importance of the concepts learned in class the greater their interest and motivation will be during class (Turner et al).

Students can often feel overwhelmed by the numerous responsibilities associated with being a college student (Cole, Field & Harris, 2004). As a result, some will suffer a loss in motivation to perform and, even worse, a few will experience a severe state of depressed mood (Cole et al). Therefore it is imperative that the concerns of students be addressed and some specific recommendation be implemented by universities and instructors to possibly change these outcomes.

What can be done to increase the motivation of students especially is the critical freshman year. For example, according to a study which was conducted with first year accounting students, many of these students did not perceive much value from their initial courses (Turner et al, 2006). The purpose of their study was to determine if motivation could be increased by showing the relevance of the course material to a student. Through this research they determined that many freshman and sophomore

students recognized the importance of the courses but, still lacked enthusiasm. The motivational tool they employed was based on the presumption that the more students believe they will apply the concepts of the course to their career, the greater their interest and enthusiasm for the course. The results were encouraging and showed that relating concepts to chosen professions clearly enhanced the learning process and made the course more interesting and relevant to students.

According to Colquitt, LePine and Neo (2000) dispositional, attitudinal and situational characteristics are predictors of learning motivation. This would be at the beginning of their college career. Still, according to Noe (1986) learning motivation is malleable and changes over time. He postulates that one can expect that a student's level of learning motivation to change over the course of the term. It might increase, decrease or stay the same depending on the situational characteristics they find themselves in (Cole et al, 2004). They tell us that when the motivational level of the student is low or the academic environment is perceived as stressful, then the acquisition of knowledge is likely to suffer. This is further upheld by Brackney and Karabenick, (1995) who state if students evaluate academic demands as a threat, and appropriate coping mechanisms are not in place, they are likely to experience a decrease in motivation and effort. How might this research be relevant to this study?

Young (2004) addressed this problem through a study of students from low socioeconomic backgrounds in Australia who often did not work toward a college degree. Here a qualitative approach to the issue was taken through extensive interviews of students who had completed a high school degree. Specifically the region of Elizabeth was chosen because it was identified as having the third lowest rate of university participation in Australia (7.6%). The average rate for Australia is 24.2% and therefore people from Elizabeth were accessing higher education at less than 1/3 the national average.

The sample in Young's study included 28 participants who lived in the region and had the basic

qualification to attend higher education and be successful. Twelve of these people had progressed straight from high school to college and 16 had at some point left high school believing that to be the end of their education.

From the 28 interview transcripts five motivator variables emerged. These motivator categories are nature of work, interest, role models, competition and encouragement (Young, 2004). In this research barriers to the successful achievement of a degree were also noted,

One would expect barriers encountered by individuals would be multiple, occurring in a variety of forms across a long span of time from the point where individuals begin to consider university study to that of granting with a degree (Young, 2004, p. 439).

In the study conducted by Young (2004) these barriers were distance from the college, Geographical discrimination, isolation and finances. For the current study these barriers (controls) were changed to marital status, gender and employment status as these are assumed to impact a student's ability to be successful in college in the United States.

According to Young (2004) barriers related strongly to the experiences noted in the interviews. In development of Young's motivators model it was noted that there is a process involved where individuals took information from their environment and converted this into self-expectation before they could access higher education. Young defines barriers as factors that prevent or obstruct the development of such an expectation within the mind of the student.

The specific variables in the model emerged through the interviews. For example, nature of work emerged from the positive and negative aspects of school work during the interviews. Positive being the kind of work that people would like to do and negative being the kind of work that people would prefer not to do (Young, 2004). Many of the participants noted the importance of these positive and negative aspects as motivators for going to college and completing a

degree. The negative aspects of school, such as the treatment by the teachers, were found to be particularly strong in relation to motivation.

Interest became an important variable in the model as it involved a desire to study either a general or a specific subject. For many of the participants their level of interest was regulated by, "a push of discomfort and the pull of hope" (Young, 2004, p. 451). This is further described as the following

Change in individuals is often brought about by the dual pressure of a person's circumstances being uncomfortable, unhappy, unfulfilling juxtaposed against the vision and promise that thing can be improved (Young, 2004, p. 451).

Six of the participants noted that a negative Nature of Work was juxtaposed with the pull of hope for a better life. Therefore this hope for a better life and the material things which come as a result of this life had a positive effect on their interest in the work. role models became evident as being important and the participants noted with great pride how they were often the first in their families to qualify for college.

Encouragement became evident as another important variable as the participants talked of the importance of encouragement from adults in their lives. In particular encouragement from their parents to attend college. Through the study it became evident that many of the parents were hampered by a lack of information regarding college and this had a significant impact on their ability to encourage their children. "Parents who are not aware of the potential benefits of higher education may well fear the financial and social implication for both their children and themselves" (Young, 2004, p. 441).

Role Models were shown to be an important variable during the research process. Many of the participants who had contact with professionals were shown to be more interesting in pursuing a higher degree. 17 of the participants noted a person in their lives who could be interpreted as a positive role model.

### *Research Question*

Based upon the available literature on this topic the research question which will be addressed during this study will be:

1. What is the relationship between interest in coursework, role models, encouragement and age to a student staying in a higher education program?

The research of Young (2004) was chosen because it studied the effect of specific motivating variables on the ability of students to be successful in college.

In this study nature of work and interest have been collapsed into one independent variable called interest in coursework, role model is defined as the educational level achieved by the student's role model, encouragement is defined as the level of encouragement received from faculty members and competition was changed to age.

Thus:

H1: The motivating variables of interest in coursework, role model, encouragement and age have a positive effect on the intention of the student to remain in a higher education program.

## **Method**

### *Sample*

The participants in this study were current students in the Weekend College Program at Lakeland Community College. This is a program which has been in effect for only three years and the total population is relatively small. Therefore all current students (93) were sampled for this study. The participants were given full disclosure of my role as researcher and also my role as a previous instructor in the Weekend College program. Some of the participants were previous students in my courses. The research objectives were clearly explained to all participants and the collection procedures explained. It was important that the participants understood that all data would be completely anonymous. The final sample which was used for analysis included 50 respondents and there were 43 non-respondents.

## *Measures*

The data collection method which was employed for this study used a number of measures to collect data for testing the motivating variables. Specifically the Overall Job Satisfaction Survey (Brayfield and Rothe, 1951) was used to measure interest in coursework. This measure had an alpha level of .05 and interest in coursework was shown to be significant at  $p < .02$ . Age was measured with a single scale item which requested the birthdates of the participant. The role model was measured by a single scale item which asked the highest level of education achieved by the student's role model. Encouragement was measured through a single scale item which asked the level of encouragement the student received from the faculty. The reliability for this measure range from .88 to .91 (Moorman, 1991; Pillai, Schreisheim & Williams, 1999; Shore, Newton & Thorntom, 1990).

The dependent variable was measured by asking the respondents to give a percentage chance that they would complete their degree. This was a single scale open-ended item on the measure.

The survey was modified to reflect the fact this was being done within a college environment instead of an organization. Specifically the words "job" was replaced with "coursework" for several of the scale items. A copy of the instrument to be used is included in Appendix 1.

In addition, demographics were assessed to be used as controls in the analysis. These included marital status, current employment status and gender. These were chosen as they would have an impact on the daily lives of the students and therefore it is assumed they would affect the motivation of a student to continue in a program.

## *Procedure*

The survey was mailed to the entire population of Weekend College (93) students. In order to assure the highest possible response rate the suggested administration process of Salant and Dillman (1994) was utilized.

First Mail out: A short advance notice was sent to all members of the sample.

Second Mail out: The actual mail survey was distributed about one week after the advance notice letter.

Third Mail out: A postcard follow-up was sent to all members of the sample four to eight days after the initial questionnaire.

Fourth Mail out: A personalized letter with a handwritten signature, questionnaire, and preaddressed return envelope with postage. This was sent to all non-respondents (Salant & Dillman).

A total of 52 surveys were returned. Two of these surveys were incomplete and

only the first page was completed so these were discarded. Finally 50 surveys were considered to be appropriate for use in this study. Considering this research was being conducted during the summer semester and the surveys had to be sent via mail this was a good response rate.

The demographic characteristics of the final sample ranged in age from 22 years old to 68 years old. There were 38 females in the sample and 12 males. 34 of the respondents were married and 16 of the respondents were single. 46 of the respondents reported that they were working full time and 4 of the respondents were not currently employed.

## *Results*

### *Analysis*

Before the data could be analyzed all negatively worded scale items were reversed in accordance with the instructions on the original measure (Brayfield & Rothe, 1951). The specific scale items which were reversed are 3, 4, 6, 8, 10, 11, 14, 16 and 18. According to Pallant (2005) this is done to prevent response bias.

The next step in the process was to calculate a total scale score for independent variable interest in



coursework. This variable was tested with the 18 items on the Brayfield and Rothe (1951) measure. These 18 items were added together with the aid of SPSS and transformed into the independent variable of interest in coursework.

Two methods were utilized to understand the available data. First descriptive statistics were done with the aid of SPSS. As noted in Table 1 the age range of the participants was 22 to 68 years of age with a mean age of 45 and a standard deviation of 10.41. The participants reported their role models ranged from 0 (high school degree) to 3 (doctoral degree) with a mean of 1.34 and a standard deviation of .89. In addition the range on encouragement from a faculty member went from 0 to 5 with a mean of 2.96 and a standard deviation of 1.00.

Second a multiple regression analysis was performed to examine how well age, role models, encouragement and interest in coursework could predict a student's intention to complete a higher education program. The coefficients of the regression model are shown in Table 2.

Here the control variables only account for 1% of the variance for intention to continue ( $R^2 = .019$ ) in the regression model; while model 2 (predictor variables) account for 30% of the variance for intention to continue ( $R^2 = .300$ ).

The  $R^2$  change demonstrates that in Model 1 (control variables) accounts for only 2% of the variance in the intention to continue. In Model 2 (predictor variables) account for 28% change in the variance on the intention to continue. This is a statistically significant contribution (.006). This significance is noted again in the ANOVA table where the model as a whole is  $F(7, 42) = 2.573, p < .027$ .

To determine which of the independent variables contributed to the equation the Coefficient table was analyzed. Here only one of the variables was statistically significant age ( $\beta = .321, p < .04$ ). The other independent variables were shown to be nonsignificant. Also none of the control variables were shown to have any significance.

The Pearson correlation analyses reflects statistically significant relationships between the intention to continue and age ( $r = .441, p < .001$ ) encouragement ( $r = -.270, p < .03$ ) and interest in coursework ( $r = .306, p < .02$ ). A nonsignificant relationship was shown with role model.

The excluded variables from Model 1 (controls) demonstrate a statistically significant contribution to the production of intention to continue and age ( $\beta = .460, p < .002$ ) and interest in coursework ( $\beta = .306, p < .04$ ). In this test the independent variables of role model and encouragement showed a nonsignificant relationship.

## Discussion

### Conclusions

Only part of the hypothesis could be supported through this study. There was clear support for the independent variables of interest in coursework and age throughout the regression analysis. The finding regarding interest in coursework was in line with the research of Young (2004). Age was a new independent variable but, the findings were in line with expectations. The students were generally in the same age range (mean = 44) and therefore were adults who were serious about pursuing an education.

There was partial support for the independent variable of encouragement. It was interesting to note the negative Pearson value for encouragement and still significance. In conversations with my professor we speculated that students who are successful in their coursework probably do not need encouragement from their professors and therefore do not seek it out. Those who are not as successful in their coursework are going to be in need of a great deal more attention from faculty. Therefore the negative correlation was noted.

There was no support for the independent variables of role model. Perhaps the way in which this variable was measured could be adjusted for future research. The inference can be made that the students did not need a role model in order to be motivated in their educational pursuits.

### Limitations

A major limitation to this study was the time of year. During the summer the students in the Weekend College program are not in classes and therefore the only way to contact them was via the mail. The return could have been improved if the surveys could have been distributed and collected while they were in class.

The sample size for this study was not sufficient as there were only 50 samples

for four independent variables. A sample of 60 would have been a more appropriate number for multiple regression analysis.

Another limitation to this study was the decision to change the independent variable of competition (Young, 2004) to age for this study.

Finally, there are additional control variables which should have been assessed. For example, whether or not the participants had children or the distance they must travel to attend school might affect their ability to be successful in college.

### Implications for Future Research

The relationship between encouragement and the intention to continue produced interesting results through this study and therefore certainly lends itself to future research. The lack of consistency in the results of this study was confusing and in particular the negative Pearson correlation value of  $-.270$  which was shown to be significant at  $.029$ .

### References

- Alliger, G., Tannenbaum, S., Bennett, W., Traverse H., and Shotland, A., (1997), A meta-Analysis of the relations among training criteria, *Personnel Psychology*, 50, p. 341
- Astin, A. (1993), *What matters in college? Four critical years revisited*, San Francisco: Jossey-Bass.
- Baird, L., (2000). College climate and the Tinto model, In J.M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 62-80). Nashville, TN: Vanderbilt University Press.
- Bean, J. and Eaton, S., (2000), A psychological model of college student retention, In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 48-61), Nashville, TN: Vanderbilt University Press.
- Bennett, R., (2004). Student's motives for enrolling on business degrees in a Post-1922 university, *The International Journal of Educational Management* Vol. 18, Iss 1
- Brackney, B. and Karabenick, S., (1995), Psychopathology and academic performance: The role of motivation and learning strategies, *Journal of Counseling Psychology*, 42, p. 456.
- Business Wire, TG Hosts Colloquium for ICUT: Texas Independent College Explore Retention Issues, Jan, 23, 2006, p. 1.
- Campbell, J., (1989), An agenda for theory and research, In I.L. Goldstein, *Training And development in organizations*, p. 469, San Francisco, CA: Jossey Bass
- Cassidy, R., (2007) *How facilities affect student's college choices, Building Design And Construction*, Vol 48, Iss 11, p. 9
- Cervone, D., Kopp, D, Schaumann, L., and Scott, W., (1994), Mood, self efficacy, and performance standards: lower mood induce higher standards for Performance, *Journal of Personality and Social Psychology*, 67, p. 499.
- Chemers, M., Hu, L., and Garcia, B., (2001), Academic self efficacy and first Year college student performance and adjustment, *Journal of Educational Psychology*, p. 93
- Cole, M., Feild, H., and Harris, S., (2004), *Student learning motivation and Psychological hardiness: interactive effects on student' reactions to a Management class*. Vol. 3, Iss. 1, p. 64.
- Colquitt, J., LePine, J., and Neo, R., (2000), Toward an integrative theory of training Motivation: a

meta analytic path analysis of 20 years of research. *Journal of Applied Psychology*, Vol. 85, p. 678.

Cox, K., (2000), Motivating students for lifelong learning, *Web Tools Newsletter*, July 2000.

Creswell, J., (2003) *Research Design Qualitative, Quantitative and Mixed Methods Approach*, Thousand Oaks, CA: Sage.

DEET (Department of Employment, Education and Training) (1990) A Fair Chance for All: Higher education that's within everyone's reach, Australian Government Printing Service, Canberra

DETYA (Department of Employment, Training and Youth Affairs), (1999) Equity In Higher Education, Higher Education Division, Occasional Paper 99A, Canberra, Australia.

Dykman, B., (1998) Integrating cognitive and motivational factors in depression: initial Tests of a goal orientation approach. *Journal of Personality and Social Psychology*, vol. 74, p. 139.

Edwards, J. and Waters, L., (1982). Involvement, ability, performance, and satisfaction As predictors of college attrition, *Educational and Psychological Measurement*, 42 (4), 1149-1152.

Green, J., Caracelli, V. and Graham, W., (1989) Toward a conceptual framework for Mixed-methods evaluation design, *Educational Evaluation and Policy Analysis*, 11 (3), p. 255.

Griffin, O.T. (1991). Strategies for black student retention: A conceptual review, *Western Journal of Black Studies*, 15 (4), 235-241.

Hair, J., Black, W., Babin, B., Anderson, R., and Tatham, R., (2006), *Multivariate Data Analysis*, Upper Saddle River, NJ: Prentice Hall.

Iffert, R., (1958), Retention and withdrawal of college students (U.S. Department of Health, Education and Welfare, Office of Education, Bulletin 1958, No. 1), Washington, DC: U.S. Government Printing Office.

Kerlinger, F., and Lee, H., (2000), *Foundations of Behavior Research*, Australia: Wadsworth.

Kreitner, R., and Kinicki, A., (2007), *Organizational Behavior*, Boston: McGraw Hill.

Lounsbury, J., (2004), An investigation of personality traits in relation to intention to withdraw from college, *Journal of College Student Development*.

Maudal, G., Butcher, J., and Mauger, P., (1974), A multivariate study of personality and academic factors in college attrition, *Journal of Counseling Psychology*, 21 (6), 560-567.

McNeely, J., (1937), College and student mortality (U.S. Office of Education, bulletin 1937, No. 1), Washington DC: U.S. Government Printing Office.

Miles M., and Huberman, A., (1994), *Qualitative data analysis: a sourcebook of new Methods (2<sup>nd</sup> ed)*, Newbury Park, CA: Sage.

Montano, C., and Utter, G., (1999). Total quality management in higher education, *Quality Progress*, Vol. 32, Iss. 8, p. 52.

Montclair State University, (2001). Highlights from the 2000-01 CRSDE report, Retrieved, August 26, 2004, from [http://www.montclair.edu/pages/vpbpbit/CRSDE\\_AY2001.pdf](http://www.montclair.edu/pages/vpbpbit/CRSDE_AY2001.pdf)

Morgan, D., (1998), Practical strategies for combining qualitative and quantitative Methods: application to health research. *Qualitative Health Research*, 8(3)p. 362.

Noe, R., (1986), Trainers attributes and attitudes: neglected influences on training effectiveness, *Academy of Management Review*, 11: p. 736.

Neo, R., Wilk S, Mullen, E and Wanek, J., (1997) Employee development: Construct Validation issues, In J.K, Ford, S.W, Kozlowski, K, Draiger, E, Salas, and M. *Teachout, Improving training effectiveness in work organizations*: p. 153, N, J: Eribaum.

Perez, G., (2007), PCC gains in retention of students, *Knight Ridder Tribune Business News*, Washington.

Sax, L., Keup, J., Gillmarten, S., Stolzenberg, E., and Harper, C., (2002), Findings from the 2002 Administration of Your First Year (YFCY): National aggregates, Los Angeles: University of California, Higher Education Research Institute.

Steckler, A., McLeroy, K., Goodman, R., Bird, S., and McCormick, L., (1992), Toward Integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*, 19 (1), p. 1.

Tinto, V., (1975). Dropout from higher education: A theoretical synthesis of recent Research, *Review of Educational Research*, 45, 89-125.

Turner, K., Lesseig, V., and Fulmer, J., (2006), Motivation in the first accounting course *The CPA Journal*, Vol. 76, Iss. 5, p. 66.

Watson, M., Mcsorley, M., Foxcroft, C., and Watson, A., (2004), Exploring the Motivation orientation and learning strategies of first year university learners, *Tertiary Education and Management*, Vol. 10, p. 193.

Worthen, J., (1998). The faculty need to teach more, Delivered to the Symposium on New Paradigms for Higher Education, Rose-Hulman Institute of Technology, Terre Haute, Indiana.

Young, J., (2004). Becoming different: accessing university from a low socioeconomic Community – barriers and motivators, Division of Health Sciences, University Of South Australia, East Campus,

---

Tracy H. Porter is currently a second year Ph.D. student at Regent University working toward a degree in Organizational Leadership with a major in Human Resource Development. She is also a visiting faculty member at Cleveland State University in the Department of Management and Labor Relations.

Table 1

Descriptive Statistics for All Variables

Variable	N	Minimum	Maximum	Mean	Std. Dev.
Age	50	22	68	.45	10.41
Role	50	0	3	1.34	.89
DV	50	50	95	86.40	8.00
Encourage	50	1	5	2.96	1.01
Interswrk	50	49	80	67.70	8.19
Marital Status	50	1	2	1.32	.47
Gender	50	1	2	1.24	.43
Working	50	1	2	1.08	.27

Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting the effect of Motivation on the Students Intention to Stay in Higher Education (N = 50)

Variable	b	SE b	Beta
Step 1			
Marital Status	1.83	2.58	.11
Gender	.70	2.76	.04
Working	1.50	4.52	.05
Step 2			
Marital Status	-1.42	2.61	-.08
Gender	2.30	2.60	.12
Working	-1.32	4.24	-.05
Age	.25	.11	.32*
Role	-1.46	1.29	-.16
Encourage	-2.17	1.31	-.27
Interswrk	.25	.14	.25*

Note: \*p < .05, standardized regression coefficients ( $\beta$ ) are presented

## Appendix 1

### Instrument

#### Definition of the Independent Variables:

1. Nature of Work – This is defined as the positive (the kind of work that people would like to do) and the negative (the kind of work that people would prefer not to do) aspects of coursework.
2. Interest – The level of interest in the course work
3. Role Models – Does the student have any role models they are attempting to model themselves after
4. Encouragement – What sort of encouragement is the student receiving during their studies. Either from faculty, other students, family or friends.

Description: This measure, developed by Brayfield and Rothe (1951), uses 18 items to describe overall job satisfaction. The items form a one-dimensional measure of overall job satisfaction.

Measure: Responses are obtained using a 5-point Likert-type scale where 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, and 1 = strongly disagree.

1. My education is like a hobby to me.
2. My education is usually interesting enough to keep me from getting bored.
3. It seems that my friends are very interested in their educations.
4. I consider my education rather unpleasant.
5. I enjoy my education more than my leisure time.
6. I am often bored with my education.
7. I feel fairly well satisfied with my present school
8. Most of the time I have to force myself to go to class.
9. I am satisfied with my school for the time being.
10. I feel that my school is no more interesting than others I could attend.
11. I definitely dislike my school work.
12. I feel that I am happier in my school work than most other people.
13. Most days I am enthusiastic about my education.
14. Each day of school seems like it will never end.
15. I like my school better than the average student does.
16. My school is pretty uninteresting.
17. I find real enjoyment in my education.
18. I am disappointed that I ever attended this school.

#### Open – Ended Questions

19. What is your date of birth?
20. Think of a role model you might have. What is the highest educational level obtained by that person?
21. What is the likelihood that you will stay in the program until you obtain a degree? Please give a percentage\_\_\_\_\_.

EFFECTIVENESS OF ONLINE LEARNING AND VIRTUAL TOOLS  
IN ASSISTING ENTREPRENEURS WITH BUSINESS PLANNING  
Ernie Post, Kutztown University Small Business Development Center  
CJ Rhoads, Kutztown University

---

Abstract

The purpose of the study is to determine if the integration of online courses and tools have an effect on entrepreneurs in business planning and business start-up behavior. An extensive literature review on online learning specifically related to entrepreneurs provides a foundation for the first step in assessing the effectiveness of a blended learning program for entrepreneurs. A synthesis of the literature indicates that online learning is as effective in promoting learning as face-to-face (FTF) instruction when measuring traditional learning outcomes. Following this finding, a qualitative study was done comparing the achievement of milestones between entrepreneur who used online learning with entrepreneurs who did not use online learning. Though causality was not determined, the study confirms ( $p < .0001$ ) that entrepreneurs who participate in online learning courses and who utilize virtual tools are more likely to complete business decision and planning milestones than those who do not. Practical applications of both the qualitative and quantitative aspects of this study are discussed as well as further possible investigations into identifying causal factors and other effects of online learning and virtual tools.

---

Executive Summary

A Small Business Administration (SBA) Portability Grant funded a study to determine the effectiveness of using online learning modules and tools with entrepreneurs. Our first task was to conduct a search of the literature regarding online learning and entrepreneurs. The literature review concluded that a constructivist theoretical framework (Huang, 2002) of learning is important to entrepreneurial learning and online learners. Because of the dearth of research specifically addressing the effectiveness of online learning with entrepreneurs, a synopsis of entrepreneurial learning styles in general is also reviewed. Both qualitative and quantitative studies were included in the literature review. A summary of online learning effectiveness studies that consider student learning attributes is found in Table 1 in the appendix.

Based upon the search of the literature, we can qualitatively conclude that online learning is as effective in promoting learning as face-to-face (FTF) instruction when measuring traditional learning outcomes. However, many of the research designs

used in the online quantitative research are considered weak designs.

Entrepreneurial learning style research supports the importance of collaboration and mentoring for entrepreneurs. In addition, learning disabilities and spirituality are confirmed as important aspects of learning for various groups of emerging disadvantaged entrepreneurs.

We further investigated the topic by conducting a quantitative study to determine if blended learning (a combination of online and FTF instruction) was effective in helping entrepreneurs achieve their goals. The participants in the study were clients of Small Business Development Centers. Those who completed online learning and used virtual tools as a part of their consulting engagement were compared to clients who did not complete any online learning courses or use any virtual planning tools as a part of their consulting engagement. The dependent variables were milestone behavior such as making the decision whether or not to go into business and/or completing a business plan. The dependent variable was tested using a chi-square analysis. Though



causality was not determined, the study confirms ( $n = 2004$ ,  $\chi^2 = 21.3$ ,  $p < .0001$ ) that entrepreneurs who participate in online learning courses and who utilize virtual tools are more likely to complete business decision and planning milestones than those who do not.

Both the qualitative and the quantitative findings are important to future research because the learning needs of entrepreneurs are very different than the traditional college age students that were used in the reviewed research concerning the effectiveness of online learning. This will inform future research for entrepreneurial outreach programs that are interested in using online learning and online tools to help entrepreneurs launch new businesses. As entrepreneurial outreach programs struggle with scarce resources, funding agencies will promote technology as a way to stretch declining program funding. However, as entrepreneurial educational outreach programs are encouraged to offer more online learning options, small business educators and mentors will need to understand the implications of offering online learning to entrepreneurs. This paper offers some insight toward that end.

### Introduction

Information, knowledge and course content are becoming increasingly more available on the World Wide Web (WWW) at little or no cost. Horrigan and Smith (2007) reported that almost 50% of U.S. adults had broadband connections in their homes in their recent Digital Future Report of U.S. Households. They also report that the Internet is perceived by users as a more important source of information – over all other principal media, including television, radio, newspapers, and books. In fact, 80% of Internet users, age 17 and older, consider the Internet an important source of information.

Small business owners are increasingly turning to the WWW for information and learning needs. While there are numerous studies about the implications and effectiveness of online learning, there are questions about how and why entrepreneurs might benefit from online learning differently than other adult learners. Studies concerning the way that entrepreneurs learn

indicate that they use different strategies for learning than most adults, and therefore there may be important implications for why online learning might be more or less effective with this group of learners.

Serial entrepreneurs are often described as careful planners who are innovative and self-directed. Increasingly, programs serving the educational needs of entrepreneurs are turning to online learning to provide education and knowledge to aspiring entrepreneurs. Despite this move on the part of entrepreneurial education programs toward online learning there is very little research about the effectiveness of online learning with entrepreneurs. Some educators are beginning to use a blended learning approach that is defined by Bonk and Graham (2006) as combining face-to-face (FTF) instruction with computer-mediated instruction. This may be in response to problems reported by Martinez (2003) concerning attrition, persistence and completion rates associated with online learners. At this time, it is important to question the implications for entrepreneurial learners as policy makers and funding agencies push to transition these entrepreneurs to an online learning environment. This literature review will offer some information toward that end.

The purpose of this literature review is to discuss the research that addresses online learning effectiveness, completion rates, and factors that help predict success in an online learning program designed for the small business community. This literature review will first discuss the method used and participants involved in the online learning studies. Because of the dearth of literature addressing the effectiveness of online learning in the context of small businesses, a section addressing entrepreneurial learning styles precedes the online learning effectiveness findings. Research on how entrepreneurs learn will provide insights to help evaluate studies about online learning effectiveness. The method for review section discusses the search strategy used to select the articles for this literature review. The qualitative findings section will then highlight four themes found in the literature, concluding with implications for practice, and future research. Following that will

be a description of the quantitative aspect of the study.

### Method for the Review

The electronic databases searched for this literature review include ProQuest, EBSCO and dissertation abstracts through World CAT. No articles were selected that were published prior to December 1999 because currency is an important issue with respect to online learning. The platforms and technology change so rapidly. Previous database searches in this area demonstrated a prolific amount of literature on the effectiveness of distance education versus FTF courses. However, distance education is a broader term used to define many other forms of learning beyond online learning course delivery. Therefore, online learning was the term selected consistently for this literature review search strategy. Effectiveness of online learning was paired with entrepreneur, small business, business, persistence, completion rates, and learning style as second level search terms. The 40 qualitative studies and 10 quantitative studies produced with this search criteria were reviewed and paired down to 11 quantitative studies, 10 qualitative studies, one mixed method study, and one government sponsored report. The online learning effectiveness quantitative studies are summarized in Table 1 in the Appendix. The entrepreneurial learning style discussion includes seven qualitative studies and one quantitative study.

### Participants in Research Literature

The majority of the participants across the online effectiveness studies were traditional, enrolled, college age (18-24) undergraduate or MBA graduate students, with the exception being a dissertation study that surveyed business engineering staff, high school technical students, and customers as participants. With the exception of two studies, the online effectiveness research was conducted with business or computer science students attending American institutions of higher education. The studies were all conducted with institutions that are offering FTF, online, and blended courses on business or closely related topics as part of a regular degree program.

As noted in Table 1 in the appendix, the general topics highlighted in the studies included learning style, self-directed learning (SDL), readiness, intrinsic/extrinsic motivation, demographic characteristics, different types of learning task, quality of the communication with faculty and peers, support factors and previous experience with online learning. In a majority of the studies effectiveness was determined by comparing numerous student output measures through pre-test and post-test achievement scores. In addition, surveys were used in a majority of studies to solicit student perceptions about their achievement of the course objectives, their perceived learning outcomes, and their perceived satisfaction with the faculty who taught the course as well as the course itself. Most of the studies contrast similar courses that were offered as either a FTF or online course option for students to self-select their preferred course delivery mode. The exceptions were two studies by Benbunan-Fich and Hiltz (2003) and Terry (2007) that offered a blended mode of delivery as a course delivery option. The next section will explore selected pieces concerning entrepreneurial learning styles.

### Entrepreneurial Learning Styles

This section explores issues surfacing in selected literature regarding entrepreneurs learning style that are included here to provide insight for using online learning with small business owners. These issues include experiential learning, learning through critical incidents, self-directed learning, learning through spirituality, and cognitive issues.

#### Experiential Learning, Critical Incidents and Self-Directed Learning

Van den Broeck and Willem (2007) explored the learning style of Belgian small business owners. This study reinforces the importance of small business owners using both reflective learning and continuous pro-active learning. This study found that entrepreneurs do not learn enough at the early stage of business formation and that their learning tends to be too reactive. Furthermore, the study notes that entrepreneurs often employ a disjointed learning style that makes it difficult for the learner to use critical

reflection as a means to reach higher levels of learning. The study determined that entrepreneurs do not place enough emphasis on "learning to learn." Moreover, the learner's gap between actual learning and required learning is thought to be due to the independent nature of small business owners, and the fact that their independent nature makes it difficult for them to adequately self-assess their learning needs. Furthermore, inadequate self-assessment is further compounded by the learner's reluctance to seek help from the educational small business channels due to their self-reliant nature. The study concluded that mentors, support networks, and traditional courses are helpful to entrepreneurs who seek to turn experiences into learning moments, and this is reinforced by the fact that those who seek fewer educational learning channels tend to report fewer learning events. This study found that Belgian entrepreneurs think that personal experience is the best way to learn. However, this study also revealed that entrepreneurs have difficulty learning from critical incidents, and thus, tend to fail to use reflective learning effectively, without the help of mentors.

Cope and Watts (2000) used a phenomenological case study with six entrepreneurs to explore the complexity of entrepreneurs' use of critical incidents as a higher order learning tool. They concluded that mentoring is essential for helping an entrepreneur interpret their critical incidents as a powerful learning outcome. In a later study, Cope (2003), using two business owners in a case study design, explored the importance of discontinuous events as they relate to the learning experiences of entrepreneurs. This study illustrates that discontinuous incidents can stimulate distinct forms of higher-order learning that are fundamental dimensions of both personal and business success. This study discusses the complexity of the relationship between entrepreneurs and their enterprise, due to the extreme levels of personal investment, and risk that owners take when starting their business. Cope also recommends further research into the affective dimension of critical incidents and its corresponding relationship between the emotional intensity of the event with the corresponding depth of personal reflection and

learning. These studies demonstrate the importance of critical events, and they suggest that entrepreneurs require a communicative interface between the learner and mentor for higher level learning to be fully realized from the learners critical incidents. This reinforces the need for online learning programs to address this communicative element within the course design. These studies also suggest that there is an aspect to learning and reflective experience that may be best accomplished through FTF interaction between learner and mentor to fully capture the affective intensity of the learner's critical incident.

Learner attributes associated with self-directed learners are frequently mentioned as critical enhancers to the effectiveness of online learning; O'Hara's (2005) qualitative study states that entrepreneurs have many attributes associated with self-directed learners. This study also suggests that online learning helps develop entrepreneurial attitudes by the fact that students need to manage their own time and independent work in an online program.

#### Cognitive Learning Issues

Logan's (2008) quantitative study found that 35% of U.S. entrepreneurs experience dyslexia, compared to only 1% of this incidence with U.S. corporate managers. The dyslexic entrepreneurs in the study indicated that they were either good or excellent at visualization learning task, oral communication, problem solving, and delegation, while the non-dyslexic entrepreneurs rated themselves as average or good on these same learning dimensions. Logan explained that dyslexic entrepreneurs might enhance their ability to apply creative solutions through their earlier years of learning to overcome obstacles resulting from their learning disability. Moreover, Logan believes that dyslexics learn to be exceptional oral communicators, and this enhances their ability to motivate their employees. Their disability also taught them to rely on, and trust other people at an early age making them exceptional delegators; which is often a missing attribute that can restrain entrepreneurs from pursuing business growth strategies because of their desire to micro-manage all aspects of the business.

Logan recommends that entrepreneurial learning programs offer a dyslexic friendly curriculum, one that promotes soft skill development, and Logan claims that lectures and case study that are typical pedagogical practices in FTF business programs are not ideal teaching methods for dyslexics.

### Spirituality and Cross Cultural Aspects of Entrepreneurial Learning

An important issue for the entrepreneurial educational community concerns marginalized entrepreneurial learners and this section reviews several pieces toward that end. Smith's (2001) qualitative study investigated business success from the perspective of Black women entrepreneurs, who comprise one of the fastest growing segments of entrepreneurs. This study used an exploratory method to determine learning strategies employed by Black women entrepreneurs who were participating in an entrepreneurship educational program in New York State. Black feminist theory informed this study, as well as Smith's experience as a Black woman entrepreneur and teacher. The study determined that the dominant learning strategies used by the participants included observation, listening, modeling, apprenticeship, collaborative learning, mentoring, and transfer of learning. Also, these strategies were used in both formal and informal learning settings, often simultaneously. More importantly, spirituality (faith in themselves as well as a higher being) was found to be a major factor in helping these learners overcome obstacles associated with starting a business. Smith found that spirituality provided the women an advantage, a base of support, a source of guidance, strength, and inspiration sustaining them through difficult times. Moreover, these Black women entrepreneurs also connected their spirituality with their need for balance between their mind, body and spirit, as well as to life and work, which comprise a measure of success for these learners.

Online learning could help foster spiritual learning by narrowing the distance of time and place between learners and through building online learning communities. Using asynchronous design strategies,

online learning can offer a means for entrepreneurs to meet, discuss and share experiences, as well as a way to offer peer-to-peer mentoring, and sharing of ideas between peers. The literature regarding entrepreneurial learning styles helps inform the next section that discusses the literature about online learning effectiveness.

### Qualitative Findings

This section will discuss four themes emerging in the findings of the online effectiveness studies including: a) dropout rates, persistence and motivation; b) student attributes and learning outcomes; c) cognitive engagement; and d) social factors influencing online learning.

#### Dropout Rates, Persistence and Student Motivation

The problem of online attrition rates and persistence is a common issue for online educational programs. According to Martinez (2003) attrition refers to the decrease in the number of learners engaged in a course of study. Martinez defines persistence as relating to the act of continuing toward an education goal. In a conceptual piece, Diaz (2002) noted online learners tend to be older, have completed more college credit hours, more degree programs and generally maintain a higher GPA than students enrolled in FTF courses. These learner characteristics are noted by Diaz as being well suited for self-directed study, such as online learning.

Online learning effectiveness research frequently overlooks those students who might have dropped a course before completion. These students are never counted in the final analysis of studies comparing effectiveness between various modes of learning that use end of course achievement scores as a measure of effectiveness. Consequently, when evaluating online learning effectiveness it is imperative to consider completion rates in relation to the overall evaluation of online learning versus FTF instruction.

Parker (2003) tested the hypothesis that a learner's locus of control as measured by Rotter's Locus of Control scale is a significant predictor of academic

persistence. Using groups of traditional and online community college students Parker was able to confirm that a student's internal locus of control, and their academic persistence were shown to have a correlation of .83 ( $p=.05$ ). Indicating that those students with higher internal locus of control and self-motivation are more likely to complete their online course study than students who scored as having an external locus of control and who are externally motivated.

Parker concludes by suggesting that a screening procedure should be used to determine a student's locus of control prior to assigning them to online learning. As Parker hypothesized, an internal locus of control orientation, as the independent variable by the learner, predicted dropout rate with an accuracy of 80%. This study used two self-selected groups for the same classes and offered both classes in traditional FTF format and distance education format with the same syllabus, examination schedule and faculty. The results of the study concluded the locus of control was the greatest predictor of completion with the distance education program. Age, gender and number of previous distance education courses completed did not meet the completion group predictive criteria of this study.

Chyung (2001) carried out a seven year evaluation study determining the effectiveness of interventions implemented to improve student persistence rates with online learning. This study sought to improve the motivational appeal of the online course by using John Keller's attractive, relevant, confidence, satisfaction (ARCS) model. The ARCS model focuses on making the online learning attractive and, relevant to learners. The model also seeks to improve student's confidence and satisfaction levels toward their online learning. Using this model as a guide to improve the instructional design of online learning proved significant when Kirkpatrick's evaluation model was used to measure results. Between the fall semester of 1989 and the fall semester of 1996, the average retention rate for online courses by the end of the third course was only 56%. When the interventions based on the ARCS model were implemented, the retention rate improved to 78% by

the end of 1997, just three semesters after the interventions were implemented.

### Student Attributes, Learning Styles, and Learning Outcomes

The studies discussed in this section considered students' success in online learning by using more traditional pre-test and post-test measurements to evaluate knowledge or skill acquisition in the online learning course. Locus of control and student motivation are not only important learner attributes that affect students attrition rates in the online learning environment, but they are also important attributes when measuring student outcomes using traditional learning achievement measures such as pre-test and post-test scores. Issues such as learning style, degree of experience with online learning, cognitive engagement (e.g. deep or surface) learning, and intrinsic or extrinsic dimension of the student are all considered potential variables impacting effectiveness with online learning. Neuhauser (2002) used the Learning Modality Preference Inventory to test students' learning styles. Of the most successful online students receiving at least an A or A-, 40% listed a visual learning style as either their preferred or one of their preferred learning styles, as compared to 66% listing a kinesthetic learning style as either their preferred or one of their preferred learning styles. In comparison, 43% of the FTF most successful students had a visual preference learning style, and 43% had a kinesthetic preferred learning style. The study found that there was no significant relation found between final grades and preferred styles of learning in either mode of learning.

Hsu and Shiue (2005) used the Self Directed Readiness Scale (SDLR) with 126 students taking FTF and two-way distance education courses to compare Taiwanese undergraduate students' achievement on grades between similar courses with the same instructor. They found students' educational score (prior GPA and SDLR) is a strong predictor for determining students' success in distance education courses. This confirms that locus of control not only plays a pivotal role with enhancing completion rates

with online learning but also enhances online learner outcomes.

Ashill, et al. (2006) hypothesized course structure, self-motivation, learning styles, instructor knowledge and facilitation, and interaction and instructor feedback would affect perceived learning outcomes. Although each of these factors were significant when measuring student satisfaction for the online course, only learning styles and instructor feedback were significant when measuring for student perceived learning outcomes. However, student user satisfaction with online learning was a significant predictor of learning outcomes. Although, perceived student satisfaction is impacted by significantly different learner attributes than perceived learner assessment of knowledge acquisition. This reinforces how important it is for educators to clearly define what they are measuring to determine effectiveness when discussing the issue of online learning effectiveness.

Finally, in a dissertation study by Fitzgerald (2003), there was support found for matching the type of activity (collaborative or self-directed) to the learner's preferred learning style as a way to improve performance. This tends to contrast with the Ashill, et al. (2006) study which indicated the students learning style only impacted one aspect of the effectiveness (student perceived satisfaction). This may be a result of the Fitzgerald study using validated instruments to determine learners' preferred learning style, as compared to Ashill's et al. study that relied on the student's reporting their perceived learning style. Fitzgerald also used a more diverse sample of older adults as participants in the study while Ashill, et al. used traditional college age (18-24) students.

#### Cognitive Load Theory, Cognitive Engagement and Knowledge Task

Cognitive load theory was raised in a qualitative piece by Tyler-Smith (2007) as an issue of concern in the context for online learning course designers. Cognitive load theorists believe that learning is first processed in short term working memory. Short term memory is very limited in the amount of new information that can be processed in a given time.

Learning new complex material that has an under developed cognitive schema in long term memory, can cause our short term memory to overload, which causes the learner to become incapable of continuing with the learning task. Salmon (as cited in Tyler-Smith, 2007), stressed the importance of limiting the amount of content specific information in the early stages of an online course, to help reduce cognitive overload in the context of online learning. Tyler-Smith recommends that online learning instructors focus on doing E-activities that help foster group cohesion and self-identity as an online learner. Tyler-Smith also discusses the importance of starting the online course with a face-to-face meeting with the learners. This is important to help learners foster a group identity and to ease their angst over migrating to online learning. Tyler-Smith proposed a conceptual model that specifies five multiple learning tasks that the novice online learner is confronting. These include negotiating the technology, negotiating the course website, negotiating the course content, becoming an online learner, and negotiating the online course mediated-communication processes. An example of mediated communication is the online discussion forum where learners often experience cognitive load just trying to read through the extensive postings that are generated in an online class discussion. Similar experiences can cause the learner to become cognitively overloaded, leaving them to think that dropping the class is their only option.

In a qualitative piece Kirshner (2002) calls for enhancing competency-based education in online learning. Competency-based education is defined as the ability to enable learners to recognize and define new problems in their domain of study, while also solving these problems. Kirshner (2002) also states that competency-based education is a combination of complex cognitive and higher-order skills, highly integrated knowledge structures, interpersonal and social skills, and attitudes and values. Educators engaged with online learning need to consider these higher-order thinking skills required in new learning domains, and this requires educators to better understand and make use of the possibilities and to take into account the limitations of the human mind.

Richardson and Newby (2006) used the Study Process Questionnaire (SPQ) to examine the affect of learner motivation and learning strategy on learner outcomes. The SPQ scale defines students' learning strategy and motivation as either surface or deep. Deep learners are highly engaged with the learning material. Surface learning involves learning what is necessary to get a passing grade. Students using surface strategy and surface motivation are less cognitively engaged with the course material. This study found as students gain more experience with online learning, the students' achieving motive (e.g. working to get the highest grade) was replaced with an achieving strategy (i.e. better organization of their time and learning resources). Therefore, as students gain online experience, they are also learning to employ different learning strategies and they take more responsibility for their own learning. This study demonstrates online learning may be an important tool for educators who desire to increase their students' self-directed learning skills. Integrating online modules with their FTF instruction may improve students' self-regulatory learning skills. Furthermore, as students take more responsibility for self-regulating their learning, they also are likely to perceive online learning as a more effective learning mode of delivery. Consequently, this reinforces self-regulatory skills in the online learning experience. This study also found that student-perceived effectiveness with online learning can be improved by increasing student confidence and satisfaction with the course design.

Moneta and Moneta (2002) examined the effectiveness of multimedia-rich e-learning materials, in comparison to FTF instruction. Their study compare results of factual based learning and higher-order applied conceptual learning using four learning outcome measures. These outcome measures include the percentage of correct answers to the factual and applied-conceptual questions in the midterm and final exam. Both FTF and online learners improve equally well between midterm and final grading when answering factual questions. However, interesting results were observed between the two groups when comparing the effectiveness in applied-conceptual learning task. First, they found that FTF students

ability to answer applied conceptual questions decreased from midterm to final, while online students increased their scores. They speculate that students experience a learning curve in adapting to new challenges with online learning and that this learning curve adjustment may be the reason why they witnessed suppressed performance with the online learners midterm grading with applied-conceptual question responses, but yielded superior performance in the final. This is the only study which considered the impact on effectiveness from different learning tasks required as a controlled variable in the studies between FTF and online learning.

For the majority of the studies, instrumental knowledge was being taught and evaluated, but little attention was given to how online learning effectiveness might be different with other forms of knowledge that Habermas (Kincheloe, 1991 ) would label as communicative and emancipatory knowledge. Liebowitz's (2003) study is the exception. Using MBA students, the Liebowitz (2003) study sought to determine if communication skills could be taught by group exercises and role plays synchronously in the online chat room. The study determined the students' assessment of their ability to perform a multitude of communication skills, which were taught in an organizational behavior course, were able to be performed equally well using both FTF and online modes of delivery. The instructor used the assessment instrument in six semesters taught in a FTF format, and one online format. Although only one online course was used in the comparison, the results hold promise that communication knowledge and skills can be taught in the online learning environment. There was no significant difference in the student self-rating effectiveness scores between the seven comparison classes.

### Social Factors Influencing Online Learning

Huang's (2002) qualitative piece addresses several issues related to practice for online instructors. First, teachers need to address the loss of humanity that online learning presents for the student due to the lack of face-to-face social interaction with peers and

the teacher. Moreover, a key issue for instructors of online learning is to be aware that adding new learner communication media such as list serves, forums and teleconferencing will not necessarily alleviate the isolation that online learners frequently feel. In addition, the adult learner's self-directed learning style makes them more favorably disposed toward an active learning style, and online learning, in its strictest form, only provides information. Another important aspect for online educators relates to what role the teacher should play in the online course. According to Huang, the teacher is best suited to be a facilitator in the online learning environment, and the teacher should move freely between the role of consultant, guide and resource provider. The issue of learning assessment is also viewed as a time consuming endeavor. However, Huang states that "learning to learn" defined as the learning process, is just as important as the result of learning. The constructivist learning theorists believe that teaching and learning need to be learner-centered and under this framework, each learner is recognized as bringing their own unique experience and knowledge to the learning environment (Huang, 2002). Online learning can be viewed as static and not easily customized to the individual learner. Therefore, if online learning is not designed well, there is a trade off on this issue when using online learning from a constructivist teaching orientation.

The quality of the communication and frequency of communication between and among student and faculty are also discussed. Frederickson's et al., (2001) longitudinal study on online learning effectiveness determined that the transparent interface, frequent instructor interactions and dynamic discussions are the most significant factors of student success with online learning. Reissetter et al. (2007) found that the timing of teacher input was a critical pedagogical difference between FTF and online learners. For example, in the online course, the instructor's anticipatory skills were essential for preventing student mistakes and misconceptions. By contrast, the FTF comparison group of students reported the immediacy of the teachers scaffolding skills, oral communication skills and approachable personality were essential to the student's success in

the classroom. Most importantly this study found that online learners do not expect a virtual FTF learning experience and the students had less value for a FTF virtual experience in their online learning experience. This study takes a slightly different approach to some previous research that suggested that online learning should seek to recreate the FTF interaction as closely as possible. This most likely is explained because this study specifically asked students about their expectations of the experience for taking the online course, and they found that students did not expect the same experience in the online course as they did in their FTF class. Previous qualitative studies may have assumed that the student would desire to experience the replication of the FTF classroom in the virtual world without necessarily asking the student what they expected to experience in the online learning program.

Benbunan-Fich and Hiltz (2003); Kuhl (2002) and Rovai (2003) each consider the importance of providing for student-to-student interactions when designing online courses. Benbunan-Fich and Hiltz (2003) found that the greater the extent of student-perceived collaboration, the greater the perceived learning reported. Another finding for online courses was the greater the student access to the professor, the better the student perceived the learning experience. Therefore, the improved and enhanced communication with the professor resulted in the student being more likely to perceive the learning as valuable. Moreover, Kuhl's (2002) piece suggested that student to student communication is an important aspect of fostering motivation; online learning encourages students who are quiet in the FTF classroom to be more engaged in the online chat room or email streams. Consequently, student online discussions are viewed by Kuhl as an important aspect of the online learning environment that provides benefits to certain groups of students who are not as skilled in expressing themselves verbally. Rovai (2002) states that hybrid or blended learning programs may hold the most promise by incorporating the best of both worlds of FTF and online learning. Blended learning assumes that learning can be enhanced during one or more FTF meetings to promote collaboration and socialization



among learner cohorts. The next section addresses implications of the findings for practice in an entrepreneurial adult education program.

#### Implications for Practice and Future Research

This section will provide recommendations for practice in light of the research on entrepreneurial learning style and online learning effectiveness. These recommendations are intended for an entrepreneurial education program context.

#### Meeting the Needs of Multiple Learning Styles

Entrepreneurs use a multitude of learning styles including self-directed learning, experiential learning, and reflective learning in both formal and informal settings. Critical incidents and cognitive disabilities are also surfacing as important issues that impact the entrepreneur's learning. Furthermore, marginalized entrepreneurial learners may benefit from other ways of learning, including spiritual learning and collaborative learning.

A number of mediators and factors impact the overall effectiveness of online learning as depicted in Figure 1 in the Appendix. A significant mediator surfacing across several studies reinforces the importance of communication between students and the teacher. This mediator has implications for both pedagogy and learning platform technology. Kuhl (2002) recommends that teachers incorporate live chat room conversation as a way to promote conversation from students lacking confidence to speak orally in FTF classes. Online learning platforms should provide live streaming video, live chat rooms and enhanced online facilitation tools. An added benefit for using these advanced online learning platforms with entrepreneurs is that they will be learning to use technology, which will also prove helpful for them in connecting with customers, suppliers and employees.

Kirshner (2001) believes that critical load theory holds promise for informing course designers how instructional materials for acquiring complex cognitive skills and competencies can and should be designed. Mentors and instructors can limit cognitive overload by carefully selecting the online modules that address the learner's specific learning needs.

Furthermore, online course developers should integrate streaming video clips that incorporate marginalized entrepreneurial success stories to help inspire others to pursue their dreams in the wake of obstacles. Starting a business is frequently initiated in response to a critical life event (job loss, life style changes), and critical reflection on the part of the learner is important to helping them determine the financial viability of their business concept. Critical reflective learning can be enhanced through a mentor (Van den Broeck & Willem, 2007) and entrepreneurial educators should link learners with FTF mentoring to help facilitate the critical reflection process. Journaling, storytelling, and role-playing could be incorporated into online learning. These tools can help raise an entrepreneur's consciousness concerning their affective connection between themselves and their business. Emotional attachment can hinder an entrepreneur from taking immediate action that could stem a spiraling series of critical events from turning into a business financial crisis.

Future studies on effectiveness of online learning with entrepreneurs should ask the learner how effective they perceived the learning to be in helping them reach these critical milestones. More detailed effectiveness measures should include the level of satisfaction with various online program components. Finally, critical reflection skills and self-directed learning skills are key components of long term entrepreneurial success. Therefore, effectiveness measurements should attempt to evaluate these higher level thinking skills that are essential long term success as a self-employed business owner.

#### Next Step: Quantitative Confirmation

The qualitative aspect of this study clearly pointed to a level of effectiveness for online learning that is on par with FTF learning. The interesting question then becomes; Can we experimentally test for this effectiveness? Can we find out whether or not entrepreneurs exposed to online learning in a blended format with personal consulting support do better than entrepreneurs who obtain the same personal consulting support, but who do not choose to register for online learning?

## Hypothesis for Quantitative Study

There were two hypothesis for the quantitative study. In order to provide for a two-tailed test, the hypothesis is stated as a null hypothesis.

H<sub>0</sub>: There will be no difference between the online training group and the no-online training group in completing a written business plan.

H<sub>1</sub>: There will be no difference between the online training group and the no-online training group in the decision whether or not to open a business.

## Method for Quantitative Study

Data was obtained from the Small Business Development Centers in Pennsylvania that included information about whether or not the clients registered for online training as well as identifying whether or not the client had achieved a number of milestones. After reviewing the available data, we decided to limit the data to the clients of just one center because it was the only one which had a large enough population of clients who had registered for online training to provide sample to compare. Additionally, we limited the data to just those years when online learning was available; from January 2006 to August 2008. There were 2004 subjects who met the criteria. The subjects were separated into two groups; those who had registered for online learning, (n = 310) and those who had not registered for online learning (n = 1694).

Next, the milestones for each subject were codified. There were 32 different types of milestones, many of which had nothing to do with the topic of the study. Similar milestones such as "Completed a Business Plan" and "Completed a Marketing Plan" were grouped together for each hypothesis. Two binary variables were created from the groupings: Planning Completed, and Decision Made. Subjects were determined to have completed planning if they had any of the similar milestones for planning. Subjects were determined to have made the decision if they had a milestone for either "Started a business" or "Decided not to go into business."

Due to the binary nominal nature of the data, a chi-square test (using SPSS 16 for Windows) was used to determine whether or not there was a significant difference in the achievement of milestones between the two groups. The 2 X 3 contingency table is reported in the next section.

## Quantitative Results

Our initial review included the descriptive statistics of the data. We then conducted the chi-square analysis and follow up tests of significance.

## Descriptive Statistics

A little more than half of the subjects had not yet officially started their businesses (52.3%). Less than 4% were considered "homebased" businesses. Forty seven percent of the businesses were owned by a male, thirty two by female, and twenty one percent by both male and female. A comparison of their ethnicity and gender did not differ significantly from the general population. Business size ranged from very small to large and followed a normal bell-shaped curve distribution.

## Inferential Statistics

Both hypotheses were rejected. There was a difference between the online training group and the group that did not do online training. The contingency table is shown in Table 2. The actual count of subjects was greater than the expected count for the group which registered for online learning for both Decision Made and for Planning Completed, with a much larger discrepancy for the Planning Completed variable.

TABLE 2: Contingency Table for Crosstabulation of Milestones By Online Learning

			OnlineReg		
			No Online Learning	Registered for Online Learning	Total
Milestones	Neither Decision nor Planning Completed	Count	1454	235	1689
		Expected Count	1427.7	261.3	1689.0
Decision Made		Count	102	27	129
		Expected Count	108.0	20.0	128.0
Planning Completed		Count	139	48	188
		Expected Count	157.2	28.8	186.0
Total		Count	1694	310	2004
		Expected Count	1664.0	310.0	2004.0

To test for significance, we employed the Pearson Chi Square, which resulted in a value of 21.268,

which is significant ( $p < .001$ ). None of the cells had an expected count of less than 5, so we did not apply the Yates correction.

While the Chi Square test enables us to tell if the results are significant, they do not tell us the strength of the results. To analyze the strength of the nominal by nominal relationship, we utilized the Phi statistic (a correlation technique for dichotomous variables). The value was .103, which indicates that though there was a significant difference, the relationship between the variables is not extremely or highly correlated. Cramer's V, another test of strength of relationship, showed the same thing.

#### Limitations of Study

There were several limitations which impacted the generalizability of the findings. The data was from a single center only; perhaps there was some unknown geographically based variable that impacted the results. Additionally, we did not differentiate by consultant; perhaps the difference was due to quality of consultants, or a tracking bias. Subjects registered for online learning may have been more closely watched for milestones than non-online learning subjects.

Furthermore, registration for on-line training was measured, not actual participation in on-line training. There was no way to tell if the clients actually followed through with the online training, or felt that the training was helpful to them. Subjects who were not registered for online learning may have, elsewhere, taken part in online learning.

We were unable to measure *how* the subjects integrated the learning with their practice. The consultants took a blended learning approach; utilizing both online learning and FTF interaction in order to get the help they needed in developing a business plan or making a decision as to whether or not they should start a business. There was no way to delineate the impact of the online learning from the consulting help in general. Additionally, the quality of the business plan was not evaluated. It may be that the group that did not do online training had superior plans to the online training group.

Both online and no online training groups of entrepreneurs had members with both just starting and existing businesses.

#### Discussion & Conclusions

Despite the noted limitations, the findings of the quantitative aspect of this study clearly indicate that providing online learning opportunities has a positive impact on whether or not entrepreneurs complete their milestones on the way to starting and growing their businesses. Considering the cost and resource differential between providing FTF and online learning, this blended approach may serve entrepreneurs the best.

As new technologies continue to enhance communication capabilities that improve online learning platforms future researchers might want to consider how effective online modules could be with teaching higher levels of learning (e.g. communicative and emancipatory learning). Online learning effectiveness with established business owners should also be addressed. Entrepreneurs use more formalized learning networks, and their needs are very different from most people. Logan's research about the high incidence of learning disabilities in the entrepreneurial learning community may help online course designers take additional steps to improve the interface to assist entrepreneurs with various cognitive learning issues. As new technology improves, and as knowledge about learners advances, researchers will need to consider new questions about the relationship between these exciting new developments. Especially considered in the light of the qualitative findings regarding the differences in the way entrepreneurs learn, the quantitative results indicate that it would be beneficial to any program designed to support entrepreneurs to consider adding an online training component.

#### References

Ashill, N., Eom, S. B. & Wen, J. H. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. *Decision*

*Sciences Journal of Innovative Education*, 4(2), 215-232.

Benbunan-Fich, R., & Hiltz, S. R. (2003). Mediators of the effectiveness of online courses. *IEEE Transactions on Professional Communication*, 46(4), 298-312.

Bonk C. J. & Graham C. R., (2006). *The Handbook of Blended Learning: Global Perspectives and Designs*. Pfeiffer, an imprint of Wiley.

Cope, J. (2003). Entrepreneurial learning and critical reflection discontinues events and triggers for 'higher-level' learning. *Management Learning*, 34(4), 429.

Cope, J., & Watts, G. (2000). Learning by doing-an exploration of experience, critical incidents and reflection in entrepreneurial learning. *International Journal of Entrepreneurial Behavior & Research*, 6(3), 104-125.

Chyung Y. (2001). Improve Motivational appeal of online instruction for adult learners: What's in it for me? *American Journal of Adult Education*, 15(3), 36-49.

Diaz, D. P. (2002). Online drop rates revisited. *The Technology Source Archives at the University of North Carolina*, May/June <http://ts.mivu.org/> Retrieved January 28, 2008.

Fitzgerald, C. T. (2003). Self-directed and collaborative online learning: Learning style and performance. (Doctoral dissertation, Boston University, 2003). *ProQuest Dissertation Abstracts*, (UMI No. 3090404).

Fredericksen, E., Picket, A., Pelz, W., Swan, K., and Frederickson, P. (2001). Measures of Learning effectiveness in the SUNY learning network, Published by State University of New York, Center for Professional Development. <http://tlt.suny.edu/originaldocumentation/library/research/ALNWorkshop2000.pdf>. Retrieved January 28, 2008.

Huang, H. (2002). Toward constructivism for adult learners in online learning environments. *British Journal of Educational Technology*, 33(1), 27.

Horrigan, J. B. & Tyler-Smith A. (2007). *Home broadband adoption 2007*. Published by Pew Research Center. [http://www.pewinternet.org/pdfs/PIP\\_Broadband\\_2008.pdf](http://www.pewinternet.org/pdfs/PIP_Broadband_2008.pdf). Retrieved January 25, 2008

Hsu, Y. & Shiue, Y. (2005). The effect of self-directed learning readiness on achievement comparing face-to-face and two-way distance learning instruction. *International Journal of Instructional Media*, 32(2), 143.

Kincheloe, J. (1991). Teachers' as researchers: Qualitative inquiry as a path to empowerment. In *What constitutes knowledge?* NY: Falmer Press.

Kirshner, P.A. (2002). Cognitive load theory: implications of cognitive load theory on the design of learning. *Learning and Instruction*, 12(1), 1-10.

Kuhl, D. D. (2002). Investigating online learning communities. ERIC Document Reproduction Service No. ED475750.

Liebowitz, J. (2003). Teach people skills totally online? *College Teaching*, 51(3), 82-85.

Logan, J. (2008.) *Analysis of the incidence of dyslexia in entrepreneurs and its implications. Proceedings of the Annual Conference: United States Association for Small Business and Entrepreneurship. January 9, 2008*

Martinez, M. (2003, July 14). Strategies and techniques for designers, developers, and managers of elearning [Electronic version]. *The Elearning Developers' Journal*, 1-9.

Moneta-Kekkonen, S & Moneta, G. B, (2002). E-learning in Hong Kong: comparing learning outcomes in online multimedia and lecture versions of an introductory computing course. *British Journal of Educational Technology*, 33(4), 423-433.

- Neuhauser, C. (2002). Learning style and effectiveness of online and face-to-face instruction. *American Journal of Distance Education*, 16(2), 99.
- O'Hara, T. M. (2005). Entrepreneurial attitudes and online learning success: Exploring the connection. *The Business Education Forum*, 59(3), 43-6.
- Parker, A. (2003). Identifying predictors of academic persistence in distance education, *USDLA Journal* 17 (2003) (1), pp. 55-62.
- Reisetter, M., LaPointe, L., & Korcuska, J. (2007). The impact of altered realities: Implications of online delivery for learners' interactions, expectations, and learning skills. *International Journal on ELearning*, 6(1), 55.
- Richardson, J. C., & Newby, T. (2006). The role of students' cognitive engagement in online learning. *American Journal of Distance Education*, 20(1), 23-37.
- Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *The Internet and Higher Education*, 6(1), 1-16.
- Smith, C.A. (2001). "If you only knew": lessons learned from successful Black women entrepreneurs. *Journal of Pedagogy, Pluralism & Practice*. (ERIC Document Reproduction Services No. ED480495).
- Tyler-Smith, K. (2006). Early attrition among first time elearners: A review of factors that contribute to drop-out rate, withdrawal and non-completion rates of adult learners undertaking elearning programs. *Journal of Online Learning and Teaching* 2 (2).
- Terry, N. (2007). Assessing instruction modes for master of business administration (MBA) courses. *Journal of Education for Business*, 82(4), 220-225.
- Van den Broeck, H. & Willem, A. (2007). Learning mode of small business owners. (ERIC Document Reproduction Service No. D2007701224).

---

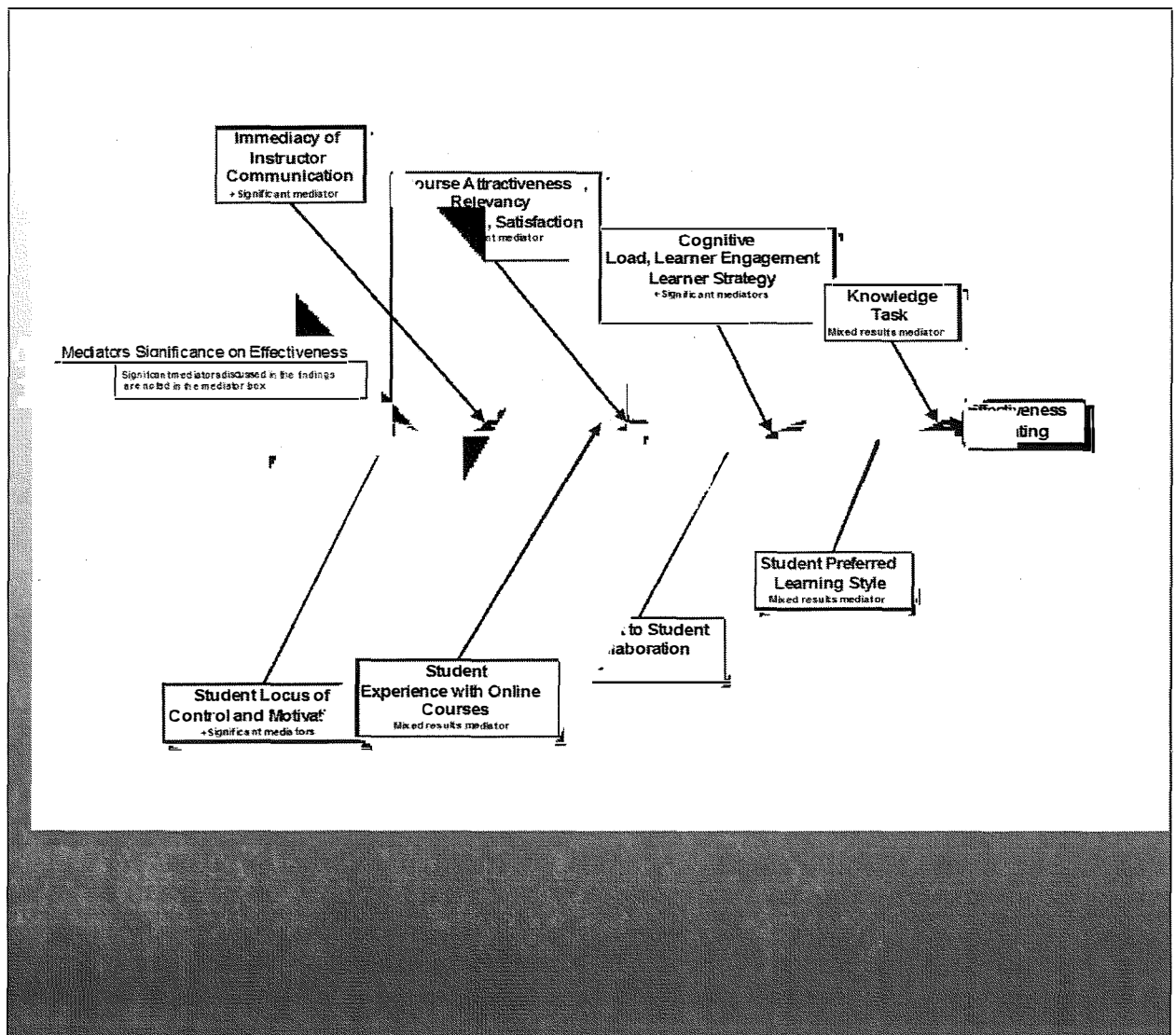
*Ernie Post is the Executive Director for the Kutztown Small Business Development Center. Previously served at the Executive Director at the Gannon University Small Business Development Center in Erie, PA. He has an MBA from Penn State and is a doctoral candidate in the Adult Education program at Penn State. His topics of research include Online learning effectiveness, entrepreneurship development. Ernie Post may be reached at 15155 Kutztown Road,,P.O. Box 730Kutztown, PA 19530,484-646-4002 or at [post@kutztown.edu](mailto:post@kutztown.edu)*

*Dr. CJ Rhoads is the founder of ETM Associates, Inc., a PA-based enterprise, technology, and management consulting firm [\[ETMAssociates.com\]](http://ETMAssociates.com). Her doctoral degree is from Lehigh University in Educational Technology, and her Master's degree is from Temple University. She is currently an associate professor in the College of Business at Kutztown University. Since 2004 she has published four books and over 100 articles. She is also the editor for The Entrepreneur's Guide to ... book series by Greenwood/Praeger, a scholarly publisher. Her topics of research are leadership, entrepreneurship, strategy, information technology, and decision making. Dr. Rhodes may be reached at College of Business, Kutztown University, Kutztown, PA 19530, 610-683-4703, or at [rhoads@kutztown.edu](mailto:rhoads@kutztown.edu)*

TABLE 1  
Empirical Studies for Online Learning Effectiveness

Author	Methods/Participants	Topic	Mode of Learning
Ashill, et al., 2006	Survey n=397 U.S. college students	Antecedents driving online learning effectiveness	Online
Chyung, 2001	Survey, 8 semesters n=296 U.S. college students	Learner perceptions, learner outcomes impact on drop rates/retention rates with online learning	Online
Fich & Hiltz, 2002	Field study 17 courses n=(pretest)=1,048 (post-test)=842	Mediators of effectiveness of online courses	FTF/online/hybrid
Fitzgerald, 2003	Survey U.S. corporate employees, students & customers, n=106, 46 courses, 326 pre/post-test	Self directed learning, collaborative, learning style & performance (dissertation)	FTF/self-directed online/collaborative online
Hsu & Shiue, 2005	Survey n=126 Taiwanese college students, one course	SDL readiness on achievement	FTF/2- way distance education
Liebowitz, 2002	Survey (7 semesters) n=126 U.S. college students	Effectiveness of teaching people skills online	Online/FTF/ Satellite location
Moneta & Moneta, 2002	Field study/post-test scores 7 FTF and 2 online courses n=105, 180 and 129 Hong Kong college students	Learning outcomes with factual versus applied concept learning	FTF/online
Neuhaser, 2005	Survey n=62 U.S. college students, one course	Learning Style & Effectiveness	Online/FTF
Parker, 2003	Survey n=151 students	Rotter's locus of control as variable for successful completion of online learning	FTF/online using Blackboard
Richardson & Newby, 2006	Survey n=121 U.S. engineering and education students	Program focus, gender, age, prior online experience Impact with online learning effectiveness	Online
Reisetter, et al. 2007	Mixed method FTF n=59, 46 online	Attitudes about online experiences	Online/FTF
Terry, 2007	Multiple surveys, n=366 (FTF), 312 (online), 198 (hybrid)	Faculty & course evaluation & Learning objectives measured	FTF/Online/ Hybrid

Figure 1. Mediators impacting online learning effectiveness.



# DO ECONOMIC REFORMS AND HUMAN CAPITAL EXPLAIN POST-REFORM GROWTH?

Mahbub Rabbani, Milliman Inc  
Svitlana Maksymenko, University of Pittsburgh

---

## Abstract

By employing a conventional production function, this study advances theoretical and empirical research on the role of economic reforms and human capital on the post-reform economic growth. We construct two unique indexes – a composite economic reform index and a human capital index – to perform a comparative analysis of a panel data model and to demonstrate that human capital and economic reforms have had a significant positive effect on economic growth in India and South Korea in the post-reform period. This positive effect is revealed in both contemporaneous and lagged estimations. The impact of reforms is found to be much stronger in South Korea than in India. This study also demonstrates the importance of time-invariant country-specific characteristics, and suggests that policies aimed to improve human capital accumulation have complementary effects on the efficacy of economic reforms

---

## Introduction

Growth performance is a key issue for all economies distressed by poverty. One of the most important questions raised by economists and policy makers recently is why some countries grow faster and for extended periods, while others stagnate and remain poor.

Our enquiry into the causes of growth is motivated by the recognition that growth is the dominant condition for social and economic development of a country. Even though economic growth does not allow a society to overcome scarcity and to avoid opportunity cost, it increases the society's standard of living and makes the country better off. Empirical studies provide sufficient evidence on a significant positive impact of economic growth on income of the poor<sup>1</sup>. Therefore, to overcome poverty, policies that accelerate growth should be pursued. Social variables such as health, literacy, longevity, nutrition, and infant mortality are also found to be correlated with growth, although there is a larger scope for them to vary independently of income (Sen, 1999).

In this study, we employ a traditional theoretical model which builds on the idea that both a technological change and physical and human capital accumulation play a key role in economic growth. At the same time, we recognize that the growth process

would decelerate without organized markets and the society would be deprived of a substantial part of its benefits. Taking into account the importance of economic reforms for market organization, we will investigate in-depth both the role of economic reforms and the role of human capital on economic growth.

It is widely believed that one of the key factors of the South Korean economic success is pragmatic market reforms (World Bank, 1993). On the other hand, Edwards (1992), and Levin and Renelt (1992) argue that market reforms are associated with growth only in those economies that have appropriate human capital to absorb new developments efficiently. According to Nehru, Swanson, and Dubey (1995), East Asia has the highest average education stock and the highest growth rate of education stock among developing countries, while South Asia is at relatively low level in both categories. To this end, Rodrik (1996) attributes the success of reforms in East Asian economies to a better-educated labor force that might have simplified the establishment of a competent bureaucracy and have enhanced the productivity of interventions aimed at increasing private investment. Furthermore, Rodrik (1996), and Harvie and Pahlavani (2000) indicate that an impressive investment in human capital (education, in particular) have boosted South Korea's economic growth far beyond the level of other South and East



Asian economies. Which one of these hypotheses is correct? This issue has not been resolved yet. We will investigate this issue in deeper detail in this paper.

By looking at the stylized facts, we recognize a significantly broader extent of human capital development in East Asia relative to the South Asian region. Considering the two large representatives of South Asia and East Asia – India and South Korea – it will be interesting to explore the factors that have worked behind their divergent paths of economic growth and explain the considerable differences between them.

In this paper, we will comparatively evaluate the impact of two factors – market reforms and human capital – along with their complementary effects on economic growth in India and South Korea in the post-reform period during the second half of the twentieth century. Our choice of countries is justified by the fact that India and Korea are the largest economies of the two regions under consideration, and were at a somewhat similar economic level in per capita GDP when the reforms were initiated. And yet, the impact of reforms has differed significantly between these two economies.

In particular, we have the following objectives for this paper. We will perform a comparative analysis of the economic reforms and the movement of major economic variables before and after the reform implementation in India and South Korea. As no explicit data are available for market reforms and human capital, we develop a new methodology for determination and construction of two composite indexes – a reform index and a human capital index – to measure these determinates implicitly. We use a panel data model to test the hypotheses of the impact of economic reforms and human capital on economic growth in India and South Korea. Our model is based on a modified production function, which along with conventional factors of production incorporates composite reform and human capital indexes. Based on an empirical analysis of the economic reforms effects, we discuss policy implications and assess the soundness of economic reform policies.

The rest of the paper is structured as follows. Section 2 reviews the literature. Section 3 develops a simple econometric model to quantify empirically the impact of economic reforms and human capital accumulation on economic growth. Section 4 briefly introduces readers to the recent economic developments in India and South Korea with an assessment of market reforms outcomes, describes data, and performs empirical analysis based on a panel data model. Section 5 provides policy recommendations, explores avenues for further research, and offers conclusions.

### Literature Review

Lately there has been a growing interest in the economic literature to explore theoretical models that capture the effect of economic reforms on economic growth. However, systematic empirical studies have been carried out mostly in the context of transition economies of Eastern Europe and the former Soviet Union (Havrylyshyn and Wolf, 2001, Kushnirsky, 2001), or Latin American countries (Loayza and Palacios, 1997). These studies come to a general conclusion that even though initial conditions might generate pace for further growth, pragmatic economic policies ultimately are relevant for economic growth. In particular, macroeconomic stabilization, structural reforms, and institutional changes are found to be the key factors for achieving sustainable growth. Initial effects of reforms may be negative, however, growth performance is clearly better in the economies where stabilization solidified sooner and structural reforms advanced most. The effect of these reforms is found to last over several years.

According to Sachs and Warner (1995), trade liberalization is the most significant component of the economic reform program undertaken by any government. Sachs and Wagner (1995) argue that trade liberalization establishes a strong direct linkage between an economy and the world system. Consequently, it forces government to implement other reform programs such as price liberalization, budget restructuring, privatization, and deregulation under pressure from international competition. Using a cross-country measure of trade openness as a proxy for each country's orientation to the world economy,

Sachs and Warner find that open economies grow 2.45 percentage points faster than closed economies. They conclude that international opening of the economy is the *sine qua non* of the overall reform process.

De Melo, Denzler, and Gelb (1996) improve upon the work of Sachs and Warner (1995) by constructing a composite index of reform process. They analyze the transitional experience of 26 countries in Central and Eastern Europe in 1989-1994 by creating a liberalization index, which combines the intensity and duration of economic reforms in three sectors - internal, external, and private. This study is among the first to create a meaningful composite reform index and to explain the effect of several reform measures on growth.

In the De Melo et al (1996) tradition, Fisher, Sahay, and Vegh (1996) use the liberalization index to revise the impact of various reforms on the growth of transition economies in the pooled cross-country/time-series data model. They employ fixed effect panel regressions model and find that along with a cumulative liberalization index, country-specific fixed effects and a pegged exchange rate regime generate a positive impact on economic growth.

With a focus on the Middle East and North Africa (MENA) region in 1970 - 1999, Nabli and Vaganzones-Varoudakis (2004) analyze the linkages between growth and macroeconomic stability, external stability, structural reforms, human capital, and physical infrastructure based on composite reform variables created by the principal component analysis<sup>2</sup>. The study illustrates that even though the growth performance of the MENA region has been disappointing due to lags in economic reforms, macroeconomic and external stability, human capital, and physical infrastructure are key variables for the reform process success in the developing world.

A vast amount of economic literature places a special attention on a country's human capital accumulation, and attributes economic growth to the ability of a country's existing human capital to innovate and

adopt technology (Becker, 1964, Mankiw, Romer, and Weil, 1992).

More empirical studies on the effect of human capital on economic growth emerged with the availability of relatively better data in the 1990s. In particular, Barro (1991) finds that, given the initial level of GDP, the starting level of human capital as measured by the secondary school enrollment has a strong positive impact on economic growth. Using panel data for 100 countries over the 1960 -1990 period, Barro (1996) also demonstrates that the relationship between health status proxied by life expectancy at birth and subsequent growth is positive, roughly linear, and not affected by outliers. To this end, Barro (1991) argues that accumulation in human capital is a good strategy for the poorer countries to accelerate growth. In another study, Gemmel (1996) illustrates that the primary education mainly affects economic growth of the poorest economies, the secondary education affects growth of the middle-income countries, while the tertiary education impact is more important for the OECD group. In all cases, Gemmel (1996) finds that both the initial stock and subsequent growth of human capital impose a positive effect on economic growth. Hanushek and Kimko (2000) construct two alternative labor force quality measures from transformed students mathematics and science scores. Their results show that human capital quality has a stable, causal, and direct influence on economic growth in the OECD economies.

Numerous studies have been conducted to explore the importance of health in human productivity. Fogel (1994) estimates that improved gross nutrition accounts for roughly 30 percent of the growth of per capita income in Britain between 1790 and 1980. Bhargava, Jamison, Lau, and Murray (2001) demonstrate a positive effect of adult survival rates on economic growth at low levels of GDP, with the impact disappearing when the GDP per capita reaches 2123 PPP dollars. The authors estimate that a 1 percent gain in adult survival rates is associated with an average 0.05 percent increase in growth rates for the poorest countries. Exploring the alternative measures of health - life expectancy, average height of adult men, body mass index, and age of menarche

(the onset of menstruation) for women - Bloom, Canning, and Sevilla (2004), and Weil (2005) confirm that health component of human capital has a positive and statistically significant effect on economic growth. The role of health remains robust to variety of different microeconomic and historically calibrated estimates, as well as to the adjustments for HIV/AIDS in affecting mortality in the 1990s.

Finally, combining two components of human capital in the comparative analysis of the differences in growth between African countries and the rest of the world, Gyimah-Brempong and Wilson (2005) show that both components of human capital - education (as measured by average years of educational attainment) and health (as proxied by calorie intake and life expectancy) - exert a significant positive effect on growth. Moreover, in a study on the health contribution to economic growth with partially endogenous technical progress covering 53 countries over the 1965-1990 period, Jamison, Lawrence, and Wang (2003) reveal that accumulation of education accounts for 14 percent, while improvements in health as measured by the survival rate of males between age 15 and age 60 explain about 11 percent of growth during the same period.

Our survey of studies about the effect of market reforms and human capital accumulation on economic growth shows several gaps in the recent literature that we would like to fill in this paper. Most of the studies that analyze impact of market reforms deal with the transition economies of the former Soviet Union and Central Europe. These studies consider a uniform period for all countries to explore the after-reform effect on growth. Yet, timing of reform implementation differs significantly among countries. One may also question the economic foundations and theoretical justification of the inclusion of independent variables in the research. While in some cases independent variables clearly appear to be correlated, as a rule no information is provided about testing for correlation and multicollinearity. The majority of studies that analyze impact of reforms in transition economies considers only 4-6 years in time series observations, which does not seem sufficient to capture the dynamics of

the reform effect on growth. Finally, the studies above do not conduct a robustness check for the different proxies of reform measures to assess their impact. Therefore, the conclusions of these analyses could be attributed to the particular nature of data used as a proxy for the reform component.

Studies on the role of human capital in the developing world also suffer from several drawbacks. A significant portion of these studies consider either the education component, or the health component of human capital. In addition, proxies used for education component are unable to capture all aspects of the specific human capital concept<sup>3</sup>. Yet, the fundamental problem in the literature surveyed is lack of a composite measure of human capital. Only few studies employ both components of human capital - education and health - in the same empirical specification. However, an inclusion of two independent variables to proxy for one variable - human capital - may be inherently incorrect due high correlation between education and health, generating potential multicollinearity problem<sup>4</sup>.

Addressing the above shortcomings, we will build upon the prior works by analyzing the effect of economic reforms and human capital accumulation on economic growth of two countries - India and South Korea - in greater detail. Our study will consider a much longer uniform post-reform period for both economies. We will also improve upon and contribute to the literature by conducting our empirical analysis based on a model with sound theoretical underpinnings. The fact that our study has considerably longer time series will help us make a meaningful interpretation of empirical results. In this paper, we will construct a composite reform index in some respect similar to De Melo et al (1995). As we are considering two countries with diverse types of reform, composition of the reform index will be made more relevant to specific economic realities. Hence, our study will differ from most studies by probing deeply into the individual country experience over time. We believe this is the first study to investigate the role of economic reforms on economic growth of India and South Korea with the use of a composite reform index.

In this paper, we will also improve upon previous research by constructing a composite human capital index that incorporates both education and health components. The new composite variable for human capital will be created based on the weights from principal components analysis (PCA)<sup>5</sup>. Such composite indices would, in our view, better explain economic growth in both cross-country and time series frameworks. Our human capital index would likely reduce the probability of misspecification and multicollinearity error because it will enter empirical specification as a single variable.

### The Model

In this section, we develop an empirical model to ascertain the impact of three major types of market reforms and human capital development on economic growth in India and South Korea in the post-reform periods. The three major market reforms are trade liberalization, financial reform, and enterprise restructuring. We make a conventional assumption that economic reforms, if properly implemented, boost total factor productivity (TFP). Institutional changes that occur in the process are considered exogenous.

We assume a continuous time infinite horizon economy with identical, rational agents. At time  $t$ , there is a normalized  $L$  number of workers in the economy. At each time  $t$ , production of a single homogenous good is represented by:

$$Q = AF(K, hL) \quad (3.1)$$

where  $Q$  is the quantity of output produced per period of time,  $A$  is the total factor productivity,  $F$  is a general constant elasticity of substitution production function,  $K$  is a capital stock,  $L$  is the number of workers,  $h$  is the measure of human capital per worker, and  $hL$  is the total labor input in the economy.

According to Weil (2004), productivity  $A$  can be determined by two factors: technology  $T$ , that represents the knowledge about how factors of production are combined to produce output, and efficiency  $E$ , that measures how effectively given

technology and factors of production are employed. The positive impact of reform measures such as trade liberalization, financial reform, and enterprise restructuring on both technology and efficiency components of the total factor productivity  $A$ , is well supported by Edwards (1998). For the purposes of our study, we establish the productivity term:

$$A = A(T(R, O), E(R, O)) = A(R, O), \\ A_R > 0 \quad (3.2)$$

where  $R$  is the reform factor, and  $O$  is a catch-all factor for all other effects not explained by  $R$ .

According to equation (3.2), a shock to the economy from market reforms will have a positive effect on total factor productivity  $A$ . A higher productivity will accelerate economic growth, and total production  $Q$  will reach a new higher level at the end of transition process.

The effects of trade liberalization, openness to foreign investments, and enterprise restructuring on economic growth are easily justified. Liberalization of trade, with reduction of tariffs, subsidies, and quotas on imports and exports increases competition in the domestic market. In order to compete with imported products, domestic producers would have to increase their productivity. Similarly, exporters would need to increase quality and productivity of their output in order to compete in the world market. Thus, by engendering efficiency, trade liberalization will boost economic growth and overall production in the economy.

When the economy reduces restrictions on foreign investment, the level of capital inflows into the economy is likely to increase. In the absence of distortions, and with a rational maximizers' behavior, the hitherto inefficient economy should become more efficient<sup>6</sup>. Increased investment and enterprise restructuring will boost production directly by increasing the capital level, and indirectly by improving efficiencies in the production processes. New technologies and more efficient production methods associated with foreign investment will speed up the economic growth.

In a similar way, the effect of human capital on economic growth can be assessed. Improvement in human capital will make labor more efficient. According to equation (3.1), this will have a direct positive impact on the country's production.

Combining (3.1) with (3.2), and specifying the production function similar to Kushnirsky (2001), we use the following production function as a benchmark function in our estimations:

$$Q_{ij} = OK_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad j=1, \dots, J \quad (3.3)$$

where  $i$  denotes a country,  $j$  denotes an observation,  $u$  is an error term. In equation (3.3), the constant term  $O$  and all the exponents  $\alpha$ ,  $\beta$ , and  $\gamma$  are independent of the country index  $i$ .

Next, we modify the base production function (3.3) to make the effect of one independent variable country specific:

$$Q_{ij} = OK_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.4)$$

$$Q_{ij} = O_i K_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.5)$$

In production function (3.4), the output elasticity with respect to reform index is country specific. Modification (3.5) will allow us to ascertain the significance of time-invariant country-specific exogenous factors on economic growth.

We further modify the benchmark production function (3.3) to make the effect of two independent variables country specific:

$$Q_{ij} = O_i K_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.6)$$

$$Q_{ij} = OK_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.7)$$

$$Q_{ij} = OK_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.8)$$

$$Q_{ij} = OK_{ij}^{\alpha} (hL)_{ij}^{\beta} R_{ij}^{\gamma} u_{ij}, \quad (3.9)$$

In production function (3.6), the output elasticity with respect to reform index and time-invariant country-specific exogenous factors are country specific. In

production function (3.7), the output elasticity with respect to capital stock and human capital factors are country specific. In production function (3.8), the output elasticity with respect to human capital and reform index factors are country specific. Finally, in production function (3.9), the output elasticity with respect to capital stock and reform index factors are country specific.

The functions above are log-estimated with various approaches to evaluate how different paths of economic reforms, capital stock, and human capital accumulation affect the growth of a country.

### Empirical Study

The main objective of this section is to perform an empirical analysis of the impact of economic reforms and human capital accumulation on economic growth in India and South Korea in the post-reform period. Section 4.1 comparatively outlines economic reforms in the two countries. Description of the data and their sources follow. Section 4.3 introduces the methodology of estimations and presents results based on panel regression models. Section 4.4 performs sensitivity analyses.

#### *Comparative Review of Reform Policies*

We begin with an overview of Indian and South Korean experience in macroeconomic reforms, and then discuss trade reforms, enterprise restructuring, industry structure evolution, capital account liberalization, and financial sector reform measures adopted by these economies in the post-reform period.

Macroeconomic reform in India was primarily driven by a fiscal crisis in the early 1990s. In order to improve the fiscal situation, the Indian government introduced a key reform in the tax system. However, the tax revenue as a percentage of GDP actually decreased in the 1990s and the fiscal deficit stayed near 5 percent as late as 2000. The effect of reforms was not very effective by any measure. In contrast, macroeconomic reform in South Korea has been effective from the very beginning. In 1966-1967, the Korean government substantially enlarged tax

revenues by increasing tax base and by reforming tax administration.

As both India and South Korea followed an import-substitution development policy prior to reform implementation, trade liberalization did not play a significant role in their economies. In order to increase competitiveness of its exports, India implemented a major exchange rate reform only in the early 1990s. Imports were also liberalised by removing quantitative restrictions and by gradually decreasing tariff rates. Yet, tariff rates in India were relatively high compared to East Asian countries until 2002. One of the notable features of Indian exports dynamics is a sharp increase in its service exports. A less repressive regulation and an inflow of foreign investment are the two key factors that explain the success of service sector in India. In contrast, the Korean government implemented a major exchange rate reform much earlier, in the mid 1960s. Reforms in the Korean imports were mainly implemented by removing quantitative barriers rather than by decreasing tariffs. Moreover, a trade reform in South Korea was characterized by a consistent government support in expanding the export market and incentives in the form of tax reduction for export income. As a result, in South Korea, the share of the manufacturing sector in GDP increased significantly in the post-reform period.

India implemented financial reforms in early 1990s. These reforms included interest rate deregulation, opening up the banking sector to private and foreign banks, and reduction of government interventions in credit allocation. Prudential regulations following Basel Committee recommendations significantly improved bank supervision. New rules were enacted to manage the securities market. Similarly, South Korea introduced the first step of financial sector reforms by deregulating interest rates. Control over bank credits was reduced, and the banking sector was partially opened to foreign banks and private banks in the late 1960s to early 1970s.

Since independence, India's economy was dominated by huge public sector enterprises. In the 1990s, the government removed subsidies and preferential

access to bank loans for these enterprises. A sharp reduction in the number of areas reserved for the public sector enterprises improved incentives for private participation and foreign direct investment (FDI). Disinvestments in the form of reduction of government equity in public sector enterprises were implemented. Reduced government regulation and bureaucratic red tape along with a larger amount of FDI contributed to a surprising growth of the Indian service sector. Unlike India, the Korean economy was not dominated by public sector enterprises at the beginning of economic reform. The Korean government restructured the public sector in the late 1960s to the early 1970s by mainly selling unprofitable public enterprises, and reorganizing other enterprises geared towards economic development. Important steps were taken in order to remove favourable treatment of large conglomerates and to enact legislation regulating monopolies.

#### Data Description

For empirical study, we confine our dataset to the periods when the major economic reforms were implemented in both countries. Arguably, the defining initial year of a major economic reform in South Korea is 1965, with a second wave of changes initiated in the late 1970s. As for India, Rodrik and Subramanyam (2004) point out that even though the first hesitant market-oriented reform took place in the mid 1980s, the more decisive reform occurred only in 1991. Driven by a relatively shorter post-reform period in India, we consider a twelve-year post-reform period. To maintain symmetry in data, we confine our dataset to 1966-1977 in case of South Korea, and to 1992-2003 in case of India.

The variables in our empirical analysis for both India and Korea are as follows:

**GDP (Q):** GDP in 2000 constant US dollars comes from the World Development Indicators (WDI) 2005. The World Bank defines this as the sum of gross value added of all resident producers in the economy adjusted for taxes and subsidies.

**Labor (L):** Total labor force comes from the WDI 2005. The World Bank uses International Labor

Organization (ILO) definition of economically active population to determine total labor force. It includes both employed and unemployed, but excludes homemakers, other unpaid caregivers, and workers in the informal sector. Taking into account a thriving informal sector in India, and a relatively undeveloped data collection procedures in Korea in the 1960s, we acknowledge that labor force data in both countries might be biased and should be treated with caution.

**Capital Stock (K):** As no explicit data available for the capital stock, we convert Larson et al. (2000) 1967-1992 capital stock database in 1990 US dollars to 2000 constant US dollars. We further extend the dataset to the remaining years of the 1960-2003 period. Specifically, we use the Larson et al. (2000) fixed capital deflator to convert total capital stock in 1990 constant US dollars to current US dollars. We then employ the GDP deflator from the WDI 2005 to convert the total capital stock in current US dollars to constant 2000 US dollars. We expand the capital stock data over the 1960-2003 period by applying a perpetual inventory method (PIM):

$$K_t = K_{t-1} + I_t - D_t \quad (4.1)$$

where  $K_t$  is a capital stock at time  $t$ ,  $K_{t-1}$  is a capital stock at time  $(t-1)$ ,  $I_t$  is investment at time  $t$ , and  $D_t$  is a depreciation at time  $t$ . We use gross capital formation data from WDI 2005 as a proxy for investment ( $I$ ) and assume that the depreciation rate is 5 percent, which according to the recent economic literature is close to reality.

**Reform Index (R):** We construct two composite reform indices R1 and R2 in the style of De Melo et al (1996)<sup>7</sup>. Taking into account the specifics of economic reforms in India and South Korea, our indices are weighed average of three reform indicators - trade reform, financial reform, and enterprise restructuring. The distinction between R1 and R2 is based on different approaches to measure effectiveness of trade reform, as explained below.

**Trade Reform:** To measure trade reform, we use two indices: 1) volume of trade, or sum of imports

and exports as a percentage of GDP in 2000 constant US dollars, and 2) value of imports in 2000 US constant dollars as a percentage of aggregate consumption. Figures 4.1 and 4.2 show these indices for India and South Korea in the period of interest.

The volume of trade as a percentage of GDP in 2000 constant US dollars is available from the WDI 2005. Assuming that changes in this index are driven by the medium-term policy changes, we use outcome-based measures to evaluate effectiveness of trade reforms. Specifically, the effectiveness of trade reforms is judged meaningfully by an increase in the trade volume it generates<sup>8</sup>. In addition, we employ the share of imports in aggregate consumption to be an alternative indicator of trade reform effectiveness. As imports of consumption goods are heavily restricted in the developing world, the second indicator perhaps is a more reliable estimate for a repressive trade policy<sup>9</sup>.

**Financial Reform:** The major purpose of financial reforms is to assign greater flexibility in determining interest rates and allocating credit to market forces. It is generally expected that reforms in financial sector would lead to this sector's faster development and further expansion. Similar to trade reform measures, we justify variables measuring financial reform effectiveness by the outcome-based approach. In the construction of the financial development indicator we follow methodology developed by Loayza and Palacios (1997). Our financial reform index consists of the following two variables, with equal weights: 1) a ratio of broad money to GDP ( $M2/GDP$ ) that measures a level of financial development in the economy<sup>10</sup>; 2) a ratio of domestic credit to private sector to GDP that approximates a reduction of government intervention in bank lending. All variables employed in the construction of this index come from the WDI 2005. Figure 4.3 shows dynamics of the financial reform indices in India and South Korea in 1960-2003.

**Enterprise Restructuring:** As an economy pursues reform measures to restructure enterprises from public to private ownership, or enacts new laws encouraging private sector participation in various

economic activities, the private sector share of employment and value added are most likely to increase. Considering data availability, we employ two variables that capture enterprise restructuring effect on the economy: 1) private sector share of total employment (in India), and 2) private sector share of value added (in South Korea). The private sector share of employment data were obtained from the Reserve Bank of India; the data on private sector share of total value added in South Korea come from Kang (1989) and the Bank of Korea. These two measures of enterprise restructuring are highly correlated, and thus reduce the probability of errors due to an apparent asymmetry in reform index composition.

We construct an overall reform index as a weighted average of the three reform measures by assigning equal weights to trade reform index, financial reform index, and enterprise restructuring index. Appendix A shows the construction of overall composite reform indices R1 and R2 for India and South Korea in the post-reform years. Figures 4.4 and 4.5 depict dynamics of these composite reform indices in two countries in 1960-2003.

Human Capital (h): It has been established in economic theory that human capital is one of the most significant sources of economic growth. Nevertheless, the empirical research has not yet produced convincing results to ascertain the importance of it for economic growth. The main problem lies in the construction of a human capital variable, which is not directly measurable.

In order to proxy a human capital for the Asian region, most empirical studies (Harvie and Pahlavani, 2006, Song, 1990, Guesan, 2004) rely more on data availability rather than on a theoretical definition. The variables commonly used as a proxy for human capital are investment in education, secondary or total school enrollment ratio, literacy rate, and average years of schooling. However, all these ratios have several disadvantages<sup>11</sup>. In addition, the above mentioned studies omit health component of the human capital variable.

In our judgment, a plausible variable for human capital should take into account returns on all types of investments that human beings undertake in order to increase their future well-being and production potential. Therefore, using conceptual foundations of the term, we construct a composite human capital index, which captures both major components of human capital – education and health. The composite human capital variable is created as a weighted average of the two indices –average years of schooling and life expectancy at birth - based on a principal component analysis.

Data on the years of formal schooling received, on average, by adults over age 15, defined as average years of schooling, are available from Barro and Lee (2000) for 1960-2000. We use a linear interpolation method to estimate missing observations. Data on life expectancy at birth, or the number of years a newborn infant would expect to live if prevailing patterns of mortality at the time of her birth were to stay the same throughout her life, come from the WDI 2005.

To address the issue of comparability of indices, we set India's average years of schooling and life expectancy at birth in 1960 to unity, and normalize the rest of schooling and life expectancy data respectively. Appendix B shows construction of the human capital variable for India and South Korea. Figure 4.6 depicts the dynamics of human capital indices in two countries in 1960-2003.

Table 4.1 provides a summary of definitions and sources of variables used in this study.

### Empirical Results from a Panel Data Model

To investigate the effect of reform measures on economic growth of both India and South Korea, we estimate panel regressions based on equations (3.3) and (3.4) in logarithmic forms. Results of estimations are summarized in Table 4.2.

Columns (1) and (2) of Table 4.2 show estimation results of the model (3.3) with reform indices R1 and R2, respectively. Coefficients by  $\ln(hL)$ ,  $\ln(K)$ ,  $\ln(R1)$ , and  $\ln(R2)$  are positive and significant at



the 5 percent level. Hence, the results from these estimations support our hypothesis that both the economic reforms and the human capital augmented labor exert a positive effect on economic growth.

Columns (3) and (4) of Table 4.2 present estimation results of equation (3.4) with reform indices R1 and R2, respectively. In order to explore the impact of reforms in a comparative perspective, we allow the coefficients of reform indices to vary. Coefficients by  $\ln(hL)$ ,  $\ln(R1)$  and  $\ln(R2)$  remain positive and significant at the 5 percent level in both cases, however the coefficients by  $\ln(K)$  turn out to be insignificant. In an alternative modification (3.4), we acknowledge a considerably higher impact of reform measures on economic growth in South Korea relative to India (0.994 vs. 0.896, and 1.093 vs. 0.799 in estimations (3) and (4), respectively).

We include an interaction effect between the reform index and the human capital augmented labor to explore the possibility of any complementary role between them. Columns (5) and (6) in Table 4.2 present the results of corresponding estimations. The coefficient of the interaction term is positive and significant at the 5 percent level when R2 represents the reform measure. The coefficient is positive and significant at the 15 percent level with the R1. These results reveal complementarities in the role of economic reforms and human capital, via labor market restructuring, in particular<sup>12</sup>. As indicated by adjusted  $R^2$ , all six estimations in Table 4.2 have a high explanatory power.

As the timing of reform implementation may not coincide with the actual impact of outcome-based reform measures on economic growth, Nabli and Veganzones-Varoudakis (2004) highlight the importance of considering lags in the analysis of reform outcomes in the developing world. In addition, we hypothesize that even if there is an immediate effect of reform measures, i.e. associated with the removal of quantitative restrictions, the impulse response of growth will continue over time<sup>13</sup>. To explore this possibility, we introduce estimations of our baseline models (3.3) and (3.4) with lags

(Table 4.3). We assume that one year is sufficient to capture the lagged effects of reform implementation.

The results of lagged estimations agree with the results from Table 4.2, where all variables are contemporaneous. The effects of lagged  $\ln(R1)$  and  $\ln(R2)$  in Table 4.3 are positive and significant at the 5 percent level, which again supports our hypothesis that economic reforms have accelerated economic growth in India and South Korea in the post-reform period. Columns (3) and (4) show a relatively higher impact of reform indices on economic growth in South Korea relative to India. Columns (5) and (6) demonstrate results similar to those in Table (4.2)<sup>14</sup>.

To investigate the effect of country-specific time-invariant factors on economic growth in India and South Korea, we perform an estimation of our baseline model with fixed effects. In Table 4.4, columns (1) and (2) show estimation results of equation (3.5); columns (3) and (4) show estimation results of equation (3.6). The respective estimations of lagged model alternatives are reported in corresponding columns of Table 4.5. The coefficients of reform indices are positive and significant in all cases. The larger value of the fixed effect intercept for South Korea indicates a higher effect of country-specific time-invariant factors (such as initial state of economy, income distribution, demographic transition, legal system, democracy, cultural tradition etc) in South Korea relative to India.

In order to investigate whether physical capital accumulation and human capital policies affect two countries in a similar way, we further modify our base production function and make the effects of two factors country specific. Table 4.6 shows regression results based on equations (3.7)-(3.9). Columns (1) and (2) of Table 4.6 report estimations with country-specific coefficients of labor and capital; columns (3) and (4) report estimations with country-specific coefficients for labor and reform index, and finally, columns (5) and (6) show estimations based on country-specific coefficients for capital and reform index. Most of the coefficients from these regressions are significant at 5% or 10% level. In estimations (1) and (2), the coefficient for Indian

capital alternates sign and becomes negative, which can be attributed to the fact that Indian economy is a labor-abundant economy, and when joint country-specific effect of labor and capital is taken into consideration, relatively scarce and deteriorated capital could impose a negative impact on Indian growth.

In order to analyze the impact of human capital on economic growth, we estimate our benchmark production function (3.3) by replacing the human capital augmented labor variable with the raw labor variable. The outcome of estimations is shown in Table 4.7, where columns (1) and (2) report estimation results of a contemporaneous model, with reform indices R1 and R2, respectively; columns (3) and (4) report estimation results of the corresponding lagged models.

Coefficients of  $\ln(K)$  are positive and significant at the 5 percent level in three out of the four estimations. Coefficients of reform indices are positive and significant at the 5 percent level in both contemporaneous and lagged cases. When the human capital variable is omitted, the impact of the raw labor on economic growth is found to be much lower compared to similar estimations in Tables 4.2 and 4.3, where the human capital augmented labor is taken into considerations.

### Sensitivity Analysis

By changing assumptions of the benchmark model, we analyze the robustness of our results in two alternative specifications.

First, we employ capital stock data found using a PIM (4.1) with a 10 percent capital depreciation rate instead of a conventional 5 percent rate. It has been established in the economic literature that capital is not used efficiently in highly regulated economies. Inefficient capital is usually scrapped or reorganized when the economy opens up. Therefore, generally depreciation rates will be higher in countries undergoing transformation from a regulated economy to an open economy<sup>15</sup>. Table 4.8 shows results of a sensitivity analysis with a 10 percent capital depreciation rate.

Compared to results in Table 4.2, the estimated coefficients in Table 4.8 do not change signs and significance. Both reform indices R1 and R2 impose a positive effect on economic growth, with a higher reform impact in South Korea than in India.

Secondly, we change composition of the overall reform indices R1 and R2 by using different weights for three reform components. According to Sachs and Warner (1995), trade reform and financial reform are the most important transformations in a highly regulated economy, with trade reform generally being a catalyst for other reforms. In both countries - India and South Korea - enterprise restructuring faced a serious opposition from special interest groups, and as a result was implemented gradually. Therefore, to check the robustness of our model, we decrease weight of enterprise restructuring, and increase weights of a trade and financial reform in the overall composite reform index. Instead of equal weights, trade reform, financial reform, and enterprise restructuring are assigned weights of 0.4, 0.4, and 0.2, respectively in the sensitivity model 2. Table 4.9 shows results of the sensitivity analysis with modified weights in composite reform indices.

Similar to the benchmark case (Table 4.2), the estimated coefficients of models (3.3) and (3.4) with modified weight in composite reform indices continue to produce a significant positive impact on economic growth in India and South Korea in the post-reform period. One noticeable difference is a sharp decrease in India's reform coefficient compared to South Korea. This adjustment suggests that, even though trade liberalization and financial reforms were vital for the both countries' economic growth, enterprise restructuring played a more important role in India relative to South Korea. This phenomenon might be explained by the presence of high initial distortions in India, and a consequent less efficient implementation of trade and financial reforms in this economy.

Overall, results of our analyses lend support to the hypothesis that economic reforms positively contributed to economic growth in India and South Korea in the post-reform period. This positive effect

is present both in contemporaneous and lagged estimations. Our results on the role of economic reform in economic development agree with De Melo et al (1996), Fisher et al (1996), and Havrylyshyn and Wolf (2001). While the previous studies focus on transition economies of Central Europe and former Soviet Union, this study expands empirical growth literature by studying the effect of economic reforms in India and South Korea.

The larger effect of reforms on South Korean economic growth has been consistent in models with a constant intercept. However, in the fixed effects model, we obtain a higher coefficient of reform index for South Korea only in one out of four cases. Results from the fixed effects model suggest that while economic reform has a positive effect on economic growth, time-invariant, country-specific initial conditions cannot be neglected.

A relatively equal distribution of income in South Korea in the early 1960s might have been one of potential factors behind these beneficial initial conditions (Rodrik, 1996). We realize that income equality could have facilitated better governance in South Korea relative to India in three ways. First, policymaking and reform implementation was much easier in Korea due to a lack of influential property-owning class. Secondly, the absence of acute inequality did not create an urgency to redistribute income on the government, and, thus, undercut reform efforts. Thirdly, as the government was free to pursue economic objectives, it supervised bureaucracy closely and removed any obstacles to the reform process.

It is our perception that high distortions in the Indian economy at the beginning of reform implementation might have contributed to a relatively higher impact of a composite reform index in the fixed effect estimations in India rather than in South Korea. Results of our fixed effect estimations once again lend support to the conventional view in reform literature that the higher are the initial distortions in an economy, the more beneficial is the impact of reform on the economic growth. Therefore, even a modest reform implementation in India could have

generated a substantial productivity growth captured by the fixed effect model.

In this study, we have found a significant interaction between the reform indices and the human capital augmented labor. In general, this interaction can be explained as follows. When a domestic firm finds opportunities to utilize appropriately educated labor and low-cost financing, it receives a *per se* incentive to increase production. Economic reforms can result in higher economic growth when the labor market is flexible enough to allow workers move directly to sectors that matches their skills. In a comparative estimation, we demonstrate that the magnitudes of coefficients of the human capital augmented labor variable are higher relative to their counterparts in regressions with the raw labor. This shows that human capital itself has a positive impact on economic growth.

#### Policy Implications

By drawing on the findings of this study, the objective of this section is to provide recommendations to policy makers both in India and South Korea. These recommendations are also aimed to attract attention of a wide range of international organizations, as well as authorities in the developing countries that are at initial stages of reform implementation, or are planning to devise and launch a new economic reform program. In particular, we focus on economic implications of three major reforms – trade reform, financial reform, and enterprise restructuring – as well as policies aimed to improve human capital accumulation in the developing countries.

Our analysis suggests that trade reforms and financial reforms played a relatively more significant role in economic growth in South Korea rather than in India. Related outcome-based measures (such as index of openness, share of imports in consumption, ratio of broad money to GDP, etc) show much steeper trend in South Korea in the post-reform period. A hesitant approach to reform implementation is the primary factor behind less effective reform outcomes in India. The Indian financial sector, in particular, still has numerous barriers against the ownership by foreign

companies<sup>16</sup>. As India is quickly marching towards becoming a vibrant and highly sophisticated economy, demand for risk management products will increase from both individuals and businesses. Allowing foreign insurers will expose the domestic market to advanced risk management techniques, which in turn will foster growth in the economy.

India is unique among developing economies in having a huge service sector, exceeding a half of GDP. Economic reforms at the beginning of the 1990s played a critical role in the growth of services. Privatization, deregulation, and FDI created a positive shock to the hitherto stagnant service sector. The introduction of new technology also generated efficiency. Generally, the service sector requires a more highly educated labor force compared to industry. Our study provides evidence that both economic reforms and improvements in human capital bring about a complimentary effect to country's growth. Since the majority of the Indian population is not highly educated, it is important for India to undertake greater investment in labor force education and health care, building on the growth and success of its service sector.

Our analysis shows that human capital, being a driving force of economic growth, also exerts an indirect effect by complementing economic reforms. A higher level of human capital in South Korea at the beginning of reform implementation to a certain extent explains Korea's economic success. While India is unique in having a very successful tertiary education system, its primary education is in a poor state, which is evidenced by a low literacy rate. Therefore, primary education system is vital for the Indian effort to improve human capital. More funding, adequate teacher training, and improved infrastructure should lead towards that goal. Vocational education can be provided to people who do not intend to pursue higher education.

Based on the empirical analyses in our study, we provide the following summary of policy implications, which will be relevant to any developing country exploring the ways to pursue economic reforms and accelerate growth. First,

economic reforms such as trade liberalization, financial reform, and enterprise restructuring play an important role in economic growth. Either active or gradual reform measures benefit the economy. The more distorted is an economy, the greater is the benefit from economic reforms. Secondly, initial conditions in an economy prior to reform implementation are important factors of reform effectiveness. Reform measures should take into account the state of institutions and social implications of the income distribution. Thirdly, human capital is critical for economic growth. Appropriate human capital increases the efficiency of labor force. Both education and health components of human capital should be taken into account when designing a policy to improve human capital.

### Conclusions

In this paper, we analyzed the impact of economic reforms and human capital on economic growth in India and South Korea in the post-reform period.

We constructed a modified production function that along with a conventional factor of production - physical capital- incorporates a composite reform index and augmented labor and show the effect of various reform measures and human capital accumulation on economic growth. We decomposed the total factor productivity into a reform factor and a catchall factor, which captures other implicit influences. We further decomposed augmented labor into raw labor and human capital. By constructing two unique indices - a composite economic reform index and a human capital index - we explored the transitional dynamics of a growth in total factor productivity generated by trade reform, financial reform, enterprise restructuring, schooling, and improvements in life expectancy. We estimated several modifications of our baseline production function to reflect more accurately variable effects of economic reforms in India and South Korea.

Our analysis suggests that economic reforms and human capital accumulation impose a significant positive effect on economic growth. This positive effect is revealed both in contemporaneous and lagged estimations of panel data models. The impact

of reform turns out to be stronger for South Korea when a model with a constant intercept is estimated.

We also have explored a possibility of an interaction between economic reforms and human capital augmented labor variable. In accordance with the traditional economic literature, which suggests that having appropriate human capital is important in advancing the opportunities opened by reforms, our analysis confirms that reforms aimed on the improvement of human capital, e.g. reforms in labor market, investment in education and healthcare, will have a complementary effect on the efficacy of economic reforms. To ascertain the strength of the effect of human capital on economic growth, we estimated the model with raw labor (i.e. without augmentation effect from human capital). The comparison of models with raw labor and with human capital augmentation reveals a significantly higher effect on economic growth when the estimation employs a human capital augmented variable.

In conclusion, our investigation opens a broad avenue for further research. We recognize that economic reforms and human capital accumulation are important factors for explaining growth in India and South Korea. As such, it is interesting to employ a multivariate maximum likelihood cointegration technique in order to explore the long-run interaction between economic growth, reform measures, and human capital development in these countries. Finally, the model can be empirically tested for a broader range of East Asian countries that recently implemented market reforms and significantly improved their human capital.

#### References

- Agenor, P. & Montiel, P. (1999). *Development Macroeconomics*. Princeton, New Jersey: Princeton University Press
- Baldacci, E., Guin-Siu, T. & De Mello, L. (2003). More on the effectiveness of public spending on health care and education: a covariance structure model. *Journal of International Development*, 15, 709-725
- Barro, R. (1991) Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106, 407-443
- Barro, R. (1996). Health and economic growth. *Harvard University Department of Economics Working Paper*
- Barro, R. & Lee, J. (2000). International data on educational attainment: updates and implications. *National Bureau of Economic Research Working Paper No. 7911*
- Becker, G. (1964). *Human capital: a theoretical and empirical analysis, with special reference to education*. Chicago: University of Chicago Press
- Bernanke, B. & Gurkaynak, R. (2001) Is growth exogenous? Taking Mankiw, Romer, and Weil seriously. *National Bureau of Economic Research Working Paper No. 8365*
- Bhargava, A., Jamison, D., Lau, L., & Murray, C. (2001). Modeling the effects of health on economic growth. *Journal of Health Economics*, 20, 423-440
- Bloom, D., Canning, D. & Sevilla, J. (2004). The effect of health on economic growth: a production function approach. *World Development*, 32, 1-13
- Deininger, K. & Squire, L. (1996) A new data set measuring income inequality. *World Bank Economic Review*, 10, 565-91
- De Melo, M., Denizer, C. & Gelb, A. (1996). From plan to market: patterns of transition. *The World Bank Working Paper No. 1564*.
- Dollar, D. & Kraay, A. (2001). Growth is Good for the Poor. *The World Bank Policy Research Working Paper No. 2587*
- Edwards, S. (1992). Trade orientation, distortions, and growth in developing countries. *Journal of Development Economics*, 39, 31-57
- Fischer, S., Sahay, R. & Vegh, C. (1996). Economies in transition: the beginnings of growth. *American Economic Review*, 86, 229-233

- Fogel, R. (1994). Economic growth, population theory, and physiology: the bearing of long-term processes on the making of economic policy. *American Economic Review*, 84, 369-95
- Gemmel, N. (1996). Evaluating the impacts of human capital stocks and accumulation on economic growth: some new evidence. *Oxford Bulletin of Economics and Statistics*, 58, 9-28
- Guesan, M. (2004) Human capital, trade and development in India, China, Japan and other Asian countries, 1960-2002: econometric models and causality tests. *Applied Econometrics and International Development*, 4, 123-139
- Gyimah-Brempong, K. & Wilson, M. (2005). Human capital and economic growth: is Africa different? *Journal of African Development*, 7, 73-109
- Hanushek, E. & Kimko, D. (2000). Schooling, labor-force quality, and growth of nations. *American Economic Review*, 90(5), 1184-1208
- Harvie, C. & Pahlavani, M. (2006) Sources of economic growth in South Korea: an application of the ARDL Analysis in the presence of structural breaks – 1980-2005. *University of Wollongong Economics Working Paper No.06-17*
- Havrylyshyn, O. & Wolf, M. (2001). Growth in transition countries, 1990-98: the main lessons. In Havrylyshyn, O. & Nsouli, S.M. (Eds.), *A Decade of Transition: Achievements and Challenges*. (pp. 83-128). Washington, DC: IMF
- Jamison, D. , Lawrence, J. , Wang, J. (2003). Health's contribution to economic growth in an environment of partially endogenous technical progress. *Disease Control Priorities Project Working Paper No. 10*. Bethesda, MD: US National Institutes of Health
- Kang, S. (1989). Korea's privatization plans and past experiences. *Korea Development Institute Working Paper Series 8823*
- Kushnirsky, F. (2001) A modification of the production function for transition economies: reflecting the role of institutional factors. *Comparative Economic Studies*, 43, 1-30
- Levin, R. & Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *American Economic Review*, 82, 942-963
- Loayza, N. & Palacios, L. (1997) Economic Reform and Progress in Latin America and the Caribbean. *The World Bank Policy Research Working Paper No.1829*
- Mankiw, N., Romer, D. & Weil, D. (1992). A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107, 407-437
- Nabli, M. & Veganzones-Varoudakis, M. (2004). Reforms and growth in MENA countries: new empirical evidence. *The World Bank Working Paper No.36*
- Nehru, V., Swanson, E. & Dubey, A. (1995). A new database on human capital stock in developing and industrial countries: sources, methodology, and results. *Journal of Development Economics*, 46, 379-401
- Rodrik, D. (1996). Understanding economic policy reform. *Journal of Economic Literature*, 34 (1), 9-41
- Rodrik, D. & Subramanian, A. (2004). Hindu growth to productivity surge: the mystery of the Indian growth transition. *International Monetary Fund Working Paper No. 04/77*
- Sachs, J. & Warner, A. (1995). Economic reform and the process of global integration. *Brookings Papers on Economic Activity*, 1, 1-118
- Sen, A. (1999). *Development as Freedom*. Oxford, UK: Oxford University Press
- Song, B. (1990), *The Rise of the Korean Economy*. Oxford University Press: Hong Kong
- Weil, D. (2004). *Economic Growth*. Boston, MA: Addison Wesley

Weil, D. (2005). Accounting for the effect of health on economic growth. *National Bureau of Economic Research Working Paper No.11455*

Wobmann, L. (2003). Specifying human capital. *Journal of Economic Surveys*, 17( 3), 239-270

World Bank Study (1993). *East Asian Miracle*. Washington, DC: World Bank

World Development Indicators (2005) Washington, DC: World Bank. ]

---

<sup>1</sup> See Dollar and Kraay (2001), Deininger and Squire (1996)

<sup>2</sup> Each indicator is created as a weighted sum of two-three principal components. For example, macroeconomic stability captures inflation, budget deficit as a percentage of GDP, and black market premium; structural reform index is composed of "natural trade openness", exports of oil and mining products, and private credit by deposit banks and other institutions.

<sup>3</sup>For example, the most widely used proxy for human capital is school enrollment ratio. But this proxy captures only the education component of human capital. Moreover, school enrollment is a flow variable. Secondary enrollment, in addition to the latter flaws, captures only a segment of education. Another common proxy -adult literacy rate-disregards any investment that occurs on top of basic literacy.

<sup>4</sup> According to Bloom, Canning, and Sevilla (2004), the correlation between health component (measured by life expectancy) and education component (proxied by average years of schooling) is 0.834.

<sup>5</sup> Assuming that different variables used to proxy for human capital may move disproportionately, we describe the effect of variables by finding a linear combination of them.

<sup>6</sup> However, if trade distortions are present in the economy, foreign investments may further increase production of a "wrong" good and make the economy even more inefficient.

<sup>7</sup> The De Melo et al (1996) reform index is a weighted average of three reform indicators: 1) price liberalization and competition, 2) trade and foreign exchange regime, and

3) privatization and banking reform.

<sup>8</sup> We acknowledge a fact that there are alternative ways to measure trade liberalization (i.e., by employing the weighted average rate of tariff and non-tariff barriers or by using Structure Adjusted Trade Intensity (SATI) index). Yet, we follow a traditional approach in economic reform literature and choose outcome-based approach to measure trade liberalization. On the usefulness of this approach in comparing improvements in trade openness over time and across countries, refer to Loayza and Palacios (1997).

<sup>9</sup> Following Edwards (1993), we also performed evaluation of the Structure Adjusted Trade Intensity (SATI) to control for country's size, GDP, transport cost and other relevant variables. This alternative measure of trade reform effectiveness produced no significant results that might have changed our choice.

<sup>10</sup> M2/GDP is assumed to move upward with reforms in financial sector.

<sup>11</sup> See Barro (1991), Nehru et al (1995), Gemmel (1996), Hanushek and Kimko (2000), and Wobmann (2003)

<sup>12</sup> In regressions (5)-(6) that include an interaction term, individual significance of a human capital augmented labor variable is lost. Due to multicollinearity, i.e. with a high correlation of labor input and reform outcome measures (0.878 and 0.863, for R1 and R2, respectively), an introduction of the interaction term might have caused a loss of individual significance to joint significance. However, it is not an issue for us as multicollinearity does not reduce the predictive power or reliability of the model as a whole.

<sup>13</sup> We also acknowledge that lags in the impact of reforms will be more considerable in an economy, where market forces had not been well developed or played a significant role prior to reforms.

<sup>14</sup> In Table 4.3 in regressions (1), (3), (4), and (5), which include a lagged reform coefficient, individual significance of a physical capital variable is lost. The significantly higher correlation between physical capital and lagged reform measures compared to contemporaneous reform measures, as well as an introduction of interaction term might have caused a loss of individual significance of capital coefficient in these regressions. However, similar to Table 4.2, as long as multicollinearity does not reduce the predictive power of our model, we disregard the issue.

<sup>15</sup> For additional discussion, see Havrylyshyn and Wolf (2001).

<sup>16</sup> e.g., the ceilings for ownership by foreign insurers are exceedingly low.

---

Mahbub Rabbani is an economist at Milliman Economic Consulting Inc. He received a Ph.D. in Economics, with specialisation in Economics of Development and Industrial Organization from Temple University (2006). Dr. Rabbani's research interests focus on emerging and developing markets.

Svitlana Maksymenko is a Visiting Lecturer at the Department of Economics, University of Pittsburgh. She received a Ph.D. in Economics with specialisation in Economics of Development and Financial Economics from Temple University in 2006. Dr. Maksymenko has been Edmund Muskie Academic Fellow in 2001-2006. Her research interests are economies in transition and growth of developing countries.

Table 4.1.

Variables for the empirical analysis and index composition

Variable	Definition	Source
Y	Gross Domestic Product, in constant 2000 US dollars	World Development Indicators 2005
hL	Human capital augmented labor	Below
L	Total labor force, or economically active population	World Development Indicators 2005
h	Human capital index, assigns equal weight to: a) average years of schooling b) life expectancy at birth	a) Barro and Lee (2000) b) World Development Indicators 2005
K	Physical capital, in constant 2000 US dollars	World Development Indicators 2005 and Larson et al (2000)
R	Reform index, assigns equal weights to trade reform index, financial reform index, and enterprise restructuring index	Below
Trade Reform Index	a) (Exports + Imports)/GDP and b) Imports/Consumption	World Development Indicators 2005
Financial Reform Index	Assigns equal weights to the M2/GDP, and the ratio of domestic credit to private sector to GDP	World Development Indicators 2005
Enterprise Restructuring Index	a) Private sector share of total employment (India) and b) private sector share of value added (South Korea)	a) <i>Handbook of Indian Economy</i> by the Reserve Bank of India b) Bank of Korea, National Accounts 1970-1987; Kang (1989)



Table 4.2.

Panel regression results with constant intercept Dependent variable: Ln(Q)						
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	7.654*	6.995*	6.620*	3.914*	15.238*	15.391*
	(0.396)	(0.442)	(2.106)	(1.191)	(4.936)	(3.296)
Ln(hL)	0.594*	0.520*	0.714*	0.889*	0.122	0.019
	(0.048)	(0.031)	(0.237)	(0.141)	(0.307)	(0.192)
Ln(K)	0.118*	0.185*	0.082	0.065	0.182*	0.242*
	(0.044)	(0.032)	(0.084)	(0.050)	(0.056)	(0.026)
Ln(R1)	1.023*				-1.152	
	(0.105)				(1.412)	
Ln(R2)		1.152*				-1.324
		(0.083)				(0.953)
Ln(R1)-India			0.896*			
			(0.224)			
Ln(R1)-South Korea			0.994*			
			(0.098)			
Ln(R2)-India				0.799*		
				(0.146)		
Ln(R2)-South Korea				1.093*		
				(0.067)		
Ln(hL)*Ln(R1)					0.111	
					(0.072)	
Ln(hL)*Ln(R2)						0.125*
						(0.049)
Regression F-value	3568.556	7042.050	2411.397	7711.998	2717.879	5964.655
Adjusted R <sup>2</sup>	0.998	0.999	0.998	0.999	0.998	0.999

Notes: standard errors are in parentheses

\* denotes significant at 5% level

Table 4.3.

Panel regression results with constant intercept and lagged reform index Dependent variable: Ln(Q)

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	8.509* (0.475)	7.662* (0.387)	7.884* (2.029)	5.716* (1.228)	15.137 (8.035)	16.876* (2.908)
Ln(hL)	0.629* (0.058)	0.536* (0.041)	0.707* (0.251)	0.790* (0.132)	0.201 (0.522)	-0.022 (0.183)
Ln(K)	0.067 (0.058)	0.158* (0.043)	0.042 (0.104)	0.068 (0.056)	0.134 (0.102)	0.224* (0.038)
Ln(R1(-1))	0.993* (0.118)				-0.954 (2.356)	
Ln(R2(-1))		1.091* (0.091)				-1.664 (0.889)
Ln(R1(-1))-India			0.910* (0.205)			
Ln(R1(-1))-South Korea			0.973* (0.101)			
Ln(R2(-1))-India				0.849* (0.117)		
Ln(R2(-1))-South Korea				1.049* (0.075)		
Ln(hL)*Ln(R1(-1))					0.099 (0.118)	
Ln(hL)*Ln(R2(-1))						0.140* (0.046)
Regression F-value	3283.793	6636.768	2343.252	5474.001	2428.031	6091.425
Adjusted R <sup>2</sup>	0.998	0.999	0.998	0.999	0.998	0.999

Notes: standard errors are in parentheses. \* denotes significant at 5% level.

Table 4.4.

Panel regression results with fixed effects Dependent variable:  $\ln(Q)$ 

	(1)	(2)	(3)	(4)
$\ln(hL)$	0.787*	0.772*	0.573*	0.813*
	(0.169)	(0.078)	(0.233)	(0.220)
$\ln(K)$	0.091	0.130*	0.230*	0.109
	(0.047)	(0.027)	(0.098)	(0.099)
$\ln(R1)$	0.818*			
	(0.159)			
$\ln(R2)$		0.915*		
		(0.091)		
$\ln(R1)$ -India			1.047*	
			(0.241)	
$\ln(R1)$ -South Korea			0.489*	
			(0.152)	
$\ln(R2)$ -India				0.875*
				(0.238)
$\ln(R2)$ -South Korea				0.969*
				(0.184)
Fixed effects-India	5.138	4.111	4.912	4.009
Fixed effects-South Korea	5.847	4.939	7.346	4.583
Regression F-value	2799.919	7812.220	2411.397	5941.108
Adjusted $R^2$	0.998	0.999	0.998	0.999

Notes: standard errors are in parentheses, \* denotes significant at 5% level

Table 4.5.

Panel regression results with fixed effects and lagged reform index Dependent variable: Ln(Q)

	(1)	(2)	(3)	(4)
Ln(hL)	0.815* (0.222)	0.775* (0.092)	0.594* (0.263)	0.588* (0.166)
Ln(K)	0.042 (0.066)	0.101* (0.036)	0.215 (0.121)	0.204 (0.083)
Ln(R1(-1))	0.787* (0.217)			
Ln(R2(-1))		0.875* (0.096)		
Ln(R1(-1))-India			1.003* (0.234)	
Ln(R1(-1))-South Korea			0.384 (0.258)	
Ln(R2(-1))-India				1.067* (0.168)
Ln(R2(-1))-South Korea				0.660* (0.158)
Fixed effects-India	6.059	5.052	5.080	5.390
Fixed effects-South Korea	6.756	5.823	7.798	7.227
Regression F-value	3568.556	6380.055	2411.397	5369.141
Adjusted R <sup>2</sup>	0.998	0.999	0.998	0.999

Notes: standard errors are in parentheses, \* denotes significant at 5% level

Table 4.6.

Panel regression results with country-specific coefficients Dependent variable: Ln(Q)

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	10.673 (0.585)*	8.627 (1.015)*	6.936 (2.053)*	4.051 (1.976)	7.336 (1.895)*	.4.691 (1.918)*
Ln(hL)					0.574 (0.233)*	0.801 (0.222)*
Ln(K)			0.174 (0.111)	0.074 (0.105)		
Ln(R1)	0.279 (0.121)*					
Ln(R2)		0.444 (0.156)*				
Ln(hL) - India	1.772 (0.136)*	1.514 (0.189)*	0.542 (0.288)	0.866 (0.283)*		
Ln(hL) - Korea	0.139 (0.069)	0.341 (0.113)*	0.640 (0.252)*	0.873 (0.228)*		
Ln(K) - India	-0.769 (0.099)*	-0.524 (0.154)*			0.134 (0.082)	0.089 (0.068)
Ln(K) - Korea	0.426 (0.040)*	0.348 (0.059)*			0.228 (0.098)*	0.116 (0.100)
Ln(R1) - India			1.099 (0.299)*		1.111 (0.261)*	
Ln(R1) - Korea			0.655 (0.198)*		0.493 (0.152)*	
Ln(R2) - India				0.824 (0.314)*		0.905 (0.266)*
Ln(R2) - Korea				1.067 (0.211)*		0.949 (0.185)*
Regression F-Value	10,491.85	12,487.36	2,157.77	5,849.61	2,400.34	5,970.47
Adjusted R2	0.9997	0.9997	0.9983	0.9993	0.999	0.999

Notes: t-statistics are in parentheses below, \*Significant at 5 percent level

Table 4.7.

Panel regression results with L replacing (hL) Dependent variable: Ln(Q)

	(1)	(2)	(3)	(4)
Constant	6.242* (0.655)	5.843* (0.808)	6.790* (0.557)	6.246* (0.726)
Ln(L)	0.560* (0.064)	0.456* (0.040)	0.592* (0.074)	0.463* (0.050)
Ln(K)	0.184* (0.060)	0.270* (0.044)	0.143 (0.071)	0.258* (0.053)
Ln(R1)	1.234* (0.155)			
Ln(R2)		1.286* (0.135)		
Ln(R1(-1))			1.232* (0.171)	
Ln(R2(-1))				1.232* (0.146)
Regression F-value	2350.414	2811.817	2375.205	3011.540
Adjusted R <sup>2</sup>	0.997	0.997	0.997	0.998

Notes: standard errors are in parentheses, \* denotes significant at 5% level

Table 4.8.

Sensitivity analysis 1: Panel regression results with constant capital depreciation rate 10%  
Dependent variable:  $\ln(Q)$

	(1)	(2)	(3)	(4)
Constant	7.494* (0.450)	6.543* (0.488)	5.523* (2.125)	3.392* (1.119)
$\ln(hL)$	0.646* (0.038)	0.576* (0.025)	0.869* (0.231)	0.956* (0.130)
$\ln(K)$	0.076 (0.039)	0.145* (0.029)	0.018 (0.069)	0.036 (0.041)
$\ln(R1)$	1.110* (0.090)			
$\ln(R2)$		1.281* (0.079)		
$\ln(R1)$ -India			0.805* (0.289)	
$\ln(R1)$ -South Korea			1.006* (0.110)	
$\ln(R2)$ -India				0.787* (0.176)
$\ln(R2)$ -South Korea				1.122* (0.077)
Regression F-value	3158.363	5925.877	2411.062	7288.845
Adjusted $R^2$	0.988	0.999	0.998	0.999

Notes: standard errors are in parentheses, \* denotes significant at 5% level

Table 4.9.

Sensitivity analysis 2: Panel regression results with constant reform index and weights 0.4, 0.4, 0.2 Dependent variable: Ln(Q)

	(1)	(2)	(3)	(4)
Constant	9.629* (0.473)	9.489* (0.652)	6.556* (2.309)	3.857* (1.384)
Ln(hL)	0.609* (0.041)	0.511* (0.031)	0.938* (0.236)	1.142* (0.149)
Ln(K)	0.044 (0.049)	0.111* (0.043)	-0.042 (0.071)	-0.074 (0.046)
Ln(R1)	0.968* (0.086)			
Ln(R2)		1.088* (0.090)		
Ln(R1)-India			0.580* (0.258)	
Ln(R1)-South Korea			0.864* (0.084)	
Ln(R2)-India				0.409* (0.173)
Ln(R2)-South Korea				0.942* (0.060)
Regression F-value	2664.648	3292.155	2205.382	6483.701
Adjusted R <sup>2</sup>	0.997	0.998	0.997	0.999

Notes: standard errors are in parentheses, \* denotes significant at 5% level



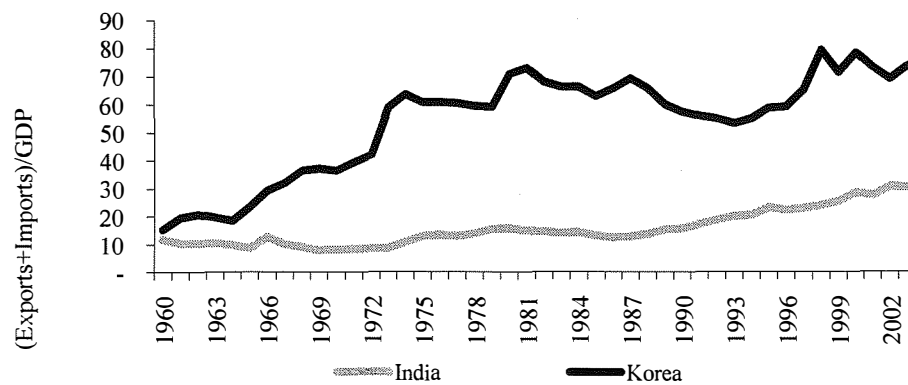


Figure 4.1. Volume of trade as a percentage of GDP in India and South Korea, 1960-2003

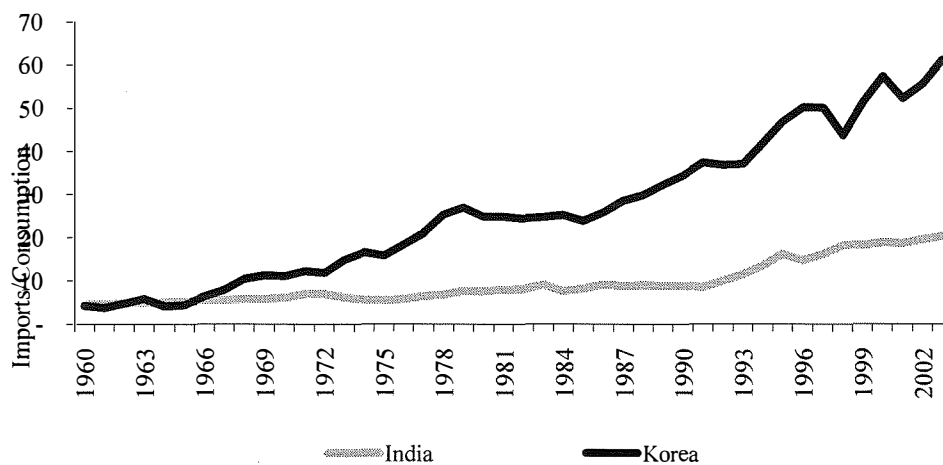


Figure 4.2. Share of imports in aggregate consumption in India and South Korea, 1960-2003

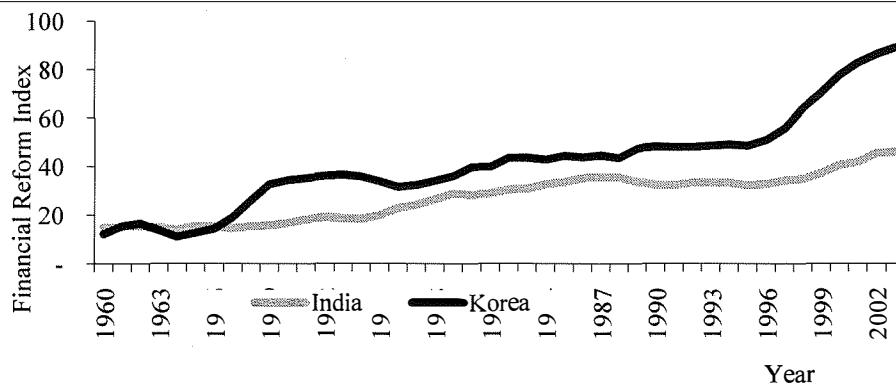
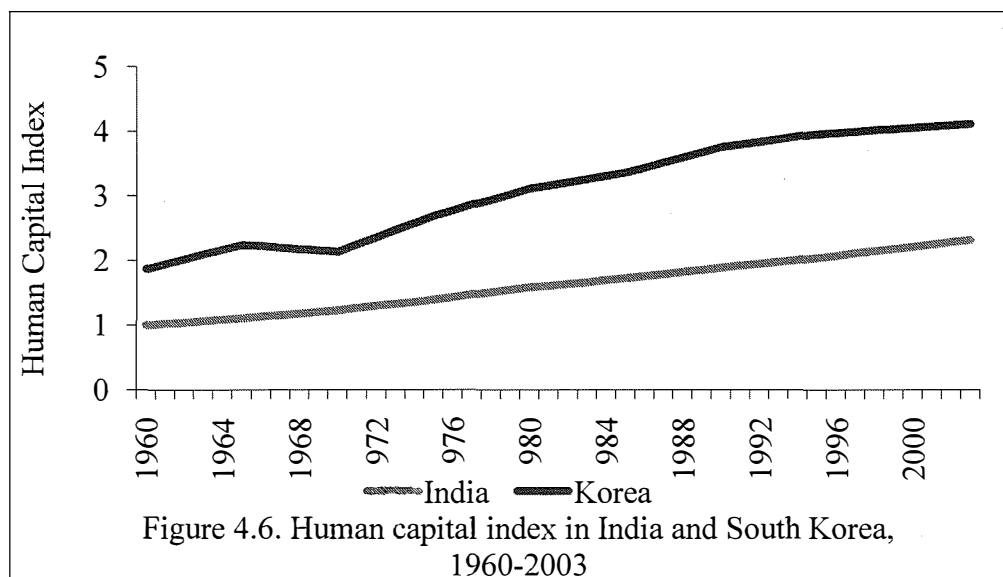
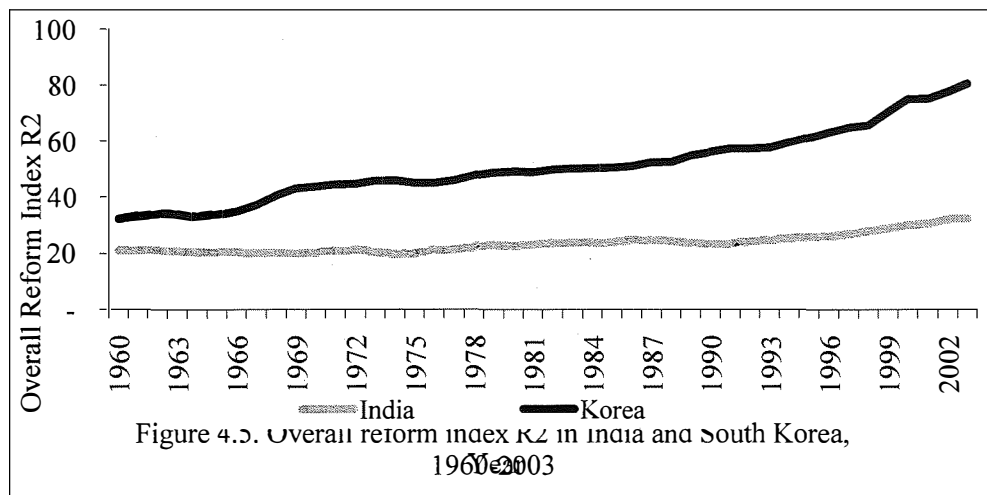
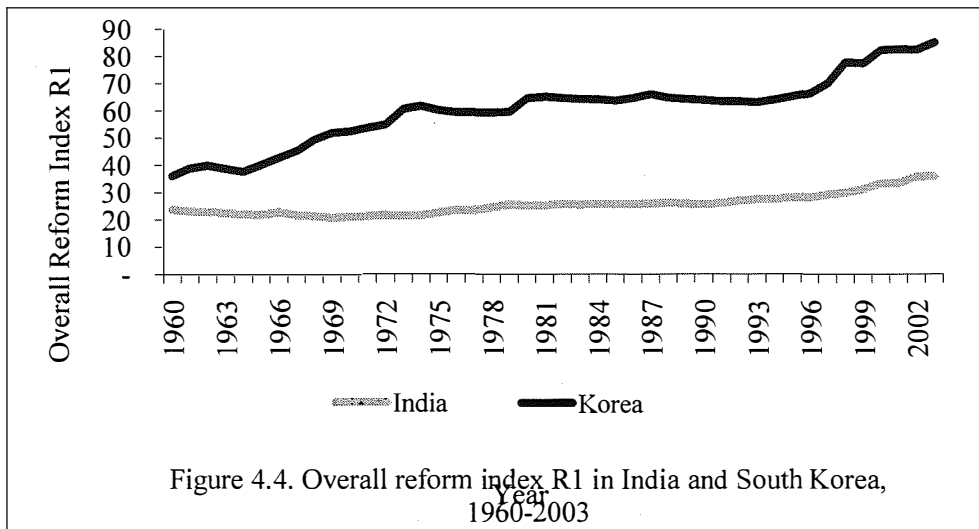


Figure 4.3. Financial reform index in India and South Korea, 1960-2003



Appendix A  
Construction of Reform Indices

Table A.1.

Construction of Overall Reform Index for India, 1992-2003

	Trade Reform	Trade Reform	Financial Reform	Enterprise Restructuring	Overall Reform	Overall Reform
Year	Index 1	Index 2	Index	Index	Index (R1)	Index (R2)
1992	18.75	10.06	33.39	28.79	26.98	24.08
1993	20.04	11.46	33.37	28.98	27.46	24.60
1994	20.37	13.50	33.38	28.90	27.55	25.26
1995	23.21	16.23	32.42	29.04	28.22	25.90
1996	22.36	14.74	32.91	29.57	28.28	25.74
1997	22.96	16.08	34.23	30.53	29.24	26.95
1998	24.13	18.18	35.03	30.84	30.00	28.02
1999	25.47	18.15	37.34	31.03	31.28	28.84
2000	28.54	18.84	40.65	30.95	33.38	30.15
2001	27.58	18.62	41.97	30.98	33.51	30.53
2002	30.82	19.42	45.64	31.09	35.85	32.05
2003	30.47	20.32	46.12	31.20	35.93	32.55

Table A.2.

## Construction of Overall Reform Index for South Korea, 1966-1977

	Trade	Trade	Financial	Enterprise	Overall	Overall
	Reform	Reform	Reform	Restructuring	Reform	Reform
Year	Index 1	Index 2	Index	Index	Index R1	Index R2
1966	29.37	6.38	14.29	12.30	42.69	35.02
1967	32.09	7.89	19.04	16.15	45.31	37.24
1968	36.59	10.39	26.18	20.99	49.32	40.59
1969	37.09	11.27	32.68	26.51	51.79	43.18
1970	36.48	11.09	34.47	28.99	52.32	43.85
1971	39.38	12.22	35.20	28.99	53.66	44.61
1972	42.33	11.82	36.07	30.07	54.85	44.68
1973	59.08	14.79	36.69	31.47	60.55	45.79
1974	63.68	16.50	35.89	28.52	61.73	46.00
1975	60.87	15.81	34.08	26.99	60.10	45.09
1976	60.92	18.35	31.63	25.71	59.22	45.03
1977	60.58	20.94	32.38	27.45	59.19	45.97

Appendix B  
Construction of a Human Capital Variable

Table B.1.

Construction of a Human Capital Variable for India, 1992-2003

Year	Average Years of Schooling	Life Expectancy at Birth	Normalized	Normalized	Composite Human Capital Variable
			Average Years of Schooling	Life Expectancy at Birth	
1992	4.27	60.15	2.54	1.36	1.95
1993	4.35	60.57	2.59	1.37	1.98
1994	4.44	60.98	2.64	1.38	2.01
1995	4.52	61.40	2.69	1.39	2.04
1996	4.63	61.82	2.75	1.39	2.07
1997	4.74	62.24	2.82	1.40	2.11
1998	4.84	62.43	2.88	1.41	2.15
1999	4.95	62.62	2.95	1.41	2.18
2000	5.06	62.80	3.01	1.42	2.21
2001	5.17	63.09	3.08	1.42	2.25
2002	5.28	63.38	3.14	1.43	2.29
2003	5.38	63.42	3.20	1.43	2.32

Table B.2.

## Construction of a Human Capital Variable for Korea, 1966-1977

Year	Normalized		Normalized		Composite Human Capital Variable
	Average	Life	Average	Life	
	Years of Schooling	Expectancy at Birth	Years of Schooling	Expectancy at Birth	
1966	5.29	57.17	3.15	1.29	2.22
1967	5.20	57.66	3.09	1.30	2.20
1968	5.10	58.41	3.04	1.32	2.18
1969	5.01	59.17	2.98	1.33	2.16
1970	4.91	59.93	2.92	1.35	2.14
1971	5.25	60.68	3.12	1.37	2.25
1972	5.59	61.44	3.33	1.39	2.36
1973	5.92	62.26	3.53	1.40	2.47
1974	6.26	63.07	3.73	1.42	2.58
1975	6.60	63.89	3.93	1.44	2.68
1976	6.86	64.71	4.08	1.46	2.77
1977	7.12	65.52	4.24	1.48	2.86

**ADDRESSING THE 'BOUNDARYLESS CAREER': IMPACT ON  
ORGANIZATIONS, WORKERS, AND INSTITUTIONS OF HIGHER LEARNING**  
Irwin H. Siegel, Harrisburg Area Community College

---

ABSTRACT

The traditional career paths followed by workers as they join and attempt to progress within an organizational setting may no longer be applicable in the 21<sup>st</sup> Century. The declining numbers of employees working for large organizations results in many workers now engaged in "boundaryless careers," whereby workers attempt to gain skills within a number of different organizations, and package themselves as portable skill sets, migrating from one organization to another. This paper explores in more depth the "boundaryless career" concept and its impact on organizations, the workers themselves, and institutions of higher learning.

---

Introduction

The end of the 20<sup>th</sup> Century and the beginning of the 21<sup>st</sup> Century have proved to be fertile ground for development of the term *boundaryless* in business literature. The concept of viewing organizations within the context of boundaries, or barriers, emanated from former General Electric CEO Jack Welch. His proposed remedy was the concept of "boundary spanning," which involved linking and coordinating an organization, initially internally via use of more horizontal structures, but then more particularly to elements of its external environment (Daft, 2007). In this way, Welch suggested that the boundaries or barriers between organizations, which he conceived as artificial and resource-consuming, could be disbanded and more networked structures could ensue.

Ashkenash, et al. (1995) enlarged that concept to what they called the "boundaryless organization." They also envisioned 21<sup>st</sup> Century business as requiring enhanced communication and coordination, not just internally within a particular organization, but between organizations themselves. This was the next step in the theoretical framework that envisioned most of the traditional organizational structures as creating and perpetuating the barriers that could impede progress in a globally-connected world.

Certainly, notwithstanding the social, economic and legal implications that might arise from adoption of this concept of a web of networked organizations, questions arise as to implications for the individual worker. It appears to be little coincidence that the

discourse of *boundaryless* is occurring within a context of downsizing and flattening of organizational structures. The era of careers based in one relatively large organization, what Toffler (1981) referred to as "second-wave" organizations (emanating from the dawn of the Industrial Revolution until around 1970) appears gone forever. Indeed, Miles and Snow (1996) suggest that modern workers face performing tasks in "fourth-wave" organizations, where the hierarchies that have dominated American business in particular, will be eliminated, and the organization as employer is replaced by organization as nothing more than a "skill facilitator," a conduit between individual skill sets and locations requiring those skill sets.

It is within this setting that the concept of the *boundaryless career* for individual workers has germinated and been nourished. Although a formal definition of this concept will be presented in the following section of this paper, for purposes of this introduction it is suggested that workers (especially recent graduates of institutions of higher learning) entering 21<sup>st</sup> Century careers will discover a decreased emphasis on working for traditional organizations and an increased emphasis on the workers themselves being able to understand and package themselves as portable skill sets. This paper will review the theoretical foundations of the *boundaryless career*, describe some ramifications, and suggest some responses, particularly by institutions of higher learning, to this new paradigm, which will significantly impact not just the individual graduates, but the institutions themselves which seek to prepare their graduates for success.

## Exploring the Concept of the *Boundaryless Career*

### Definition and Context

The often-cited definition of *career* is the unfolding sequence of a person's work experience over time (Arthur, Hall and Lawrence, 1989). Note the importance of the dimension of *time* to this venerable definition, which neither addresses particular work arrangements nor what constitutes career *success* (Arthur, Khapova and Wilderom, 2005). Traditional organizational careers are conceived of as "bounded," subject to the barriers inherent to working within one or a few organizations, where hierarchy and vertical structures have been dominant. Thus, a great deal of traditional career theory or career success literature, and it is in ample supply, is based upon the foundation of the bounded career. However, the emergence of what has been called the "new work order" (Solomon, 1999) has severely eroded the concept of the bounded career, as downsizing and the reality of the global economy increasingly have eroded the stability characterized by employment in "second wave" organizations (Tofler, 1981). Weick (1996) suggests that "What is different now is that work experience is more decoupled from specific organizations, more proactive and enactive, more indistinguishable from organizing, more portable, more discontinuous, less predictable, and more reliant on improvisation" (p. 41).

Although it has been suggested that models of the boundaryless career date back to the 1960's (Mirvis & Hall, 1996), certainly Arthur & Rousseau (1996) can be credited with popularizing this concept. To build their development of a definition of the *boundaryless career*, Arthur and Rousseau (1996) suggest that the traditional definition of *organization* as an entity having relatively constant membership is migrating back to the roots of organization, not as an entity but as a *process*, one of the four functions of management. Unconstrained by the "boundaries" of organizations, a *boundaryless career* can thus be defined as "careers that cross organizational boundaries, cross traditional boundaries within the organization, involve allegiance to a profession outside the organization, utilize networks of

relationships that cross organizations, or involve extraoccupational considerations such as the family" (Ellig and Thatchenkery, 1996, 172). This represents a more expanded version of the classic definition of boundaryless careers provided as "...a sequence of job opportunities that go beyond the boundaries of a single employment setting" (DeFellippi and Arthur, 1996, p. 116).

Arthur and Rousseau (1996) break down the definition into particular elements, which are very interesting. They include:

- careers which transcend boundaries of separate employers
- careers which draw validation (and marketability) externally from the present employer
- careers sustained by external networks or information
- careers where traditional hierarchical reporting and advancement are no longer applicable
- careers resulting from rejection of opportunities for personal or family reasons
- careers dependent upon the interpretation of the career actor/actress.

In addition, Sullivan (1999) researched the boundaryless career literature to that point and developed a similar list of dimensions, which include (a) portable skills, knowledge, and abilities across multiple firms; (c) personal identification with meaningful work; (d) on-the-job action learning; (e) development of multiple networks and peer learning relationships; and (f) individual responsibility for career management (p. 458). In synthesizing these conceptions, one is struck, first of all, with the sweeping breadth of the definition of boundaryless careers. Also, the familiar concept of a career linked to particular organizations is striking by its absence from these elements, replaced by "an enticing vision of individual initiative, relative independence from a hierarchy, and the building of a sense of community through voluntary associations and networks" (Baker



and Aldrich, 1996). It is evident that the boundaryless career is not a natural extension of the traditional "bounded" career, but is essentially a new paradigm, timely in the first decade of a new century with new concepts of the nature of work.

Certainly, the boundaryless career developed within a context. That context is sometimes referred to as the "new economy," the migration from a manufacturing to a service economy. Critical research refers to it as the "new work order," defined as "the dynamic and human nature of post-industrial work...post-Fordism" (Solomon, 1999, p. 121). The transition from production of goods to production of knowledge, coupled with expansion of globalism, an explosion in development of technology, and economic realities has certainly provided fertile ground for germination of the boundaryless career, as many larger organizations began to shrink in size or disappear altogether.

#### Review of Applicable Literature

Teff (1997), in reviewing Arthur & Rousseau's (1996) book, makes an interesting point: "It seems noteworthy that...career theories from the past fifty years are substantially absent...Might we conclude that the development of the boundaryless career paradigm will require that we abandon fifty years of career and organizational theory? It would seem so" (p. 68). This paper suggests we should be cautious in rejecting traditional career theory, however. The paradigm of boundaryless career is more about reshaping the *context* of careers than about reshaping the *content* of careers. The basic elements of the definition of "career" presented earlier have not changed. Careers still unfold over time, are still sequential (if only in the chronological sense) and still involve work experience. What the boundaryless career literature suggests has changed, however, is the environment or context in which careers occur. Thus, it is useful to briefly review some of the leading career literature, before reviewing significant boundaryless career literature. (As the boundaryless career appears to negatively impact the *career success* research, however, that concept, including the literature base, will not be reviewed here).

A relatively early "classic" in careers research was Hall's (1976) *Careers in organizations*. Now, as reflected in the book's title, it presupposed a "bounded" environment for careers. Actually, it was dated so fast that, by the time it finally went out of print ten years after publication, there was no interest in reprinting. Hall (2002) admitted that, "not only is the book dead but also perhaps the main idea of the book (careers inside organizations) is dead as well" (p. 5). In fact, Hall himself published a sequel in 1996 entitled *The career is dead: Long live the career*. Not surprisingly, his later book (2002) was entitled *Careers in and out of organizations*. The 1976 book was important, though, for the basic definition of "career" that is provided, which, since it is not linked to organizations, has proven to be durable over the decades.

Another "classic" from the same time period was Van Maanen's (1977a) *Organizational careers*. As with Hall's early work, careers in this book are situated within the bounded environment of organizations. The author himself described the book as presenting "for the most part [a] complementary" match between career studies' interest in unfolding individual identity and "the nature and workings of complex organizations" (Van Maanen, 1977b, as quoted by Arthur and Rousseau, 1976, p. 7).

Ed Schein needs no introduction to organizational culture researchers, but he also wrote one of the earlier careers "classics." *Matching individual and organizational needs* (1978) and subsequent works introduced the concept of "career anchors," wherein certain interests and competencies within individuals could be linked to organizational needs. It is interesting, though, that the later version (1996) is entitled *Career anchors: discovering your real values*, with the reference to the organization now nowhere evident. As with many "fastcapitalist" (Gee, et. al, 1996) products, the book is linked to assessments and other fee-generating features.

Certainly, one of the most significant resources for the boundaryless organization has been Arthur & Rousseau's (1996) *The boundaryless career: A new employment principle for a new organizational era*.

The editors have assembled over twenty pieces, covering subject areas in addition to the nature of the boundaryless career: the influence of knowledge-based components; social structure; individual development and growth; and the impact on social institutions. The editors are to be commended for the quality and breadth of this work, which remains a foundation for any future research.

Arthur, Khapova and Wilderom (2005) address the boundaryless career through the lens of offering "guidelines for bringing about a rapprochement between career theory and career success research" (p. 177). They recognize a disconnect between literature suggesting career opportunities transcend an organization, and the traditional model of defining career success from an individual's perspective, i.e., rank and promotion. They suggest the career success researchers more clearly address issues related to the boundaryless career.

A key issue in understanding the boundaryless career relates to the *psychological contract*. It is interesting that, although Denise Rousseau, who co-edited *The boundaryless career* (1996) was also a leading developer of the psychological contract literature, the issue of the extent to which boundaryless career concepts are integrated into the psychological contract was actually explored by Granrose and Baccili (2006). This empirical study concluded that employees who perceived their organizations violated aspects of the psychological contract, particularly the traditional upward mobility obligation, also perceived that managers violated boundaryless career obligations. Not surprisingly, perceived boundaryless career violations were negatively related to organizational commitment. The authors suggest that "Managers and non-managerial employees might need some help in developing their own capacity to enact a boundaryless career and to develop realistic perceptions of what organizations are willing to offer employees in a tightly competitive global economy" (p. 180).

Weick (1996) offers the related concept of *enactment*, which he views as a natural extension of the boundaryless career: "the concept of enactment

suggests that individuals are agents of their own development, but not simply because they are active, controlling and independent. People also organize cooperatively in order to learn" (p. 45). Enactment reinforces two key components of boundaryless careers: the importance of cooperation with others, even as the traditional bounded organization becomes less important; and the essential ingredient of *learning* in the new work order. As far as cooperation, Baker and Aldrich (1996) suggest that the boundaryless career permits "the building of a sense of community through voluntary associations and networks" (p. 135). As far as learning, they also remind us that the traditional career dimensions include identify, knowledge accumulation and multiple employers. Bird (1996) reaffirms careers as repositories of knowledge, and develops a model boundaryless careers as themselves a vehicle for knowledge creation.

It should be noted, however, the two relatively recent books dealing with the subject of careers in the new economy do not adopt the boundaryless career lens. Osterman (1996) notes that Kanter (1989) presciently observed that "Reliance on organizations to give shape to a career is being replaced by reliance on self" (p. 299). He goes on to caution that, even though data and cases studies reflect that managerial work is changing, "the data do not suggest the kind of revolutionary change implied by much of the popular literature" (Osterman, 1996, p. 11). Many of the chapters he presents are bounded by what he calls the "internal labor market" of managers. The term "boundaryless career" does not appear in any of them. In all fairness, that may be due to the fact that this book was released at the same time as that of Arthur and Rousseau (1996), which provided the focus on boundaryless careers.

Similarly, Kummerow (2000), in updating her classic *New directions in career planning and the workplace*, while acknowledging significant changes in the workplace from 1991, when the original work was published, does not include any chapters that discuss the boundaryless career concept using that terminology. However, contributors Saveri and Falcon (2000) do suggest that "In the new world of

work, employers will continue to support workers, but individuals will take more control over their career paths and seek what is necessary to achieve continuous professional satisfaction, growth, and effectiveness" (p. 51). Although the specific term is not used, the concept appears close to that of the boundaryless organization.

In sum, it seems clear that even some of the authors of the earlier "classic" career literature, while not always embracing the term "boundaryless career," have acknowledged that the traditional "bounded" career assumption which guided much of that literature may have lost a great deal of its relevance in the 21<sup>st</sup> Century. While not all subsequent literature has used the specific term "boundaryless career," the concept itself does appear to drive much of that literature, and it will serve as the focus for the discussion and recommendations of this paper.

## RAMIFICATIONS OF THE BOUNDARYLESS CAREER

### Alteration of the Psychological Contract

Rousseau, one of the editors of *The boundaryless career: A new employment principle for a new organizational era* (1996), also has contributed significantly to development of the "psychological contract" literature. The "psychological contract" research suggests that, similarly to a contract at law, employees agree, at least psychologically, to make certain *contributions* to an organization, such as their time, expertise, loyalty, etc., in exchange for certain *inducements* from the organization, such as pay and other benefits, job security, etc. Obviously, as the impact of the organization declines, the psychological contract becomes more fragile. Sullivan (1999) suggests that "The psychological employment contract between firms and workers has also altered. Under the old contract, workers exchanged loyalty for job security. Under the new contract, workers exchange performance for continuous learning and marketability" (p. 458).

A recent empirical study by Granrose and Baccili (2006) sought to examine, in part, consequences of perceived violations of the psychological contract

pertaining to aspects of boundaryless careers. Based upon a sample of aerospace employees, the researchers hypothesized that boundaryless career contract violations would be negatively related to organizational commitment and positively related to intentions to leave the firm. Results of the study indicated that the data supported both hypotheses, with the interesting *caveat* that intention to leave the firm after perceived violation was moderated by the interaction between the organization providing boundaryless career training and commitment to the supervising manager.

It is evident that, because the traditional psychological contract was heavily grounded in the assumption that the employee would work for only one or a few organizations during his or her career, it has been significantly altered for many employees, not just by the external environmental impacts upon organizations themselves, but also by the resulting development of the boundaryless career conception. What employees will perceive as *inducements* received in exchange for their *contributions* must now also include tangible and intangible enhancements to their knowledge and skill sets, to increase their marketability as their careers unfold.

### Other Potential Psychological Ramifications for Workers

In addition to the impact on the psychological contract, boundaryless careers will carry other potential psychological ramifications for workers. To understand this better, one must first keep in mind that "Research on careers has been greatly influenced by the theories of adult development" (Sullivan, 1999, p. 459). From the works of Super (1957) came the seminal model of career stages fitted within a life-span approach; implementation of "self-concept through vocational choices" (Sullivan, 1999, p. 459). Levinson (1986) contributed what is called the "punctuated equilibrium" model of life development, which seeks to link specific age groups and attitudes.

In attempting to apply this line of research to the boundaryless career, Mirvis and Hall (1996) first introduce Hall's (1976) earlier definition of *psychological success* as "the experience of

achieving goals that are personally meaningful to the individual, rather than those set by parents, peers, an organization or society" (Mirvis and Hall, 1996, p. 238). They suggest that the boundaryless career inevitably results in a cyclical form of career development, which includes periods of reskilling, as opposed to the more linear upward spiral of traditional bounded careers. The result may be the need for adjusted expectations for workers as far as their own career progression, and replacement of the "known unknown" of a bounded organization with the "unknown unknown" as the impact of organizations upon individual careers becomes more marginalized. This is consistent with the suggestion by Leavitt (2003) that the organizational hierarchy fulfills important psychological needs within the individual worker, a sense of personal identity (Hall, 1976).

To combat what could become earlier career plateauing within a boundaryless career, Mirvis and Hall (1996) again suggest the need to view careers within *developmental*, rather than chronological cycles, thus, in essence, reversing the progression suggested decades earlier by Super (1957) and Levinson (1986). A negative psychological (and material) result, though, would be the realization by the worker that he/she is taking a step backward to, hopefully, be able to take three steps forward. Their suggestion of the need for "adaptability" (p. 244) essentially means that workers in the 21<sup>st</sup> Century will need a substantial amount of flexibility (again, material and psychologically) to be able to flourish. As a result of these and other psychological issues, Mirvis and Hall (1996) caution that "the movement toward the boundaryless organization is well ahead of acceptance of the boundaryless career" (p. 250).

#### Potential Sociological Ramification for Workers

Sullivan (1999) notes the dearth of literature addressing career implications for women under the traditional, bounded career. She then cautions that, although "it has been suggested that women's experiences of balancing work and non-work demands, coupled with feminine traits, may make women better suited than men to boundaryless

careers. . . [potential negative effects] may not significantly improve the working lives of women and minorities" (p. 475). Those negative effects could include increased examples of discrimination, sexual harassment, and ability to locate needed mentors. Perrow (1996) would tend to concur, warning that "for every satisfying boundaryless career that opens up, there are five to ten dead-end and degrading ones created, and one or two people left unemployed for a long stretch" (p. 297).

Perrow's (1996) piece is particularly thought-provoking in that he reminds the readers that, over the past century, organizations have not only benefitted workers themselves, but all of what he terms "civil society," i.e., those outside of the direct employment parameters. Thus, he would appear to view the "bounded" organization as much less bounded than it appeared, or whose boundaries are permeable to the overall benefit of society as a whole. Benefits of the large organization to civil society include not just those which flow from the employment contract (legal or psychological) but "more subtle sociopolitical processes. . . such as the determination of residence patterns; friendship opportunities; mate selection; political socialization; and most broadly, the ways in which social reality is constructed. . ." (pp. 298-299). Further, the residue of larger organizations is the creation of smaller ones to address specific needs or issues created by the larger organizations.

It should be noted in passing, however, that not all researchers would view what Perrow (1996) terms "absorption" of civil society by large organizations as an entirely positive phenomenon. However, there can be little doubt that emergence of the boundaryless career will result in sociological upheaval to some extent, perhaps even as widespread at the very Industrial Revolution which spawned the proliferation of the large organizations which have dominated society for over a century.

#### Ramifications for Adult Education and Human Resource Development

No less an adult education research icon than Stephen Brookfield suggested that Eduard Lindeman's (1926)

*The meaning of adult education* is "the single work in American adult education which can justly lay claim to the status of a visionary charter for the field. . . it is the one tract in the field to which the term 'classic' can correctly be applied" (Brookfield, 1983, p. 37). It would seem appropriate to review Lindeman's (1926) seminal work to ascertain whether his vision for adult education encompassed the boundaryless career and, if so, what its potential ramifications for adult education might be.

At first glance it would appear that Lindeman would have viewed the boundaryless career as violative of one of his key principles for adult education: it must be non-vocational in character: "adult education more accurately defined begins where vocational education leaves off. Its purpose is to put meaning into the whole of life" (Lindeman, 1926, p. 5). Essentially, Lindeman rejected the utilization of adult education to foster the training, and thus, the financial position, of the worker. This would seem to be contrary to the fundamental need for continuous training and education of workers engaged in boundaryless careers. However, the above principle was largely rejected during the 20<sup>th</sup> Century and no longer "predominate[s] in respect to the conduct of adult education in the United States" (Brookfield, 1984, p. 187).

The remaining three fundamental principles of adult education contributed by Lindeman (1926) do, if not foresee, at least address issues related to boundaryless careers. The first is the need for *lifelong education*. Lindeman rejected the "front-end" model of education, under which education was the province solely of the young and developing. The ringing final sentence of his book is straightforward and clear: "Education *is* life" (Lindeman, 1926, p. 129). Lifelong education is a cornerstone of adult education and also a requirement for the boundaryless career; thus, the intersection is strong and significant.

The development of the boundaryless career would also be consistent with another principle of adult education formulated by Lindeman (1926): adult education is *situational*. "Since that education is best

which most adequately helps us to meet situations, the best teaching method is one which emerges from situation-experiences" (Lindeman, 1926, p. 115). The need for adult education within the boundaryless career will indeed become very situation-dependent, which will result in an enhanced role for adult educators.

Finally, Lindeman (1926) reminds us that ". . . the resource of highest value in adult education is the *learner's experience*. . . Experience is the adult learner's living textbook" (p. 7). Now Lindeman was not just looking at adult workers drawing on experience as they learned new trades; indeed, he rejected a vocational lens for adult education. What he was suggesting is that adult education could serve as a vehicle for workers not just in enhancing a package of skill sets but in making a difference within their own worlds: "Experience is, first of all, doing something; second, doing something that makes a difference; third, knowing what difference it makes" (p. 87). Note how this call for adult education to serve as a fulcrum for social action fits very nicely in addressing the concerns of Sullivan (1999) and Perrow (1986) about the potential costs to society as a whole resulting from the boundaryless career.

In short, it is apparent that adult education would indeed have a significant potential role in a world of boundaryless careers. One important vehicle for adult education in the workplace is *human resource development* (HRD). Interestingly, although some definitions of HRD have been narrowly crafted, as "development of people within organizations" (Gilley, Eggland and Gilley, 2002), with *development* itself defined as "advancement of knowledge, skills and competencies for the purpose of improving performance within an organization...career development" (p. 5), there have been broader applications than this bounded one. McLean and McLean (2001) defined HRD as "any process or activity that, either initially or over the long term, has the potential to develop adults' work-based knowledge, expertise, productivity and satisfaction, whether for personal or group/team gain, or for the benefit of an organization, community, nation or, ultimately, the whole of humanity" (p. 322).

Driven by this broad concept of HRD, van Dijk (2004) argues that "career development should be a foundation for HRD and not some fad that is insignificant to the discipline" (p. 771). He suggests that even though most people may still be involved in a "traditional" career, "the concept of the boundaryless career will most probably play an important part in the future of career development and HRD" (p. 774), while acknowledging that more research is needed to determine how HRD can play its role.

### Evolution of the Structure of Organizations

Finally, in addition to the "micro" ramifications to the individual worker resulting from the boundaryless career, several macro, or organizational, ramifications should be noted. A primary organizational ramification might be seen as an evolution into more horizontal structural forms. Miles and Snow (1996) discuss what they call the "cellular" structure, made up of "cells" (self-managing teams or autonomous business units are the examples provided) which can exist independently but could also interact with other cells in a systems-like fashion. They suggest that "In the cellular firm, the organization functions not as an employer, but as a facilitating mechanism to promote the application and enhancement of the professional skills of its membership" (p. 111). Although the concept is interesting, the metaphor they utilized calls to mind the very boundaries that Jack Welch suggested should be spanned within an organization.

Another interesting structural form which could evolve is Handy's (1989) shamrock model. The shamrock would have three leaves. The first would constitute the core staff of managers, technicians and professionals. The second would be contractors and other specialists. The third would be a "contingent" labor force of part-time and temporary workers serving as a "buffer" for the core workforce. The strengths of this model lie in its networked nature and horizontal layout. However, it does tend to call to mind Mintzberg's (1979) famous five parts of an organization, which was not intended to address boundaryless careers.

Perhaps it is simply more realistic to conceptualize the boundaryless career as a reaction to the changed nature of organizations, rather than viewing the organization as reacting structurally to the boundaryless career.

### Recommendations for Institutions of Higher Learning

A recent article in the *Wall Street Journal* (July 11, 2008) reported that even not-so-recent college graduates are demanding more career assistance from their former schools as they encounter the current residue of the new economy. The era of the boundaryless career does present some challenges, not just to employers within traditional organizations, but for institutions of higher learning as well. If the traditional career models have not been formally taught, certainly their presence has been assumed as far as career planning and placement of students is concerned. It would appear that, at a minimum, higher education institutions should be shifting their focus in this area. Some recommendations follow below.

1. Enhance Utilization of Internships and Other Experiential Learning Vehicles. As a result of the importance of learning and building skill sets in a boundaryless career, the work of Kolb (1984) in presenting the concept of experiential learning, and Schon (1987) in framing the application, often through development of mentorship relationships, becomes crucial to worker success. Institutions of higher learning need to assist in and promote development of internships, service learning projects and other forms of experiential learning, regardless of program. This not only serves to build experience in students, thus enhancing their value, but also serves to initialize the mentoring and networking relationships they will require.
2. Enhance Focus on Person-to-Job Fit. Person-to-job fit means essentially ensuring that the position the worker will assume will "fit" that worker's behavior set, as well as his or her skills, education and ability. This is of added importance in a boundaryless environment,

where workers may not be able to make lateral changes or even ascend the hierarchy in the event they assume a position that does not “fit” them, and in which therefore they will not remain for long. Perhaps behavioral inventories will become even more important in the boundaryless environment, in lieu of the HR counseling function utilized by larger organizations. It would be useful for students graduating into a boundaryless career environment to have developed some idea of their identity as far as the world of work is involved: their strengths, weaknesses, preferences, etc. Parker (2002) suggests the “Intelligent Career” model to integrate subjective career data in counseling workers. Included in this category would be enhancing sensitivity to issues involving diversity and the multicultural workplace, including an emphasis on understanding the generations of workers currently engaged in the workplace.

3. Increase Student Sensitivity to the Importance of Informal Learning and Lifelong Learning. Students need to recognize that the formal classroom learning they acquire within institutions of higher learning is not the “end-all” for a career. Institutions of higher learning contribute greatly by enhancing a student’s ability to learn, but that process will continue for the remainder of the student’s life, primarily outside of the classroom setting. This concept needs to be reinforced in students, who often tend to blame their college or university for failing to ‘teach’ them what they might see as “useful” skills. It is prudent for institutions of higher learning to ensure that students understand the difference between training and education, and understand that learning is their responsibility, and it will continue throughout the remainder of their careers, and their lives.
4. Explore Vehicles to Assist Students With Portfolio Development. By its very nature, the boundaryless career is going to be largely self-directed by the worker. A portfolio to provide more detail on the skill sets that a worker

expresses that he or she possesses is extremely valuable as evidence for prospective employers. Brown (2002) suggests that “developing a portfolio supports not only identification of prior learning but also leads to new learning outcomes” (p. 232). Her qualitative study on the use of portfolios with adult students found (a) a marked increase in the participants’ self-knowledge after portfolio development; (b) a greater recognition of the value of learning from work and from mentors; and (c) improved communication and organizational skills. While there is a great deal of software dealing with portfolio development from an assessment perspective, perhaps more of that software should be tailored towards post-graduation career issues.

5. Reinforce the Possibility of Becoming a Temporary Worker for a Period of Time. Students often reject the idea of joining a temporary workforce agency after graduation, even those who do not quickly secure a full-time or even part-time position in the workforce. One reason for that is the stereotype that “temporary workers are locked into a labor market underclass, with low wages, no benefits, negligible job security, little training and no possibility of advancement” (Marler, Milkovich and Barringer, 1998). However, an empirical study at Cornell University found that highly skilled boundaryless temporary workers were more likely to choose temporary work assignments voluntarily, perhaps as a method for building their skill sets, rather than for economic reasons. “They prefer temporary work because it offers them an opportunity to have greater flexibility as well as earn more money. . . .” (Marler, Milkovich and Barringer, 1998, p. 23). The researchers suggest their findings might lead to a “boundaryless temporary career” industry. At the least, it does describe a feasible alternative of which students should become aware.

The above listing is certainly not exhaustive, but perhaps provides a framework for further discussion and development.



## Limitations and Suggestions for Further Research

As indicated above, certainly the concept of the boundaryless career has not been universally accepted. Brocklehurst (2003) cautions that, "The evidence for the boundaryless career has yet to emerge" (p. 4). Relatively recent works on careers edited by Osterman (1996) and Kummerow (2000) make scant if any mention of it, while acknowledging the changing nature of careers in general. It is true that much of the research on this concept to this point is theoretical in nature, with a paucity of studies to actually support the theory. A good deal more general empirical research on the actual existence of what is termed a boundaryless career is warranted (Sullivan, 1999).

One key limitation may also be its limited applicability to the professions. A recent empirical study by Smith and Sheridan (2006) appears to challenge the applicability of the boundaryless career concept to accountants in Australia. Based on interviews with 60 of them, the authors concluded that "the behaviour, needs and expectations of the men and women interviewed from the accounting profession in Australia are more in line with an organizational career" (p. 231). The researchers attributed this result in part to the structured nature of the accounting profession. Certainly, empirical studies of the applicability of the boundaryless career to other professions would be useful.

Brocklehurst (2003) also reminds the readers that the existence of "boundaries" transcends those of the organizational variety, and may have resulted from past practices that have become routine. He also cautions that while "it may be the case that workers are crossing organizational boundaries at an ever-increasing rate, it does not follow that this amounts to a 'career' even of the non-linear, non-hierarchic sort described in the literature on the boundaryless career" (p. 3). He suggests further research on the effect of increasing geographic mobility as job seekers move from place to place.

Van Dijk (2004) also suggests the need for further research in the area of using HRD to facilitate the employability of workers in a boundaryless

environment, and the impact of the boundaryless career on HRD. He recommends additional research into the interplay of work-life issues and the effect of societal and national elements, which might be viewed as 'boundaries' in themselves.

Sullivan (1999) provides a number of suggestions for future research in this area. Certainly one, which was mentioned earlier is the effect of the boundaryless career on women and minorities. Along those same lines, she also suggests further studies on the cross-cultural generalizability of careers research.

Finally, literature from the field of adult education in this area is scant at this point. More research is needed concerning the intersection of the boundaryless career and adult learning. Particularly of interest might be the enhanced implications for informal and incidental learning as substitutes for continued formal learning mechanisms, such as training, and the increased formalization and communication of tacit (in addition to explicit) knowledge in the workplace.

## Conclusion

With the advent of the "new economy" and the "new work order," as well as the enhanced utilization of technology and increased globalization has come a marked shift in the way many workers perceive their careers. The boundaryless career concept suggests increased proliferation of what has been called the "free agent" worker (van Dijk, 2004), essentially a package of skill sets traveling from workplace to workplace, as a result of increased marginalization of the larger organization. Over the long term, this phenomenon may result in as significant an impact on work and careers as the dawning of the Industrial Age itself. Institutions of higher learning and organizations themselves should be developing mechanisms to address students and workers who will more than likely be involved in this new career paradigm.

## References

- Ashkenash, R., Ulrich, D., Jick, T. & Kerr, S. (1995). *The boundaryless organization: Breaking the chains*



of organizational structure. San Francisco: Jossey-Bass publishers.

Arthur, M., Khapova, S. & Wilderom, C. (2005). Career success in a boundaryless career world. *Journal of Organizational Behavior*, 26, 177-202.

Arthur, M. & Rousseau, D. (eds.). (1996). *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press.

Arthur, M. & Rousseau, D. (1996). Introduction: The boundaryless career as a new employment principle. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 3-20.

Arthur, M., Hall, D. & Lawrence, B. (1989). *Handbook of career theory*. New York: Cambridge University Press.

Baker, T. & Aldrich, H. (1996). Prometheus stretches: Building identity and cumulative knowledge in multiemployer careers. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 132-149.

Bird, A. (1996). Careers as repositories of knowledge: Considerations for boundaryless careers. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 150-168.

Brocklehurst, M. (2003). Self and place: A critique of the 'boundaryless career.' Retrieved July 5, 2008, from [www.mngt.waikato.ac.nz/cmsconference/2003/proceedings/identity/brocklehurst.pdf](http://www.mngt.waikato.ac.nz/cmsconference/2003/proceedings/identity/brocklehurst.pdf)

Brookfield, S. (1983). Adult education and the democratic imperative: The vision of Eduard Lindeman as a contemporary charter for adult education. *Studies in Adult Education*, 15, 36-46.

Brookfield, S. (1984). The contribution of Eduard Lindeman to the development of theory and

philosophy in adult education. *Adult Education Quarterly*, 34(4), 185-196.

Brown, J. (2002). Know thyself: The impact of portfolio development on adult learning. *Adult Education Quarterly*, 52(3), 228-245.

Daft, R. (2007). *Organizational theory and design* (9<sup>th</sup> Ed.). Mason, OH: Thomson South-Western.

DeFillippi, R. & Arthur, M. (1996). Boundaryless contexts and careers: A competency-based perspective. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 116-131.

Ellig, J. & Thatchenkery, T. (1996). Subjectivism, discovery, and boundaryless careers: An Austrian perspective. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 171-187.

Gilley, J., Eggland, S. & Gilley, A. (2002). *Principles of human resource development* (2<sup>nd</sup> Ed.). Cambridge, Mass.: Perseus Publishing.

Gee, J., Hull, G. & Lankshear, C. (1996). *The new work order*. Boulder, CO: Westview.

Granrose, C. & Baccili, P. (2006). Do psychological contracts include boundaryless or protean careers? *Career Development International* (11), 2, pp. 163-182.

Hall, D. (1976). *Careers in organizations*. Santa Monica, CA: Goodyear.

Hall, D. (1996). *The career is dead: Long live the career*. San Francisco: Jossey Bass.

Hall, D. (2002). *Careers in and out of organizations*. Thousand Oaks, CA: Sage Publications, Inc.

Handy, C. (1989). *The age of unreason*. Boston: Harvard Business School Press.

- Kanter, R. (1989). *When giants learn to dance*. New York: Simon & Schuster.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Kummerow, J. (ed.). (2000). *New directions in career planning and the workplace* (2<sup>nd</sup> ed.). Mountain View, CA: Davies-Black Publishing.
- Leavitt, H. (2003). Why hierarchies thrive. *Harvard Business Review*, 81(3), 96-102.
- Levinson, D. (1986). A conception of adult development. *American Psychologist*, 41: 3-13.
- Lindeman, E. (1926, 1989). *The meaning of adult education*. Canada: Harvest House Ltd.
- McLean, G. & McLean, L. (2001). If we can't define HRD in one country, how can we define it in an international context? *Human Resource Development International*, (4), 3, 313-326.
- Marler, J., Milkovich, G. & Barringer, M. (1998). *Boundaryless organizations and boundaryless careers: A new market for high-skilled temporary work* (Working Paper 98-01). Ithaca: Center for Advanced Human Resource Studies.
- Mintzberg, H. (1979). *The structure of organizations*. Upper Saddle Ridge, NJ: Prentice-Hall, Inc.
- Mirvis, P. & Hall, D. (1996). Psychological success and the boundaryless career. In
- Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 237-255.
- Osterman, P. (ed.). (1996). *Broken ladders: Managerial careers in the new economy*. New York: Oxford University Press, Inc.
- Parker, P. (2002). Working with the intelligent career model. *Journal of Employment Counseling*, 39(2), 83-96.
- Perrow, C. (1996). The bounded career and the demise of civil society. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 297-313.
- Saveri, A. & Falcon, R. (2000). Planning for the 21<sup>st</sup>-century workforce: Key trends that will shape the employment and career landscape. In Kummerow J. (ed.). (2000). *New directions in career planning and the workplace* (2<sup>nd</sup> ed.). Mountain View, CA: Davies-Black Publishing, pp. 33-76.
- Schein, E. (1978). *Career dynamics: Matching individual and organizational needs*. Reading, Mass.: Addison-Wesley.
- Schein, E. (1996). *Career anchors: Discovering your real values*. Oxford: Pfeiffer.
- Schon, D. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass.
- Smith, T. & Sheridan, A. (2006). Organizational careers versus boundaryless careers: Insights from the accounting profession. *Journal of Management and Organization*, 12(3), 223-233.
- Solomon, N. (1999). Culture and difference in workplace learning. In D. Boud and Jo. Garrick (Eds.), *Understanding learning at work*. London: Routledge, pp. 119-131.
- Sullivan, S. (1999). The changing nature of careers: A review and research agenda. *Journal of Management*, 25: 457-484.
- Super, D. (1957). *Psychology of careers*. New York: Harper and Brothers.
- Teff, D. (1997). Broken ladders: Managerial Careers in the new economy/The Boundaryless Career: A new employment principle for a new organizational era/New era careers: No ladders; no boundaries. *HR. Human Resource Planning*, 20(2), 67-69.

Toffler, A. (1981). *The third wave*. New York: Bantam Books.

van Dijk, M. (2004). *Career development within HRD: Foundation or fad?* Austin, TX: Proceedings of the Academy of Human Resource Development Conference (March 3-7, 2004). ERIC Database (ED492364).

Van Maanen, J. (ed.), (1977a). *Organizational careers: Some new perspectives*. New York: Wiley.

Van Maanen, J. (1977b). Introduction: The promise of career studies. In J. Van Maanen, ed. *Organizational Careers: Some new perspectives*. New York: Wiley.

Weick, K. (1996). Enactment and the boundaryless career: Organizing as we work. In Arthur, A. & Rousseau, D. (eds.), *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press, pp. 40-58.

---

Irwin H. Siegel, J.D., LL.M., D.Ed., served in industry for almost twenty years as an in-house counsel and manager for primarily financial institutions. He recently retired after having served as Professor of Business Administration for Pennsylvania College of Technology, Williamsport, PA. He is now employed in a part-time capacity as Career Outreach Coordinator for HACC – Lebanon Campus. Dr. Siegel was the recipient of numerous teaching awards and also supervised the Internship program in Business Administration at Pennsylvania College of Technology.

## PROJECTIVE TECHNIQUES IN CONSUMER RESEARCH

Ross B. Steinman, Widener University

---

### Abstract

For many years consumer researchers have suggested that non-conscious processes may operate on consumer behavior. However, understanding these processes has been a difficult endeavor. One indirect measure, the projective technique, has been used to help uncover consumer attitudes, thoughts, and feelings that would not be necessarily detected by more straightforward questioning. The different types of projective techniques are described as well as a brief review of the literature where projective techniques have been used to better understand consumer behavior. The advantages and disadvantages of projective techniques are discussed. This paper aims to provide an overview of projective techniques in qualitative consumer research. A secondary aim is to open this topic up for further discussion and recommend further research in this area.

---

### Introduction

Consumer behavior is defined as the acquisition, consumption and disposal of products, services, and ideas by decision making units (Jacoby, 1976). The primary goal of consumer research is to produce knowledge about consumer behavior (Calder & Tybout, 1987). Increasingly, consumer researchers have suggested that automatic or non-conscious processes may operate on consumer behavior (Bargh, 2002; Fitzsimins et al., 2002). Indirect measures of consumer attitudes were developed to measure attitudes that would not be necessarily detected by explicit measures (Greenwald & Banaji, 1995). These measures do not reference objects in a respondent's personal history, but instead focus a respondent's attention on participating in some task that can indirectly reveal an inaccessible attitude. One such indirect measure and the focus of this literature review is the projective technique.

Projective techniques "provide verbal or visual stimuli which, through their indirection and concealed intent, encourage respondents to reveal their unconscious feelings and attitudes without being aware that they are doing so" (Will, Eadie, & MacAskill, 1996, p. 38). Projective techniques are often referred to as disguised-unstructured techniques. They are termed disguised tasks because the subjects are aware they are participating in a study yet unaware of what the researcher is interested in measuring; they are considered unstructured tasks because their response alternatives are not limited or determined by the researcher (Klofper & Taulbee, 1976). Projective techniques were originally

developed by clinical psychologists, psychiatrists, and other personnel trained in personality assessment to gain some understanding into the underlying problems of the patient (Donoghue, 2000). From a clinical and psychoanalytic perspective, the concept of projection is interpreted as a defense mechanism whereby the ego protects and defends itself from anxiety by externalizing thoughts and feelings, directly ascribing them to other individuals, inanimate objects, and environments (Donoghue, 2000; Kline, 1983). Examples of projective techniques in a clinical setting include (but are not limited to): the Rorschach Inkblot Test, Thematic Apperception Test (TAT), Draw-a-Person (DAP) test, and Washington Sentence Completion technique (Klofper & Taulbee, 1976; Seechrest, Stickle, & Stewart, 1998).

In the consumer domain, projective techniques are a way for researchers to transcend communication barriers and illuminate aspects of consumer experience that may be difficult to study. Researchers are able explore people's thoughts, feelings, and experiences, and encourage respondents to discuss private issues or motives (of which the respondent may not be aware of) without respondents feeling threatened by the direct line of questioning (Haire, 1950). Projective techniques are used to overcome the obstacles inherent in explicit consumer attitude measures. For example, when presented with explicit attitude measures, respondents may fear being judged in a negative manner by those involved with the research study and may be reluctant to endorse certain items that reflect their attitudes. As a

result, many respondents may veil their responses. It is a basic human tendency to present oneself in the best possible light (Fisher, 1993), but the effect of distorted data gathered from self-report, overall, is deleterious to the purpose of the research. Respondents, whether with or without awareness, tend to offer answers that are socially acceptable when placed in the role of a subject in a research experiment. When used properly, projective techniques enable the researcher to circumvent some of these common social barriers that inhibit the respondents' expression of attitudes and behaviors.

### Types of projective techniques

There are a variety of projective techniques that have been and/or are currently used in marketing research. They can be subsumed under the following four headings: (1) association tasks; (2) completion tasks; (3) construction tasks; and (4) expressive tasks (Will et al., 1996).

Association tasks, the most commonly employed projective technique, require subjects to respond to the presentation of an object by indicating the first word, image, or thought elicited by the stimulus (Donoghue, 2000; Will et al., 1996). The basic premise behind association tasks is that thoughts immediately brought to mind are automatically activated by the presentation of the stimulus (Hussey & Duncombe, 1999; Robertson & Joselyn, 1974; Will et al., 1996). Researchers employ these measures because they are seemingly able to tap an automatically activated association with a stimulus object. A byproduct is that respondents often enjoy these tasks because they view the procedure as a game or an entertaining exercise. Word associations, a specific type of association task, are especially valuable for extracting information from consumers about a product or brand (Will et al., 1996). By asking what words come to mind when a stimulus word or phase is presented—e.g., Coca-Cola: beverage, thirst, fun, relaxation—respondents reveal valuable information regarding their attitudes and beliefs (Day, 1989). Subjects' responses often provide the researcher with a product- or brand-related consumer vocabulary.

Another association task often employed is termed brand personification, or association of a brand or product with a person or personality type (Donoghue, 2000; Hussey & Duncombe, 1999). During these tasks, respondents are given a number of words and pictures and instructed to select those that they associate with a brand and/or product. The respondents are also asked to explain their choices, providing reasons for their selections. Respondents' perceptions and imagery associated with a specific product or brand are deduced by analyzing the leitmotif of their responses (Donoghue, 2000; Green, 1984).

Completion tasks encompass a second type of projective technique where, most often, the respondent is given an incomplete sentence, story, argument, or conversation and is instructed to complete it (Donoghue, 2000; Gordon & Langmaid, 1988; Will et al., 1996). There are two specific types of completion procedures: (1) sentence completion tasks and (2) story completion tasks. First, sentence completion tasks require respondents to finish a sentence in any manner that they deem appropriate. It is employed with great frequency because a significant amount of information can be gathered in a short period of time. For instance, contextual information and product- or brand-specific associations can be elicited. Examples assessing the product Coca-Cola could include, "People who drink Coca-Cola are \_\_\_\_\_," or "I drink Coca-Cola because it is \_\_\_\_\_." However, its main limitation is that, unlike some of the more complex completion procedures, its structure dissuades elaboration, thus limiting researchers' ability to examine multifaceted consumer associations (Gordon & Langmaid, 1988; Green, 1984).

Second, story completion is a specific task whereby the researcher can examine respondents' level of emotional attachment with a product or brand. The procedure is quite simple: the only instruction is for respondents to tell a story about the product or brand of interest. In some instances, respondents are instructed to complete a hypothetical conversation between actors/characters while other times pictures are presented as the stimuli, in a manner similar to

the way the Thematic Apperception Test (TAT) is used in a clinical setting. Briefly, when the TAT is used, respondents are given a set of TAT cards where each picture depicts an individual (or more than one individual) in a fairly ambiguous environment engaging in an indistinct behavior. It is the respondent's responsibility to describe a story of what may be occurring in the picture. This procedure is repeated for several TAT cards. Based upon the sum of the explanations, the clinician is able to deduce the theme of the patient's stories. This motif provides insight into the psychological conflicts, past and present, central to the patient (Klopper & Taulbee, 1976). Similarly, many consumer researchers have adapted the TAT to a consumer setting. Respondents, when asked to tell a story about a picture, product, or brand, will describe a detailed tale where they increasingly reveal their own attitudes and feelings toward an attitudinal object as the story unfolds.

The third type of projective technique often used in marketing and consumer research is a construction task. Third person questioning and bubble drawings are the most commonly employed construction procedures. Essentially, respondents are instructed to present their opinions of other people's actions, feelings, or attitudes. This allows people to respond freely, as they are not explicitly stating how they would personally act, believe, or think (Donoghue, 2000; Gordon & Langmaid, 1988; Will et al., 1996). Thus, an attitude or belief that they might be unwilling to report becomes one that they would express willingly because they do not have personal accountability. The main benefit for researchers is that, typically, subjects' responses mirror their own thoughts and feelings (Donoghue, 2000; Gordon & Langmaid, 1988). However, the main limitation is that people may simply be describing societal norms instead of their own attitudes and behaviors.

Bubble drawings (often referred to as cartoon tests) are tasks where respondents are instructed to fill in thought or speech bubbles corresponding to characters depicted in a cartoon strip. The characters are presented in ambiguous consumer-related scenarios that are of interest to the researcher (e.g., a

consumer looking for an item in the store, a consumer at the checkout line) (Donoghue, 2000; Gordon & Langmaid, 1988). Again, akin to the third person questioning technique, the basic premise behind bubble drawings is that respondents will project their own opinions onto the cartoon characters (Will et al., 1996). It is hypothesized that responses will reflect respondents' own attitudes and behaviors (Donoghue, 2000; Will et al., 1996).

The final type of projective technique is an expressive task. When expressive tasks are employed, respondents are instructed to role-play, act, draw, or paint a specific concept or situation (Donoghue, 2000). For example, in role playing exercises, the respondent is asked to adopt the role or behavior of a product or brand. Following the exercise, the content, in addition to the construction process, is analyzed. As has been described, the basic premise is that respondents will likely project their own opinions onto the thoughts of the person in the role playing exercise. It is suggested that the way respondents express their answers will match their own feelings (Donoghue, 2000; Will et al., 1996).

#### Projective techniques in consumer research

The first published study on projective techniques in the consumer literature was the Haire shopping list study (Haire, 1950). At the time of the study, Mason Haire was a preeminent behavioral scientist who blended the psychological trends of that time into the consumer domain (Fram & Cibotti, 1991). Haire reported that motives exist which are below the level of verbalization because they are socially unacceptable, difficult to verbalize cogently, or unrecognized, and these motives were intimately related to the decision to purchase or not to purchase. As such, Haire found that it was possible to identify and assess these consumer motives in an indirect manner.

The primary focus of Haire's research was consumers' image of a new coffee product—Nescafé instant coffee. At the time of the study, instant coffee was considered a product innovation (most households used traditional drip coffee), but marketers were wary that consumers would not

accept the product unequivocally. It was during this period of history that women were expected to spend considerable amounts of time preparing food and caring for their families (Haire, 1950). Executives believed any product that threatened the image of the woman as a doting and competent housewife could potentially be a marketing disaster. The primary goal of the Haire study was to assess consumer sentiment toward this inventive yet controversial product. However, Haire was apprehensive about using explicit measures to assess consumers' attitudes toward Nescafé instant coffee. Haire believed that respondents would attach additional meaning to the use of instant coffee in their homes, and explicit measures would not be able to capture respondents' deepest thoughts and feelings toward the product. Therefore, Haire tried using projective techniques, which were very popular in clinical psychology at the time of Haire's research, an indirect approach to measure consumer attitudes toward Nescafé instant coffee.

In the study, two shopping lists were prepared for respondents to examine. They were identical in all aspects except that one list specified the purchase of Nescafé instant coffee while the other indicated Maxwell House Coffee (traditional drip ground). The lists were administered to alternate subjects and individuals had no awareness that another list existed. Each shopping list was administered to fifty women in the Boston area (100 women total). Respondents were instructed to read the shopping list and attempt to characterize the woman shopping for the groceries on the list. The respondents were then asked to write a brief description of the woman's personality and characteristic traits. Lastly, the respondents were instructed to indicate the factors that influenced their judgments of the woman who was shopping for groceries (Haire, 1950).

Overall, Haire (1950) found that the Maxwell House Coffee shopper was depicted frequently in a positive manner. Shoppers with this product on their list were more often viewed as a good housewife by respondents than those who had Nescafé instant coffee on their list. Respondents viewed the Nescafé shopper as lazy, sloppy, and an inefficient household

planner and scheduler. Moreover, almost half of the respondents indicated that Nescafé shoppers were indolent and lacking organizational skills. Based on the substitution of Maxwell House Coffee for Nescafé instant coffee (and vice versa), respondents readily altered their perceptions of the female shopper. It appeared that a switch from the well-established, home-made drip coffee (i.e., Maxwell House Coffee), with an associated meaning of concern for one's family, to the instant coffee (i.e., Nescafé), seemingly associated with respondents' perceptions of what professional women would purchase, influenced respondents' ratings of the shoppers. Haire (1950) suggested (and many researchers later supported his contention) that explicit attitude measures would not allow researchers to access this important information. Respondents would be unwillingly, and perhaps unable, to volunteer their thoughts, beliefs, and feelings toward the products.

Haire (1950) completed two subsequent studies in an attempt to better understand the findings from the initial experimental effort. In the second study, to determine whether the negative attitudes toward shoppers were caused by the use of a labor- and time-saving product, Haire added a fictitious convenience product to both the Maxwell House Coffee and Nescafé shopping lists. This product was named Blueberry Fill Pie Mix. Haire (1950) believed that this manufactured good would have rife negative association among respondents, like Nescafé instant coffee, because women were expected to spend substantial amounts of time cooking, baking, and preparing meals for their husbands and families. That is, if women were going to bake a blueberry pie for their families, then they were expected to use fresh blueberries and prepare the pie from scratch. It was hypothesized that any deviation from this norm would tarnish the image of women as caring, considerate, and attentive housewives.

Overall, Haire (1950) found that the addition of Blueberry Fill Pie Mix influenced respondents' descriptions of the shoppers. Whereas in the first phase the Nescafé shoppers were perceived as being lazy and careless, in the second phase, both the

Maxwell House Coffee and Nescafé shoppers were described in negative terms when Blueberry Fill Pie Mix was an item on their shopping list (Haire, 1950). Both groups were described in unpromising and objectionable terms. Haire attributed these findings to the character of the product, Blueberry Fill Pie Mix, which was deemed even more offensive than Nescafé instant coffee. At the time of this study, prepared foods were not yet a component of mainstream society. Again, it is unlikely that explicit measures would have yielded similar results. However, projective techniques enabled Haire to access this information in an indirect, less threatening manner.

Haire (1950) also conducted a third study in which his purpose was to assess the relationship between unconscious motives and purchase decision. Haire found that the respondents who described the Nescafé shopper in negative terms were unlikely to have purchased or stored instant coffee in their homes. However, women who described the Nescafé shopper in neutral or positive terms, or pardoned the fictitious shopper for using the instant coffee, were almost twice as likely to have instant coffee in their pantries (Haire, 1950). From this study, Haire (1950) suggested that unconscious motives were related to respondents' decision to purchase or not to purchase instant coffee. Thus, he concluded that projective techniques have the ability to predict consumer behavior.

Haire's pioneering shopping list study has been replicated several times since its publication in the marketing research literature (Anderson, 1978; Arndt, 1973; Fram & Cibotti, 1991; Hill, 1960, 1968; Lane & Watson, 1975; Robertson & Joselyn, 1974; Sheth, 1970; Webster & von Pechmann, 1970; Westfall, Boyd, & Campbell, 1957). The replications have addressed various issues of projective techniques including the methodology, validity, and utility in consumer behavior and marketing research.

The first replication and extension of Haire's study was conducted to further test the overall usefulness of projective techniques (Westfall et al., 1957). Westfall et al. (1957) found support for Haire's

(1950) findings and concluded that informative data can be revealed by more disguised, or less overt, projective questioning. Hill (1960) reported that Haire's (1950) study was flawed because he used biased wording, improperly grouped categories, permitted the symbols to intensify negative attitudes toward Nescafé instant coffee, and had not properly weighted the responses of verbose and laconic respondents. In a second study, Hill (1968) reexamined Haire's (1950) study, replicating the basic methodology while adding a new condition to the procedure. In this replication, two grocery lists were used: (1) baking powder and instant coffee and (2) salt and instant coffee. Hill's (1968) somewhat more cautious conclusion was that one change in methodology made important differences in subjects' responses to the projective techniques. He urged researchers to exercise caution when interpreting responses induced from projective techniques.

Haire's (1950) shopping list study has also been replicated in languages other than English and in locations outside of the United States (Lane & Watson, 1975; Robertson & Joselyn, 1974). The general findings have remained consistent across international replications. The first intercontinental research effort occurred in Bergen, Norway, using a language other than English (Robertson & Joselyn, 1974). Robertson and Joselyn (1974) found that respondents tended to describe product dimensions in a similar manner to those found in the American studies, but Norwegians used more dimensions in rating the products than their American counterparts. Lane and Watson (1975) surveyed 200 respondents, 100 English-Canadian and 100 French-Canadian women, and found that respondents tended to describe the products in a relatively similar manner to those found in the American version. Lane and Watson (1975) attributed the slight variation in responses to cultural differences and changes in consumer values since Haire's (1950) research. They also concluded that references to brand names, advertising, and nutrition indicated growing consumer awareness and the importance of their characteristics and attributes. The most recent replication of the Haire (1950) shopping list study demonstrated that projective techniques remain a



reasonable and cost effective way to uncover some real-world phenomena (Fram & Cibotti, 1991). This study showed support for the resurgence of projective techniques in consumer research, utilizing the same methodology of the original shopping list study, while highlighting that the perception of Nescafé instant coffee has evolved in the past 40 years. Overall, the findings indicated that projective techniques remain a useful approach to better understand consumer sentiment.

Beyond the Haire study and its replications, there has been very little published research on projective techniques in the consumer domain. Other published studies have addressed using projective techniques to examine the meaning in gift giving (McGrath, Sherry, & Levy, 1993), to emphasize the need for marketers to make a connection with consumers (Day, 1989), and to evaluate the measurement capabilities of lifestyle typologies (Lastovicka, Murry, & Joachimsthaler, 1990). However, it is not unlikely that researchers in both academic and applied settings are using projective techniques. Small sample sizes and monetary and time commitments associated with projective techniques may have limited the proliferation of research results into the academic journals. Yet projective techniques are taught in introductory and advanced marketing research classes (Churchill & Iacobucci, 2002) and, in all likelihood, still employed with regularity in an applied setting.

#### Advantages of projective techniques

There are several advantages to using projective techniques, including the amount, richness, and accuracy of the information that is collected (Donoghue, 2000; Wagner, 1995). Projective techniques, when used properly, enable the researcher to access presumably unreachable beliefs, attitudes, values, motivations, personality, cognitions, and behaviors (Donoghue, 2000; Fram & Cibotti, 1991; Will et al., 1996). The nature of projective techniques is that the true purpose of the instrument is well disguised and, in most instances, the subjects are not aware of the purpose of the exercise. However, even if they are aware of the general nature

of projective techniques most respondents are uncertain as to which responses are significant to the researcher or the extent of the significance. It is the sum of the responses to the projective stimuli, especially the theme that binds them together, that is of primary interest to the researcher in interpreting the data (Donoghue, 2000; Hussey & Duncombe, 1999; Seechrest et al., 1998; Will et al., 1996).

One specific advantage of using projective techniques in consumer behavior and marketing research is their utility in generating, supplementing, and verifying hypotheses. For example, researchers can use projective techniques to broaden hypotheses about consumers' purchase behaviors and the ways that they are influenced in their decision-making. These preliminary studies provide relevant information for hypothesis testing that can be verified through various methodologies such as experimentation, panel studies, and surveys.

A second advantage is that there are relatively minor cognitive demands placed on respondents when using projective techniques. For researchers, this is a substantial advantage over other measures where respondents are required to read, comprehend, and respond to the instructions. Most projective techniques are largely nonreading and nonwriting exercises; therefore, the data are not dependent on having a highly educated population. By using projective techniques, researchers have a wider scope of potential respondents compared to self-reporting or rating procedures (Donoghue, 2000). Data are not limited by cognitive ability, and the use of projective techniques enable researchers to measure the beliefs, attitudes, behavior, motivation, and personality of a subset of the population that is often neglected, but nonetheless important, in consumer research.

#### Disadvantages of projective techniques

The primary disadvantage of employing projective techniques is the complexity of the data; interpretation requires a sophisticated skill set. To effectively employ projective techniques, the researcher must be adept at decoding the data culled from the projective stimuli. Subjects' responses have little meaning without a methodical analysis by

researchers trained in these techniques (Donoghue, 2000). Further, there can be considerable costs to employ a skilled research staff able to interpret the responses.

A second disadvantage of using projective techniques is that it may be difficult for some respondents to fully immerse themselves in the exercise. Some respondents may not feel comfortable participating in role-playing or imaginative exercises. While some respondents may enjoy these tasks, others may participate reluctantly or even outright refuse.

Another potential disadvantage of projective techniques is the reliability of the instruments (Donoghue, 2000; Kline, 1983). Reliability refers to the general consistency of the instrument (Churchill & Iacobucci, 2002). Test-retest reliability refers to the stability with which a technique yields information over time. In certain situations, subjects' responses should remain similar and highly correlated from when they are first tested to when they are later re-tested. However, in other instances, the researcher might expect responses to be affected by situational factors (Churchill & Iacobucci, 2002; Donoghue, 2000). Test-retest reliability is contingent upon the goals of the projective research and is a consideration when using projective techniques. There is much debate about whether repeated administrations of projective techniques should correlate or differ (Donoghue, 2000). A second form of reliability is coder or interrater reliability. Interrater reliability refers to the extent to which two (or more) interpreters code the data in the same manner. If equally competent researchers interpret the data in a different manner, then doubts are cast about interrater reliability. Interpreting subjects' responses to the projective stimuli requires a high level of subjectivity on the part of the researchers, and they may disagree about the underlying meanings of responses. Thus, interrater reliability is one of the major issues of using projective techniques and is often the target of criticism (Churchill, 1991).

### Conclusion

Research on marketing and consumer behavior has often focused on the measurement of attitudes

(Churchill & Iacobucci, 2002) because attitudes have been perceived as powerful determinants of behavior (Allport, 1935). In general, marketers believe that when someone has a favorable attitude toward a particular product, he or she will be more likely to purchase this product. However, straightforward questioning techniques, or explicit attitude measures, typically have been employed to assess these attitudes. Consumer researchers have stressed the importance of using other types of measures in consumer behavior. One such measure is the projective technique. Projective techniques are fundamental to consumer researchers—academics and practitioners alike—involved in qualitative data collection methods. They are mainly used for answering “how”, “why”, and “what” questions in consumer behavior. Projective techniques can provide a depth of understanding of what people truly think and feel about a consumer object. Projective techniques have been in the psychological lexicon for many years, and the strengths and weaknesses of this technique have been clearly outlined. However, there is a need for further research, analysis, and discussion in this area. When used properly, as well as in conjunction with other methods, projective techniques have the ability to illuminate unique aspects of the consumer experience. As such, researchers should continue to examine the utility of projective techniques in the consumer domain.

### References

- Allport, G. W. (1935). Attitudes. In *Handbook of social psychology* (pp. 798-884). Worcester: Clark University Press.
- Anderson, J. C. (1978). The validity of Haire's shopping list projective technique. *Journal of Marketing Research*, 15, 644-649.
- Arndt, J. (1973). Haire's shopping list revisited. *Journal of Advertising Research*, 13, 57-61.
- Bargh, J. A. (2002). Losing consciousness: automatic influences on consumer judgment, behavior, and motivation. *Journal of Consumer Research*, 29, 280-285.

- Calder, B., & Tybout, A. M. (1987). What consumer research is... *Journal of Consumer Research*, 14, 136-140.
- Churchill, G. A. (1991). *Marketing research: methodological foundations* (5th ed.). Chicago: Dryden.
- Churchill, G. A., & Iacobucci. (2002). *Marketing research: methodological foundations* (8th ed.). United States: Thomson Learning.
- Day, E. (1989). Share of heart: what is it and how can it be measured? *Journal of Consumer Marketing*, 6, 5-12.
- Donoghue, S. (2000). Projective techniques in consumer research. *Journal of Family Ecology and Consumer Sciences*, 28, 47-53.
- Fisher, R. J. (1993). Social desirability and the validity of indirect questioning. *Journal of Consumer Research*, 20, 303-315.
- Fitzsimins, G. J., Hutchinson, J. W., Williams, P., Alba, J., Chartrand, T. L., Huber, J., et al. (2002). *Non-conscious influences on consumer choice. Marketing Letters*, 13, 269-279.
- Fram, E. H., & Cibotti, E. (1991). The shopping list studies and projective techniques: a 40-year view. *Marketing Research*, 3, 14-21.
- Gordon, W., & Langmaid, R. (1988). *Qualitative market research*. Aldershot: Gower.
- Green, J. (1984). Approaching the core of consumer behavior. *Marketing Research*, 14, 649-656.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4-27.
- Haire, M. (1950). Projective techniques in marketing research. *Journal of Marketing*, 14, 649-656.
- Hill, C. (1960). Another look at two instant coffee studies. *Journal of Advertising Research*, 1, 18-21.
- Hill, C. (1968). Haire's classic instant coffee study--18 years later. *Journalism Quarterly*, 45, 466-472.
- Hussey, M., & Duncombe, N. (1999). Projecting the right image: using projective techniques to measure brand image. *Qualitative Market Research: An International Journal*, 2, 22-30.
- Jacoby, J. (1976). Consumer psychology: An octennium. *Annual Review of Psychology*, 27, 331-358.
- Kline, P. (1983). *Personality: Measurement and theory*. London: Hutchinson.
- Klofper, W. G., & Taulbee, E. S. (1976). Projective tests. *Annual Review of Psychology*, 27, 543-568.
- Lane, G. S., & Watson, G. L. (1975). A Canadian replication of Mason Haire's shopping list study. *Journal of the Academy of Marketing Science*, 3, 48-59.
- Lastovicka, J. L., Murry, J. P., & Joachimsthaler, E. A. (1990). Evaluating the measurement validity of lifestyle typologies with qualitative measures and multiplicative factoring. *Journal of Marketing Research*, 27, 11-23.
- McGrath, M. A., Sherry, J. F., & Levy, S. J. (1993). Giving voice to the gift: The use of projective techniques to recover lost meaning. *Journal of Consumer Psychology*, 2, 171-192.
- Robertson, D. H., & Joselyn, R. W. (1974). Projective techniques in research. *Journal of Advertising Research*, 14, 27-31.
- Seechrest, L., Stickle, T. R., & Stewart, M. (1998). *The role of assessment in clinical psychology* (Vol. 4: Assessment). New York: Pergamon.
- Sheth, J. N. (1970). Projective attitudes toward instant coffee in late sixties. *Markadakkommikazjon*, 8, 73-79.
- Wagner, E. E. (1995). A logical analysis of projective techniques based on independence of items and

latitude or response. *Perceptual and Motor Skills*, 81, 868-870.

Webster, F. E., & von Pechmann, F. (1970). A replication of the shopping list study. *Journal of Marketing*, 34, 61-67.

Westfall, R. I., Boyd, H., & Campbell, D. (1957). The use of structured techniques in motivation research. *Journal of Marketing*, 22, 134-139.

Will, V., Eadie, D., & MacAskill, S. (1996). Projective and enabling techniques explored. *Marketing Intelligence and Planning*, 14, 38-43.

---

Ross B. Steinman is with Widener University.

## A.D. Roy: THE FORGOTTEN FATHER OF PORTFOLIO THEORY

Edward J. Sullivan, Lebanon Valley College

---

### ABSTRACT

In 1952, Harry Markowitz published a ground-breaking paper on portfolio selection. In that article, he proposes that optimal portfolios could be constructed using expected return and the variance of the return. About three months later, A. D. Roy also published a paper that argues for portfolio selection using the mean-variance criterion. In essence, these economists developed the same theory of portfolio selection at the same point in time, independently of each other. Yet, in 1990, Harry Markowitz was awarded the Nobel Prize in Economics for his development of portfolio theory, while Roy received no such honor. This paper explores the contributions of Roy in detail and compares them to the Markowitz analysis. Although Roy's work still remains a footnote in the development of portfolio theory, this paper offers a new appreciation for the forefather of portfolio theory.

---

### Introduction

In 1952, Harry Markowitz published a ground-breaking paper on portfolio selection. In that article, he proposes that optimal portfolios could be constructed using expected return and the variance of the return. About three months later, A. D. Roy also published a paper that argues for portfolio selection using the mean-variance criterion. In essence, these economists developed the same theory of portfolio selection at the same point in time, independently of each other. Yet, in 1990, Harry Markowitz was awarded the Nobel Prize in Economics for his development of portfolio theory, while Roy received no such honor. This paper explores the contributions of Roy in detail and compares them to the Markowitz analysis. Although Roy's work still remains a footnote in the development of portfolio theory, this paper offers a new appreciation for the forefather of portfolio theory.

### The Early Beginnings Of Portfolio Theory

The notion that asset diversification reduces risk is ancient and can be traced as far back as the Talmud which states, "A man should always keep his wealth in three forms: one third in real estate, another in merchandise, and the remainder in liquid assets."<sup>1</sup> Somewhat more recently, in 1738, Daniel Bernoulli observed "it is advisable to divide goods which are exposed to some small danger into several small portions rather than to risk them all together."<sup>2</sup>

Arguably, however, it was not until 1935 that the future Nobel laureate J.R. Hicks offered some early direction for modern portfolio theory. Although his research was more concerned with explaining the demand for money, he points out two important considerations for modeling risk. Hicks writes, "The risk-factor comes into our problem in two ways: First, as affecting the expected period of investment, and second, as affecting the expected net yield of investment."<sup>3</sup> Regarding Hick's first point, both Markowitz (1952) and Roy (1952) emplace their analyses in a one-period investment horizon. Second, and even more relevant to modern portfolio theory, is Hicks's suggestion of using an expected value calculated with subjective probabilities. Hicks continues, "It is convenient to represent these probabilities to oneself, in statistical fashion, by a mean value, and some measure of dispersion."<sup>4</sup> Clearly, Hicks comes very close to articulating a mean-variance solution. Crucially, and unlike Roy or Markowitz, Hicks does not develop this line of reasoning nor does he suggest the particular use of variance or standard deviation as that measure of risk. Nonetheless, Hicks's suggestion anticipates the work of Markowitz and Roy.<sup>5</sup>

Like Hicks, and later James Tobin (1958), Jacob Marschak (1938) was interested in the demand for money and how it related to the demand for other assets. In developing his analysis, Marschak makes a significant conceptual leap: he employs mean and standard deviations for modeling risk. In this

instance, however, the analysis centers upon modeling uncertainty in production and consumption but not, however, portfolio selection. Curiously, Markowitz does not cite Marschak in his original work. Since Marschak was Markowitz's dissertation advisor, it is very likely he knew of his mentor's approach. However, Markowitz attributes his insight to the reading of Williams's book (1938) *The Theory of Investment Value*.<sup>6</sup> In that book, Williams presents the now well-known dividend discount model which states that the price of a stock is equal to the present value of a firm's expected dividends. While Williams advocates selecting assets with the highest expected returns and reducing risk by diversifying among those assets, he implicitly assumes that returns are independent. Markowitz (1952), of course, clearly recognizes that the returns on securities are highly correlated, and this fact is the entrée for his analysis. Roy, on the other hand, does cite Marschak's later paper (1950) which deals with the problem of choice under uncertainty. Roy is critical of Marschak's approach because, while it explains the phenomenon of diversification, it ignores an objective function that maximizes expected return. Thus, Roy and Markowitz set out to build a model that maximizes expected return subject to a risk measure which both economists define as the variance or standard deviation of returns.

#### The Contributions Of A Forgotten Founder

Andrew Donald Roy was born June 28, 1920, the elder son of Donald Whatley Roy, a physician. Shortly before the outbreak of World War II, he studied mathematics at Cambridge University, England. With the outbreak of World War II in Europe, Roy volunteered for military service in October, 1939. During the war, he served overseas in the Royal Artillery and fought in the Burma campaign at the Battle of Imphal. His military service took its toll: Roy contracted epidemic jaundice and suffered a nervous breakdown which resulted in depression and mild schizophrenia.<sup>7</sup> After the war, a healthier Roy returned to Cambridge to study economics. He completed his bachelor's degree in 1948 and married Katherine Juliet Grove-White (b. September 15, 1922, d. July 24, 2001).

They had one son, Donald James Roy. In 1950, Roy completed his master's degree. In the following year, Roy obtained a Lectureship in Economics and Politics at Sidney Sussex College in Cambridge University – a position he held until 1964. While teaching there, Roy (1952) made his key contribution to portfolio theory by writing "Safety First and the Holding of Assets." In 1964, he left the academy and became a civil servant. Roy held variety of positions in the Treasury, the Department of Trade & Industry, Ministry of Defense (where he was the Assistant Under-Secretary of State), and, finally, he moved to the Department of Health & Social Security. This change of careers steered his research interests into largely macroeconomic issues, such as labor productivity, and away from portfolio theory.<sup>8</sup> Roy died March 12, 2003 of heart disease.

The history of scientific thought reveals a number of instances when individuals, working independently, developed the same ideas or theories. Clearly, the most famous case involves the development of calculus by Isaac Newton and Wilfred Leibniz. Within financial economics, the derivation of the capital asset pricing model (CAPM) by John Lintner, Jan Mossin, William Sharpe and Jack Treynor is a similar tale. What motivated Roy and Markowitz to consider the portfolio selection problem at the same time? Not surprisingly, both men were dissatisfied with the simple rule of maximizing expected return. Instead, they both sought to reconcile maximizing return with asset diversification. While portfolio diversification, as a practice, can be traced back at least to the mid 19<sup>th</sup> century, when it was practiced by British investment trusts, no rigorous argument had been put forth to explain it. Instead, diversification was seen as a useful rule of thumb to be applied in an *ad hoc* manner. Markowitz writes, "Diversification is both observed and sensible; a rule which does not imply the superiority of diversification must be rejected both as a hypothesis and as a maxim."<sup>9</sup> Along similar lines, Roy notes, "the principle of maximising expected return does not explain the well-known phenomenon of the diversification of resources among a wide range of assets."<sup>10</sup>

In comparing the papers of Markowitz and Roy, the similarities are, at times, striking. For example, the first three numbered equations are virtually the same, save for their choice of letters, to denote expected return. More importantly, however, is the key difference between them: Roy uses the Safety First principle as the guiding notion for his analysis. In formulating his model, he specifies that the expected return on an investment,  $m$ , should not fall below some disaster level,  $d$ . In turn, this leads him to develop his equations in order to estimate the probability of a disaster, i.e., the failure of an investment to yield some minimum rate of return. In essence, then, Roy's statement of the problem can be restated as maximizing:

$$(m - d) / \sigma$$

where  $\sigma$  denotes the standard deviation of return.<sup>11</sup> Roy's use of the Safety First principle was, at that time, unusual for an economist and probably influenced by his unfortunate military experience. In employing this principle, he writes about "avoiding the known rocks of uncertain position or with deploying forces so that, if there is an ambush round the next corner, total disaster is avoided. If economic survival is always taken for granted, the rules of behaviour applicable in an uncertain and ruthless world cannot be discovered."<sup>12</sup>

In deriving his model, Roy, like Markowitz, graphically depicts the now-familiar mean-variance frontier, which identifies the risk-return combinations available from holding different portions (weights) of assets. Interestingly, Roy does not emphasize the obvious implication of his diagram: that a higher expected return can be obtained only by assuming more risk (a higher variance). Instead, he chooses to demonstrate how an investor could derive an upper-bound estimate for the probability of a disaster occurring (a return lower than some value  $d$ ). Also of note is that Roy anticipates the commonly adopted form of mapping the frontier by putting the expected return on the  $y$ -axis and variance (or standard deviation) on the  $x$ -axis. In his original and subsequent papers, Markowitz reverses the variables on the axes.

In a section of the paper entitled, "The optimum distribution of resources among  $n$ -assets," Roy tackles the diversification problem. Specifically, Roy sets out to determine the optimal amounts to invest in each asset (the portfolio weights). Hence, his "optimal portfolio" differs from the Markowitz model for several reasons. First, by "optimal", Roy means any portfolio that offers an expected return above some level  $d$ , given some level of risk. Second, his optimal portfolio is one which provides an upper-bound probability of disaster. For Markowitz, any portfolio that offers the highest expected return for a given level of risk (one that lies on the efficient frontier) is judged optimal. In reading the papers of Roy and Markowitz, their divergence in analysis is one born of emphasis. For Markowitz, diversification is shown to reduce the variance of a portfolio's return. For Roy, diversification is a tool for reducing the probability of disaster.

Perhaps the most crucial insight of mean-variance analysis is its demonstration of the importance of return covariances. Through his equations, Markowitz conveys the impact of covariances on a portfolio's variance: the lower their values, the lower the variance. Because of his emphasis on determining a probability for disaster, Roy downplays this role for covariance. Nonetheless, in a section of the paper entitled, "A detailed examination of the particular case of two assets," Roy develops another argument familiar to portfolio theorists – that the position of the mean-variance frontier varies with correlation coefficient values. Although he does not develop this argument, his Figure 3 demonstrates that the efficient frontier becomes linear when the correlation value is negative one.<sup>13</sup>

When comparing the original analyses of Markowitz and Roy, can one be judged "better" than the other? In this context, better can be construed as a more general analysis; specifically, an analysis with fewer

constraints or assumptions. An argument could be forged that Roy's analysis is broader in scope because he allows an investor to short sell securities. Markowitz, on the other hand, allows only non-

negative positions in investments. Offsetting this degree-of-freedom is Roy's requirement that a portfolio satisfy a minimum expected disaster return. In one sense, this slightly complicates the analysis and sends Roy off in search of disaster probabilities. Aesthetically, Markowitz serves us with a pristine version of the mean-variance model. Although the import of their papers are the same, history pronounces Markowitz the clear winner. Today, Markowitz's name is synonymous with portfolio theory.

### Conclusions

Like Markowitz, Roy understood that maximizing expected return was an incomplete or unsatisfactory way to model portfolio choice. He recognized that a better theory was needed to provide a convincing explanation for diversification. In his conclusion, Roy writes, "We have shown why it is a good thing for the property owner to disperse widely both his assets and liabilities, a principle that is always accepted in practice but rarely explained satisfactorily on relatively simple theoretical assumptions."<sup>14</sup> Curiously, Roy was unimpressed by his own paper and that of Markowitz. In a private communication with me, Professor Richard Brealey of the London Business School recalls a luncheon with Roy. Brealey writes, "The interesting thing is how little regard Roy had for his paper. I wonder whether things would have been different if he had worked on it at Chicago and [the] Rand Corp." In other words, Brealey believes that Markowitz received quite a bit of encouragement while writing his dissertation at the University of Chicago and, later, while working at the Rand Corporation; Roy labored in obscurity.

Still, the question remains: why did Roy view his work as unimpressive? Excluding the problem of calculating the variance-covariance matrix, which at the dawn of the computer age seemed daunting, both men were troubled by the notion of incorporating subjective probabilities into the analysis.<sup>15</sup> Probabilities play a crucial role in their theory: this is how expected returns and variances are calculated. Roy proposes that these probabilities come from

"both introspection and observation".<sup>16</sup> Similarly, Markowitz suggests that they are derived by "observation and experience."<sup>17</sup> Probability formulation weighed on the minds of both men. Markowitz acknowledges that, "This paper does not consider the difficult question of how investors do (or should) form their probability beliefs."<sup>18</sup> Roy's misgivings are revealed in his review of Markowitz's 1959 book *Portfolio Selection*. Roy writes,

Before probability concepts can help us with the selection of our investments, we must be able to translate our expectations about future yields and process into subjective joint probability distributions. While Dr. Markowitz emphasizes that past experience is unlikely to be a very good guide to future performance, he gives no clear indication of how either we, or our investment advisors, can provide ourselves with sufficiently precise or generally agreed expectations to merit their processing in an elaborate way... Dr. Markowitz presses for a precision in the specification both of motives and of expectations which it seems unlikely that any existing investor can reasonably be expected to possess or to express coherently.<sup>19</sup>

Roy's commentary reveals a skepticism regarding the implementation of their theory. Perhaps this explains why he chose not to pursue portfolio theory much further.

In 1990, Harry Markowitz was awarded the Nobel Prize in economics; Roy received no such acclaim. Toward the end of his life, Markowitz offered this final assessment:

Comparing the two articles, one might wonder why I got a Nobel Prize for mine and Roy did not for his... the more likely reason was visibility to the Nobel Committee in 1990. Roy's 1952 article was his first and last article in finance. He made this one tremendous contribution and then disappeared from the field, whereas I wrote two books and an assortment of articles in the field. Thus, by 1990 I was still active and Roy may have vanished from the Nobel Committee's radar screen.<sup>20</sup>



Markowitz's observation is well-taken. After the publication of his 1952 paper, Roy's research slowly drifted away from the portfolio selection problem. In hindsight, another avenue of research leading to greater acclaim now appears obvious. By employing a safety-first criterion in his analysis, Roy anticipated the value-at-risk approach to portfolio selection used today. Had he chosen to pursue his safety-first analysis, it seems unlikely that the Nobel Committee would have missed his contribution to financial economics. Today, Markowitz is still largely credited with developing the mean-variance model. Yet, as this analysis reveals, Roy deserves equal credit for establishing the foundations of modern portfolio theory.

### References

- Bernoulli, Daniel. (1738; 1954). Exposition of a New Theory on the Measurement of Risk. *Econometrica*, 22, (1), 23-36. Translated by L. Sommer from the Latin, *Specimen Theoriae Novae de Mensura Sortis*.
- Hicks, J.R. (1935). A Suggestion for Simplifying the Theory of Money. *Economica*, 1, 1-19.
- Hicks, J.R. (1939). *Value and Capital*. New York: Oxford University Press.
- Jordan, Bradford D. and Miller, Thomas W. (2008). *Fundamentals of Investment*. New York: McGraw-Hill.
- Markowitz, Harry M. (1952). Portfolio Selection. *Journal of Finance*, 12, 71-91.
- Markowitz, Harry M. (1959). *Portfolio Selection*. New York: John Wiley and Sons.
- Markowitz, Harry M. (1999). The Early History of Portfolio Theory: 1600-1960. *Financial Analysts Journal*, (July/August), 6-16.
- Marschak, J. (1938). Money and the Theory of Assets. *Econometrica*, 6, 311-325.
- Roy, A.D. (1952). Safety First and the Holding of Assets. *Econometrica*, 20, (3), 431-449.
- Roy, A.D. (1956). Risk and Rank or Safety First Generalised. *Economica*, 91, 214-228.
- Roy, A.D. (1961). Portfolio Selection by Harry Markowitz. *Econometrica*, 29 (1), 99-100.
- Roy, A.D. (1982). Labour Productivity in 1980: An International Comparison. *National Institute Economic Review*, (August), 26-37.
- Roy, A.D, and G. Wenban-Smith. (1983). *Trends in UK Productivity: A Production Function Approach*. London: National Institute of Economic and Social Research.
- Tobin, James. (1958). Liquidity Preference as Behavior towards Risk. *Review of Economic Studies*, 25 (1), 65-86.
- Williams, J.B. (1938). *The Theory of Investment Value*. Cambridge, MA: Harvard University Press.

<sup>1</sup> Talmud, Baba Metzia ("Middle Gate"), 42a.

<sup>2</sup> Bernoulli (1954), p.30.

<sup>3</sup> Hicks (1935), 7.

<sup>4</sup> Hicks (1935), 8.

<sup>5</sup> Neither Roy nor Markowitz cites the Hick's 1938 paper. However, Markowitz (1952) does cite *Value and Capital* (1939), where Hicks applies the notion of expected profit to a firm rather than a portfolio. Roy does cite Marschak's 1950 paper but not his earlier work.

<sup>6</sup> For more on Markowitz, please see his autobiography at [www.nobelprize.org](http://www.nobelprize.org).

<sup>7</sup> The author thanks the Sidney Sussex College Archivist Nicholas Rogers who made provided these details from the College register. Regarding the diagnosis Roy received at that time, one wonders if it now be categorized as post-traumatic distress disorder.

<sup>8</sup> See, for example, Roy (1982) and (1983).

<sup>9</sup> Markowitz (1952), 77.

<sup>10</sup> Roy (1952), 431.

<sup>11</sup> Students of portfolio theory will notice that this ratio is reminiscent of the Sharpe ratio which measures performance as the ratio of the portfolio

---

risk premium, defined as the difference between the portfolio return and the risk-free rate, over the portfolio return's standard deviation.

<sup>12</sup> Roy (1952), 432.

<sup>13</sup> This graph is now standard in investment textbooks. See for example, Jordan and Miller (2008), 374, Figure 11.5.

<sup>14</sup> Roy (1952), 447.

<sup>15</sup> To find a mean-variance efficient portfolio, one needs to calculate the variance-covariance matrix with  $N(N-1)/2$  elements. Thus, a reasonably sized

---

portfolio of 100 securities requires the daunting task calculating 4,950 variances or covariances.

<sup>16</sup> Roy (1952), 432.

<sup>17</sup> Markowitz (1952), 77.

<sup>18</sup> Markowitz (1952), 81, fn. 7.

<sup>19</sup> Roy (1961), 99-100.

<sup>20</sup> Markowitz (1999), 6. Roy (1956) did produce one more paper involving decision making under uncertainty. However, the paper does not address the portfolio selection problem.

---

Edward J. Sullivan is an associate professor of business and economics at Lebanon Valley College. He earned his Ph.D. in Economics at The Pennsylvania State University. His research interests include monetary and financial economics.

# PUBLIC POLICY EXCEPTION TO THE EMPLOYMENT-AT-WILL DOCTRINE IN PENNSYLVANIA

Thomas L. Bright, Shippensburg University, Pennsylvania  
Richard L. Coffinberger, George Mason University, Virginia

## ABSTRACT

The management of the workforce personnel by Pennsylvania employers is governed by the doctrine of at-will employment. Employment-at-will permits that either the employer or the employee may terminate the employment relationship at the will of either party, without cause. The employment may be ended for a good reason, a bad reason or no reason at all. Generally, an at-will employee has no valid case against an employer for ending his or her job.

## INTRODUCTION

Pennsylvania law presumes that employment is at-will due to the fact that most employees in the private sector do not work under the terms and conditions of a written contract. Employees covered by the terms and conditions of a written contract are, by definition, not at-will. Those with written contracts would include union members and, most often, high salaried employees such as CEOs and professional athletes. Their written agreement dictates the terms and conditions of their employment. Consequently, the specific terms in the at-will employment relationships regarding such matters as duration and/or grounds for termination of the relationship are not expressly stated in writing. The Pennsylvania Supreme Court has stated, "...this court has steadfastly resisted any attempt to weaken the presumption of at-will employment in this Commonwealth"<sup>1</sup>. Ergo, the relationship can legally be ended without a reason; however, the relationship cannot be ended for the wrong reason.

A wrong reason would be a violation of statutory law. Violations of federal law include violations under:

1. Title VII of the 1964 Equal Opportunity in Employment Act;<sup>2</sup>
  2. The Family Medical Leave Act of 1993;<sup>3</sup>
  3. The age Discrimination in Employment Act of 1967;<sup>4</sup> and
  4. Various labor laws regarding union activity.<sup>5</sup>
- Also prohibited are violations of Pennsylvania State Laws, which include:

1. Pennsylvania Human Relations Act;<sup>6</sup>

2. The Criminal History Records Information Act;<sup>7</sup> and
3. Commercial Drivers.<sup>8</sup>

A third exception to the termination of employment relationships for any or no reason whatsoever in Pennsylvania is "Where the discharge of at-will employees would threaten clear mandates of public policy"<sup>9</sup>. There exists, however, confusion regarding what is or is not, public policy in Pennsylvania. To date, no clear, bright, exact, or inclusive definition exists defining the term.

## HISTORY

Reiterating the fact that most employees in the private sector do not work under the terms and conditions of a written contract (as do, for example, union members who are protected by a collective bargaining agreement), the specific terms of the employment relationship regarding such matters as duration and/or grounds for termination are not stated. Thus, although an employer may not fire an employee for an improper reason (such as when one advocates unionization, or the firing is a form of prohibited discrimination) nevertheless, the employer is free to simply dismiss an employee at the will of the employer without stating a reason or cause.

The "at will" doctrine has been well entrenched in labor jurisprudence. The origin of employer and employee rights can be traced to England's Statute of Labourers<sup>10</sup> which provided that when a hiring of unfixed duration took place, it was presumed to be for one year and a master could not put away his servant except for reasonable cause. The statute was later repealed. However, the English courts

continued to apply the principle by presuming that a general hiring was presumed to be for one year.

In America, although the courts initially followed the English precedent,<sup>11</sup> by the late 1880's there emerged a new development. The courts seemingly adopted "Wood's Rule" from the writings of H.G. Wood in his Treatise on the Law of Master and Servant.<sup>12</sup> Emphasis was shifted from a presumption of hiring for one year to freedom of both parties to define their relationship. If the servant sought to make out a yearly hiring, the burden was upon him to establish it upon proof.

The firmly established, well trenched doctrine of at-will employment was referred to by the Supreme Court of the United States of America as long ago as 1908 when in the case of Adair v. United States<sup>13</sup> the court mentioned that the right of an employee to quit his job, for whatever reason, is the same as the right of an employer to terminate the employee for whatever reason.

Pennsylvania has historically recognized this unfettered right of an employer to discharge an employee-at-will for no reason, in the absence of a contractual or statutory prohibition. In the past it has been rare that at-will employees have been successful when attacking an employer for wrongful termination in Pennsylvania. The law in Pennsylvania generally remains to be employer friendly. The employment-at-will doctrine, arguably, continues to be strongly entrenched in Pennsylvania.

An early declaration of the doctrine was made in Pennsylvania in 1891 when a court stated "[an employer] may discharge an employee with or without cause at pleasure, unless restrained by some contract."<sup>14</sup> One hundred years later, the courts in Pennsylvania steadfastly continued to follow the doctrine.<sup>15</sup> Presently in the 21<sup>st</sup> Century, the courts in Pennsylvania remain firmly dedicated to the doctrine.

## PUBLIC POLICY

The public policy exception is a narrow one and dictates a "finding of violation" of a clearly defined mandate of public policy which 'strikes at the heart

of citizens', social rights, duties and responsibilities.<sup>16</sup> In Pennsylvania, the public policy exception to the employment-at-will doctrine must be based on Pennsylvania public policy. In the case of McLaughlin v. Gastro Intestinal Specialists,<sup>17</sup> the Pennsylvania Supreme Court held that "A plaintiff must do more than show a possible violation of a federal statute..."<sup>18</sup> The Court continued "[plaintiff] must allege that some public policy of this Commonwealth is implicated, undermined, or violated."<sup>19</sup>

In Pennsylvania, public policy is determined by examining the precedent set in Pennsylvania, looking at the Pennsylvania Constitution and the laws of the Commonwealth of Pennsylvania.

A Pennsylvania court has noted:

The sources of public policy [which may limit the Employer's right of discharge] include legislation; Administrative rules, regulation, or decision; and judicial decision. In certain instances, a professional code of ethics may contain an expression of public policy . . . Absent legislation the judiciary must define the cause of action in case-by-case determinations.<sup>20</sup>

Consequently, what societal considerations would be of sufficient moment to be recognized as public policy generated uncertainty.

Wrongful discharge of an at-will employee initially was recognized as being actionable in Pennsylvania in the landmark decision rendered in Geary v. United Stated Steel Corp.<sup>21</sup> in 1974. The court stated:

[T]here are areas of an employee's life in which his employer has no legitimate interest. An intrusion into one of these areas by virtue of the employer's power of discharge might plausibly give rise to a cause of action, particularly where some recognized facet of public policy is threatened. The notion that 'substantive due process elevates an employer's privilege of hiring and discharging his employees to an absolute constitutional right has long since been discredited. But this case does not require us to define in comprehensive fashion the perimeters of

this privilege, and we decline to do so. We hold only that where the complaint itself discloses a plausible and legitimate reason for terminating an at-will employment relationship and no clear mandate of public policy is violated thereby, an employee at will has no right of action against his employer for wrongful discharge.<sup>22</sup>

Geary, a salesman for fourteen years, had been discharged after he voiced an opinion that new tubular products for the petroleum industry were inadequately tested and unsafe. He continued to express his reservations after being ordered to follow directions. Subsequently the product was withdrawn from the market. Nevertheless, Geary was fired, due to his complaints and demeanor. Geary had bypassed the employer's chain of command and created a nuisance, which the court found to be a plausible and legitimate reason for the termination, leaving Geary without relief. The court determined that no clear mandate of public policy was present and that any implications of such were outweighed by the company's legitimate interest in preserving normal operational procedures from disruption.

In the wake of the Geary decision, case law in Pennsylvania continues to build regarding specific example of what are actionable violations of public policy, but only sparingly. It is to be noted that when a statutory remedy exists, in some cases there is no actionable claim for a violation of public policy. Therefore, it has been found that where a claim is based on the violation of the Pennsylvania Human Relations Act, (PHRA) an employee was prevented from suing for wrongful termination. Her remedies against her employer were only those found in PHRA.<sup>23</sup>

However, when an employee was denied recourse against her employer based upon allegations of sexual harassment in violation of the PHRA, only because the employer employed less than four persons, a claim was permitted to be pursued as an exception to the at-will employment doctrine.<sup>24</sup> The Pennsylvania Superior Court noted:

It is difficult to believe that the Legislature would first define certain acts as illegal via both the

Constitution and statute, thus establishing a public policy unequivocally condemning such conduct, and then remove all judicial recourse for the victims of that conduct. We therefore agree with Appellant's contention that a public policy exception is appropriate for her situation. In this context we find persuasive the conclusion reached by the Third Circuit Court of Appeals that: "[a] discharge in retaliation for the refusal by a woman employee to succumb to sexual advances would abridge a significant and recognized public policy against sexual discrimination in employment." To prevent an employee who is alleging sexual harassment from pursuing her claim in court only because her employer has less than four employees appears a direct contravention of a clear public policy on grounds both quixotic and arbitrary.<sup>25</sup>

#### PENNSYLVANIA STATE COURT DECISIONS

Employee plaintiffs have stated a cause of action based on the public policy at-will exception in the state courts in Pennsylvania in limited instances. In Reuther v. Fowler & Williams Inc.,<sup>26</sup> the employee was fired for electing to serve on a jury. Since individuals are required by statute in Pennsylvania to serve when called for jury duty in order to have citizens available for trials, the dismissed employee was permitted by the Pennsylvania Supreme Court to pursue an action against the employer after being discharged for having chosen to fulfill the required jury obligations.

Likewise, a violation of a clearly mandated public policy was found in the case of Hunter v. Port Authority,<sup>27</sup> wherein public employment was denied to an individual on the basis of a prior conviction for which a pardon had been granted. The Pennsylvania Supreme Court found that to do so constituted a violation of the Pennsylvania Constitution and would not be permitted.

Another lawsuit that did not uphold the right of an employer to fire an at-will employee due to a violation of public policy is Field v. Philadelphia Electric Company.<sup>28</sup> In Field, the employee had reported nuclear safety violations and was subsequently discharged. Since federal law

mandated such disclosures, the Pennsylvania Supreme Court permitted the at-will employee to bring suit against the employer. In distinguishing Geary, the Supreme Court noted that the employee was an expert, knew about nuclear regulatory regulations, and knew that the company's actions were not in compliance. Furthermore, the court found it significant that the risks of radiation were clear.

Additionally, the Pennsylvania Supreme Court found a violation of public policy in the case of Kroehn v. Bedway Sec. Agency, Inc.<sup>29</sup> An employee has been wrongfully discharged for refusing to submit to a polygraph test. Pennsylvania had adopted an anti-polygraph statute that permits employers to require employees to submit to a polygraph under very limited circumstances, none of which applied to the dismissed employee. Consequently, the Pennsylvania Supreme Court held that the employee's suit against the offending employer should not be dismissed.

The Superior Court in Pennsylvania in 1995 added a fifth scenario to the rare victories for dismissed at-will employees in the case of Highhouse v. Avery Transportation.<sup>30</sup> While the Pennsylvania trial court rendered judgment in favor of the defendant employer, the Pennsylvania Superior Court reversed, holding that "constructive discharge of an at-will employee may serve as a basis for tort recovery if the employer has made working conditions so intolerable that an employee has been forced to resign."<sup>31</sup> The Pennsylvania Superior Court determined that "if the employer discharged (the employee) because he had made a claim for unemployment compensation during a period when he was not working and earning income, the discharge will constitute a violation of public policy and will support a tort claim for wrongful discharge."<sup>32</sup> The Superior Court concluded that the right of an employee to receive unemployment compensation is a benefit granted by the state, enacted to alleviate the hardships attendant upon unemployment. Moreover, the Superior Court noted that the Pennsylvania Unemployment Compensation Law mandates that agreements to waive, release, or commute rights under this law are

invalid.<sup>33</sup> Discharging an employee in retaliation for filing an unemployment compensation claim was also found to be a violation of public policy in the 1995 case of Ray Kovitz v. K-Mart Corp.<sup>34</sup>

Conversely, two weeks following the Pennsylvania Superior Court's decision in Highhouse in 1995, a Pennsylvania trial court in Shick v. Shirey<sup>35</sup> held that Pennsylvania state law did not recognize a wrongful discharge claim against an employer arising from an employee's firing in an alleged retaliation for filing for workers' compensation benefits. The trial court dismissed this lawsuit prior to trial, holding that the employee failed to state a recognized cause of action in Pennsylvania.

In its Shick v. Shirey decision, the Superior Court upheld the trial court's decision and, likewise, decided that Pennsylvania does not recognize a cause of action for firing someone for filing for workers' compensation benefits because the Pennsylvania Workers' Compensation Act does not contain any language prohibiting it.<sup>36</sup> Allowing employers to be the masters of their own businesses constitutes, according to the Pennsylvania Superior Court, an equally compelling public policy argument against recognizing such a cause of action. This intermediate appellate court opted to focus on the right of the employer to operate the employer's business and to emphasize what had been previously suggested in prior rulings – that judicial modification of the at-will doctrine was ill-advised.<sup>37</sup>

In an abrupt turnabout, the Pennsylvania Supreme Court in 1998 overturned the Shick decision rendered by the Pennsylvania Superior Court. The Supreme Court in its Shick v. Shirey<sup>38</sup> decision ruled that an at-will employee who was allegedly fired in retaliation for pursuing rights under the Pennsylvania Workers' Compensation Act states a claim for wrongful termination. Although not specifically prohibited by the Act, the Pennsylvania Supreme Court decreed that the broad remedial purpose of the Pennsylvania Workers' Compensation Act would be defeated if employers were permitted to lawfully fire employees in retaliation for pursuing their statutory rights for workers' compensation benefits.

However, there exists many more cases in Pennsylvania in which the Courts have refused to find public policy exceptions. When an employee was fired after complaining about the manner in which his department was operated, resulting in financial waste, he had no claim against his employer for a violation of public policy.<sup>39</sup> There was no violation of public policy when an employment was terminated after a person actively sought a position with a competitor.<sup>40</sup> Likewise, it was found that when a supervisor and those under his supervision could no longer co-exist, and the supervisor was fired, the supervisor had no cause of action against his employer.<sup>41</sup> A claim that there existed a violation of First Amendment rights, when an employee placed an ad in a competitor's newspaper, also has failed.<sup>42</sup>

When a doctor's employee reported an alleged rape of a woman who was in a facility, she was dismissed. The Superior Court up-held the right of the employer to dismiss the employee without violating any well-enunciated violations of public policy, due to the fact that no duty in the law, regulations, or code of professional ethics required the disclosure.<sup>43</sup>

In the case of McLaughlin v. Gastro Intestinal Specialists<sup>44</sup> the Pennsylvania Supreme Court refused to find that firing an employee in retaliation for reporting an alleged safety violation of OSHA was a violation of public policy. The Court emphasized "A plaintiff must do more than show a possible violation of a federal statute..."<sup>45</sup>

However, the Supreme Court of Pennsylvania, following the guidance language enunciated in Shick, included a violation of public policy where a supervisor was fired for not dissuading a subordinate from seeking worker's compensation benefits in 2005.<sup>46</sup>

## FEDERAL LAW

While the Pennsylvania State Courts have been reluctant to expand public policy exceptions, it appears that Federal Courts have adopted a much more expansive approach than the Pennsylvania State Courts, regardless that the Federal Court are interpreting Pennsylvania law.

Cases in which public policy violations have been found to exist in federal courts include Novosel v. Nationwide Insurance Co.<sup>47</sup> In Novosel, the plaintiff had been employed by Nationwide for approximately fifteen years. When he was fired, he was being considered for promotion and had steadfastly advanced previously, without negative comment or event. When Nationwide in 1981 solicited the plaintiff to seek supporting signatures for passage of the "No-Fault Reform Act", plaintiff refused. He was later terminated and claimed the termination was due to the refusal and constituted a violation of his federal First Amendment rights.

The Third Circuit agreed holding that Pennsylvania law permits a cause of action where the firing abridges a significant and recognized public policy. The Federal court analogized protections afforded public employees regarding political activities and held, as a matter of public policy, employees in the private sector should enjoy the same.<sup>48</sup>

In Borse v Pierce Goods Shop, Inc.<sup>49</sup> a Federal Court found a violation of public policy where an employee was fired for refusal to consent to urinalysis and a property search. She contended that the search constituted an invasion of privacy. The Federal Court concluded that to require the plaintiff to sign a consent form in which she would agree to drug testing constituted a possible violation of her right to privacy under Pennsylvania law. It was determined that if a discharge was related to a substantial and highly offensive invasion of privacy, then that discharge would be actionable.<sup>50</sup>

In the case of Perks v. Firestone Tire and Rubber Co.<sup>51</sup> the plaintiff's employer terminated employment because the plaintiff refused to submit to a polygraph examination. The Federal Court found the termination to be a violation of public policy, not unlike the violation found when an employee is discharged for jury duty.<sup>52</sup>

Additional cases where Federal Courts have found public policy exceptions to exist include:

1. Woodson v. AMF Leisureland Centers Inc.<sup>53</sup> wherein a barmaid was fired for not serving liquor to a visibly intoxicated person;
2. McNulty v. Borden, Inc.<sup>54</sup> in which allegedly an employee refused to engage in illegal price-fixing; and
3. Kilpatrick v. Delaware County Society for Prevention of Cruelty to Animals.<sup>55</sup> In Kilpatrick the employee claimed the employment termination was caused due to reports of occupational safety;
4. Brown v. Hammond.<sup>56</sup> The plaintiff in Brown was terminated for refusal to perform an improper activity – billing paralegal time as attorney's time;
5. Paralegal v. Lawyer.<sup>57</sup> The paralegal plaintiff was terminated for testifying against an attorney.

It has specifically been recognized by a Federal Court that Pennsylvania courts decline to follow the expansive decisions of the Federal Courts.<sup>58</sup> Although strong argument exists supporting the contention that the Federal Courts in Pennsylvania are more inclined to find violations of public policy than the Pennsylvania State Courts, the finding of violations are not without exception.

In the case of Bruffet v. Warner Communications, Inc.<sup>59</sup> the plaintiff brought suit based on a claim of handicap discrimination, a violation of PHRA.<sup>60</sup> The court ruled no public policy exception would be found for three reasons. First, Pennsylvania is a state which takes a constrictive view of the public policy exception. Second, to allow the suit would circumvent the required administration procedures of the PHRA. Third, Pennsylvania cases allowing exception to at-will employment based on public policy exceptions involve instances where statutory remedies did not exist.<sup>61</sup>

An additional public policy exception was not cut out again in the case of Smith v. Calgon Carbon Corp.<sup>62</sup>

Smith claimed he was dismissed for reporting to his supervisors environment pollution caused by his company. The court held against the plaintiff stating he did not claim he was fired for violating a positive law, nor had he claimed he was fired for performing a duty required by statutory law.<sup>63</sup>

Other Federal cases in with the Pennsylvania plaintiff was unsuccessful include: Clark v. Modern Group Ltd.<sup>64</sup> wherein an employee refused the order to not report reimbursed auto expenses as income; Franhel v. Warwick Hotel.<sup>65</sup> where the employer- father, fired his employee-son when he refused to divorce his wife; and Redick v. Kraft, Inc.<sup>66</sup> when an employee was immediately discharged after giving two weeks notice.

### Conclusion

There remains in Pennsylvania a burden upon employers, and also upon employees, to know precisely what constitutes public policy in Pennsylvania. What is, or is not, public policy continues to be ambiguous. What sources can serve as ground to establish public policy limiting the right to fire-at-will remains nebulous. Can an employer terminate employment safely, without fear of a lawsuit, because an employee smokes at home? Is it permissible and within the employer's rights to fire an employee for unhealthy eating? These and similar type questions remain unanswered in Pennsylvania, and create confusion and uncertainty in the workforce.

A possible solution may be for the Pennsylvania legislature to provide specific guidelines concerning when and under what circumstances, an employer is not justified to terminate an at-will employment worker. However, there presently exists no such discernable activity in Pennsylvania.

### END NOTES

<sup>1</sup> McLaughlin v. Gastro Intestinal Specialist, 750 A. 20 283, 290 (2000).

<sup>2</sup> 42 U.S.C.A. Sec. 2000 et seq. (WEST 2007).

<sup>3</sup> 29 U.S.C.A. Sec. 2601 et seq. (WEST 2007).

<sup>4</sup> 29 U.S.C.A. Sec. 621 et seq. (WEST 2007).



<sup>5</sup> See, e.g., National Labor Relations Act, 29 U.S.C.A. Sec. 158 (a) (1) (3) and (4) (1988).  
<sup>6</sup> 43 Pa. Cons. Stat. Ann. Sec. 951 et seq. (WEST 2007).  
<sup>7</sup> 18 Pa. Cons. Stat. Ann. Sec. 9101 et seq. (WEST 2007).  
<sup>8</sup> 75 Pa. Cons. Stat. Ann. Sec. 1619 et seq. (WEST 2007).  
<sup>9</sup> Clay v. Advanced Computer Applications, Inc., 559 A. 2d 917, 918 (1989).  
<sup>10</sup> 1 W. Blackstone, Commentaries 425 (1969).  
<sup>11</sup> See, e.g., Adams v. Fitzpatrick, 26 N.E. 143 (1891).  
<sup>12</sup> Wood, H.G., Master and Servant (1877).  
<sup>13</sup> 208 U.S. 161 (1908).  
<sup>14</sup> Henry v. Pittsburgh & Lake Erie R.R. Co., 21 A. 157 (1891).  
<sup>15</sup> See Note 1, Yetter.  
<sup>16</sup> See Note 2, McLaughlin.  
<sup>17</sup> Id., at 288.  
<sup>18</sup> Id.  
<sup>19</sup> Id.  
<sup>20</sup> Reuther v. Fowler & Williams, 386 A. 2d. 119 at 121 (1978).  
<sup>21</sup> 319 A. 2d. 174 (1974).  
<sup>22</sup> Id.  
<sup>23</sup> Note 21, Reuther.  
<sup>24</sup> Weaver v. Harpster & Shipman Fin Servs., 885 A.2d. 1073 (2005).  
<sup>25</sup> Id. At 1077  
<sup>26</sup> See Note 21. Reuther.  
<sup>27</sup> 386 A. 2d. 119 (Pa. Super. 1978).  
<sup>28</sup> 419 A. 2d. 631 (Pa. Super. 1980).  
<sup>29</sup> 565 A. 2d. 1170 (Pa. Super. 1989).  
<sup>30</sup> 660 A. 2d. 1374 (Pa. Super. 1995).  
<sup>31</sup> Id. at 1376.  
<sup>32</sup> Id. At 1378.  
<sup>33</sup> Act of Dec. 5, 1936, P.L. (1937) 2897, art. VII Sec. 701, 43 P.S. 861.  
<sup>34</sup> 665 A. 2d. 833 (1995).  
<sup>35</sup> Clarion County, No. 452 C.D., July 24, 1995, 25 D & C 4<sup>th</sup> 481 (1996).

<sup>36</sup> 691 A. 2d. 511 (Pa. Super. 1997).  
<sup>37</sup> See Darlington v. General Electric, 504 A. 2d. 306 (Pa. Super. 1986).  
<sup>38</sup> 716 A. 2d. 1231 (Pa. 1998).  
<sup>39</sup> Rossi v. Pennsylvania State University, 489 A. 2d. 828 (1985).  
<sup>40</sup> McCartney v. Meadowview Manor, Inc., 508 A. 2d. 1254 (1986).  
<sup>41</sup> Turner v. Letterkenney Federal Credit Union, 512 A. 2d. 1280 (1986).  
<sup>42</sup> Martin v. Capital Cities Media, Inc., 511 A. 2d. 830 (1986).  
<sup>43</sup> Hennessy v. Santiago, 708 A. 2d. 1269 (Pa. Super. 1998).  
<sup>44</sup> Note 2. McLaughlin.  
<sup>45</sup> Id. At 288.  
<sup>46</sup> 883 A. 2d. 511 (Pa. 2005).  
<sup>47</sup> 721 F. 2d. 894 (3d. Cir. 1983).  
<sup>48</sup> Id. 896.  
<sup>49</sup> 963 F. 2d. 611 (3d. Cir. 1992).  
<sup>50</sup> Id. At 622.  
<sup>51</sup> 156 F. 2d. 1363 (3d. Cir. 1979).  
<sup>52</sup> Id. At 1366.  
<sup>53</sup> 842 F. 2d. 699 (3d. Cir. 1988).  
<sup>54</sup> 474 F. Supp. 1111 (E.D. Pa. 1979).  
<sup>55</sup> 632 F. Supp. 542 (E.D. Pa. 1986).  
<sup>56</sup> 810 F. Supp. 644 (E.D. Pa. 1993).  
<sup>57</sup> 783 F. Supp. 230 (E.D. Pa. 1992).  
<sup>58</sup> Smith v. Carbon Calagon Corp., 917 F. 2d. 1388 (3d. Cir. 1990).  
<sup>59</sup> 692 F. 2d. 910. (3d. Cir. 1990).  
<sup>60</sup> See Note 7.  
<sup>61</sup> See Note 58. Bruffet at 919.  
<sup>62</sup> See Note 59.  
<sup>63</sup> Id. 1345.  
<sup>64</sup> Clark v. Modern Group Ltd., 9 F. 3d. 321 (3d. Cir. 1993).  
<sup>65</sup> 881 F. Supp. 183 (E.D. Pa. 1995).  
<sup>66</sup> 745 F. Supp. 296 (E.D. Pa. 1990).

Thomas L. Bright, is with Shippensburg University, Pennsylvania.  
 Richard L. Coffinberger, is with George Mason University, Virginia.

# RETURN ON BOOKED GOODWILL

David E. Vance, Rutgers University

---

## Abstract

Accounting provides an approximation of economic reality. However, there is a serious discontinuity in regard to goodwill. SFAS141 (2001) requires that goodwill be booked when more is paid for a company than the fair value of its assets, but goodwill is not booked when it is internally generated. This raises a substantial question as to whether booked goodwill has economic substance separate and apart from internally generated goodwill, or whether it is merely a bookkeeping device. If booked goodwill has economic substance, it should impact performance.

This study analyses 38,519 years of company operations in 48 industries for the return of companies with and without booked goodwill. Two independent methods were used to estimate the return on goodwill. For most industries, there is no significant difference between the return on booked goodwill and other assets. For 13 industries the return on booked goodwill was positive and significant and for 5 industries the return on booked goodwill was significant and negative.

The contribution of this study is to test whether booked goodwill has economic substance separate and apart from internally generated goodwill or other assets.

---

## 1. Introduction

Accounting provides an approximation of economic reality, and the FASB seeks to make that approximation as realistic as possible (Herz 2008, Edmund 2000). However, there is a discontinuity in the treatment of goodwill. Statement of Accounting Standard (SFAS) No. 141 *Business Combinations* (2001) requires that goodwill be booked when more is paid for a company than the fair value of its assets. However, companies generate goodwill all the time. This internally generated goodwill is not recognized in accounting records whereas booked goodwill is recognized; hence the discontinuity.

This raises a substantial question as to whether booked goodwill has economic substance separate and apart from internally generated goodwill, or whether it is merely a bookkeeping device. If booked goodwill has economic substance, it should impact performance.

Isolating the impact of booked goodwill is difficult because of the "noise" created by internally generated goodwill and company operations. Four approaches are taken to suppress noise and isolate the performance of booked goodwill. The first approach is to analyze goodwill by industry. Arguably industries tend to move together throughout economic cycles. The second approach is to create a

baseline of performance in every industry by looking at companies without booked goodwill and comparing their performance to companies with at least ten percent of their assets in booked goodwill. The third approach is to perform a regression analysis of performance as a function of booked goodwill and assets to determine whether goodwill is a statistically significant indicator of performance. The fourth approach is to determine whether the second and third approaches provide a consistent view of the contribution of booked goodwill. This study analyzes return on assets for 38,519 years of company operations across 48 industries.

Goodwill has historically been a significant asset on the books of US corporations and with the implementation of SFAS 141 (2001), which requires all business combinations to be treated as purchases, it will become more significant. In 2005, the 4,815 largest companies on Compustat had \$54.4 trillion of assets and \$2.3 trillion of booked goodwill or about 4.23% of total assets. In 2006, the 4,815 largest companies had \$62.7 trillion of assets and \$2.4 trillion of booked goodwill or about 3.91% of total assets. One characteristic of an asset is that it can generate rent which can be measured in terms of return on assets. Therefore, booked goodwill's

contribution to company performance should be separable from that of other assets.

The contribution of this study is to determine whether booked goodwill has a detectable impact on company performance.

Section II of this study is a literature review. Section III presents the research question. Section IV describes the data and methodology used. Section V presents the empirical analysis and suggestions for future research and Section VI is the conclusion.

## II. LITERATURE REVIEW

There is large and authoritative body of literature discussing the rationale for goodwill (Barber and Strack 2005; Massoud & Raiborn 2003; SFAS141 2001; APB16 1970; Accounting Research Bulletin (ARB) No.24 1944; California Code of Civil Procedure §1263.510(b)), Bourne 1888). However, not everyone agrees that goodwill represents value.

Some suggest that goodwill is simply a plug figure (Lander and Reinstein 2003; Massoud and Raiborn 2003); that it should be written off immediately (Accounting Research Study No. 10, "Accounting for Goodwill" 1968) or that it can represent an overpayment (Johnson and Petrone 1998). Some suggest that goodwill is not a good theoretical fit into the definition of an asset (Samuelson 1996; Schuetze 1993; Fisher 1906). These criticisms of goodwill are inconsistent with the fact that companies pay billions of dollars for goodwill each year. A more nuanced question is whether goodwill contributes to profitability in a measurable way.

Six studies have analyzed the market's perception of whether goodwill contributes to performance using market capitalization as the dependent variable and goodwill and a variety of other measures as independent variables (Begley, Chamberlain and Li 2006; Jennings, Robinson, Thompson and Duvall 1996; McCarthy and Schneider 1995; Wang 1995, 1993; and Chauvin and Hirschey 1994). These studies found that goodwill was valued by the markets at least as much as other assets except for manufacturing companies. Bank goodwill is consistently valued higher than other assets (Begley, Chamberlain and Li, 2006). This is consistent with the argument of Barber and Strack

(2005) that performance depends more on people than assets. A seventh study of actively traded manufacturing firms (Heiens, Leach and McGrath 2007) finds that goodwill has a significant negative impact on shareholder value. This study suggests that either investors disfavor the amount paid for goodwill or the anticipated benefits of goodwill did not materialize. The results of these seven studies are summarized in Table 1 Prior Empirical Findings in the appendix.

## III. RESEARCH QUESTIONS

While there is solid theoretical reason to value goodwill, and the literature includes studies that value goodwill in conjunction with other assets, a question arises as to whether the return on booked goodwill can be estimated. This should be possible because booked goodwill is defined as value over and above the intrinsic value of related assets. Often booked goodwill is thought of as reflecting the skill and learning of management, and other attributes which are independent of acquired assets.

Isolating return on booked goodwill is difficult because returns on goodwill and other assets are not reported separately and internally generated goodwill creates "noise" that masks the effect of booked goodwill.

Overall, the literature indicates that goodwill adds value in most industries, but at least two studies indicate the contribution of goodwill to manufacturing is minimal or negative (Heinens, Leach and McGrath 2007, Chauvin and Hirschey 1994). Is it possible for the return on goodwill to be negative? This question is antithetical to the assumptions underlying SFAS142 (2001) and its predecessor APB 16 (1970). But, "Statement of Financial Accounting Concepts No. 6 Elements of Financial Statements," (SFAC 1985) warned that some goodwill might not be an asset because of its inability to generate anticipated benefits. In addition, Heiens, Leach and McGrath (2007) and Chauvin and Hirschey (1994) found evidence that goodwill reduces performance in manufacturing. Whether booked goodwill has a positive or negative impact on

performance, the question remains whether the influence of booked goodwill can be estimated.

#### IV. METHODOLOGY

##### Data Source

To explore the questions raised by the literature and this paper, return on assets was analyzed for the ten year period 1995 to 2004. Firms which began each year with at least \$20 million of assets, stock price of at least \$1, and sales of at least \$5 million were selected from the Compustat North American database. Firms with less than \$20 million in assets were eliminated so that numerous small firms without goodwill would not distort statistical analyses through dint of numbers. Sales of \$5 million was selected as a minimum threshold for an active company. Firms with a stock price of less than \$1 were eliminated to remove more speculative companies. Companies that had sufficient assets, sales and stock price to be selected one year did not necessarily qualify for selection in all ten years of this study. Some companies merged, went out of business or fell below the selection threshold. For example, a company could be unselected in one year because it did not meet minimum criteria, classified as a company without goodwill for five years and a company with goodwill for four years. To maximize the data available for this study, ROA was evaluated on a year by year basis, with each year being a data point. These data points were aggregated by industry and then classified by the percentage of goodwill on their balance sheet in a particular year.

Firms with incomplete information were eliminated from the sample. There were 2,652 firms that met the foregoing criteria in 1995 and 4,985 firms which met these criteria in 2004. See Table 2 Descriptive Statistics. In total, this study analyzes some 38,519 years of company operating experience.

##### Variables

The dependent variable tested in this study is return on assets (ROA) defined as operating income before depreciation and amortization scaled by average

assets. The independent variables in this study include: industry, goodwill, and total assets.

This study uses the Fama and French (1997) classification system which assigns four digit standard industrial codes (SIC) to forty eight industries. A SIC / industry cross reference table is provided as Appendix A.

##### Isolating the Return on Booked Goodwill Average Method

Conceptually, a company's return on assets (ROA) can be split into the return into the return on booked goodwill (ROBG) and the return on other assets (ROO) as shown in equation (1). The return for ROBG must be weighted by the percentage of assets invested in goodwill and ROO must be weighted by the percentage of non-goodwill assets.

$$ROA_{ij} = ROBG_{ij} \times GW\%_{ij} + ROO_{ij} \times (1 - GW\%_{ij}) \quad (1)$$

Where,  $ROA_{ij}$  is the return on assets for the  $j$ th company in industry  $i$ ;  $ROBG_{ij}$  is the return on booked goodwill for the  $j$ th company in industry  $i$ ;  $ROO_{ij}$  is the return on other assets for the  $j$ th company for industry  $i$ ;  $GW\%_{ij}$  is the percentage of assets invested in goodwill for the  $j$ th company in industry  $i$ ; and  $(1 - GW\%_{ij})$  is the percentage of assets invested in non-goodwill assets for the same company. Equation (1) can be re-written to isolate  $ROBG_{ij}$  as shown in equation (2) to isolate return on booked goodwill.

$$ROBG_{ij} = (ROA_{ij} - ROO_{ij} \times (1 - GW\%_{ij})) / GW\%_{ij} \quad (2)$$

While we can measure  $ROA_{ij}$ , the return on total assets for a company, direct measurement of  $ROBG_{ij}$  and  $ROO_{ij}$  is impossible. On the other hand,  $ROO_{ij}$  (return on other assets) can be estimated as the return on assets for companies in industry  $i$  which have no goodwill. Let  $ROA_i$  be the return on assets for companies in industry  $i$  which have no goodwill as shown in equation (3).

$$ROG_{ij} = (ROA_{ij} - ROA_i \times (1 - GW\%_{ij})) / GW\%_{ij} \quad (3)$$

As  $GW\%_i$  approaches zero, the impact of goodwill becomes more and more exaggerated. To avoid this problem and draw a sharper contrast between companies with and without booked goodwill, companies with between 0% and 10% of their assets in booked goodwill were eliminated from the data. Table 3 Return on Booked Goodwill Average Method is an industry by industry estimate of the return on booked goodwill, independent of the return on internally generated goodwill and other assets.

A maxim often attributed to Aristotle is that one ought not to demand more precision of a thing than its nature allows. The return on booked goodwill is an example of a thing where nature limits intrinsic precision. Therefore, two techniques were used to estimate the return on booked goodwill.

#### Isolating Return on Goodwill through Regression Analysis

An alternative means of isolating the return on goodwill is through regression analysis. Return on assets (ROA) is the dependent variable and goodwill as a percent of assets ( $GW\%$ ) is the principal independent variable. Average assets (AvgAssets) was selected as an additional independent variable. Use of assets as an independent variable parallels the work of Jennings, Robinson, Thompson and Duval (1996) in which the return on goodwill was compared to the return on other asset classes, McCarty and Schneider (1995) which compared the return on goodwill to that of other assets, and Wang (1995) which also compared the return on goodwill to that of other assets. Data for all companies were used regardless of the percentage of assets invested in booked goodwill.

The regression equation is given as (4) where  $a_i$  and  $b_i$  are coefficients of  $GW\%_i$  and  $AvgAssets_i$  and  $c_i$  is the intercept for industry  $i$ . Each industry was regressed independently.

$$ROA_i = a_i * GW\%_i + b_i * AvgAssets_i + c_i \quad (4)$$

Equation (4) provides ROA as a function of  $GW\%$  and AvgAssets. To isolate the contribution of

goodwill to  $ROA_i$ , evaluate equation (4) with  $GW\%$  as 100% of assets, then evaluate equation (4) assuming  $GW\%$  is 0% of assets. The difference should be the relative contribution of booked goodwill to  $ROA_i$ .

$$ROA_i = a_i * 1 + b_i * AvgAssets_i + c_i$$

$$\text{less } ROA_i = a_i * 0 + b_i * AvgAssets_i + c_i$$

$$ROA_i = a_i$$

The results of an industry by industry regression analysis are given in Table 4 Return on Goodwill Regression Method.

#### V. EMPIRICAL ANALYSIS

It is difficult to measure, weigh, taste or test something as illusive as goodwill, a value which is only measured as a residual. Return on booked goodwill is even more difficult to measure because of noise from internally generated goodwill and company operations. Never the less, there appear to be at least two statistically sound methods for isolating the return on booked goodwill separate and apart from internally generated goodwill or other assets.

There was so little data on coal companies with booked goodwill that reliable estimates of the return on goodwill could not be made using the average method. There was no statistically significant difference between the return on booked goodwill and other assets for 4 industries using the average method. Statistically significant returns on booked goodwill were found in 43 industries. In 29 industries returns on booked goodwill were greater than returns on other assets. For 14 industries, return on booked goodwill was less than the return on other assets. The return on booked goodwill was negative for five industries: Chems, Chips, Enrgy, Guns, Retail and Txtls. Negative returns on Chems, Chips, Enrgy, Guns and Txtls are consistent with the findings of Chauvin and Hirschey (1994) and Heinens, Leach and McGrath (2007) which found booked goodwill is undervalued in manufacturing. Retail is similar to manufacturing only in that it is capital intensive. See

Table 3 Analysis of Return on Booked Goodwill  
Average Method for details.

The second method of isolating return on booked goodwill relies on regression analysis. The dependent variable is ROA and the independent variables are the percent of assets invested in goodwill and average assets. Of the 48 industries in this study, only 28 industries returned statistically significant regression models, defined as an F-value of 0.05 or less. Twenty two industries had statistically significant coefficients for booked goodwill defined as a p-value of 0.1 or less. Of those, the return on booked goodwill was positive for 15 industries and negative for 7 industries. The industries with negative return on booked goodwill include Chems, Enrgy, Guns, Retail, Telcm, Trnas and Txtls. This list substantially overlaps the set of companies where booked goodwill underperformed other assets under the average method. Negative returns can be interpreted as booked goodwill which underperforms other assets. See Table 4 Return on Booked Goodwill Regression Method for details.

There were 18 industries for which both average and regression methods returned statistically significant estimates of return on booked goodwill. The signs of the estimates for each industry were consistent across the two methods. For 13 industries the return on booked goodwill was positive for both methods and for 5 industries the return on booked goodwill was negative for both methods. See Table 5 Comparison of Methods for details and Table 6 Summary of Results for an overview of the findings.

The research question addressed by this study was whether the impact of booked goodwill could be estimated separate and apart from the impact of internally generated goodwill or other assets. The analyses show that the impact of booked goodwill can be estimated for most, but not all industries.

#### Questions for Further Research

These findings raise several questions for further research. For example, is the guidance provided by FASB 141 (2001) is too broad? Perhaps it should be revised to include tests to determine whether booked

goodwill is likely to generate promised benefits as suggested by SFAC 6 (1985). One such test might be whether goodwill has historically generated rent in a particular industry.

Even in industries where companies with booked goodwill under perform other assets, one cannot conclude that booked goodwill is worthless. Some fraction of it, perhaps that fraction representing an overpayment, may be worthless. Distinguishing rent generating booked goodwill from non-rent generating booked goodwill presents another issue for further research. Refinement of techniques to estimate the return on booked goodwill would also be useful.

One theory advanced for the value of booked goodwill is that the skill and learning of a company's management is a key value driver. If so, perhaps goodwill is simply a marker for some set of superior management behaviors. A future line of research might concentrate on identifying such behaviors and determining whether there is a better means of measuring such value.

## VI. CONCLUSION

This study examined whether the impact of booked goodwill could be detected above the background noise of internally generated goodwill and business operations. This study used two independent techniques. The average method estimated the return on booked goodwill by subtracting the return on non-goodwill assets from the overall return on assets of companies with booked goodwill. The return on non-goodwill assets was estimated as the mean return on assets for companies that had no booked goodwill. The regression method used return on assets as the dependent variable and booked goodwill as a percentage of assets and assets as independent variables. These methods were applied on an industry by industry basis.

Generally, the return on booked goodwill is equal to or greater than the return on non-goodwill assets. This is consistent with the implicit assumption underlying FASB 141 (2001) that goodwill is a rent generating asset. However, the return on booked goodwill was less than that of other assets for several

industries. This is consistent with previous studies which indicated goodwill underperforms in manufacturing industries.

Questions for future research include whether there are better methods of estimating the return on booked goodwill and whether return on booked goodwill is really a reflection of some other variable such as the skill and learning of management. There are still many unanswered questions about the nature and economic impact of booked goodwill. These questions await some the intrepid researcher to probe goodwill further.

### References

- \_\_\_\_\_. Accounting Research Bulletin (ARB) No. 24 1944. "Accounting for Intangible Assets," Dec.
- \_\_\_\_\_. Accounting Research Study (ARS) No. 10. 1968 "Accounting for Goodwill."
- \_\_\_\_\_. Accounting Principals Board (APB) Opinion No. 16. 1970. "Business Combinations"
- Barber, F. and R. Strack. *Harvard Business Review* June 2005, Vol.83. Iss. 6. 80-91.
- Begley, J., S. L. Chamberlain and L. Yinghua. 2006. "Modeling Goodwill for Banks: A Residual Income Approach with Empirical Tests," *Contemporary Accounting Research*. Spring, Volume 23 Iss. 1.
- Bourne, J. H. 1888 "Goodwill," *The Accountant*, Sept. 22, 604.
- \_\_\_\_\_. California Code of Civil Procedure §1263.510(b)
- Chauvin, K. W. and M. Hirschey 1994. "Goodwill, Profitability, and the Market Value of the Firm." *Journal of Accounting & Public Policy*. Summer, Vol. 13 Issue 2. 159-180
- \_\_\_\_\_. *Compustat*. Standard & Poor's, a Division of the McGraw-Hill Companies, Inc. New York. 2007.
- \_\_\_\_\_. "Statement of Financial Accounting Concepts No. 6 Elements of Financial Statements," (SFAC 6) Financial Accounting Standards Board June 1985.
- \_\_\_\_\_. "Statement of Financial Accounting Standards No. 141 Business Combinations," (SFAS 141) Financial Accounting Standards Board. June 2001
- \_\_\_\_\_. "Statement of Financial Accounting Standards No. 142 Goodwill and Other Intangible Assets," (SFAS 142) Financial Accounting Standards Board. June 2001
- Fama, E. F., and K. R. FRENCH. "Industry costs of equity." *Journal of Financial Economics* 43 (1997), 153-193.
- Fisher, I. 1906. *The Nature of Capital and Income*. New York: Reprints of Economic Classics, Augustus M. Kelley, Publisher.
- Heiens, Richard A., Robert T. Leach and Leanne C. McGrath. 2007. "The contribution of intangible assets and expenditures to shareholder value." *Journal of Strategic Marketing*. Vol. 15 May-July. pp.149-159.
- Herz, Robert H. 2008. "Understanding the Issues," Financial Accounting Standards Board, May.
- [http://72.3.243.42/articles&reports/uti\\_fair\\_value\\_may\\_2008.pdf](http://72.3.243.42/articles&reports/uti_fair_value_may_2008.pdf)
- Jenkins, Edmund L. 2000. "Testimony of Edmund L. Jenkins Chairman Financial Accounting Standards Board." Committee on Commerce. May 4. <http://72.3.243.42/news/Tstmny54.pdf>
- Jennings, R., J. Robinson, R. B. Thompson II and L. Duvall. 1996 "The relationship between accounting goodwill numbers and equity values," *Journal of Business Finance & Accounting*, June, Vol. 23 Iss. 4. 513-533
- Johnson, T. L. and K. R. Petrone. 1998. "Is goodwill an asset?" *Accounting Horizons* Sept. 1998 Vol. 12 Iss. 3. 293-304.
- Lander, G. and A. Reinstein. 2003. "Models to Measure Goodwill Impairment." *International*

*Advances in Economic Research*, Aug. Vol. 9 Issue 3, p227-232

Massoud, M. F. and Raiborn, C. A. 2003.

†Accounting for Goodwill: Are We Better Off?†  
*Review of Business*, Spring, Vol. 24 Issue 2, 26-32

McCarthy, M. G. and D. K. Schneider. 1995.

†Market Perception of Goodwill: Some Empirical  
Evidence.† *Accounting & Business Research*, Winter,  
Vol. 26 Iss. 1. 69-81

Samuelson, R. A. 1996. "The concept of assets in  
accounting theory," *Accounting Horizons*. Sept.  
Vol.10 Iss.3. 147-157.

Schuetze, W. P. 1993. "What is an asset?"  
*Accounting Horizons* Sept. Vol 7. No.3. 66-70.

Vance, D. E. 2005. *Raising Capital* Springer, New  
York. 2005.

Wang, Z. 1995. †An Empirical Assessment of IASC's  
Proposed Goodwill Amortization Requirement.†  
*International Journal of Accounting*, Vol. 30 Iss. 1,  
37-47

Wang, Z. 1993. "An Empirical Evaluation of  
Goodwill Accounting," *Journal of Applied Business  
Research*, Vol. 9 No. 4. 127-133

---

DAVID E. VANCE is an MBA, CPA, attorney and former Naval Officer with a physics degree. Prior to joining Rutgers he was a corporate controller, CFO and trial attorney. He has written two books *Financial Analysis and Decision Making*, McGraw-Hill 2003, Chinese translation 2004 and *Raising Capital*, Springer 2005. For the last ten years he has been teaching accounting, economics, corporate restructuring and raising capital at Rutgers University School of Business Camden.

---



Table 1 Prior empirical research

The number of companies in each study varied from year to year. The common denominator is the total number of years of company operations considered in each study.

Study	Years of operation	Methodology	Finding
Heinens, Leach and McGrath 2007	9,942	Regression analysis of total shareholder returns as a function of the percentage of assets that were invested in goodwill for actively traded manufacturing companies.	There is a statistically significant relationship between goodwill and underperformance.
Begley, Chamberlain and Li 2006	1,865	Regression of loan and deposit levels, new loans and new deposits, non-performing loans and fee income against goodwill defined as the difference between equity and market value. Limited to banks.	Banks are consistently valued higher than their underlying assets which suggests the difference is goodwill.
Jennings, Robinson, Thompson and Duvall 1996	259	Regression of plant, property and equipment, goodwill, other assets and liabilities against the market value. Limited to non-depository firms with goodwill.	Markets consistently value goodwill higher than either plant, property and equipment or other assets.
McCarthy and Schneider 1995	6,216	Regressions of goodwill, other assets, liabilities, and income against market value. Limited to firms with goodwill.	Markets consistently value goodwill at least as much as other assets.
Wang 1995	3,728	Regressions of goodwill, other assets and liabilities against market value. Limited to firms with goodwill.	Markets consistently value goodwill more than other assets.
Chauvin and Hirschey 1994	2,693	Recursive regression of goodwill, net income, advertising, R&D expenditures, market share, intangible assets, tangible assets, leverage, sales growth and Beta against market value.	Goodwill was valued for non-manufacturing companies, but not for manufacturing companies.
Wang 1993	136	Regressions of goodwill, non-goodwill assets and liabilities against market value. Limited to service firms with goodwill.	Goodwill assets are understated relative to their theoretical value.

Table 2 Descriptive Statistics

Publicly traded companies listed on Compustat with at least \$20 million in assets, a share price of \$1 and \$5 million in sales were selected for this study to eliminate smaller, more speculative and inactive companies. Return on Assets (ROA) is operating income before depreciation and amortization divided by average assets. Dollars are in millions. Goodwill refers to booked goodwill, not internally generated goodwill.

		Total Assets	Average	Total Goodwill	Average	Beginning of year goodwill as % of assets	Average
Year	Companies selected	beginning of year	beginning assets	beginning of year	beginning goodwill		ROA
1995	2,652	10,634,953	4,010	156,674	59	1.47%	13.52%
1996	2,986	12,996,179	4,352	172,546	58	1.33%	13.06%
1997	3,390	15,111,693	4,458	242,881	72	1.61%	12.73%
1998	3,640	16,790,999	4,613	325,667	89	1.94%	11.54%
1999	3,925	20,981,758	5,346	464,872	118	2.22%	10.95%
2000	4,173	25,524,547	6,117	674,422	162	2.64%	10.24%
2001	4,385	31,676,147	7,224	1,045,970	239	3.30%	7.68%
2002	4,420	37,306,619	8,440	1,129,075	255	3.03%	8.62%
2003	4,594	42,014,932	9,146	1,648,537	359	3.92%	9.38%
2004	4,354	38,525,819	8,848	1,695,474	389	4.40%	9.91%

Table 3 Return on Goodwill Average Method

The average method estimates the return on booked goodwill by subtracting the return on non-goodwill assets from the overall return on assets of companies with booked goodwill on a weighted average basis. The return on non-goodwill assets was estimated as the mean return on assets for companies that had no booked goodwill on an industry by industry basis. The number of operating years with no booked goodwill is n, and the number of operating years with booked goodwill is m. NGWROA is the ROA of companies with no booked goodwill. GWROA is estimate of the return on booked goodwill independent of other assets. Since booked goodwill is thought to encompass things like the skill of management, theoretically it should be separable from other assets. The t-statistic is an indication of whether there is a statistically significant difference between the return on booked goodwill and the return on non-goodwill assets.

Industry	n	NGWROA	Std.	m	GWROA	Std.	t-stat	
Aero	37	13.57%	7.41%	70	18.81%	28.07%	3.8900	***
Agric	66	9.23%	7.05%	26	13.25%	27.82%	2.6206	***
Autos	260	15.85%	10.32%	154	4.39%	43.86%	-11.6501	***
Banks	5,009	2.95%	2.77%	19	44.80%	38.12%	23.1443	***
Beer	65	14.30%	8.45%	30	28.53%	41.71%	9.1684	***
BldMt	297	15.48%	8.75%	174	14.38%	36.32%	-1.6077	**
Books	152	16.86%	11.35%	153	13.62%	79.32%	-2.4268	***
Boxes	45	14.43%	4.70%	70	27.27%	34.87%	13.8844	***
BusSv	1,836	6.36%	22.64%	1,081	30.11%	80.73%	34.9398	***
Chems	315	15.51%	9.18%	201	-1.49%	9.34%	-22.3297	***
Chips	1,316	9.67%	17.26%	375	-2.66%	78.62%	-15.2335	***
Clths	274	15.34%	13.30%	119	2.23%	49.53%	-12.3694	***
Cnstr	144	11.77%	8.66%	100	13.72%	41.42%	1.9625	**
Coal	40	10.48%	11.36%	0	NA	NA	NA	
Comps	846	5.90%	20.37%	187	24.15%	73.42%	16.4805	***
Drugs	859	-4.46%	26.78%	185	70.74%	110.62%	52.3835	***
ElecEq	257	8.27%	20.26%	177	38.20%	60.82%	20.5085	***
Enrgy	866	17.90%	13.30%	75	-4.91%	45.54%	-23.3258	***
FabPr	61	12.75%	6.83%	32	17.83%	41.57%	3.7510	***
Fin	758	14.65%	25.50%	91	38.97%	22.52%	13.9924	***
Food	326	14.52%	9.93%	114	27.53%	12.84%	16.4197	***
Fun	219	15.68%	10.71%	84	10.95%	43.60%	-3.8636	***
Gold	180	5.12%	14.28%	7	59.45%	55.32%	21.5402	***
Guns	21	18.64%	10.60%	31	-23.46%	39.09%	-16.6482	***
Hlth	181	13.93%	14.50%	114	27.53%	12.84%	11.1530	***
Hshld	316	15.62%	9.06%	118	6.89%	75.62%	-7.1317	***
Insur	680	6.98%	8.62%	121	23.42%	42.81%	20.0582	***
LabEq	379	9.42%	15.95%	152	20.93%	66.78%	9.1358	***
Mach	544	12.12%	13.57%	394	16.75%	36.94%	6.9580	***
Meals	366	14.84%	9.02%	94	30.29%	55.30%	16.3497	***
MedEq	423	5.69%	20.14%	262	49.23%	71.54%	34.6454	***
Mines	102	15.22%	10.16%	21	5.86%	22.10%	-6.8039	***
Misc	81	13.11%	15.55%	84	19.00%	49.86%	3.0249	***
Paper	228	13.77%	7.72%	165	17.78%	39.99%	5.8125	***
PerSv	136	17.36%	13.60%	151	10.51%	54.94%	-4.7097	***
Retail	1,152	16.42%	12.06%	299	-1.11%	55.45%	-27.7743	***
REst	218	7.98%	8.75%	39	37.53%	47.44%	17.4293	***
Rubbr	121	12.71%	8.54%	103	26.28%	26.38%	15.2936	***
Ships	39	9.70%	8.77%	28	19.53%	57.24%	4.3070	***
Smoke	42	24.71%	26.76%	15	10.61%	17.24%	-0.7558	
Soda	50	14.13%	8.86%	26	20.11%	56.44%	3.0640	***
Steel	357	11.33%	8.99%	103	27.55%	40.14%	19.6992	***
Telcm	741	10.21%	15.85%	320	9.99%	67.14%	-0.2594	
Toys	128	14.70%	20.08%	72	26.64%	32.88%	6.2511	***
Trans	613	13.88%	9.49%	150	14.82%	40.89%	1.1533	
Txtls	83	14.85%	11.18%	37	-6.75%	49.49%	-11.2367	***
Util	1,368	10.84%	3.92%	93	12.40%	39.38%	0.6191	
Whlsl	500	10.68%	10.80%	366	16.21%	39.64%	9.2692	***

\*\*\* statistically significant at the 0.01 level

\*\* statistically significant at the 0.05 level

\* statistically significant at the 0.1 level

Table 4 Return on Booked Goodwill Regression Method

The regression method used return on assets as the dependent variable and booked goodwill as a percentage of assets and assets as independent variables. By evaluating the resulting equation with booked goodwill set to zero and a hundred percent, the return on booked goodwill can be estimated. These methods were applied on an industry by industry basis. The number of years of operating performance in an industry is n. The coefficients for booked goodwill as a percent of assets and average assets are a and b respectively and c is the intercept. ROBGW is the estimated return on booked goodwill.

Industry	n	a	t-stat	p-value	ROBGW	b	t-stat	p-value	c
Aero	143	0.043	0.955	0.341	4.32%	-4.64E-07	-1.172	0.243	0.135
Agric	125	0.092	2.518	0.013	9.22% **	-3.04E-06	-0.567	0.520	0.105
Autos	626	-0.007	-0.223	0.823	-0.65%	-2.49E-07	-3.793	0.000 ***	0.145
Banks	5146	0.383	15.591	0.000	38.27% ***	7.07E-10	0.153	0.878	0.031
Beer	168	0.016	0.197	0.844	1.64%	3.82E-06	6.288	0.000 ***	0.127
BldMt	671	-0.032	-1.097	0.273	-3.15%	-6.34E-07	-0.827	0.409	0.159
Books	336	-0.026	-0.849	0.397	-2.64%	3.85E-06	-1.816	0.070 *	0.176
Boxes	144	0.098	2.100	0.038	9.79% **	-7.59E-06	-4.479	0.000 ***	0.160
BusSv	3749	0.092	4.111	0.000	9.17% ***	2.01E-06	3.477	0.001 ***	0.083
Chems	733	-0.049	-1.468	0.143	-4.94%	1.63E-07	0.375	0.708	0.142
Chips	2242	-0.108	-3.267	0.001	-10.80% ***	2.60E-06	4.218	0.000 ***	0.096
Clths	549	-0.073	-1.133	0.258	-7.25%	8.36E-07	0.429	0.668	0.154
Cnstr	413	-0.026	-0.708	0.479	-2.62%	-1.88E-06	-1.552	0.122	0.127
Coal	46	2.542	1.218	0.230	254.16%	-1.09E-05	-1.028	0.310	0.135
Comps	1340	0.047	0.854	0.393	4.71%	1.10E-06	2.425	0.154	0.059
Drugs	1341	0.396	5.348	0.000	39.62% ***	6.93E-06	9.247	0.000 ***	-0.030
ElcEq	572	0.155	2.594	0.010	15.48% ***	-1.22E-07	-0.185	0.854	0.094
Enrgy	1215	-0.162	-2.519	0.012	-16.15% **	2.16E-07	1.295	0.196	0.174
FabPr	132	-0.047	-0.846	0.399	-4.65%	-1.77E-06	-0.135	0.893	0.135
Fin	1056	0.174	2.620	0.009	17.38% ***	-2.17E-07	-2.958	0.003 ***	0.149
Food	527	0.001	0.029	0.977	0.12%	4.95E-07	0.767	0.444	0.149
Fun	440	0.010	0.243	0.809	1.01%	-9.96E-07	-2.375	0.018 **	0.160
Gold	191	-0.282	-0.881	0.376	-28.15%	2.31E-05	3.495	0.001 ***	0.029
Guns	68	-0.311	-2.953	0.004	-31.06% ***	1.45E-06	1.064	0.292	0.161
Hlth	555	0.139	4.762	0.000	13.87% ***	1.42E-06	0.808	0.419	0.127
Hshld	604	0.043	1.174	0.241	4.34%	2.29E-06	3.358	0.001 ***	0.148
Insur	1304	0.223	8.142	0.000	22.29% ***	-1.33E-07	-4.853	0.000 ***	0.060
LabEq	717	0.088	1.722	0.086	8.80% *	8.14E-06	1.533	0.126	0.089
Mach	1261	0.016	0.635	0.526	1.63%	-3.36E-07	-0.405	0.686	0.123
Meals	660	0.079	1.597	0.111	7.86%	-1.03E-06	-1.047	0.295	0.157
MedEq	857	0.188	3.969	0.000	18.77% ***	2.35E-05	5.898	0.000 ***	0.063
Mines	164	0.035	0.298	0.766	3.50%	-1.26E-06	-1.667	0.975	0.159
Misc	261	0.047	0.838	0.000	4.72% ***	-1.48E-07	-1.798	0.073 *	0.124
Paper	503	0.002	0.088	0.930	0.24%	-7.99E-07	-1.528	0.127	0.145
PerSv	352	-0.014	-0.310	0.756	-1.38%	-9.90E-06	-2.956	0.003 ***	0.172
Retail	2003	-0.112	-4.452	0.000	-11.22% ***	3.06E-07	0.798	0.425	0.159
RIEst	300	0.273	5.092	0.000	27.29% ***	-2.80E-07	-0.292	0.771	0.079
Rubbr	329	0.012	0.238	0.728	1.21%	1.74E-06	0.519	0.604	0.140
Ships	80	0.154	1.288	0.202	15.38%	-1.17E-06	-0.274	0.785	0.104
Smoke	62	-0.153	-0.840	0.404	-15.29%	-1.93E-06	-1.817	0.074 *	0.316
Soda	99	-0.028	-0.421	0.675	-2.77%	-2.17E-06	-1.670	0.098 *	0.160
Steel	658	0.143	3.628	0.000	14.27% ***	-3.41E-07	-0.449	0.654	0.115
Telcm	1442	-0.057	-1.758	0.079	-5.65% *	4.63E-07	3.713	0.000 ***	0.112
Toys	268	-0.008	-0.089	0.930	-0.79%	-7.45E-07	-0.858	0.392	0.146
Trans	1099	-0.092	-4.220	0.000	-9.23% ***	-2.93E-06	-7.152	0.000 ***	0.152
Txtls	166	-0.262	-3.378	0.001	-26.16% ***	2.71E-05	2.164	0.032 **	0.137
Util	1539	0.039	2.973	0.003	3.92% ***	-2.43E-07	-2.408	0.016 **	0.109
Whsl	1263	0.034	1.331	0.184	3.44%	-1.21E-06	-2.661	0.008 ***	0.109

\*\*\* statistically significant at the 0.01 level

\*\* statistically significant at the 0.05 level

\* statistically significant at the 0.1 level

Table 6 Summary of Results

The average method estimates the return on booked goodwill by subtracting the return on non-goodwill assets from the overall return on assets of companies with booked goodwill on a weighted average basis. The return on non-goodwill assets was estimated as the mean return on assets for companies that had no booked goodwill. The regression method uses return on assets as the dependent variable and booked goodwill as a percentage of assets and average assets as independent variables. By evaluating the resulting equation with goodwill set to zero and a hundred percent, the return on booked goodwill can be estimated. These methods were applied on an industry by industry basis. Comparison of methods is an analysis of industries where both the average and regression methods yielded statistically significant return on booked goodwill.

#### Average Method Analysis

Industries with no statistically significant difference between the return on goodwill and non-goodwill assets.	4
Industries with a statistically significant difference between the return on goodwill and non-goodwill assets.	43
Industries in which the return on goodwill exceeded the return on non-goodwill assets.	29
Industries in which the return on goodwill was less than the return on non-goodwill assets.	14
Industries with an insufficient number of years of operations with goodwill to make reliable estimates (Coal).	1
Total	48

#### Regression Method Analysis

Industries with a statistically significant coefficients for goodwill as a percent of assets.	22
Industries for which return on goodwill is positive.	15
Industries for which the return on goodwill is negative.	7
Industries in which the coefficient for goodwill is not statistically significant.	26
Total	48

#### Comparison of Methods

Industries for which there was no statistically significant difference between the return on goodwill for using both the average and regression methods.	29
Industries for which the return on goodwill was positive for both the average and regression methods.	13
Industries for which return on goodwill was negative for both the average and regression method	5
Industries with an insufficient number of years of operations with goodwill to draw any conclusion.	1
Total	48

## Appendix A

### Industry classifications

This appendix is based on the Fama and French (1997) industry classifications plus the classification of the omitted SIC code of 3690 classified as electrical equipment, ElcEq.

SIC range	Code	Industry	SIC range	Code	Industry
0100-0799	Agric	Agriculture	2850-2899	Chems	Chemicals
0800-0899	BldMt	Construction Materials	2900-2911	Enrgy	Petroleum and Natural Gas
0900-0999	Toys	Recreational Products	2950-2952	BldMt	Construction Materials
1000-1039	Mines	Nonmetallic Mining	2990-2999	Enrgy	Petroleum and Natural Gas
1040-1049	Gold	Precious Metals	3000-3000	Rubbr	Rubber and Plastic Products
1060-1099	Mines	Nonmetallic Mining	3010-3011	Autos	Automobiles and Trucks
1200-1299	Coal	Coal	3020-3021	Clths	Apprel
1310-1389	Enrgy	Petroleum and Nat Gas	3050-3099	Rubbr	Rubber and Plastic Products
1400-1499	Mines	Nonmetallic Mining	3100-3111	Clths	Apprel
1500-1549	Cnstr	Construction	3130-3159	Clths	Apprel
1600-1699	Cnstr	Construction	3160-3199	Hshld	Consumer Goods
1700-1799	Cnstr	Construction	3200-3219	BldMt	Construction Materials
2000-2046	Food	Food Products	3210-3221	Boxes	Shipping Containers
2047-2047	Hshld	Consumer Goods	3229-3231	Hshld	Consumer Goods
2048-2048	Agric	Agriculture	3240-3259	BldMt	Construction Materials
2050-2063	Food	Food Products	3260-3260	Hshld	Consumer Goods
2064-2068	Soda	Candy and Soda	3261-3264	BldMt	Construction Materials
2070-2079	Food	Food Products	3262-3263	Hshld	Consumer Goods
2080-2085	Beer	Alcoholic Beverages	3269-3269	Hshld	Consumer Goods
2086-2087	Soda	Candy and Soda	3270-3299	BldMt	Construction Materials
2090-2095	Food	Food Products	3300-3369	Steel	Steel Works, etc.
2096-2097	Soda	Candy and Soda	3390-3399	Steel	Steel Works, etc.
2098-2099	Food	Food Products	3400-3400	FabPr	Fabricated Products
2100-2199	Smoke	Tobacco Products	3410-3412	Boxes	Shipping Containers
2200-2295	Txtls	Textiles	3420-3442	BldMt	Construction Materials
2296-2296	Autos	Automobiles and Trucks	3443-3444	FabPr	Fabricated Products
2297-2299	Txtls	Textiles	3446-3452	BldMt	Construction Materials
2300-2390	Clths	Apprel	3460-3479	FabPr	Fabricated Products
2391-2392	Hshld	Consumer Goods	3480-3489	Guns	Defense
2393-2395	Txtls	Textiles	3490-3499	BldMt	Construction Materials
2396-2396	Autos	Automobiles and Trucks	3510-3536	Mach	Machinery
2397-2399	Txtls	Textiles	3537-3537	Autos	Automobiles and Trucks
2400-2439	BldMt	Construction Materials	3540-3569	Mach	Machinery
2440-2449	Boxes	Shipping Containers	3570-3579	Comps	Computers
2450-2459	BldMt	Construction Materials	3580-3599	Mach	Machinery
2490-2499	BldMt	Construction Materials	3600-3621	ElcEq	Electrical Equipment
2510-2519	Hshld	Consumer Goods	3622-3622	Chips	Electronic Equipment
2520-2549	Paper	Business Supplies	3623-3629	ElcEq	Electrical Equipment
2590-2599	Hshld	Consumer Goods	3630-3639	Hshld	Consumer Goods
2600-2639	Paper	Business Supplies	3640-3646	ElcEq	Electrical Equipment
2640-2659	Boxes	Shipping Containers	3647-3647	Autos	Automobiles and Trucks
2670-2699	Paper	Business Supplies	3648-3649	ElcEq	Electrical Equipment
2700-2749	Books	Printing and Publishing	3650-3652	Toys	Recreational Products
2750-2759	BusSv	Business Services	3660-3660	ElcEq	Electrical Equipment
2760-2761	Paper	Business Supplies	3661-3679	Chips	Electronic Equipment
2770-2799	Books	Printing and Publishing	3680-3689	Comps	Computers
2800-2829	Chems	Chemicals	3691-3692	ElcEq	Electrical Equipment
2830-2836	Drugs	Pharmaceutical Products	3693-3693	MedEq	Medical Equipment
2840-2844	Hshld	Consumer Goods	3694-3694	Autos	Automobiles and Trucks

SIC range	Code	Industry	SIC range	Code	Industry
3695-3695	Comps	Computers	5800-5813	Meals	Restaurants, Hotel, Motel
3690-3690	ElcEq	Electrical Equipment	5890-5890	Meals	Restaurants, Hotel, Motel
3699-3699	ElcEq	Electrical Equipment	5900-5999	Retail	Retail
3700-3716	Autos	Automobiles and Trucks	6000-6099	Banks	Banking
3720-3729	Aero	Aircraft	6100-6199	Banks	Banking
3730-3731	Ships	Shipbuilding, Railroad Eq.	6200-6299	Fin	Trading
3732-3732	Toys	Recreational Products	6300-6399	Insur	Insurance
3740-3743	Ships	Shipbuilding, Railroad Eq.	6400-6411	Insur	Insurance
3750-3751	Hshld	Consumer Goods	6500-6553	RIEst	Real Estate
3760-3769	Guns	Defense	6700-6799	Fin	Trading
3790-3792	Autos	Automobiles and Trucks	7000-7019	Meals	Restaurants, Hotel, Motel
3795-3795	Guns	Defense	7020-7021	PerSv	Personal Services
3799-3799	Autos	Automobiles and Trucks	7030-7039	PerSv	Personal Services
3800-3800	Hshld	Consumer Goods	7040-7049	Meals	Restaurants, Hotel, Motel
3810-3810	Chips	Electronic Equipment	7200-7212	PerSv	Personal Services
3811-3811	LabEq	Measuring and Control Eq.	7213-7213	Meals	Restaurants, Hotel, Motel
3812-3812	Chips	Electronic Equipment	7215-7299	PerSv	Personal Services
3820-3830	LabEq	Measuring and Control Eq.	7300-7372	BusSv	Business Services
3840-3851	MedEq	Medical Equipment	7373-7373	Comps	Computers
3860-3879	Hshld	Consumer Goods	7374-7394	BusSv	Business Services
3900-3900	Misc	Miscellaneous	7395-7395	PerSv	Personal Services
3910-3919	Hshld	Consumer Goods	7397-7397	BusSv	Business Services
3930-3949	Toys	Recreational Products	7399-7399	BusSv	Business Services
3950-3955	Paper	Business Supplies	7500-7500	PerSv	Personal Services
3960-3961	Hshld	Consumer Goods	7510-7519	BusSv	Business Services
3965-3965	Clths	Apprel	7520-7549	PerSv	Personal Services
3990-3990	Misc	Miscellaneous	7600-7699	PerSv	Personal Services
3991-3991	Hshld	Consumer Goods	7800-7841	Fun	Entertainment
3993-3993	BusSv	Business Services	7900-7999	Fun	Entertainment
3995-3995	Hshld	Consumer Goods	8000-8099	Hlth	Healthcare
3996-3996	BldMt	Construction Materials	8100-8199	PerSv	Personal Services
3999-3999	Misc	Miscellaneous	8200-8299	PerSv	Personal Services
4000-4099	Trans	Transportation	8300-8399	PerSv	Personal Services
4100-4199	Trans	Transportation	8400-8499	PerSv	Personal Services
4200-4299	Trans	Transportation	8600-8699	PerSv	Personal Services
4400-4499	Trans	Transportation	8700-8748	BusSv	Business Services
4500-4599	Trans	Transportation	8800-8899	PerSv	Personal Services
4600-4699	Trans	Transportation	8900-8999	BusSv	Business Services
4700-4799	Trans	Transportation	9900-9999	Misc	Miscellaneous
4800-4899	Telcm	Telecommunications	5800-5813	Meals	Restaurants, Hotel, Motel
4900-4999	Util	Utilities	5890-5890	Meals	Restaurants, Hotel, Motel
5000-5099	Whlsl	Wholesale	5900-5999	Retail	Retail
5100-5199	Whlsl	Wholesale	6000-6099	Banks	Banking
5200-5299	Retail	Retail	6100-6199	Banks	Banking
5300-5399	Retail	Retail	6200-6299	Fin	Trading
5400-5499	Retail	Retail	6300-6399	Insur	Insurance
5500-5599	Retail	Retail	6400-6411	Insur	Insurance
5600-5699	Retail	Retail	6500-6553	RIEst	Real Estate
5700-5736	Retail	Retail	6700-6799	Fin	Trading

FINANCIAL MANAGEMENT DECISION-MAKING  
AT A COMMUNITY BANK: A CASE STUDY OF TWO BANKS

John S. Walker, Kutztown University of Pennsylvania  
Henry F. Check, Jr., Kutztown University of Pennsylvania

---

ABSTRACT

The effective use of financial leverage is fundamental to sound financial management, and no industry exemplifies leverage's importance more than banking. Commercial banks typically have returns on assets (ROA) in the range of one to two percent and sometimes less, and they use equity multipliers of five to 20 times to leverage that modest return into returns on equity (ROE) of around 15 percent.

But suppose a bank is *over-leveraged* or *under-leveraged*? How does that affect the stockholders' rate of return? What can a bank do to adjust its leverage position?

This case study examines two banks with leverage problems that are polar extremes. The effect on the banks' stock returns is examined and corrective measures are proposed.

---

Introduction

This case study looks at two community banks, both in the asset range of less than \$5 billion. Each bank is at the opposite end of the spectrum in terms of capitalization, which provides an interesting contrast for a case study. At the time of our consulting work, Lowlander Bank had an equity-to-assets ratio (E/A) close to five percent, while Highlander Bank had an E/A ratio around 20 percent.<sup>1</sup> Both banks want to manage their equity in such a way that will maximize shareholder value over the long term. We organize the case study into two parts. First, in Part I, we examine the financial management issues at Lowlander Bank and then in Part II we examine the issues at Highlander Bank.

The management and board of each bank were focused on particular issues that led them to seek outside consulting. In this case study, we present the issues and outline the analysis done to assist these two banks. Both banks were interested to hear an outside perspective regarding their stock performance. Specifically, Lowlander Bank was interested in our comments regarding recent performance, while Highlander Bank was focused on

the future, as it had just completed an initial public offering (IPO) of stock.

Part I of this case study looks at how to value a community bank. Often community banks are publicly traded, but the volume of shares exchanged is modest compared to large banks, such as Bank of America. Management teams at community banks often seek an outside opinion on the "value" of their bank. When valuing a bank, there are valuation techniques that mirror those used in other industries. However, there are unique considerations when an analyst tries to find the intrinsic value of a bank, and these will be discussed in this case.

Part II of this case study looks at capital management when a bank has "excess" capital. There are several strategies to consider—each with its own implications. Finance students are taught that capital structure doesn't affect firm value. Yet, in banking, the use of a high degree of leverage is needed to generate a solid ROE, so capital structure does matter.

**Part I: Lowlander Bank's Issues**

The management and board at Lowlander Bank have thought for several years that the market value of their bank trails its intrinsic value. Moreover, they

---

<sup>1</sup> The names of both banks have been changed and some of the numbers have been altered to conceal their identities.



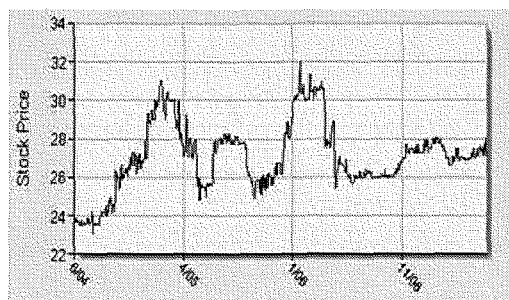
were concerned that this undervaluation by the market has been detrimental to shareholders. They wanted an outside financial expert to help them answer these questions:

1. Is their stock trading below its intrinsic value? If so, by how much?
2. Has this been detrimental to shareholders in terms of stock performance?
3. If we believe the stock is undervalued, what might explain this?

### Stock Performance

How do you fairly evaluate a firm's stock performance? People tend to have short memories and will focus on the most recent performance. Often, we focus on price appreciation, forgetting that dividends paid are an important and, in many cases, a significant component of return. Lowlander Bank schedules board retreats every three years to discuss certain strategic issues, including stock performance. Therefore, management's request to us was to examine the bank's stock performance for the prior three years. Exhibit 1 shows the stock price performance for Lowlander Bank over the three years prior to the meeting with management in the 3Q07. For the three-year period, the stock price was up 14.77 percent, but the trend was anything but steady.

Exhibit 1: Three-Year Stock Price Performance



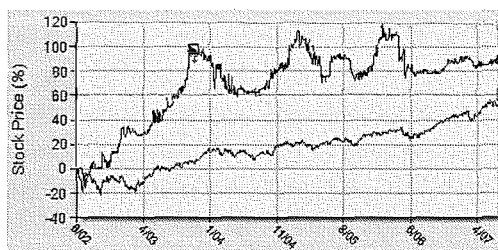
Source: SNL Financial

Exhibit 1 provides limited information. There are two questions that need addressing when assessing the bank's stock performance. First, what is a "fair" timeframe for comparison? Is it one year, three years, five years, or a longer period? Investment professionals will often assert that an investor's

timeframe should be at least 5-10 years if he plans to invest in equities. We know that stocks can exhibit dramatic volatility, so returns over short periods can be very good or very poor. Yet, when returns for longer periods are considered, equities generally do better than any other asset class, such as bonds and cash-equivalents. Therefore, we suggested to the bank that evaluation of their stock should be over a longer timeframe, such as five years.

In addition to selecting a suitable timeframe, the second question that needs to be addressed is how to select an appropriate benchmark. If a student scores a 65 percent on an exam, has he performed poorly? If the average score is 75 percent, then a 65 percent is not a good score. However, if the average is 50 percent, then a 65 percent is quite good. Stock performance, like exam grades, is relative. Lowlander Bank is accustomed to comparing their stock to the S&P 500, as shown in Exhibit 2. For the five years shown, the bank's stock (top line) is up 86.18 percent on a cumulative basis. This cumulative return far exceeds the 51.88 percent gain by the S&P 500 (bottom line). When the board first considered the prior three years, the stock performance appeared lackluster. Yet, when we stretched the interval to five years and inserted the S&P 500 for comparison, frowns turned to smiles around the board table.

Exhibit 2: Five-Year Stock Price Comparison to S&P 500



Source: SNL Financial

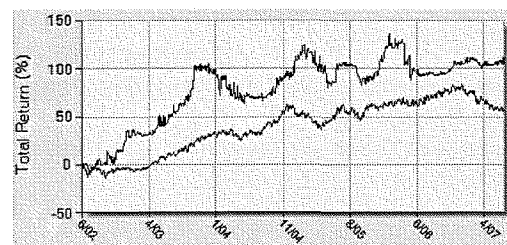
While the comparison to the S&P 500 is valid in that it tells investors how the stock compared to the overall market—or, at least, 500 widely-held companies which represent more than 70 percent of the U.S. stock market—it does not tell them how the stock compared to the bank's peers. Sectors of the

economy can go in and out of favor from year to year. Therefore, we explained to the board at Lowlander Bank that there are two more changes to the comparison that we recommended. First, it makes sense to select a peer group of *banks* of comparable size. Bank efficiency is linked to size, so larger banks should be more efficient and this will impact earnings and stock performance. The peer group that was selected was the group of banks with assets between \$1 billion to \$5 billion, compiled by SNL Financial. There are other bank benchmarks that can be used for comparison. For example, America's Community Bankers and the NASDAQ Stock Market created a broadly diversified stock index for community banks termed the "ACB NASDAQ Index."

A noteworthy omission from Exhibits 1 and 2 is dividends. Investors and boards will sometimes forget the importance of a regular dividend when evaluating their stock performance. Community banks tend to be reliable payers of dividends, so a complete stock performance comparison should include dividends. Thus, in addition to comparing a bank's stock to an adequate peer group, the second adjustment we recommend is to make a comparison using total return; dividends paid should be included along with changes to share price (adjusted for stock splits).

Exhibit 3 shows Lowlander Bank's overall stock performance (top line)—on a total return basis—relative to its peers (bottom line). This comparison finds the bank's five-year total return (105.24 percent) is nearly double the return for the peers (55.95 percent). In the next section, we do a valuation of the bank. However, regardless of what the valuation shows, the conclusion is definitive: over the last five years, Lowlander Bank has delivered outstanding stock performance to its shareholders. That perhaps explains why management and the board are puzzled by the perceived undervaluation of the bank's shares. What will our valuation and fundamental analysis reveal?

Exhibit 3: Five-Year Total Return Comparison to Peers



Source: SNL Financial

### Stock Valuation Of Lowlander Bank

There were three broad categories of valuation methodologies that we considered when we valued Lowlander Bank: (1) a dividend discount model, (2) a residual income model, and (3) price ratio analysis. Jordan and Miller (2008) present the residual income model as "a simple model that we can use [when] companies don't pay dividends." In the case of Lowlander Bank, it has paid an ever-increasing dividend, although the year-to-year growth rate has not been constant. Exhibit 4 shows the bank's dividend history from 2001 to 2006; based on these numbers, the average growth in dividends leading up to the valuation was 7.0 percent.

Exhibit 4: Dividend History From 2001-2006

	2001	2002	2003	2004	2005	2006
Dividends	0.4000	0.4067	0.4401	0.4900	0.5300	0.5600
Core EPS	1.39	1.86	2.21	2.19	2.24	2.48

Source: SNL Financial

Before we step through the valuation, we want to tell a story. The first bank valuation that we did was in the mid 1990s. The bank decided to have two valuation firms perform a valuation. We were not aware of this until after we did our valuation work. We arrived at an opinion of value of \$34.25 per share. After the opinion of value was given to the bank, the CEO said that he thought "our valuation was better than the valuation done by our

competitor.” We were curious why he had made this judgment. He went on to comment that “Our valuation was 25 cents higher than our competitor’s valuation and closer to the bank’s own valuation.” The point we made to the CEO was that valuations are imprecise. If two valuation firms are within 25 cents of one another, that is remarkable. The fact that our valuation was slightly higher was meaningless. While we wanted the client to be pleased with our valuation, someone who understands the valuation process knows that many assumptions go into a valuation. It’s impossible for it to be exact.

### Price Ratio Analysis

Financial data for 160 banks in the \$1 billion to \$5 billion peer group was obtained from SNL Financial. The average price-to-earnings (P/E), price-to-tangible-book (P/TB) and dividend-to-price (D/P) ratios are given in Exhibit 5, along with the median, high, and low. The data are based on the last four quarters (L4Q) ending 2Q07. Even though the dataset contains 160 banks—which is a fairly large sample of banks—there is noticeable positive skew in the P/E multiple. (See Mason et al., p. 86, for useful discussion on skewed distributions.) To avoid problems with skew in our valuation work, we usually use the median values for a valuation.

Exhibit 5: Selected Ratios

	P/E	P/TB	D/P
Median	15.0x	2.1x	2.3%
Average	17.5x	2.2x	2.4%
High	111.1x	4.9x	6.4%
Low	7.0x	1.0x	0.0%

Source: SNL Financial

At the time of the valuation, Lowlander Bank’s earnings per share (EPS) for the L4Q were \$2.59 per share. By multiplying the median P/E of 15.0 times this EPS, the P/E-based valuation is found to be \$38.85. At this point, some analysts will adjust the estimate for factors such as perceived earnings

quality, management abilities, and other such factors that tend to be more qualitative. Making qualitative adjustments is subjective, so we rarely do it.

The method of using the peers’ P/E multiple to estimate value is repeated for the P/TB and D/P ratios. Lowlander Bank has approximately 3.2 million shares outstanding, with a price-to-tangible-book-value-per-share (BVPS) of \$17.26. Applying this to the median P/TB of 2.1 for the peers leads to an estimate of \$36.57. Likewise, the bank’s most recent quarterly dividend per share (DPS), annualized, was \$0.57 per share. Applying this to the median D/P of 2.3 percent for the peers leads to an estimate of \$25.03.

Another method for utilizing the price ratios in an estimate of value is to find a regression equation that gives the best fit between banks’ EPS, BVPS, and DPS values. The regression model is used to estimate a bank’s value by substituting its fundamentals into the equation. Using the peer group data, the following model is obtained:

$$\text{Price} = 6.93 + 6.61 \times \text{EPS} + 0.42 \times \text{BVPS} + 3.09 \times \text{DPS}$$

When Lowlander Bank’s fundamentals are substituted into the equation, the price estimate found is \$32.99. Note that simple substitution of the numbers provided in this case will likely give a slightly different estimate due to rounding errors. The actual valuation was done in an Excel workbook, which preserves all of the trailing digits generated from each calculation.

The ratios used above are common to most if not all industries. One example of an exception is DPS. When the “dot-com” industry was in its infancy, there were plenty of firms paying zero dividends. Obviously, these firms could not be valued based on their dividend yield. One ratio that has emerged in banking as a common but unique metric for value is the “franchise-premium-to-core-deposit ratio” (FPCD). This ratio is defined as:

$$= \frac{\text{Share Price} - \text{Tangible Book Value per Share}}{\text{Core Deposits per Share}}$$

The logic behind this ratio and the reason that merger and acquisition (M&A) analysts focus on it is because the value of a bank is thought to be linked strongly to the volume of "core deposits" that are on the balance sheet, which are all deposits excluding jumbo CDs. Banks are said to be in the "spread business" because their profits are largely driven by the difference between the yields obtained on their assets minus the rates paid on their funding. The market for loans and investments is extremely competitive, so banks have difficulty generating better asset yields than their peers. On the other hand, some banks are better than others at building large balances of inexpensive core deposits. The FPCD ratio reflects the premium-over-tangible-book-value-per-dollar-of-core-deposits. By using this as a metric of value, it assumes reversion to the mean, implying that the market is paying a similar premium for each dollar of core deposit on a bank's balance sheet.

The peers' franchise-premium-to-core-deposit ratio was found to be 13.61 percent. Based on Lowlander Bank's tangible BVPS (given above as \$17.26) and its core deposits per share of \$210.70, the implied premium is \$28.68. In turn, this provides an estimate of value of \$45.94 per share.

#### Dividend Discount Model

When using the dividend discount model (DDM) to estimate the value of a company, an analyst needs to decide which version of the model is most appropriate. Generally, there are two versions of the model to select: (1) constant perpetual growth and (2) two-stage dividend growth. The two-stage dividend growth model is suitable for young companies growing very quickly in early years that expect growth to level off sometime in the future. Our feeling is that the constant perpetual growth DDM is reasonable for community banks that have been operating for a number of years. If the bank were a "de novo" bank, then another model would be needed. It is not uncommon to find a community bank that has been in existence for 50 or more years. These mature banks tend to follow a steady growth trend. The constant perpetual growth model is given as:

$$V_0 = \frac{D_0 \times (1+g)}{k-g}$$

To use this model, an analyst needs to estimate the bank's risk-adjusted discount rate and the expected growth rate in dividends. There are several ways to estimate the bank's future growth rate: (1) use the bank's historical dividend growth rate, (2) use a forecast for the industry, or (3) calculate the bank's sustainable growth rate. We choose to use the bank's average growth rate in dividends (7 percent) based on the data shown earlier in Exhibit 4.

In order to estimate the bank's risk-adjusted rate of return, we utilize the Capital Asset Pricing Model (CAPM), which says that the discount rate should equal the time value of money plus a risk premium (see p. 406 in Jordan & Miller). This requires an estimate of the bank's beta. To do this, we obtained return data for Lowlander Bank for the period 2/4/2002 to 8/1/2007 along with market returns for the same period. Using this data, we plotted the excess returns for Lowlander Bank versus the excess returns for the market (using the S&P 500 as our proxy for the market), and then estimated beta by finding the slope of the regression line. Once we estimated the bank's beta, the only other figures needed were the risk-free rate and the risk premium for the market. At the time of our valuation, the 90-day Treasury bill rate was 4.81 percent (<http://www.federalreserve.gov/releases/>); for the risk premium, we used 9.0 percent. Note that there are various sources for obtaining an estimate of the market risk premium and there can be significant differences depending on the source and the exact period studied (see p. 177 in Jordan & Miller). We are now able to make the substitutions into the CAPM:

$$k = R_f + \beta \times (\text{Market Risk Premium})$$

$$8.35\% = 4.81\% + 0.3935 \times 9\%$$

In turn, once we have a discount rate and a growth rate, all that is needed is the bank's prior four quarters' dividend. This is \$0.57. Now we can estimate the stock's value using the DDM:

$$\$45.13 = \frac{\$0.57 \times (1 + 0.07)}{0.0835 - 0.07}$$

Once an analyst has his various estimates of stock value, the obvious question is how to weight them to arrive at a final opinion of value. Often, we find the DDM-based estimate to be much higher or lower than the other estimates. The DDM is quite sensitive to the values of  $k$  and  $g$ . The decision whether or not to use the DDM estimate, in our view, is a judgment call. When we value a bank, we are doing it at a point in time. It might be the first and last time we value the institution. In contrast, a stock analyst on Wall Street will track a stock for an extended period. He can monitor risk premiums, dividend announcements, market pricing, and different variations of the DDM to determine the most accurate model to use.

The valuation produces a range of estimates from a low of \$25.03 (based on dividend yield) to a high of \$45.94 (based on the franchise-premium-to-core-deposit ratio). A summary of the valuation estimates is shown in Exhibit 6. The average of the six estimates is \$37.42. The peer data and the bank's data are for the end of 2Q07, so the appropriate comparison to use is the stock's price at the end of June 2007. The close on 6/29/07 was \$27.12. Thus, our average, which we term the "opinion of value," is 38 percent higher than the closing price. This valuation exercise supports the notion shared by management and the board that the market is undervaluing the company. However, unless you believe in market inefficiency, you have to ask: What is the market seeing about Lowlander Bank that could explain this low pricing? In the next section of our case study, we examine key fundamentals on the bank in search for clues.

Exhibit 6: Valuation Summary

Valuation based on:	
1. P/E Ratio	\$38.85
2. P/TB Ratio	\$36.57
3. Dividend Yield	\$25.03
4. Econometric Model	\$32.99
5. Franchise Premium	\$45.94
6. DDM	\$45.13
Average	\$37.42

### What The Bank's Fundamentals Tell Us

If you look at a Uniform Bank Performance Report (UBPR), you find a plethora of statistics that can be analyzed when assessing a bank. UBPRs are prepared by the Federal Financial Examination Council, which, according to their tagline, "promotes the uniformity and consistency in the supervision of financial institutions." Moreover, the UBPR is

"An analytical tool created for bank supervisory, examination, and management purposes. In a concise format, it shows the impact of management decisions and economic conditions on a bank's performance and balance-sheet composition. The performance and composition data contained in the report can be used as an aid in evaluating the adequacy of earnings, liquidity, capital, asset and liability management, and growth management. Bankers and examiners alike can use this report to further their understanding of a bank's financial condition and, through such understanding, perform their duties more effectively." (<http://www.ffiec.gov/UBPR.htm>)

With so much information available for a bank, where should an analyst begin? When looking at accounting data, a bank's return on assets and return on equity are the two main performance ratios to examine. The "drilldown" analysis should look at three primary areas: (1) net interest income, (2) net

overhead, and (3) capital, and three secondary areas: (4) the mix of earning/nonearning assets, (5) provisioning for loan losses, and (6) the tax burden. Further drilldown into the operations is possible, but these six areas give a balanced snapshot of the bank's performance.

In Exhibit 7 we show the bank's return on average assets (ROAA), return on average equity (ROAE), and return on average tangible equity (ROTE). Banks are constantly writing new loans, seeking deposits and adding retained earnings. Consequently, their balance sheets—and, specifically, the level of assets and equity—are normally growing quickly, even from one quarter to the next. This is why analysts use *average* assets and *average* equity when calculating return ratios. The difference between ROAE and ROTE is that a bank's average equity and average tangible equity is primarily accounted for by the intangibles on the balance sheet. When one bank acquires another bank, the premium over book value is accounted for as goodwill. Historically, banks would use the pooling or purchase method when accounting for an acquisition. Starting in 2001, banks were required to begin using the purchase method for all acquisitions. Intangible assets on the books explain why ROAE figures are less than ROTE.

Exhibit 7: Return Comparisons

	Bank Value	Percentile Ranking	50 <sup>th</sup> Percentile
ROAA	0.69%	16th	1.03%
ROAE	13.06%	68th	11.45%
ROTE	15.50%	52nd	14.98%

Source: SNL Financial

The data reveal that Lowlander Bank's ROAA is in the 16<sup>th</sup> percentile. Recall from statistics that this means that the bank's ROAA is higher than (or equal) to just 16 percent of the banks in its peer group. This ranking is low and could explain the low price on Lowlander Bank's stock. However, what is more important—a high ROAA or ROAE? This

debate among bankers is never-ending. We believe that both are important, but the return to equity is somewhat more important, arguably, because it's the (book) return to the providers of capital. The bank's ROAE and ROTE are both above the median 50<sup>th</sup> percentile, so this would indicate that the bank is ahead of its peers in these categories. However, the market might feel that the bank has used excessive leverage to boost its low ROAA figure to an above median ROAE.

The next step is to drill down to the fundamentals that determine the bank's ROAA and ROAE. A bank's revenues are a combination of net interest income and noninterest income. There are two statistics commonly used to compare a bank's performance to other banks: net interest *margin* and net interest *spread*. The net interest margin is defined as the difference between interest income and interest expense divided by the bank's average assets or average *earning* assets. In contrast, the net interest spread is defined as the difference between a bank's yield on earning assets and cost of funds. From Exhibit 8, we find that Lowlander Bank's margin ranks low, leading to the next drilldown question. Is the low margin a result of a low yield on earning assets (YEA) and/or a high cost of funds (COF)? The bank is well below the median YEA and above the median COF meaning that, relative to its peers, its asset yields are low while its funding costs are high. Further analysis can be done; the next step is to look at the mix of assets and liabilities and the rates offered by the bank.

Exhibit 8: Net Interest Income Analysis

	Bank Value	Percentile Ranking	50 <sup>th</sup> Percentile
Margin	2.94%	8th	3.83%
YEA	6.78%	23rd	7.18%
COF	3.49%	38th	3.30%

Source: SNL Financial

When evaluating a bank's cost structure, bankers usually examine the net overhead or efficiency ratio.

We see from Exhibit 9 that the efficiency ratio for Lowlander Bank is in the 12<sup>th</sup> percentile. The definition of the efficiency ratio is noninterest expense divided by revenue; the lower the ratio, the better. The weak percentile ranking in efficiency, along with the margin ranking, suggest that the bank is showing weakness in both revenue generation and its cost structure. Yet, keep in mind that the bank's ROAE is above the median for the peer group.

Exhibit 9: Efficiency, Capital, Provisioning, and Taxes

	Bank Value	Percentile Ranking	50 <sup>th</sup> Percentile
Efficiency	70.95%	12th	61.33%
E/A	5.30%	100th	9.04%
PRO	0.08%	73rd	0.15%
TAX	26.19%	84th	32.28%

Source: SNL Financial

So how is the bank accomplishing a strong ROAE and good stock performance? Exhibit 9 shows that the bank is in the 100<sup>th</sup> percentile for its equity-to-assets (E/A) ratio. This means that there is no bank in its peer group that is more leveraged. Yet, the bank is meeting the regulatory minimums needed for the well-capitalized designation, so an analyst could argue that Lowlander Bank is fully utilizing its capital without carrying any excess capital on the balance sheet. Moreover, the bank's provisioning—money put aside to cover loans that go bad—and tax burden are better than the median values, indicating strength of performance in those areas.

Valuation depends heavily on the expected growth rates of earnings, dividends, and the size of the institution. Five-year compound annualized growth rates (CAGR) for important fundamentals are given in Exhibit 10. At 10.81 percent, the bank's EPS growth has been well above the median for its peers; yet, the dividend growth has not kept pace. The earnings have been needed to generate new capital in order to support the higher than median asset growth.

The key asset category—loans—has grown a notch faster than the median, while crucial deposit funding has been robust. The main indicator from the income statement (i.e., EPS) and the three major categories on the balance sheet (i.e., assets, loans and deposits) all support a strong stock performance.

Exhibit 10: Five-Year Growth Rates in Key Areas

	Bank Value	Percentile Ranking	50 <sup>th</sup> Percentile
EPS	10.81%	60th	8.73%
DPS	7.34%	37th	9.06%
Assets	13.10%	57th	11.98%
Loans	14.73%	51st	14.40%
Deposits	13.45%	58th	11.97%

Source: SNL Financial

#### Summary of Part I: Lowlander Bank

Over the last five years (measured up till the end of 2Q07) Lowlander Bank has delivered a total return performance on its stock that has exceeded the bank's peer group and the overall market, as measured by the S&P 500. At least for now, that should be sufficient to please shareholders. Yet, management and the board believe the stock is undervalued, and our analysis supports that belief. Or does it?

We valued the bank and arrived at an opinion of value of \$37.42. The market price at the time of the valuation, which was based on end of 2Q07 financials, was \$27.12—nearly 30 percent lower than our valuation. The valuation work that we did three years prior showed the same result. However, unless you don't believe in market efficiency, there should be an explanation. (Actually, there are those working in the community bank sector who do believe in market inefficiency, as community bank stocks often are thinly traded.)

What exactly does the valuation tell us? It basically gives the median value of an institution that has similar fundamentals to Lowlander Bank, in terms of



EPS, BVPS, DPS, core deposits per share and growth rates. Yet, like a fingerprint, each bank is unique. The market probably sees things that have led it to discount the bank's value. Our fundamental analysis helped show what areas might be a concern to those tracking the bank's stock. An analyst would likely probe more deeply into the bank's operation by asking management key questions about the loan and borrowings portfolios and the cost structure.

A bank's net interest income is the dominate component of revenues, often more than double the noninterest income. Lowlander Bank's earning assets are producing low yields. If the creditworthiness of the assets on the balance sheet are better than average, then low yields might be okay. On the other hand, if the bank is pricing credit risk too low, then the low yields are not justified. To draw a correct conclusion would require more analysis and, perhaps, insider information.

The same thought process applies to the funding side of the balance sheet. If a bank's cost of funds is high, this points to an expensive mix of liabilities and/or rates that might be too generous relative to the local deposit market. Banks are under constant pressure to grow their deposit base, so higher-than-average deposit rates—if that is the case—can be explained, if not justified.

On the cost side of the equation, a bank that has a lower spread and margin than its peers will need to make up ground by winning the efficiency game. When we see lower-than-average efficiency, we sometimes find a commercial loan operation with costly overhead that might be under-producing. The efficiency ratio reflects a bank's revenues and costs, so when a bank is lagging in that ratio, it should determine if it has a problem with revenues, high costs, or a combination of both.

Finally, we often hear in business that "cash is king." Well, in banking, a close cousin to that saying is "capital is king." Banking is a leverage business, so lean capital helps generate a strong ROAE, yet there is always a concern that growth will be constrained by a lack of capital. Certainly, Lowlander Bank is pushing the envelope in terms of its capitalization.

The market might see that as an impediment to growing the bank—whether that is "organic" growth or growth through M&A. The fact that EPS has been growing faster than DPS shows that management is constraining dividend growth in order to preserve capital for asset growth. If the bank can improve its return on assets, this will correspondingly increase return on equity and earnings retention, provided that the payout ratio is not increased.

## Part II: Highlander Bank's Issues

Highlander Bank recently went through a mutual-to-stock conversion. When this occurs, the institution shifts from mutually-owned to stock-owned, through an initial public offering (IPO). It is believed that this change in ownership form and corporate governance dramatically alters management's incentives to operate more efficiently and grow profits. Often, when a bank goes through a conversion process, there is an influx of capital that exceeds regulatory requirements and short-term growth needs. This is the case at Highlander Bank, as its equity jumped from roughly \$82 million to more than \$280 million.

A mutual-to-stock conversion changes an institution's stakeholders and priorities. As a mutual bank, the most important stakeholders are regulators and depositors. Upon conversion, stockholders are added to the list of stakeholders and value maximization becomes one of the top priorities if not the number one goal. Highlander Bank wanted our input on the following questions:

1. How much capital is needed for the next 10 years?
2. If there is excess capital, how should it be utilized?
3. What is the likely impact of a stock buyback?
4. What financial goals, such as EPS and DPS make sense?
5. How do we objectively measure our progress now that we're a stock institution?

### Estimating Excess Capital

Exhibit 11 gives a quick snapshot of Highlander Bank's excess capital. The bank has \$1,306.5 million in assets and \$282.7 million in equity—thus, an equity-to-assets (E/A) ratio of more than 21 percent.



Exhibit 11: Estimating Excess Capital (\$000)

<b>Assumptions:</b>	
Target Equity/Assets	8%
Target Asset Growth	7%
Assets	1,306,544
Equity	282,672
Equity Reduction	91,451
Net Equity	191,222
Retention Ratio	0%

<b>Scenario 1: Status Quo</b>			
	<b>Assets</b>	<b>Equity</b>	<b>Excess</b>
2008	1,306,544	104,523	178,149
2009	1,398,002	111,840	170,832
2010	1,495,862	119,669	163,004
2011	1,600,572	128,046	154,627
2012	1,712,612	137,009	145,668
2013	1,832,495	145,600	136,073
2014	1,960,769	156,862	125,811
2015	2,098,023	167,842	114,831
2016	2,244,896	179,591	103,082
2017	2,402,027	192,162	90,510
2018	2,570,169	205,614	77,059

<b>Scenario 2: Reduce Equity</b>			
	<b>Assets</b>	<b>Equity</b>	<b>Excess</b>
2008	1,215,093	97,207	94,014
2009	1,300,149	104,012	87,210
2010	1,391,160	111,293	79,929
2011	1,488,541	119,083	72,138
2012	1,592,739	127,419	63,803
2013	1,704,230	136,338	54,883
2014	1,823,527	145,882	45,340
2015	1,951,173	156,094	35,128
2016	2,087,756	167,020	24,201
2017	2,233,898	178,712	12,510
2018	2,390,271	191,222	0

Suppose the bank wants to target an E/A ratio of eight percent and expects assets to grow by seven percent over the next 10 years. (These figures are hypothetical and created for illustrative purposes.) Scenario one shows that the bank begins with excess capital of \$178.1 million and ends (10 years later) with excess capital of \$77.1 million. The excess is calculated as the difference between actual equity minus target equity (eight percent of assets). This is an enormous amount of excess capital, and one of the assumptions is that all earnings are paid out as a dividend. If the bank decides to retain a portion of its earnings, then the excess capital would be even greater. Once the bank makes its assumptions for growth and arrives at a target capital ratio, it can estimate the true level of excess capital. We recommend to banks that they arrive at a target equity ratio by allocating a prudent amount of equity for credit, interest-rate, and other relevant risks. Regulatory input on capital requirements is also suggested.

Scenario two in Exhibit 11 shows the excess capital that would exist if there is an immediate reduction of capital in 2008. We don't specify how that reduction occurs—it could be through a stock buyback or a special dividend. Excel enables an analyst to do "what if" analyses. By using the "goal seek" function, we asked Excel to find the equity reduction needed to eliminate all excess equity by year 10. Based on a target E/A ratio of eight percent and asset growth of seven percent, Highlander Bank would need to reduce equity by \$91.5 million at the outset.

#### Uses For Excess Capital

When consulting with banks that have excess capital, we discuss their options for utilizing this capital. Unlike debt financing, which has an explicit cost (i.e., the interest rate paid to lenders), paid-in capital and retained earnings have no explicit cost. Nevertheless, there is an opportunity cost of excess capital; to allow it to sit idle on the balance sheet is not consistent with maximization of shareholder wealth. We have compiled the various capital management options discussed with clients through

the years. There are, in no particular order, at least nine options to consider:

1. Do nothing with the excess capital;
2. Capitalize growth that exceeds sustainable growth;
3. Leverage the excess capital;
4. Acquire a branch or several branches;
5. Do a bank merger or acquisition;
6. Do a stock split or stock dividend;
7. Grow the dividend faster than earnings;
8. Pay a special dividend; and
9. Do a stock buyback.

#### *Do nothing with the excess capital*

We are reminded of the proverb that says “any decision is better than no decision” and that might be true when it comes to capital management. Students of finance will likely realize that “do nothing with the excess capital” is often a suboptimal option to consider. Yet, we have visited many banks that “sit” on their excess capital for years. The problem is that banks are not sure how much excess capital they hold. Burns (2004) discusses the assessment of capital adequacy as it pertains to credit risk in the loan portfolio. Through the development of Basel II capital requirements and the lessons learned from the subprime debacle, regulators continue to refine the process for evaluating a bank’s capital requirement. Generally, unless a bank has a high concentration of risky loans, we believe an E/A ratio around eight percent is sufficient. Assuming that this is adequate, a bank needs \$8 million of equity for every \$100 million of assets. The “do nothing” option leads to high capital ratios and enables management to sidestep the process of calculating its minimum capital requirement, which can be a technically daunting task. Moreover, maintaining high capital should enable the bank to receive more favorable deposit insurance premiums, as the higher the capital the lower the risk of default (all else equal). The following explains recent changes in the deposit insurance fund (FDIC, 2008):

“The FDIC merged the Bank Insurance Fund (BIF) and the Savings Association Insurance Fund (SAIF) to form the Deposit Insurance Fund (DIF) on March 31, 2006 in accordance with the Federal Deposit

Insurance Reform Act of 2005. FDIC maintains the DIF by assessing depository institutions an insurance premium. The amount each institution is assessed is based upon statutory factors that include the balance of insured deposits as well as the degree of risk the institution poses to the insurance fund.”

Certainly, the more capital a bank has, the lower the risk it poses to the insurance fund. However, regulators have not told Highlander Bank whether its deposit insurance will be adjusted for its high capital ratio.

#### *Capitalize growth that exceeds sustainable growth*

A firm’s sustainable growth rate (SGR) is found by multiplying its return on equity (ROE) by its earnings retention ratio (rr). There can be a wide variation from bank to bank in their SGRs. For example, suppose a high-performing bank with a 20 percent ROE retains all of its earnings for growth purposes. Its SGR is  $0.20 \times 1.00 = 0.20$  or 20 percent. As a second example, suppose a poor-performing bank with a paltry ROE of 5 percent is retaining just 25 percent of its earnings, which means that 75 percent is paid out as a dividend. This bank’s sustainable growth rate is  $0.05 \times 0.25 = 0.0125$  or 1.25 percent. Banks’ earnings can change significantly from year to year, as they are sensitive to interest-rate changes as well as other factors. Consequently, ROEs and the percentages of earnings retention are volatile, which means that banks’ SGRs are ever-changing. Management will not know its SGR with certainty, but can make a projection.

We find that bank management and boards often are not aware of the implications of managing asset growth using the bank’s SGR as a benchmark. If a bank grows its assets faster than its SGR, its E/A ratio will decrease and the balance sheet becomes more leveraged and vice versa. Once a bank achieves its optimal or target E/A ratio, it needs to grow assets at the same rate as equity; otherwise, its E/A ratio will drift up or down, creating an underleveraged or overleveraged balance sheet. Maintenance of a bank’s E/A ratio is part of risk management, because the level of E/A is a determinant of the bank’s financial risk. Moreover, the reciprocal of the E/A

ratio is the equity multiplier. A bank's ROE is equal to its ROA times its equity multiplier (A/E). Therefore, from a profitability management standpoint, maintaining a steady and efficient equity multiplier is important.

Highlander Bank's ROE has shifted downward since the IPO because of the large influx of equity. Assume that management projects a 3.5 percent ROE for the next year. Then, the highest SGR feasible would be a scenario of 100 percent earnings retention producing an SGR of 3.5 percent. Anything less than 100 percent retention will produce an SGR of less than 3.5 percent. If the bank projects growth exceeding 3.5 percent, then it will use some of the excess capital to capitalize that growth. The time it takes to utilize excess capital depends on (1) the amount of excess capital and (2) the divergence between asset growth and equity growth. Each year, management can project how much excess capital will be used by (1) projecting the upcoming year's ROE, (2) deciding on how much earnings to retain, and (3) by projecting asset growth. As long as asset growth exceeds the SGR, excess capital will diminish.

#### *Leverage the excess capital*

Banking is a leverage business, characterized by low returns on assets (ROAs for banks are typically less than two percent) that are magnified by a high equity multiplier. It is not uncommon to find banks with equity multipliers (i.e., an assets-to-equity ratio) exceeding 10x or even 15x. For example, First Star Savings Bank's (ticker FSSB) 1Q08 E/A ratio is 6.1 percent and its equity multiplier is 16.4x. In contrast, non financial firms will typically have equity multipliers in the range of just 2x to 3x. For example, AT&T's (T) 4Q07 equity multiplier is 2.4x. The two-step process to finding potential asset growth from leverage is to decide on the bank's E/A target and then apply that to the equity on the balance sheet to arrive at the asset base that can be supported by the bank's equity. In Exhibit 12, we show the total assets that Highlander Bank's capital could support at various E/A ratios. For example, if the bank decides to target a conservative E/A ratio of 10 percent, its balance sheet could expand by a factor of 2.2x, or to

a total of more than \$2.8 billion. On the other hand, if the bank is comfortable with a "leaner" E/A ratio of 6 percent, then the assets could swell to over \$4.7 billion. When considering E/A ratios in this low range, a one percent to two percent difference has a huge impact to overall assets.

When talking about leveraging capital, there are the theoretical and practical issues to consider. Suppose Highlander Bank's management and board of directors decide to pursue an eight percent E/A target. That means the bank needs to expand by roughly \$2.2 billion in assets. There are two ways to achieve that growth—"organically" or by "buying" the growth. The term organic growth means to expand the bank's assets and funding without any growth from takeovers, acquisitions or mergers. In order to expand by this amount organically, the bank would need to purchase investments and write loans to add this amount of assets to the balance sheet. It could also purchase loans in the open market or do loan participations, but that would require due diligence by the bank which is time-consuming and costly. Moreover, this ignores the funding side of the equation. For every \$1 of assets that it adds to the balance sheet, the bank needs to obtain \$1 of funding, either deposits or borrowings. Highlander Bank already has a loan-to-deposit (L/D) ratio of 180 percent. For comparison, Lowlander Bank's L/D ratio is 96 percent, which is also high *but not nearly as high as Highlander Bank's*. Currently, one of Highlander Bank's concerns is its deposit growth. In order to improve its spread and margin, it needs to shift the proportion of deposit funding up quite a bit. When banks look to leverage their balance sheet quickly, they often look to the borrowings market in the short term. However, with such a high L/D ratio, it does not make sense for Highlander Bank to borrow more at this time. It will need to find a way to stimulate the supply of deposits or to acquire deposits from other banks.

Exhibit 12: Leveraging of Capital

Current Assets: \$1,306.5 million			
Equity (\$000)	E/A	Assets (\$000)	Factor
282,672	6.0%	4,711,208	3.6x
282,672	6.5%	4,348,807	3.3x
282,672	7.0%	4,038,178	3.1x
282,672	7.5%	3,768,966	2.9x
282,672	8.0%	3,533,406	2.7x
282,672	8.5%	3,325,558	2.5x
282,672	9.0%	3,140,805	2.4x
282,672	9.5%	2,975,499	2.3x
282,672	10.0%	2,826,725	2.2x

### *Acquire Growth*

If a bank is not able to expand fast enough in its own market to utilize its capital, it can look to purchase assets and liabilities through acquisition of branches and/or banks. When you hear that a bank wants to purchase liabilities, that always sounds a bit odd. Why would a profit-maximizing institution pay money to purchase liabilities? In fact, what the bank seeks is the deposit funding. As discussed in Part I of this case study, banks strive to improve their spreads and margins by obtaining low-cost funding. For example, in 1999-2000, Sovereign Bank purchased 279 branches from FleetBoston in the New England area. When a bank pays cash for branches, this leverages the balance sheet and creates the opportunity for further deposit growth at those new locations.

From a growth standpoint, purchasing a bank has a similar impact as purchasing a network of branches. However, buying a bank is a more complicated transaction as the bank needs to consolidate its existing operations with those of the acquired institution. This can lead to the firing of redundant personnel and the sale of fixed assets that are no longer necessary. A tremendous amount of due diligence is needed prior to purchasing a branch or a bank. Our consulting with Highlander Bank did not involve in-depth discussions about branch or bank acquisitions. An investment bank offers expertise in

this area when needed. The options to buy branches or a bank are beyond the scope of this case study.

### *Do a stock split or stock dividend*

Occasionally, bank boards will inquire about stock splits and stock dividends as a method for managing capital. Although we include stock splits and stock dividends as one of the options to consider, we note that the level of book equity is not changed by either. Thus, they do not help a bank control the level of capital; their effect on a bank's capital ratios is neutral. One has to question the value of a stock split when one of the world's greatest investors—Warren Buffett—is not a proponent of them. It is reported (Jubak, 2006) that “[Buffett is] on record as saying he doesn't believe in stock splits since a high stock price, he insists, discourages buying by short-term traders.” In the case of class A shares of Berkshire Hathaway, “fewer than 1,000 shares trade a day.”

However, some believe that bank-stock prices tend to react favorably to the news of a stock split or a stock dividend. SNL Securities (later renamed SNL Financial), a firm that monitors the banking industry, published an article (Winslow, 1994) that supports the conclusion that something which neither creates nor removes economic value—a stock split or dividend—does, frequently, push stock prices higher. Specifically, they found that over intervals of five and 20 trading days, stock returns for banks which did either a stock split or a stock dividend exceeded the stock returns for the entire banking industry. They believe that their research shows that “financial markets are, indeed, imperfect.” Some argue that market imperfections are more common in the markets handling community bank stocks because of fewer transactions and less coverage by analysts.

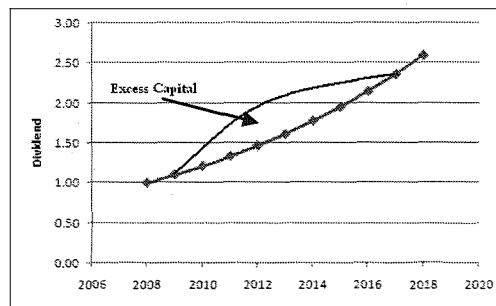
It is worth recalling one example when a stock split inadvertently resulted in an eventual reduction in a bank's retained earnings. The bank implemented a 2:1 stock split. Some time after the split, the board noticed that the level of retained earnings was not growing as quickly as before the split. We found that the bank had forgotten to reduce its dividend by a factor of two at the time of the split. So each shareholder received another 100 shares for each 100

shares owned, and the DPS was inadvertently left the same. The result was that each shareholder's aggregate dividend doubled when the stock split. This simple mistake underscores the importance of requiring at least one "financial expert" to sit on the audit committee of the board of directors, as required by Section 407 of the Sarbanes-Oxley Act.

### *Grow the dividend faster than earnings*

Generally, a bank can either put excess capital to work or give it back to shareholders. There are several ways to put capital back into the hands of shareholders. One is by paying dividends at payout ratios exceeding 100 percent. In Exhibit 13 the bottom line shows a \$1 per share dividend growing at 10 percent per year. If EPS are also \$1 and growing at 10 percent, then the growth in dividends are supported by earnings growth. If, however, the dividend growth follows the top line, then a portion of the dividends paid would come from retained earnings, reducing the excess capital on the balance sheet. Notice that at some point the dividend paid would diverge from the 10 percent growth line, meaning that payout is above 100 percent. In Exhibit 13, we show this occurring in 2009. Then, at a later date (in 2017 for this example), the dividend paid would converge to the 10 percent growth line. The "bulge" shown above the bottom line represents excess capital—namely, capital that is paid as a dividend that exceeds earnings growth. The duration and degree of divergence from the 10 percent growth line determine how much retained earnings are used to supplement the regular dividend growth. In the case of Highlander Bank, it could pay out excess capital in the form of dividends for many years.

Exhibit 13: Alternate Dividend Payment Scenarios



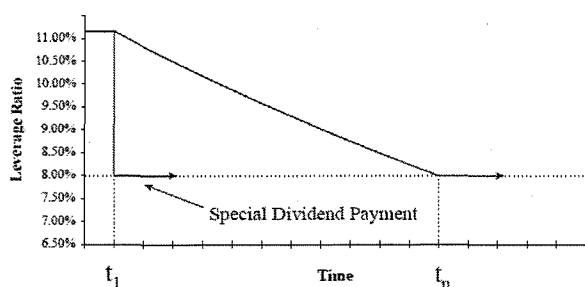
The stock market reacts to information, both positive and negative news. Thus, a bank should consider the informational content of dividend announcements. Generally, shareholders like to hear about dividend increases, and prefer not to hear about dividend cuts. Although the dividends paid are different for both paths followed in Exhibit 13, the news can be similar. For both lines, the dividend is increasing. Mathematically, dividend increases are at a constant rate along the bottom line. For the top line, the dividend growth accelerates at the point of separation; later, the dividend growth decelerates in order to merge with the constant dividend path. Importantly, despite the different path, the dividend is increasing each year along the top line, so the bank never has to announce a dividend reduction. The potential risk is that the market will eventually price a dividend slowdown into the stock price. However, once the dividend growth resumes its constant growth pattern, the stock valuation should be independent of the dividend history, as valuations are forward-looking.

### *Pay a special dividend*

For a bank such as Highlander Bank that might elect to shed a large block of excess capital, one option to consider is to pay a special dividend to "shift" the bank down to the target level of capitalization. A special dividend is a quick way to take the bank to an efficient level of capital. In Exhibit 14, we show two paths to a more efficient capital level. For this example, we assume the bank's E/A ratio is above 11 percent, and it wants to target eight percent. To follow the more gradual path down to eight percent, the bank has to continually grow the balance sheet

faster than its sustainable growth rate for a sustained period shown as the interval from time  $t_1$  to  $t_n$  in the exhibit. Growing faster than the SGR does not reduce retained earnings, but it does reduce the E/A ratio. In time, this will drop the ratio down to the target. Alternatively, with a special dividend, management can pay out a lump sum to immediately shift the bank down to its capital target. (However, dividend payments—including special dividends—must be paid from retained earnings and not paid-in capital.) Exhibit 14 illustrates that a special dividend enables a bank to shift to its capital target much more quickly, in fact instantaneously. Once the bank reaches its target, it must then grow assets at its SGR in order to maintain the desired E/A ratio.

Exhibit 14: Reducing Leverage with a Special Dividend



When planning for a sizable special dividend, management needs to decide what assets will be used to make the dividend payment to shareholders. If earning assets are converted to cash, there will be a reduction in earnings. For example, if Treasury securities are liquidated, this will have a smaller impact to earnings than a liquidation of loans. Moreover, the special dividend needs to be done in conjunction with liquidity management, because the bank does not want to deplete its liquidity sources. While the bank's balance sheet will be smaller after the special dividend, its deposit base will be the same size and liquidity needs similar.

#### *Do a stock buyback*

In corporate finance textbooks, discussion on stock buybacks and repurchases is typically presented in the chapter on dividend policy. For example,

excellent treatment of the topic can be found in Chapter 15 of *Corporate Finance* by Smart, Megginson and Gitman (2007). There are two ways to return capital to shareholders—through a dividend or a stock buyback. If the tax rate on capital gains is the same as the rate paid on dividends, then investors should be essentially indifferent between being paid a dividend and selling their shares. However, when taxes on dividends are higher than the capital gains tax, investors should prefer a stock buyback. Yet, to explain why firms continue to pay healthy dividends, Smart et al. (p. 548) explain, “[that] dividends exist to overcome unchanging human problems with trust, communication, and commitment. As a mutually-owned institution, Highlander Bank’s board did not have to deal with dividend and buyback decisions, as there were no shares outstanding. Once the conversion to stock-owned was complete, both of these capital-related issues were on the agenda for discussion.

The management and board at Highlander Bank are considering a large stock buyback as a way to reduce its excess capital. In fact, prior to our visit, they obtained authorization to repurchase up to 20 percent of its shares. They looked to us to provide some guidance on this decision. Certainly, anytime a bank finds itself with significant excess capital, a stock buyback should be considered. In the next section, we analyze the impact from a stock buyback.

#### Analysis of A Stock Buyback: The Impact To Bvps And Eps

In order to shift Highlander Bank from extremely over capitalized to a more leveraged equity-to-assets level, the bank will either need to return a lot of capital to shareholders or find a way to leverage the bank significantly. Holding excess capital for a long period of time has a growing opportunity cost. Moreover, management believes that unless it can produce a satisfactory return on the capital, shareholder dissatisfaction is likely to emerge. Generally, when management attempts to maximize shareholder returns, this implies that it will make intelligent capital allocation decisions. We are taught in finance classes that firms use net present value

(NPV) and internal rate of return (IRR) to ensure that they meet the firm's cost of capital. However, we have not seen a community bank utilize these analytical tools. Instead, they tend to focus on budgeted growth and accounting-based return on equity goals. Financial managers, regardless of how they allocate capital to internal projects, should assume that shareholders are able to reinvest capital that is returned to them into other worthwhile investments. Thus, it does shareholders no favor to retain capital indefinitely when a use is not evident.

If a firm does a share repurchase, what does it hope to accomplish? Bank managers tend to focus on book value per share (BVPS) and earnings per share (EPS) as important ratios, so the goal is to improve these ratios. Although valuation tends to hinge far more on a bank's EPS, some community bank managers track their BVPS just as closely. In Exhibit 15 we show how the bank's BVPS depends on two variables: (1) the buyback price and (2) the percent of shares repurchased. The bank board at Highlander Bank approved a buyback of up to 20 percent of the outstanding shares as a first step. The assumptions box shows that 22,924,215 shares are outstanding and the equity on the balance sheet is \$282,672,450. The original BVPS is simply the ratio of those two numbers. To find the resultant BVPS after the repurchase, the numerator is reduced by the cost of the shares repurchased. The formula is the product of the percent repurchased times the total shares outstanding times the price paid per share. Not all of the shares would have to be repurchased at the same time or price, so the buyback price can be thought of as the average price paid. Likewise, the denominator would be reduced by the number of shares purchased, which is found by subtracting the shares repurchased from the original shares outstanding.

From a BVPS standpoint, if repurchases are done at a price equal to the original BVPS, then the impact is neutral. If the repurchase price paid is less than the BVPS, then the impact is accretive to BVPS, meaning that the value increases. Conversely, if the repurchase price paid is more than the BVPS, then the impact is dilutive to BVPS, meaning that the value decreases. The shading in Exhibit 15 highlights

when the buyback is dilutive to BVPS. Every cell that is not shaded is a combination of buyback price and percent buyback that is accretive, while the shaded cells are combinations that are dilutive to BVPS. The changes shown to BVPS in Exhibit 15 aren't too significant. We find the most accretive value to be \$12.913, based on a repurchase price of \$10/share and the full 20 percent of shares repurchased. At the other extreme, we find the most dilutive value to be \$11.663, based on a repurchase price of \$15/share and, again, the full 20 percent of shares repurchased. From a financial management decision-making perspective, the changes to BVPS are modest.

Exhibit 15: Analysis of Impact to Book Value per Share

**Assumptions:**

Equity	\$282,672,450
Shares Outstanding	22,924,215
BVPS	\$12.331

BVPS (\$) as a Function of Percent Buyback and Price										
Buyback Price (\$)	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%
10.00	12.378	12.428	12.480	12.533	12.590	12.649	12.710	12.775	12.842	12.913
10.50	12.368	12.407	12.448	12.490	12.534	12.580	12.629	12.679	12.733	12.788
11.00	12.358	12.386	12.416	12.446	12.479	12.512	12.547	12.584	12.623	12.663
11.50	12.348	12.365	12.384	12.403	12.423	12.444	12.466	12.489	12.513	12.538
12.00	12.337	12.345	12.352	12.359	12.367	12.376	12.385	12.394	12.403	12.413
12.50	12.327	12.324	12.320	12.316	12.312	12.308	12.303	12.298	12.294	12.288
13.00	12.317	12.303	12.288	12.273	12.256	12.239	12.222	12.203	12.184	12.163
13.50	12.307	12.282	12.256	12.229	12.201	12.171	12.140	12.108	12.074	12.038
14.00	12.297	12.261	12.224	12.186	12.145	12.103	12.059	12.013	11.964	11.913
14.50	12.286	12.240	12.192	12.142	12.090	12.035	11.978	11.918	11.855	11.788
15.00	12.276	12.220	12.160	12.099	12.034	11.967	11.896	11.822	11.745	11.663

A stock analyst is more interested in changes to a bank's EPS than BVPS. The value of a firm is the discounted value of expected future dividends, and sustainable future dividend growth is a result of



future earnings growth. As EPS increase, DPS can increase as well. A shareholder's total return from his investment is derived from dividends paid plus capital appreciation on the stock. However, capital appreciation is a result of a firm's ability to pay a growing stream of dividends. This is accomplished by growing the firm's EPS. The impact to EPS from a stock buyback is not as clear-cut as finding the impact to BVPS. The impact to EPS critically depends on how much earnings are lost when assets are liquidated and cash is paid out to purchase the shares. Keep in mind the accounting identity: assets = liabilities + equity. As equity is reduced through the buyback, assets are reduced dollar for dollar. In fact, the buyback has immediate and, for a bank, significant impact to the equity-to-assets ratio, which we will look at later. If a bank believes it is adequately leveraged and wants to maintain its E/A ratio post buyback, then it needs to reduce its assets as a multiple of the equity reduction. For instance, if a bank desires to maintain an E/A ratio of 10 percent, a \$10 million buyback means the bank must reduce assets by 10 times that amount or \$100 million. A buyback of \$10 million will immediately reduce assets by \$10 million, meaning that the bank would need to reduce assets by another \$90 million, along with the funding liabilities. The reduction in liabilities would impact earnings favorably, with the amount of the gain depending on the cost of funds.

Highlander Bank is under-leveraged and is looking to reduce its excess capital, so it hopes to see a decline in its E/A ratio. When an under-leveraged firm does a buyback, the reduction in assets is equal to the reduction in equity. In Exhibit 16 we show the impact from a \$40 million buyback assuming that the bank does not deleverage the balance sheet after the stock repurchase.<sup>2</sup> The exhibit shows the EPS for different combinations of buyback price and marginal yield on earning assets (YEA). To project the impact, the challenge for management is to estimate the earnings

<sup>2</sup> When the E/A ratio falls, a bank becomes more leveraged. The term "deleverage" means to sell assets or raise more equity in order to push the bank's E/A ratio back up to its original level. When a bank does a stock buyback, its E/A ratio falls and the bank becomes more leveraged. If the bank subsequently sells assets, this will reverse the reduction in the E/A ratio. If enough assets are sold, this can totally offset the reduction to the E/A ratio attributable to the buyback.

power of the assets that would be lost from the balance sheet. We show the bank's YEA of 5.74 percent. This is an average. Some of the earning assets are higher-yielding; some are lower-yielding. You'd expect management to use low-yielding assets to pay for the buyback in order to minimize the impact to net income. However, the bank does not want to deplete its liquidity as a result of the buyback, and low-yielding assets tend to be more liquid. Immediately after the buyback, the bank will be facing the same level of deposit volatility and loan demand, so maintaining a stable level of liquidity is important.

Exhibit 16: Analysis of Impact to Earnings per Share (No Deleveraging)

Assumptions:	
Buyback Amount	\$40,000,000
Shares Outstanding	22,924,215
Quarterly Earnings	2,232,900
YEA	5.74%
EPS	\$0.0974
Marginal Tax Rate	34%

EPS (\$) Impact as a Function of Marginal Yield and Price										
Buyback Price (\$)	0.00%	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%
10.00	0.1180	0.1145	0.1110	0.1075	0.1040	0.1006	0.0971	0.0936	0.0901	0.0866
10.50	0.1168	0.1134	0.1099	0.1065	0.1030	0.0996	0.0961	0.0926	0.0892	0.0857
11.00	0.1158	0.1123	0.1089	0.1055	0.1021	0.0987	0.0952	0.0918	0.0884	0.0850
11.50	0.1148	0.1114	0.1080	0.1046	0.1012	0.0979	0.0945	0.0911	0.0877	0.0843
12.00	0.1140	0.1106	0.1072	0.1039	0.1005	0.0971	0.0938	0.0904	0.0870	0.0837
12.50	0.1132	0.1099	0.1065	0.1032	0.0998	0.0965	0.0931	0.0898	0.0864	0.0831
13.00	0.1125	0.1092	0.1059	0.1025	0.0992	0.0959	0.0926	0.0892	0.0859	0.0826
13.50	0.1119	0.1086	0.1052	0.1019	0.0986	0.0953	0.0920	0.0887	0.0854	0.0821
14.00	0.1113	0.1080	0.1047	0.1014	0.0981	0.0948	0.0915	0.0882	0.0850	0.0817
14.50	0.1107	0.1075	0.1042	0.1009	0.0976	0.0944	0.0911	0.0878	0.0845	0.0813
15.00	0.1102	0.1070	0.1037	0.1005	0.0972	0.0939	0.0907	0.0874	0.0842	0.0809



The opposite corners of Exhibit 16 show the best- and worst-case scenarios. If the buyback is at \$10/share and the assets used are paying zero percent interest (for example, a cash account paying no interest), then the buyback is accretive as EPS jump from \$0.0974 to \$0.1180. Moving to the opposite corner of the matrix, if the buyback is at \$15/share and the assets used are paying nine percent interest (which is well above the bank's current YEA), then the buyback is dilutive, as EPS fall from \$0.0974 to \$0.0809. The shading in Exhibit 16 highlights when the buyback is dilutive to earnings. Every cell that is not shaded is a combination of buyback price and yield that is accretive to EPS, while the shaded cells are combinations that are dilutive. To forecast the impact from the buyback, the bank's finance department would need to earmark the assets that would be liquidated to cash for the transaction and determine their yields. As for the average price of the buyback, this will be market-driven and will depend on how the market responds during the buyback and what price the bank is willing to pay for shares. The reduction to earnings (the numerator of EPS) is calculated as the assets used to repurchase shares times the marginal YEA times one minus the marginal tax rate. This reduction is multiplied by 0.25 to convert it to a quarterly basis. The reduction to the shares outstanding (the denominator of EPS) is calculated as the buyback amount—\$40 million for our illustration—divided by the buyback price.

One of the tenets of financial operation of a bank is that high leverage is generally a prerequisite for generating a strong ROE. Consequently, if a bank is fully-leveraged and does not have excess capital, and desires to maintain its E/A ratio, then a stock buyback is much more likely to be dilutive to EPS. The reason is that the bank loses assets quickly as a result of a buyback. To find the amount of assets lost, multiply the buyback amount by the bank's equity multiplier (EM). Earlier we gave an example of a \$10 million buyback for a bank with an EM of 10x. Suppose that Highlander Bank wanted to do a \$40 million buyback and maintain an E/A ratio of 8 percent. (Obviously, this is a contrived example

because Highlander Bank's equity ratio is over 20 percent.) An E/A ratio of 8 percent means that the EM is 12.5x (the inverse of the equity ratio). So the bank's assets would be reduced by \$40 million times 12.5 or \$500 million. In contrast, a bank that has excess capital and does not need to deleverage the bank after the buyback would see its assets fall by just \$40 million.

Exhibit 17 shows the EPS impact to the fully-leveraged bank, using the same variables as in Exhibit 16. Compared to Exhibit 16, there are fewer nonshaded cells meaning that fewer scenarios are accretive to EPS. One way to ensure an accretive buyback for the leveraged bank is to fund the buyback from assets that are in cash paying zero percent interest. In this case, the explicit opportunity cost of the cash is zero, so it makes sense to use the cash in a buyback. Of course, this would depend on whether the bank has sufficient cash to fund the buyback and whether the post buyback liquidity position would be sufficient to meet the bank's obligations. Seeing all shaded cells in the four percent marginal YEA column might seem curious. Suppose the bank does a \$40 million buyback at \$10/share and four percent yield. The bank would lose \$500 million in assets (after deleveraging) yielding four percent. After taxes, this translates into \$461,340 in lost earnings (on a quarterly basis); so earnings would fall by 20.7 percent. As for the share reduction, \$40 million would purchase four million shares (at \$10/share), so the outstanding shares would decrease by 17.4 percent. The resulting EPS would be \$0.0936 or 3.9 percent less than before the buyback. For the under-leveraged bank, the reduction in earnings from a \$40 million buyback is just \$264,000 (again, assuming a four percent YEA). The share reduction is identical for the fully-leveraged and under-leveraged banks, while the fully-leveraged bank's net income reduction is 1.75x the amount lost by the under-leveraged bank.

Exhibit 17: Analysis of Impact to Earnings per Share (with Deleverage)

Assumptions:	
Buyback amount	\$40,000,000
Shares Outstanding	22,924,215
Quarterly Earnings	2,232,900
YEA	5.74%
COF	3.74%
EPS	\$0.0974
Equity-to-Assets	8%
Marginal Tax Rate	34%

EPS (\$) Impact as a Function of Marginal Yield and Price										
Buyback Price (\$)	0.00%	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%
10.00	0.2680	0.2244	0.1808	0.1372	0.0936	0.0500	0.0064	-0.0372	-0.0808	-0.1244
10.50	0.2653	0.2222	0.1790	0.1358	0.0927	0.0495	0.0064	-0.0368	-0.0800	-0.1231
11.00	0.2629	0.2202	0.1774	0.1346	0.0918	0.0491	0.0063	-0.0365	-0.0792	-0.1220
11.50	0.2608	0.2184	0.1760	0.1335	0.0911	0.0487	0.0063	-0.0362	-0.0786	-0.1210
12.00	0.2589	0.2168	0.1747	0.1325	0.0904	0.0483	0.0062	-0.0359	-0.0780	-0.1201
12.50	0.2571	0.2153	0.1735	0.1316	0.0898	0.0480	0.0062	-0.0357	-0.0775	-0.1193
13.00	0.2555	0.2140	0.1724	0.1308	0.0893	0.0477	0.0061	-0.0354	-0.0770	-0.1186
13.50	0.2541	0.2127	0.1714	0.1301	0.0887	0.0474	0.0061	-0.0352	-0.0766	-0.1179
14.00	0.2527	0.2116	0.1705	0.1294	0.0883	0.0472	0.0061	-0.0351	-0.0762	-0.1173
14.50	0.2515	0.2106	0.1697	0.1288	0.0879	0.0469	0.0060	-0.0349	-0.0758	-0.1167
15.00	0.2504	0.2096	0.1689	0.1282	0.0875	0.0467	0.0060	-0.0347	-0.0755	-0.1162

When a bank decides to do a stock buyback, but then deleverage the bank to return to the initial E/A ratio, we have shown that this results in a much larger reduction of assets. As mentioned earlier, when the additional assets are eliminated, this requires the bank to also reduce liabilities. In order to project the impact to earnings, an assumption about the cost of funding (COF) is needed. For simplicity, we assumed in the analysis shown in Exhibit 17 that the COF on liabilities removed from the balance sheet is the same as the bank's current COF of 3.74 percent. However, the COF assumption could be varied by management to examine the impact more thoroughly. Just as it makes sense to reduce the bank's lowest-yielding assets, it likewise makes sense to reduce the bank's highest-costing liabilities. The EPS adjustment requires a similar calculation as described earlier,

with one modification. The analyst needs to adjust earnings (the numerator of EPS) for the reduction in interest expense. This is calculated as the reduction in liabilities times the cost of funds for those liabilities times one minus the marginal tax rate. Again, this reduction is multiplied by 0.25 to convert it to a quarterly basis.

At the beginning of this section, we asked the question, "What does [a firm] hope to accomplish from a stock buyback?" The management of a bank with excess capital might use a stock repurchase as a way to shift the bank to a more highly-leveraged position (i.e., a lower E/A ratio). In order to arrive at the appropriate size of the repurchase, the board needs to find a consensus as to the optimal capital structure for the bank. Few community banks do rigorous analysis to arrive at a target. Proactive banks will want to push the E/A ratio down as far as possible in order to yield a high EM. This requires a thorough risk analysis and documentation to justify the bank's capital ratio. When a bank approaches regulatory limits for its capital ratios, it needs to demonstrate its quantitative and qualitative rationale for why a lean capital structure is sufficient vis-à-vis the bank's overall risk profile. With the introduction of Basel II capital requirements—which do not directly pertain to community banks—there are changes to the ways regulators view capital management. Basel II and the subprime debt debacle will probably launch a new paradigm for managing bank capital for all banks, regardless of size. Earlier, we used an equity ratio of eight percent. For this case study, we will assume that this target is compatible with Highlander Bank's credit, interest-rate and operational risk profiles.

When a firm's board authorizes a share repurchase, often it will give limits on the number of shares. In the case of Highlander Bank, the initial decision was to allow for repurchase up to 20 percent of outstanding shares. When the bank steps in to purchase shares, the buying will put upward pressure on the price. Exhibit 18 shows the impact to the bank's E/A ratio as a function of two variables—the average share price paid by the bank for the purchased shares and the percentage of shares

repurchased. Obviously, the bank wants to buy back shares at the lowest price possible. Earlier, our analysis showed that the impact to BVPS and EPS is more favorable the lower the price paid. The opposite is true for the equity ratio. As the price paid climbs, the rate of capital transfer to shareholders goes up, as does the rate of descent in the E/A ratio. The greatest impact to the E/A ratio is seen in the lower-right-hand corner of Exhibit 18. If all 20 percent of the shares authorized are bought at \$15/share, the bank's E/A ratio will drop from 21.6 percent to 17.3 percent. This will leave the bank with an EM of just 5.8x, which is still low. If the bank wants to move closer to a target E/A ratio of 8 percent using a buyback, it'll need to consider a repurchase of shares on a much grander scale. Earlier, we outlined other methods for utilizing excess capital that should also be considered.

Exhibit 18: Analysis of Impact to Equity-to-Assets Ratio of Buyback

Assumptions:	
Equity	\$282,672,450
Shares Outstanding	22,924,215
Assets	\$1,306,543,500
E/A Ratio	21.6%

E/A Ratio Impact as a Function of % of Shares Repurchased and Price										
Buyback Price (\$)	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%
10.00	21.4%	21.1%	20.8%	20.5%	20.2%	19.9%	19.7%	19.4%	19.1%	18.8%
10.50	21.3%	21.1%	20.8%	20.5%	20.2%	19.9%	19.6%	19.3%	18.9%	18.6%
11.00	21.3%	21.0%	20.7%	20.4%	20.1%	19.8%	19.5%	19.1%	18.8%	18.5%
11.50	21.3%	21.0%	20.7%	20.3%	20.0%	19.7%	19.4%	19.0%	18.7%	18.3%
12.00	21.3%	21.0%	20.6%	20.3%	19.9%	19.6%	19.3%	18.9%	18.5%	18.2%
12.50	21.3%	20.9%	20.6%	20.2%	19.9%	19.5%	19.2%	18.8%	18.4%	18.0%
13.00	21.3%	20.9%	20.5%	20.2%	19.8%	19.4%	19.1%	18.7%	18.3%	17.9%
13.50	21.3%	20.9%	20.5%	20.1%	19.7%	19.3%	18.9%	18.5%	18.1%	17.7%
14.00	21.2%	20.9%	20.5%	20.1%	19.7%	19.3%	18.8%	18.4%	18.0%	17.6%
14.50	21.2%	20.8%	20.4%	20.0%	19.6%	19.2%	18.7%	18.3%	17.9%	17.4%
15.00	21.2%	20.8%	20.4%	19.9%	19.5%	19.1%	18.6%	18.2%	17.7%	17.3%

The shares acquired through a stock buyback program can eventually be used as "currency" if the bank decides to acquire another bank. Often, merger and acquisition (M&A) deals are done with a combination of cash and stock. If Highlander Bank plans M&A activity, the stock buyback will help management lower the bank's E/A ratio plus provide shares for future deals. Highlander Bank's board thought that a 20 percent buyback would reduce excess capital more significantly. If more reductions in the bank's excess capital is the goal, then a larger scale buyback should be considered. Exhibits 19 and 20 show the impact to the E/A ratio and the equity multiplier, respectively, from buybacks ranging from five percent to 50 percent. The two exhibits tell the same story, as the equity multiplier is simply the inverse of the equity ratio. Incredibly, even with a 50 percent buyback, the bank won't achieve an eight percent E/A ratio, unless the repurchase price exceeds \$15/share.

Exhibit 19: Analysis of Impact to E/A Ratio from a Larger-Scale Buyback

Assumptions:	
Equity	\$282,672,450
Shares Outstanding	22,924,215
Assets	\$1,306,543,500
E/A Ratio	21.6%

E/A Ratio Impact as a Function of % of Shares Repurchased and Price										
Buyback Price (\$)	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
10.00	20.9%	20.2%	19.5%	18.8%	18.0%	17.3%	16.5%	15.7%	14.9%	14.1%
10.50	20.9%	20.2%	19.4%	18.6%	17.9%	17.1%	16.2%	15.4%	14.6%	13.7%
11.00	20.9%	20.1%	19.3%	18.5%	17.7%	16.8%	16.0%	15.1%	14.2%	13.3%
11.50	20.8%	20.0%	19.2%	18.3%	17.5%	16.6%	15.7%	14.8%	13.8%	12.8%
12.00	20.8%	19.9%	19.1%	18.2%	17.3%	16.4%	15.4%	14.4%	13.4%	12.4%
12.50	20.8%	19.9%	19.0%	18.0%	17.1%	16.1%	15.1%	14.1%	13.1%	12.0%
13.00	20.7%	19.8%	18.9%	17.9%	16.9%	15.9%	14.8%	13.8%	12.7%	11.5%
13.50	20.7%	19.7%	18.7%	17.7%	16.7%	15.6%	14.6%	13.4%	12.3%	11.1%
14.00	20.7%	19.7%	18.6%	17.6%	16.5%	15.4%	14.3%	13.1%	11.9%	10.7%
14.50	20.6%	19.6%	18.5%	17.4%	16.3%	15.2%	14.0%	12.8%	11.5%	10.2%
15.00	20.6%	19.5%	18.4%	17.3%	16.1%	14.9%	13.7%	12.4%	11.1%	9.8%

Exhibit 20: Analysis of Impact to the Equity Multiplier from a Larger-Scale Buyback

**Assumptions:**

Equity	\$282,672,450
Shares Outstanding	22,924,215
Assets	\$1,306,543,500
Equity Multiplier	4.6x

Equity Multiplier as a Function of % of Shares Repurchased and Price											
Buyback Price (\$)	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	
10.00	4.8x	4.9x	5.1x	5.3x	5.5x	5.8x	6.1x	6.4x	6.7x	7.1x	
10.50	4.8x	5.0x	5.2x	5.4x	5.6x	5.9x	6.2x	6.5x	6.9x	7.3x	
11.00	4.8x	5.0x	5.2x	5.4x	5.7x	5.9x	6.3x	6.6x	7.1x	7.5x	
11.50	4.8x	5.0x	5.2x	5.5x	5.7x	6.0x	6.4x	6.8x	7.2x	7.8x	
12.00	4.8x	5.0x	5.2x	5.5x	5.8x	6.1x	6.5x	6.9x	7.4x	8.1x	
12.50	4.8x	5.0x	5.3x	5.5x	5.9x	6.2x	6.6x	7.1x	7.7x	8.3x	
13.00	4.8x	5.0x	5.3x	5.6x	5.9x	6.3x	6.7x	7.3x	7.9x	8.7x	
13.50	4.8x	5.1x	5.3x	5.6x	6.0x	6.4x	6.9x	7.4x	8.1x	9.0x	
14.00	4.8x	5.1x	5.4x	5.7x	6.1x	6.5x	7.0x	7.6x	8.4x	9.4x	
14.50	4.8x	5.1x	5.4x	5.7x	6.1x	6.6x	7.2x	7.8x	8.7x	9.8x	
15.00	4.9x	5.1x	5.4x	5.8x	6.2x	6.7x	7.3x	8.1x	9.0x	10.2x	

The analysis shows that the bank needs to conduct a massive stock buyback if it intends to reduce excess capital significantly in the short term. To put the buyback into perspective, a 50 percent repurchase at \$12/share equates to \$137,545,290. This size of buyback would certainly push the price higher on Highlander Bank's shares, but by how much? That depends on the price elasticity of the supply curve for the bank's shares. The IPO price was \$10/share, so \$12 would give shareholders a quick 20 percent return, during a period when other bank stocks yielded losses. If a 50 percent buyback were done, the bank's BVPS would be far more sensitive to the average purchase price. We estimate that the resultant BVPS would be \$9.66 (down from \$12.33) if the average price paid on a 50 percent buyback were \$15/share. If the average price were \$14, then the

BVPS would drop to \$10.66. As for EPS, the accretive/dilutive line shown in Exhibit 16 would remain the same. The difference that would be seen is the magnitude of EPS changes. There are many managerial issues that would need to be addressed if a larger buyback were considered, such as:

1. Could the bank liquidate enough low-yielding assets to produce sufficient funds for the buyback?
2. Would the bank's liquidity position be satisfactory after a massive buyback?
3. The bank's borrowing/assets ratio would spike—would the bank violate a lending limit?

It is unlikely that the bank will solve its capital management issues overnight. Highlander Bank is a perfect example of a bank that should create a detailed capital plan as part of its overall strategic plan. Part of the plan needs to outline management's plans for managing shareholders' expectations for the bank. The board knows that shareholders could become restless with the bank holding so much capital, so they need to explain how the bank's capital will be utilized over the next five to ten years. Each time there is a "capital event," such as an increase to the dividend, a special dividend, or a stock buyback, this is an opportunity for management to communicate to shareholders. The underlying message from management to shareholders is that steps are being taken to maximize shareholder wealth.

### Stock Performance: Fundamental Versus Speculative Return

Management and the board are interested in a fair method for evaluating the performance of Highlander Bank's stock. In Part I of the case study we did a thorough stock performance assessment of Lowlander Bank that included a stock valuation. Assessing Highlander Bank's stock is more challenging because it has been in existence for such a brief period; there is no five-year look-back period. When we valued Lowlander Bank, we estimated its beta using five years of stock returns. Without a

reasonable time series of stock returns, calculating beta is difficult if not meaningless. If a discount factor were needed for valuing Highlander Bank, it would make more sense to use an average of similar banks' betas. Moreover, we used a dividend yield multiple to derive a value proxy for Lowlander Bank. Highlander Bank has no dividend history, so an alternate value metric is needed. If the bank needs to value its shares, probably the best methods to use are the price-to-book ratio and the franchise-premium-to-core-deposit (FPCD) ratio, which were introduced in Part I of the case study. The bank's small portion of deposit funding would hurt its FPCD ratio-based valuation. Although that wouldn't directly hurt its P/B ratio-based valuation, an analyst might adjust a P/B-based valuation because of the bank's less desirable funding mix.

There is often a good deal of speculation surrounding IPOs. Investors like to buy shares with the intent of "flipping" them for a quick profit. There have been many stories in the popular press about investors looking for ways to participate in IPOs of mutual banks when they convert. In some cases, bank boards have taken measures to preclude out-of-town people from making deposits into their bank with the intent of making a fast buck from the bank's anticipated conversion. Highlander Bank realizes that speculation and investor psychology could be as much a factor in its stock performance as the fundamentals. The management team and the board read recent research that we did on the difference between fundamental and speculative returns and they wanted to learn more. The following are two illustrations of how to look at a bank's returns from a fundamental and speculative perspective. For the "real-world" illustration, we chose an example that predates the subprime debacle.

#### *Fundamental vs. Speculative Return: A Simple Illustration*

In addition to budgeting and tracking earnings performance, boards can also "budget" and track their stock performance. Jack Bogle provides insight into how to explain a divergence between earnings growth and stock performance when a stock does not

meet budget. Mr. Bogle, well known for starting the mutual fund company named The Vanguard Group, divides investment returns into "fundamental returns" and "speculative returns" (see p. 129 in Ellis, 2002). The fundamental return is the growth in earnings plus the current dividend yield. The speculative return is based on the change in a stock's price-to-earnings (P/E) ratio. Total return on a stock is the change in its price (capital appreciation or depreciation) plus the dividend yield. Using Bogle's insight, we can break the price change into two parts: the change to EPS and the change to the P/E ratio.

Exhibit 21 provides the numbers needed to make a simple comparison between fundamental versus speculative return. An investor will likely assess the return of his investment by the capital appreciation and the dividend paid, which is the total return. The sum of these two components includes the fundamental and speculative returns, as defined by Bogle. For scenarios one and two, the stock prices, EPS and dividend (paid in period one) are shown. Using these figures, we can calculate the fundamental return (growth in EPS plus dividend yield) and the speculative return (the change in the P/E ratio). For both scenarios, the total return is 10.0 percent.

Which scenario would the typical investor prefer? Arguably, he would be indifferent, because both provide a total return of 10 percent. However, when you dig deeper into the numbers, you find that the return for scenario one is mostly a result of a strengthening P/E multiple. What we don't show is whether the sector's P/E multiple also increased, or is the P/E gain company-specific? If the P/E gain is company specific, perhaps it is sustainable. Yet, scenario two reflects a meaningful 6.67 percent increase in EPS not seen in scenario one. This is evidence that the firm has become more profitable, and should be capable of sustaining a larger dividend in the future. The fundamental return calculation separates the EPS gain from the P/E ratio change. Jack Bogle's approach to stock performance evaluation favors the fundamental return over the speculative return, so he would prefer scenario two.

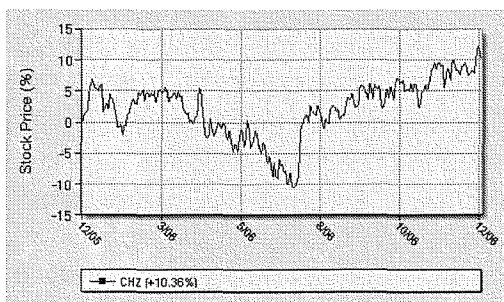
# Exhibit 21: Fundamental vs. Speculative Return

	Scenario 1	Scenario 2
$P_0 =$	\$15.00	\$15.00
$P_1 =$	\$16.00	\$16.00
$EPS_0 =$	\$1.000	\$1.000
$EPS_1 =$	\$1.000	\$1.067
$DPS_1 =$	\$0.50	\$0.50
$(P/E)_0 =$	15.0x	15.0x
$(P/E)_1 =$	16.0x	15.0x
Fundamental Return =	3.3%	10.0%
Speculative Return =	6.7%	0.0%
Total Return =	10.0%	10.0%

## Fundamental vs. Speculative Return: A Real-Life Illustration

After a rocky first half of the year that saw its stock tumble more than 10 percent (see Exhibit 22), Chittenden Corporation gave investors a pleasant surprise by year-end 2006. The bank, which has since been bought by another bank, is located in Vermont with assets around \$6.4 billion. Although net income was up just 4.2 percent for 2006, the stock rebounded and produced a total return of 13.2 percent. If Chittenden's board of directors budgeted for a 4.2 percent growth in net income in 2006, it's unlikely that they expected a total return three times that amount. However, there are instances when investment returns and earnings performance diverge substantially. Should a bank CEO be judged on how well the stock performs or on earnings growth?

Exhibit 22: Stock Performance for Chittenden Corporation in 2006



Source: SNL Financial

Traditionally, banks spend a lot of time creating a budget for the upcoming year. This helps them control expenses and to project revenues and earnings. If budgeting does not produce a feasible plan to grow EPS in line with the board's expectations, then management needs to make some tough and/or creative decisions in order to close the gap. One step taken by Chittenden in 2006 was to repurchase 1.8 million shares of outstanding stock. A management team might assume that the bank's share price will reflect its successes at growing earnings; yet, there is not always a perfect correlation between earnings and share price. If, for example, a bank's earnings rose by 10 percent last year, did its stock price rise by 10 percent as you would expect? Also an important question for shareholders: What total return is realized by growing earnings by 10 percent?

In Exhibit 23, key financial data for Chittenden Corporation are shown for 2005 and 2006. The bank increased EPS by 5.1 percent in 2006—an okay year. On the other hand, the bank's total return (share appreciation plus dividend yield) in 2006 was 13.2 percent—an excellent year. What grade should the board have given the CEO for performance based on 2006 results? Before we answer the question, let's quantify the fundamental and speculative returns as was done above for the simple example. The increase in EPS (5.1 percent) and the dividend yield (2.8 percent) sum to 7.9 percent to give the fundamental return. Management has a direct hand in achieving higher EPS and setting DPS (dividend per share), so it is fair to grade them on these two return fundamentals. The speculative return in 2006 was the 5.0 percent rise in the bank's P/E ratio. This made a material contribution to the bank's total return, but how much credit does management deserve?

Exhibit 23: Financial Data for Chittenden for 2005 and 2006

	2005	2006	% Change
Share Price	\$27.81	\$30.69	10.4%
EPS	\$1.76	\$1.85	5.1%

DPS	\$0.72	\$0.78	8.3%
Dividend Yield	2.5%	2.8%	11.9%
P/E Ratio	15.8x	16.6x	5.0%

Sources: Chittenden Corporation's 10-K; Yahoo! Finance

Frequently we read stories in the popular press about outrageous CEO compensation. Board members should find it easier to justify a compensation package based on fundamental returns than speculative returns. To fairly grade the CEO for 2006, the board should compare the fundamental return of 7.9 percent to a pre-established guideline for returns that can be agreed to and documented in the strategic plan. If the speculative return is lumped into the overall evaluation, this could lead to "grade inflation" or "grade deflation" and, arguably, too much credit or blame assigned to the CEO.

Chittenden Corporation makes an interesting illustration of fundamental versus speculative returns because of what happened in the prior year, 2005. The total return for the stock in 2005 was *negative* 0.7 percent. If this were all you knew as a board member, you might want to reduce the CEO's compensation or even fire him because of the poor return. However, as the data show in Exhibit 24, the bank had a marvelous year, based on fundamentals. The bank's EPS were up 11.4 percent and the dividend yield was 2.5 percent, producing a fundamental return of 13.9 percent in 2005. This is well ahead of the 7.9 percent fundamental return that was achieved in 2006. The reason that the total return for 2005 was negative is because the speculative return—namely, the change in the P/E ratio—was negative 13.1 percent.

In order to evaluate the performance of their banks using a fair benchmark, boards will commonly make comparisons to peer groups of banks of similar size, location and/or business model. This makes some sense because changes to P/E ratios tend to affect the entire sector to a similar extent. Nevertheless, it is impossible to forecast or budget how P/E multiples will change year to year. Moreover, a bank's P/E

multiple can vary from industry factors and/or bank-specific factors. For instance, if the banking sector looks poised to increase future earnings growth, P/E multiples will likely rise as this expectation is priced into the market. At the bank level, earnings prospects can improve and that will help the bank's individual P/E ratio. Also, any success at lowering the bank's risk could be interpreted favorably by the market and rewarded with a higher P/E ratio. Unlike earnings growth and dividends, management's direct influence on the bank's P/E ratio is uncertain. Therefore, a board might want to differentiate between fundamental and speculative return when grading the CEO's performance.

Exhibit 24: Financial Data for Chittenden for 2004 and 2005

	2004	2005	% Change
Share Price	\$28.73	\$27.81	-3.2%
EPS	\$1.58	\$1.76	11.4%
DPS	\$0.70	\$0.72	2.9%
Dividend Yield	2.1%	2.5%	20.4%
P/E Ratio	18.2x	15.8x	-13.1%

Sources: Chittenden Corporation's 10-K; Yahoo! Finance

#### *Applying Fundamental and Speculative Return Concepts to Highlander Bank*

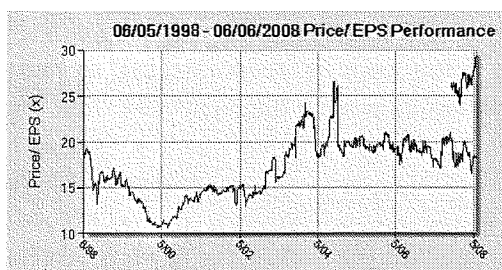
To see how the principles of fundamental versus speculative return can be applied to Highlander Bank, assume that the bank's price jumped from its IPO price of \$10 per share to \$12 per share in the first year. There were no dividends paid, so the total return was 20 percent. During the year, EPS rose by 30 percent. In the last section, we defined fundamental return as the combination of EPS growth and dividend yield. Therefore, because there were no dividends paid, the fundamental return is equal to the EPS growth, or 30 percent. The P/E ratio at the time of the IPO was 30.1x. One year later it was 27.8x, for a speculative return of -7.6 percent. Thus, the total



return for the first year after the IPO is 20 percent, the fundamental return is 30 percent and the speculative return is -7.6 percent. Which return figure is more meaningful when evaluating a bank's progress? The answer to this question might be different when evaluating a bank that has just done an IPO.

Specifically, for a mutual-to-stock conversion, how do you interpret the speculative and fundamental returns in the early years, particularly the first year? Is either return figure a meaningful measure of performance? The 20 percent price gain is a product of the fundamental return ( $1+0.30$ ) and the speculative return ( $1-0.076$ ). It is likely that the lofty P/E ratio is partly a result of investor speculation regarding how management will employ the capital to grow profitability. The value that investors place on the shares today reflects their consensus about future profitability, specifically the increases to EPS. Inherent in the consensus is an expectation that the bank will eventually pay a growing stream of dividends that are supported by the growth in earnings. Exhibit 25 shows that the bank's P/E ratio (top line) immediately exceeded the long-running average for thrifts in its peer group. One interpretation is that the market expects Highlander Bank to grow earnings more quickly than other thrifts of comparable size. Given the massive pool of capital that the bank has, this is likely a good assumption. But should this speculation factor into the assessment of the stock performance for the latest year? Arguably, it should not.

Exhibit 25: P/E Ratio for the Sector and Highlander Bank



Source: SNL Financial

As for the fundamental return, any board would be delighted with a 30 percent return. But keep in mind that Highlander Bank's IPO raised roughly \$200 million in capital, so an immediate earnings boost is not a surprise. In fact, the question has to be asked whether the earnings increase was as large as it should have been given the jump in assets. Keep in mind from the accounting identity that the bank's asset base expanded as the equity account increased. The growth in assets should be dollar for dollar along with the growth in equity; however, some of the equity was a shift in funds from deposits into the equity account. Thus, the net asset base increase was equal to the new funds that flowed into the bank as a result of the IPO.

#### Setting Dividend Policy And Eps/Dps Targets

Usually, when a firm does an IPO, it needs to raise capital for growth purposes. Highlander Bank's mutual-to-stock conversion raised a tremendous amount of equity—more than it needed. Prior to the conversion, the bank's E/A ratio was below eight percent and falling. Exhibit 26 shows the compound annualized growth rate (CAGR) of the bank's loans and deposits over the 10-year period prior to the conversion. During the same period, the bank's average ROE was well below its loan growth. Because the bank was paying no dividends, the sustainable growth rate was equal to the bank's ROE. This meant that the bank's equity growth was slower than asset growth, which explains the falling E/A ratio. If the bank forecasted loan growth to continue at the 10-year rate, then raising capital was a good idea; but the actual amount raised through the IPO was excessive. It's incumbent on bank boards to create a capital management plan. Otherwise, they run the risk of having too much or too little capital.

Exhibit 26: 10-Year Loan and Deposit Growth Rates

	CAGR
Loan Growth	9.6%
Deposit Growth	8.0%



Sources: SNL Financial; Regulatory Financials

As the bank looks to the future, management should set a target return for shareholders. This will help it formulate a budget for EPS and DPS. Suppose management sets a goal of 10 percent rate of return for the next 10 years, composed of share appreciation and dividend yield. Typical returns might be eight percent share appreciation from EPS growth and two percent from dividend yield. By using the dividend discount model and the IPO price of \$10/share, we can create a dividend schedule for the next 10 years. Below we show the DDM that was introduced in Part I of the case study, substituting \$10 for  $V_0$ , 10 percent for  $k$  and eight percent for  $g$ . The numerator of the DDM,  $D_0 \times (1 + g)$ , represents  $D_1$ , the dividend paid in the first year after the IPO. Solving for that value gives \$0.20 as the first year's dividend, with eight percent growth each year in the future.

$$\$10 = \frac{D_0 \times (1 + 0.08)}{0.10 - 0.08}$$

$$D_1 = \$0.20$$

Based on the assumptions above, Exhibit 27 provides DPS and EPS targets for Highlander Bank. Management and the board can change the assumptions. For example, the model above shows a 10 percent rate of return, with eight percent share appreciation and a two percent dividend yield. Bank stocks provide an equity investment with lower-than-average risk. Therefore, a target return of eight to nine percent could be justified. With the schedule shown in Exhibit 27, the bank is paying out about 50 percent of earnings. If this schedule were adopted, then the bank's strategic plan would need to outline how the bank will grow its EPS by eight percent each year.

The DDM can be further used to project the bank's price in 10 years. Based on the model, the value would be year 10's dividend times one plus the growth rate  $(1+g)$  divided by the difference between the return and the growth rate  $(k-g)$ , or \$21.59. Whether or not this price becomes reality depends not just on the dividend paid. The market would have to reflect a consensus about the expected rate of

return continuing at 10 percent and the growth rate in dividends continuing at eight percent. This consensus will depend on the market's expectations for the bank's future earnings. Specifically: Can management continue to grow EPS at eight percent to support the eight percent growth in dividends? This will be the key question.

Exhibit 27: DPS and EPS Targets

Year	DPS	EPS	Payout
1	\$0.200	\$0.39	51%
2	\$0.216	\$0.42	51%
3	\$0.233	\$0.45	51%
4	\$0.252	\$0.49	51%
5	\$0.272	\$0.53	51%
6	\$0.294	\$0.57	51%
7	\$0.317	\$0.62	51%
8	\$0.343	\$0.67	51%
9	\$0.370	\$0.72	51%
10	\$0.400	\$0.78	51%

During the next 10 years, changes to the bank's leverage ratio will depend on asset growth. In order to grow earnings at eight percent per year, the bank can grow assets and improve ROA. Both serve to boost earnings. Suppose, as an illustration, that the entire earnings gain in the first year comes from asset growth. That means that assets would grow by eight percent. The equity growth would be the difference between EPS and DPS (for example, in year one:  $\$0.39 - \$0.20 = \$0.19$ ) times the number of shares outstanding (e.g., 22,924,215 in year one), which gives \$4,355,601. This is a 1.5 percent increase relative to the end-of-year equity of \$282,672,000. As long as the bank's assets are growing faster than equity, the bank's E/A ratio will trend downward to a more efficient level.

Eventually, the bank's equity ratio and SGR need to stabilize to produce the growth needed to sustain the growth in EPS and DPS at an optimal capital structure. The growth rate incorporated into the DDM is eight percent. Exhibit 27 shows that the payout ratio is 51 percent. If that continues, then the retention ratio is 49 percent. Earlier, in Part II of the case, we presented the SGR as the product of the

firm's ROE times the retention ratio (rr). Based on the eight percent growth and 49 percent rr, the implied ROE for Highlander Bank is 16.3 percent. That is the ROE needed when the bank reaches its optimal E/A ratio. At that time, the bank will need to focus on the identity:  $ROA \times \text{equity multiplier} = ROE$ . It will need to determine (1) how profitable can the bank operate, as measured by ROA, and (2) what is the bank's equity multiplier target, based on the bank's risk profile and regulatory guidance? Suppose that Highlander Bank decides eight percent E/A is optimal, then the implied ROA is 1.31 percent. Can the bank lift its profitability to that level sometime in the future?

### Summary

By completing the mutual-to-stock conversion, the board and management at Highlander Bank have altered the mission of the bank. As a mutual, the bank's goal was to serve depositors, similar to the culture of a credit union. With the conversion, the bank added shareholders to the mix of stakeholders. We know in Corporate America that shareholders can often be the most vocal shareholder group. Going forward, strategic planning should include a target return for shareholders and steps to achieve it. Nevertheless, there is no reason why the other stakeholders (namely, management, employees, customers, and regulators) can't be equally well-served by a stock organization. Employee and customer satisfaction are ingredients of a successful corporation.

The IPO took the bank from a moderate capital position to being over-capitalized. However, it might be a mistake to act too quickly to reduce capital. In the last section, we laid out a DPS and EPS schedule that could produce a 10 percent long-term return for shareholders. To make it a reality, management will need to pay a consistently growing dividend and, just as importantly, demonstrate that the bank can generate the profitability needed to sustain a growing DPS. The plan calls for an ROE of 16.3 percent in the future. Suppose the bank's ROA hits a peak of one percent and the board wants to maintain 10 percent capital. Then the ROE will peak at 10 percent. In

order to maintain an SGR of eight percent, the bank's retention ratio will need to increase to 80 percent, dropping the payout ratio to 20 percent (rather than the 51 percent shown above). This would result in an immediate cut in the dividend and a drop in the share price, assuming the market price adjusts as finance theory would predict. If management and the board believe that the goals outlined are unrealistic, then a stock buyback might be considered. By reducing the shares outstanding, the overall level of earnings needed is reduced.

Earlier in the case study, we looked at the impact to EPS and BVPS from a stock buyback. The management of Highlander Bank is seriously considering a buyback as a way to reduce capital. However, before they launch a buyback, it makes sense to create a capital plan. Ultimately, a bank wants to achieve an optimal level of capital, which is sufficient to capitalize asset growth and remains stable in terms of the equity-to-assets ratio. Finance students are taught that firm value does not depend on capital structure. However, in banking this is less certain. As a bank's leverage increases, its ROE rises. Moreover, banks' EPS can be increased when they obtain a sizable portion of their funding from low-cost deposits, such as demand deposits and negotiable orders of withdraw accounts (i.e., NOW accounts). Normally, providers of capital are reluctant to invest in companies that depend on too much debt to finance their assets. In the case of banking, deposit insurance offered by the FDIC protects depositors from losses so they show little concern about the amount of financial leverage used by a bank. As Highlander Bank looks to the future, they should consider all the possible methods for utilizing capital discussed in this case study. These have to be weighed against prospects for loan and deposit growth. The overarching goal should be to use the capital to maximize shareholder returns by capitalizing profitable growth. When management makes its decisions about how much capital to invest versus the amount to return to shareholders, it has to assume that shareholders have other profitable investments they can choose. So returning a large chunk of the bank's capital might make perfect sense.

## References

- Burns, R. L. (2004). "Economic capital and the assessment of capital adequacy." *FDIC's Supervisory Insights*, [http://www.fdic.gov/regulations/examinations/supervisory/insights/siwin04/economic\\_capital.html](http://www.fdic.gov/regulations/examinations/supervisory/insights/siwin04/economic_capital.html)
- Ellis, C. D. (2002). *Winning the loser's game: Timeless strategies for successful investment*. New York, NY: McGraw-Hill.
- FDIC (2008). Risk-Based Assessment System. <http://www.fdic.gov/deposit/insurance/risk/index.htm>
- Jordan, B. D. & Miller, Jr., T. W. (2008). *Fundamentals of investments: Valuation and management*. 4<sup>th</sup> edition. New York, NY: McGraw-Hill Irwin.
- Jubak, J. (2006). Why Warren Buffett's a genius again. *Jubak's Journal on MSNBC*. <http://articles.moneycentral.msn.com/Investing/Jubak'sJournal/WhyWarrenBuffettsAGeniusAgain.aspx>
- Mason, R. D., Lind, D. A. & Marchal, W. G. (1999). *Statistical Techniques in Business and Economics*, 10<sup>th</sup> edition, United States: Irwin McGraw-Hill.
- Smart, S .B., Megginson, W. L., & Gitman, L. J. (2007). *Corporate Finance*, 2<sup>nd</sup> edition, Mason, OH: Thomson South-Western.
- Winslow, S. (1994). *Stock Splits and Dividends: Do They Fool the Market? SNL Bank Securities Monthly*, published by SNL Securities, 6-8.

---

John S. Walker is an Associate Professor of Finance at Kutztown University of Pennsylvania. He holds masters degrees in chemical engineering from the University of Delaware and in business administration from Lehigh University, where he earned his Ph.D. in business and economics. He is a chartered financial analyst and spent 12 years as director of research for a bank advisory firm. He is co-author of a monograph titled *A Financial-Agency Analysis of Privatization: Managerial Incentives and Financial Contracting*. His research interests include privatization, banking, and portfolio management.

Henry F. Check, Jr. is an Instructor of Accounting and Finance at Kutztown University of Pennsylvania. He earned masters degrees in business administration and in economics from Lehigh University. His other research interests are firms with dual-class common capitalizations, the effect of dividend initiations on systematic risk, and public pension plan performance.

INFLUENCING CONSUMER LOYALTY  
Jefrey R Woodall, Argosy University and York College of Pennsylvania

---

Abstract

The purpose of this paper is to provide a literature review of consumer loyalty, including many of the drivers of loyalty, such as satisfaction, trust, and perceived value. Using information from the literature, it will be demonstrated that marketers must change their approach to loyalty in order to manage business results and realize long-term gains.

---

Introduction

One of the most often used business strategies is the focus on customer loyalty. Many businesses consider it the 'Holy Grail' (Henry, 2000). This focus on customer loyalty is thought to drive increased profits, through the reduced cost to sell an existing customer, versus the cost to prospect a new customer. Many authors, including Caruana (2004); Bhatt, Skinkle, and Spaulding (2001); Henry; and Dowling and Uncles (1997), discuss the value that loyal customers are perceived to bring to a business.

Loyal customers are thought to be more likely to repurchase a good or service; recommend a product, brand or marketer; and use positive word-of-mouth advertising. These behaviors are thought to be worth up to 100% increase in profits driven by as little as a 5% increase in customer retention (Reichheld, Markey, & Hopton, 2000).

Bhatt, Skinkle, and Spaulding (2001) published a study which provides more detail on the value of a loyal customer. From the customer's point of view (they consider themselves loyal), almost 90% said they would shop at their primary store before shopping elsewhere, and 43% said they wouldn't shop anywhere else. In addition, almost 75% said they would recommend the primary retailers, and that 63% would be likely to forgive mistakes made by the retailer. These statistics point out that loyal customers can be very valuable to a business. For example, marketers need to spend less money on the 43%

who said they wouldn't shop elsewhere, as those shoppers are less likely to switch, and less likely to be influenced by other marketing activities.

Based on the potential identified by this and other studies, marketers have increased their efforts to segment the markets where they participate to target the customers they believe to be loyal. Duffy (1998) believes that the segmentation is necessary in part because of the number of two-income households, and the increase in the number of media outlets to reach their consumers. With the increased number of messages and reduced time to view them, pressure to identify a loyal consumer is growing, but the results are neutral at best.

In a more recent study, customers admit that they are not as loyal as previously thought. (Yin, 2003) More than 50% of the customers surveyed admitted they are not happy with the retailers they frequent, but that they may not have any other choice. However, this second study does provide similar statistics (45%) on the number of customers who are unlikely to switch. Another interesting statistic from the study is that 41% are willing to pay higher prices for better service.

As part of their discussions, both Yin (2003) and Duffy (1988) use the word relationships. They believe it is necessary to build a relationship between the marketer and the customer. They and others write that through that relationship, marketers can begin to increase loyalty with their customers, in part by improving customer satisfaction.

Coyles and Gokey (2002) state that marketers started measuring customer satisfaction in the 1970s. Then in the 1980s, marketers began measuring the number of defecting customers. They investigated the reasons for the defections, and tied them back to a lack of satisfaction with the marketer. In addition, through those studies, marketers also began to realize that not all customers were created equally; some customers are more valuable than others. That realization began the work to target the more valuable customers. In addition, the concept of managing migration of those defecting customers and with existing customers became more prominent. The authors provide an example of the importance of managing migration.

They relate information from a retail bank, where 5% of checking account customers defect, representing about 10% of the bank's checking accounts. However, 35% of customers reduced their account balance, accounting for a 24% loss and 35% of the customers increased their account balance, representing a 25% increase. This example points out the importance of knowing which customers to target. The authors point out that in their studies this trend was seen in more than two-thirds of the businesses studied across 16 different industries (Coyles & Gokey, 2002).

With the discovery that all customers are not equal, at least from a profit standpoint, companies have had to come to grips with the improbable task of meeting all customers' expectations and providing superior service to all. Through the 1990s marketers developed the concept of micro-marketing to reach the more profitable segments, improving profitability with those higher value customers. Once the targets are identified, products and services can be tailored appropriately to meet the needs of those segments (Zeithaml, Rust, & Lemon, 2001).

As research identifies profitable customers, and segmentation provides a path to reach them,

Bitner, Brown, and Meuter (2000) suggest that another important tactic marketer can use is to delight customers with unexpected pleasant experiences. These experiences are often shared with others (increased word-of-mouth advertising), and increase the customer's satisfaction with the good or service offered. The authors go further and suggest that if the product is technology related, then the company should work with the consumer to better understand expectations and use the consumer's inputs to improve the interaction.

Others also have written about the importance marketers place on satisfaction. Durvasula, Lysonski, Mehta, and Tang (2004) write that companies have spent significant amounts of money developing their ability to improve and measure customer satisfaction. However, this focus on satisfaction does not in itself guarantee customer retention. Instead, they write, marketers should focus on factors that will deliver satisfaction, such as increased customer value and a quality experience. Additionally, Rowley and Dawes (2000), write that customers who claim to be satisfied often switch to other marketers, while dissatisfied customers remain loyal. Satisfaction then does not seem to be sufficient to deliver loyal customers.

Liljander and Roos (2002) write that a trusting relationship is an important step for marketers to develop their customers. This trusting relationship can be an indicator of the commitment of the customer toward the marketer. The way that most marketers interact with their customers is through the direct interaction of their employees.

According to Bitner, Brown, and Meuter (2000), customers and consumers interact with marketers millions of times each day. The interaction can range from a self-service gas pump, to an internet search, to a grocery store register operator, to the concierge at a five-star hotel. At each encounter, the marketer has an opportunity

to influence both the current experience and the potential for future encounters.

Oliver (1999) also writes about the importance of understanding the linkage between loyalty and satisfaction. He claims that in some industries, despite loyalty programs, defections can climb to 90%. Therefore, it seems clear that marketers need to change the way they think about loyalty.

In this paper, existing programs designed to build customer loyalty are reviewed. It will be demonstrated that loyalty can be influenced through the development of a trusting relationship between the customer and the marketer. With this relationship in place, marketers can then start to change the way they approach their marketing plans. These changes should help marketers maintain and increase their customer base, improving their market share, and leading to additional short- and long-term revenues and profits.

### Literature Review

What then is loyalty, and why does it matter? Reichheld (2003) says that loyalty is "the willingness of someone – a customer, an employee, a friend – to make an investment or personal sacrifice in order to strengthen a relationship"(p48). In addition, Reichheld writes that a 'loyal' customer may be willing to pay more for a product, if that product is thought to be a good value, and consistently meets the needs of the consumer. This seems consistent with the study mentioned earlier in the paper, printed by Yin (2003), which said that 41% of customers would also be willing to pay more for better service, often touted as an indicator of value. According to Caruana (2004), loyalty may involve more than just value. Loyalty may also be impacted by products, brands or marketers.

Going further, how do customers decide what they will buy? Or said another way, how can you attract customers to a product in order to

develop that loyalty? There are a variety of models that address those questions. For example, Morgan (1999) writes that customers can be attracted by the perceived quality and value offered by a brand as compared to other similar brands. According to Morgan, customers claim they are willing to pay more for a higher quality product. However, marketers need to do more than just create value.

Coyles and Gokey (2002) theorize that customers have certain attitudes that drive customer purchases. They believe that customers are emotive, inertial or deliberative. They explain that emotive customers purchase the products they feel are right for them. Because the customers develop an emotional attachment to the brand and do not deliberate over choice, they buy more and are less likely to switch. Inertial customers, while also unlikely to reassess their choices over time, are influenced more by switching costs, than value or the lack of clear choice than by emotion. Deliberative customers represent up to 40% of the customers in an industry. They often reassess their choices based on price or the marketer offering the product and are as likely to switch as not.

Even switchers have been surveyed and categorized. For example, Wangenheim and Bayon (2004) suggest that there are two different types of switchers – referral switchers and other switchers. They offer the distinction as switchers who have been influenced to switch by word-of-mouth or other recommendations by trusted sources (referrals). On the other hand, other switchers are influenced by advertising methods, such as reduced price, direct mail, or in-store display. Bhatti, Skinkle, and Spaulding (2001) also asked customers why they switched businesses and the key reasons include marketers not valuing the customer (30%) and poor attitude of the staff (43%).

Moving back to intent, a model offered by Anand and Sachar (2004) states that customers

buy products based on the image of the overall brand. If customers can aspire to a brand, they are likely to purchase a product from that brand family, even if another marketer offers a product that individually better fits the customer's image. Further they suggest that customers buy products from multi-brand marketers based in part on their satisfaction with another product made by the same company. A study published by Bhatti, Skinkle and Spaulding (2001) provides additional reasons that people buy a product, or from a specific marketer, and that influence repeat business (referred to by the authors as loyalty).

In the study, 44% rated a positive attitude of the staff as a key attribute. Other key attributes included 39% rating delivery of advertising promises and 31% rated customers being viewed as valuable. Of note, many of the attributes normally thought of as loyalty drivers scored low in the survey. For example, price was only important to 25%, in-store promotion was only important to 10% and loyalty programs were important to 5% of customers.

### Loyalty Programs

With studies reporting that loyalty programs are not important to many customers, why do marketers use them? O'Brien and Jones (1995) write that rewards can be an important way to build loyalty. In a more recent article, Uncles, Dowling, and Hammond (2003) write that loyalty programs were developed for two reasons. First, marketers thought they could increase sales, reduce the purchase cycles, and increase the number of products that customers purchased. Second, marketers hoped that by creating a program to establish a relationship with customers, the customer would be less likely to defect. However, some believe that creating a loyalty program is nothing more than a reaction to competition (Wansink, 2003).

Another benefit touted by business as a reason to implement loyalty programs is the data available on customers – who they are, where they live, what they buy, how often they shop, and how much they spend. Uncles, Dowling, and Hammond (2003) offer opinions on the viability of data made available as a result of the loyalty programs and list five problems companies experience with the data gathered through loyalty programs.

First, there is a significant amount of data gathered about customers. Unfortunately marketers are not prepared to manage the data, and so are unable to analyze the information gathered. Second, few of the programs capture the same data about customers, so it is difficult to build complete picture about a market or marketer. Third, data is often gathered from multiple sources, internal and external, and the data does not always agree. Fourth, data gathered on sales promotions don't have proper comparison periods to determine whether the promotion was successful. Finally, there is rarely a benchmark to measure the overall effectiveness of the programs.

Even though there are many loyalty programs in use, with more implemented on a regular basis, research suggests that loyalty programs alone do not create long-term profitability or market share increases. Dowling and Uncles (1997) state that the programs should be part of an overall marketing program designed to build a relationship with the customer.

### Satisfaction, Trust and Value

Satisfaction has been a frequent topic of studies on loyalty. According to Wangenheim and Bayon (2004), customer satisfaction is a measure of how well a brand or marketer performs versus the customer's expectations. So, if the marketer exceeds the customer's expectations, then Agustin and Singh (2005) suggest that the customer may be delighted with

the outcome, more satisfied, and more likely to become a loyal customer.

Athanassopoulos, Gounaris, and Stathakopoulos (2001) suggest that customer satisfaction is necessary to compete and survive in today's business world. They and others also point to the outcomes of satisfaction, such as a high likelihood to maintain the relationship with a current provider, and a low likelihood of switching to another provider.

Service research suggests that satisfaction is not just the responsibility of the marketer. Dabholkar (1996) has written that the customer has responsibility for taking an active role in the delivery and quality of the services they receive. Active customers are more likely to have their customer needs understood and met. However, if the service interaction goes bad, and the customer is not satisfied, the customer may blame themselves for the outcome. Although the customer feels that they played a part in the failure of the service, ultimately, they blame the provider and come away from the experience dissatisfied (Bitner, Faranda, Hubbert, & Zeithaml, 1997).

Additional research suggests that other factors can impact a customer's satisfaction with a good or service. Perceived value and trust are often mentioned in the literature as factors that customers consider leading to a customer purchase decision (Agustin & Singh, 2005; McDougale & Levesque, 2000; Foster & Cadogan, 2000; Andreassen & Lindestad, 1998). The authors agree that while trust and value are not leading indicators of loyalty, they do impact satisfaction which in turn may impact loyalty.

### Relationships

Based on what has been covered so far, if a marketer can create a positive customer interaction with the customer, by providing an excellent service or good that exceeds the customer's expectations at a great perceived

value, is that enough to build loyalty? Lemon, Rust, and Zeithaml (2001) would say no. Based on research they published, the marketer needs to establish a relationship with the customer, or what they refer to as 'relationship equity'. Shani and Chalasani (1992) agree and believe that the customer must be an active participant in that relationship.

There are four factors to relationship equity, as written by Lemon, Rust, and Zeithaml (2001). First, it is important if the customer attaches value to the relationship in excess of the actual value of the purchase. Second, relationship equity is important if there is an organization or community associated with the purchase. The authors use the example of a motorcycle club as a community that would enrich the relationship. The third factor deals with the learning process a marketer goes through to better understand the customer, and anticipate future needs. Finally, even when the customer chooses to stop purchasing or receiving the service, the marketer has an opportunity to manage the relationship, such as when a customer chooses to stop using an Internet or cell phone service provider.

Gwinner, Gremler and Bitner (1998) also write about the importance of service marketers developing relationships and the benefits customer expect from those relationships. They say that customers expect social, psychological, and economic benefits from the relationship. Social benefits refer to the community also mentioned on the previous study. An example would be a bar where everybody knows your name, such as on the television *Cheers*, from the 1980s. Psychological benefits refer to the feelings a customer may experience after dealing with a marketer over time. Those feelings might be trust, confidence, or even a reduction in the anxiety a customer might experience after frequenting the same dentist over many years. Finally, economic benefits refer to the discounts or price reductions a customer expects from a marketer. There are also non-monetary benefits,



such as better or quicker service. The authors also list the ability of marketers to customize their service as an additional benefit for regular customers.

These services may create positive feelings toward the marketer, but they come at a cost. There are costs for the marketer to develop programs that add and maintain the benefits for customers. There are also costs for the marketer who offers price reductions or discounts. There are costs for the customer to join some of the communities described above. There may be costs to terminate a relationship, such as with cell phone services (Caruana, 2004).

These additional benefits and costs may help define the value previously mentioned as important to developing satisfaction and leading to loyalty. Lemon, Rust, and Zeithaml (2001) list three factors in the value equation: price, convenience, and quality. Price being the actual cost paid for the service or product. Convenience is described by the authors as those factors that a customer perceives as reducing the time necessary to make a purchase, such as location, selection, or availability. Quality comprises both the actual and perceived characteristics describing the interaction.

Foster and Cadogan (2000) state that the relationship formed is between the customer and the salesperson lead to the overall relationship the customer develops with the marketer. As customers develop a level of comfort and satisfaction with the salesperson, they are likely to feel positively about their overall interaction with the marketer and the quality of the service offered.

Companies seeking to build relationships with customers have tried to use technology to develop that relationship. They add special phone numbers with IVR systems, web sites, and special emails to create value for the customer and demonstrate their interest in service, but that

only serves to detract from the customer's experience, because they feel that the provider doesn't care enough to want to talk to them (Michaud, 2000). Zeithaml, Parasuraman, and Malhotra (2002) also discuss the use of technology. They write that companies must change their focus from using technology to build their business to using technology to service their customers.

### The link to loyalty

So far we have focused on the marketer's tenuous link to loyalty by building relationships with customers, increasing customer's perception on quality and value, leading to increased satisfaction and finally to loyalty, maybe. Returning to the study published by Bhatti, Skinkle, and Spaulding (2001), they write that of the factors driving loyalty, 7 of 10 are relationship issues. For example, customers list staff attitude as both a positive reason to frequent (44%) and a reason they defect to other marketers (43%). In another example, 31% of customers list valuing the customer as a reason they frequent and 30% said that lack of valuing them as customers is a reason they defect. However, many customers 43% said that once they develop loyalty to a provider they are unlikely to shop anywhere else. Therefore, there is an opportunity to build loyalty given the right levers. Additionally, if almost half the customers can be considered loyal, then there may be a tie between loyalty and financial growth.

Reinartz and Kumar (2002) suggest that customers who are loyal may be more profitable because less money needs to be spent to attract them and they are more likely to relate their positive experiences through word-of-mouth advertising. Reichheld (2003) agrees that loyal customers are more profitable due to lower costs to acquire the sale. An additional view of loyalty from a financial point of view is offered by Reichheld, Markey, and Hopton (2000).

They suggest that sales and share can grow as the high value customers purchase and repurchase, referring others and developing attachment. They agree with Reichheld (2003) that costs to maintain the customers decreases, as the cost to prospect for new customers also declines. They also suggest that employees develop loyalty to the company as well, increasing job satisfaction, which in turn will lead to greater customer satisfaction and service.

#### Summary and Recommendations for Additional Research

Through the literature reviewed in the paper it has been demonstrated that developing customer loyalty to a business can help drive revenues, profits, and market share. However, the path to customer loyalty is not straightforward, and consists of many different aspects.

The literature is clear that marketers need to develop relationships with their customers. In order to develop meaningful relationships the literature is less clear, but provides several components, such as the need for trust, perceived value, and perceived quality. The literature also suggests that marketers need to develop relationships at the direct salesperson level, and at the organizational level (Delgado-Ballester & Munuera-Aleman, 2001; Foster & Cadogan, 2000).

In addition to the development of trusting relationships, marketers need to develop satisfaction within the customer base. An increase in satisfaction is thought to reduce switching. Another aspect includes a match between a customer's aspiration and the image of the brand (Andreassen & Lindestad, 1998). The path to loyalty leads from relationships through satisfaction and finally for a lucky few to loyalty.

While loyalty is often thought of as part of an integrated marketing plan, companies who include loyalty as part of the overall business

plan are more likely to be successful (Duffy, 1998; Reichheld, 1993). Additionally, the most successful loyalty programs are those that provide benefits to both sides (Gwinner, Gremler, & Bitner, 1998).

The business and marketing plans must account for the nature of the customer base. In most markets and industries, there is more than one choice. Uncles, Dowling, and Hammond (2003) point out that as long as there is a choice, in any given category, customers are likely to purchase more than one brand. The goal of a loyalty program then, should be to focus on the high value customers, building volume within that base, and minimizing defection in other segments (Wangenheim & Bayon, 2004; Bhatty, Skinkle, & Spaulding, 2001; Rowley & Dawes, 2000; Reichheld, 1993).

There are several areas for future research identified in the literature. Research on relationships has been identified to look across various industries and whether relationships vary in consumer products versus B2B. Another related research topic is switching – can it be predicted and influenced (Caruana, 2004; Grinner, Gremler, & Bitner, 1998)?

Another area of research is on the use of technology in service industries and the impact on satisfaction and loyalty. How can it influence satisfaction with customers (Bitner, Brown, & Meuter, 2000)?

Finally, literature calls out the need for research on trust. More work needs to be done to understand brand trust used in brand and product extensions (Delgado-Ballester & Munuera-Aleman, 2001).

#### References

- Agustin, C. & Singh, J. (2005). Curvilinear effects of consumer loyalty determinants in relational exchanges. *Journal of Marketing Research*, 42(1), 96-108.

- Anand, B.N. & Sachar, R. (2004). Brands as beacons: A new source of loyalty to multiproduct firms. *Journal of Marketing Research*, 41(2), 135-150.
- Andreassen, T.W. & Lindestad, B. (1998). Customer loyalty and complex services: The impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. *International Journal of Service Industry Management*, 9(1), 7.
- Athanassopoulos, A., Gounaris, S., & Stathakopoulos, V. (2001). Behavioral responses to customer satisfaction: An empirical study. *European Journal of Marketing*, 35(5/6), 687-707.
- Bhatty, M., Skinkle, R., & Spaulding, T. (2001). Redefining customer loyalty, the customer's way. *Ivey Business Journal*, 65(3), 13-17.
- Bitner, M.J., Brown, S.W., & Meuter, M.L. (2000). Technology infusion in service encounters. *Academy of Marketing Science Journal*, 28(1), 138-149.
- Bitner, M.J., Faranda, W.T., Hubbert, A.R., & Zeithaml, V.A. (1997). Customer contributions and roles in service delivery. *International Journal of Service Industry Management*, 8(3), 193.
- Caruana, A. (2004). The impact of switching costs on customer loyalty: A study among corporate customers of mobile telephony. *Journal of Targeting, Measurement, and Analysis for Marketing*, 12(3), 256-268.
- Coyles, S. & Gokey, T.C. (2002, Spring). Customer retention is not enough: Defecting customers are far less of a problem than customers who change their buying patterns. New ways of understanding these changes can unlock the power of loyalty. *The McKinsey Quarterly*, 81-89.
- Delgado-Ballester, E. & Munuera-Aleman, J.L. (2001). Brand trust in the context of consumer loyalty. *European Journal of Marketing*, 35(11/12), 1238-1259.
- Dowling, G.R. & Uncles, M. (1997). Do customer loyalty programs really work? *Sloan Management Review*, 38(4), 71-82.
- Duffy, D.L. (1998). Customer loyalty strategies. *The Journal of Consumer Marketing*, 15(5), 435.
- Durvasula, S., Lysonski, S., Mehta, S.C., & Tang, B.P. (2004). Forging relationships with services: The antecedents that have an impact on behavioral outcomes in the life insurance industry. *Journal of Financial Services Marketing*, 8(4), 314.
- Foster, B.D. & Cadogan, J.W. (2000). Relationship selling and customer loyalty: an empirical investigation. *Marketing Intelligence and Planning*, 18(4), 185.
- Gwinner, K.P., Gremler, D.D., & Bitner, M.J. (1998). Relational benefits in service industries: The customer's perspective. *Academy of Marketing Science Journal*, 26(2), 101-114.
- Henry, C.D. (2000). Is customer loyalty a pernicious myth? *Business Horizons*, 43(4), 13.
- Lemon, K.N., Rust, R.T., & Zeithaml, V.A. (2001). What drives customer equity. *Marketing Management*, 10(1), 20-25.
- Liljander, V. & Roos, I. (2002). Customer-relationship levels. *The Journal of Services Marketing*, 16(7), 593-614.
- McDougle, G.H.G. & Levesque, T. (2000). Customer satisfaction with services: Putting perceived value into the equation. *The Journal of Services Marketing*, 14(5), 392.
- Michaud, L. (2000). How to six key to true client loyalty. *Training & Development*, 54(11), 16.
- O'Brien, L. & Jones, C. (1995). Do rewards really create loyalty? *Harvard Business Review*, 73(3), 75-82.
- Oliver, R.L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63, 33-44.

- Reichheld, F.E. (2003). The one number you need to grow. *Harvard Business Review*, 81(12), 46-54.
- Reichheld, F.E. (1993). Loyalty-based management. *Harvard Business Review*, 71(2), 64-71.
- Reichheld, F.E., Markey, R.G., Jr., & Hopton, C. (2000). The loyalty effect: The relationship between loyalty and profits. *European Business Journal*, 12(3), 134.
- Reinartz, W. & Kumar, V. (2002). The mismanagement of customer loyalty. *Harvard Business Review*, 80(7), 86-94.
- Rowley, J. & Dawes, J. (2000). Disloyalty: A closer look at non-loyals. *The Journal of Consumer Marketing*, 17(6), 538.
- Shani, D. & Chalasani, S. (1992). Exploiting niches using relationship marketing. *The Journal of Consumer Marketing*, 9(3), 33-42.
- Uncles, M.D., Dowling, G.R., & Hammond, K. (2003). Customer loyalty and customer loyalty programs. *The Journal of Consumer Marketing*, 20(4/5), 294-316.
- Wangenheim, F. & Bayon, T. (2004). Satisfaction, loyalty, and word of mouth within the customer base of a utility provider: Differences between stayers, switchers and referral switchers. *Journal of Consumer Behavior*, 3(3), 211-220.
- Wansink, B. (2003). Developing a cost-effective brand loyalty program. *Journal of Advertising Research*, 43(3), 301-309.
- Yin, S. (2003). Chronic shoppers. *American Demographics*, 25(10).
- Zeithaml, V.A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Academy of Marketing Science Journal*, 30(4), 362-375.
- Zeithaml, V.A., Rust, R.T., & Lemon, K.N. (2001). The customer pyramid: Creating and serving profitable customers. *California Management Review*, 43(4), 118-13

---

Jeffrey Woodall has been an Adjunct Faculty member in the Business Administration department at York College of PA since Fall, 2001. He teaches classes in Marketing and Information Systems.

Jeffrey received his B.S. in Management from New Hampshire College (now Southern New Hampshire University), and his M.S. in Business Administration from YCP. He is pursuing a D.B.A. in Marketing and Management at Argosy University in Sarasota, FL, and expects to defend his dissertation in the Spring of 2009. He is researching the effects and impacts of consumer loyalty on business. As part of his doctoral studies, Jeffrey has written papers on consumer loyalty and organizational change, and has been invited to present papers at the APUBEF/NABET Conferences in 2005, 2006 and 2008; and at the International Business Conferences held at Argosy University, Sarasota in 2006, 2007, and 2008.

Jeffrey has been employed by Procter & Gamble, Cincinnati, OH since 1990. Currently, he is a Business Analyst in the North America Beauty organization. Previously, Jeffrey worked in a variety of sales, marketing, and information systems roles, managing customers, people, processes, and systems.

---

## DETERMINANTS OF THE ANNUAL EARNINGS OF THE LPGA AND PGA GOLFERS

Jonathan K. Ohn, Bloomsburg University of Pennsylvania

Victoria Geyfman, Bloomsburg University of Pennsylvania

---

### Abstract

Much attention has been paid in the literature to the salary determination of professional athletes in Major League Baseball (MLB) and National Football League (NFL) whose earnings are determined by past and expected future performance. However, the earnings of professional golfers depend strictly on their current performance in the tournaments held during the course of a season (Nero, 2001). This study performs comparative analysis of the structure of professional golfers' official tour earnings in Professional Golf Association (PGA) and Ladies Professional Golf Association (LPGA) in 2007. The results show that controlling for the number of events that a player participates in, driving distance and accuracy, improvements in green in regulations, and putting average are significant determinants of earnings of LPGA players. The PGA results are similar to LPGA but the performance determinants have greater economic impact on earnings of the PGA golfers, possibly revealing their higher earnings efficiency and/or gender inequality.

---

### Introduction

Much attention has been given to the study of the performance and earnings structure of professional sports players in Major League Baseball (MLB) (Scully, 1974; Zech, 1981; Sommers and Quinton, 1982; and Gustafson and Hadley, 1995) and in National Football Leagues (NFL) (Scahill, 1985; Kahn, 1992; Gius and Johnson, 2000; and Massey and Thaler, 2005). However, little attempt has been made for the study of earnings structure of professional golf players. There is an interesting difference in the earnings structure of the MLB or NFL players and professional golfers. The current earnings of the MLB or NFL players are determined by two most important factors: 1) past performance and 2) their expected future performance and contribution to the team. The earnings of professional golfers, however, depend strictly on their current performance in the tournaments held during the course of season. Also, unlike their counterparts in the MLB and NFL, professional golfers are usually responsible for their own expenses, such as travel, caddie, and meal expenses. In order to improve their earnings and performance, professional golfers' investment decisions should be on improving the aspects of their game which lead to the greatest increase in their earnings.

This study performs comparative analyses of the structure of professional golfers' official tour

earnings in the Professional Golf Association (PGA) and the Ladies Professional Golf Association (LPGA) in the most recent year, 2007. Even though few attempts have been made to study this issue, there are several previous studies to note. Ehrenberg and Bognanno (1990) find that the level and structure of tournament prize money influence players' performance, which occurs primarily in the later rounds of a tournament and especially for players that have exemptions to play on the tour in the following year. Orszag (1994), however, shows that the level of the PGA tournament money has an insignificant effect on performance. Moy and Liaw (1998), based on an earnings determination equation using performance variables, identify several determining skills that lead to an increase in players' official earnings. Nero (2001) also tests the significance of selected performance variables in determining the PGA players' earnings and finds some important determinants.

Based on the previous studies, we investigate the determination of the earnings structure of both the LPGA and PGA golfers. We first develop an earnings equation using selected performance variables which are known to have significant effects in determining their official tour earnings for the LPGA and PGA players (Nero, 2001), and analyze the marginal effect of those variables on the players' annual earnings. We then compute the level of each player's relative

efficiency by using the estimated equation and check which golfers played more efficiently given their level of performance during the year. The structure of this paper is: The next section will examine the descriptive statistics of the players' annual tour earnings and their performance (skill) variables for the LPGA and PGA players during the 2007 season. In Section III, the regression estimation results of the professional players' earnings on those performance variables will be discussed for both the LPGA and PGA players, and then the marginal effect of each of those variables on the annual tour earnings for both LPGA and PGA players will be estimated. In Section IV, we will compute the relative performance efficiency of the players by comparing their actual and estimated tour earnings given the level of their performance. The summary of results will conclude the paper.

#### Data Description and Test Model

Table 1 in the appendix shows the definitions and descriptive statistics of the LPGA and PGA players' annual tour earnings and their performance variables in 2007. The data of LPGA players are from the official web site of LPGA ([www.LPGA.com](http://www.LPGA.com)), while those of PGA players are from the website of PGA Tour ([www.PGATOUR.com](http://www.PGATOUR.com)). As long as a player's name and all relevant data are available from the official web site, that player is included in our data sets, which totals 133 LPGA players and 194 PGA players in 2007. The performance variables include driving distance (DD), driving accuracy (DA), green in regulation (GIR), sand saves (SS), the putting average (PUT), and the number of tour events that each golfer played (START). The average amount of annual tour earnings for an average LPGA player is \$331,565, while that of an average PGA player is \$1,309,098 in 2007, which is about four times larger than that of the LPGA player. Shamanske (2000) suggests that the majority of the earnings gap is due to difference in measured performance skills and not due to different return to various performance characteristics (variables) between LPGA and PGA players, which does not support the idea of a gender disparity in the earnings of professional golfers. While the LPGA players show better performance in

DA (65.47% vs 63.49%) and PUT (28.98 vs 29.30), their performance is significantly lower in DD (249.74 vs 289.05 yards), GIR (61.31% vs 64.56%), and SS (38.64% vs 49.19%). The average number of events that a player participated in is also lower for LPGA player than PGA player (20.61 vs 25.50). Table 2 shows the degree of earnings concentration among the top LPGA-PGA players in 2007. The LPGA shows a substantially higher level of earnings concentration among top-earning players. Top 5 LPGA players take 22.51%, top 10 players take 33.98%, and top 20 players take 52.57% of total LPGA tour earnings. On the other hand, top 5 PGA players take 12.08%, top 10 players take 19.88%, and top 20 players take 30.36% of total PGA tour earnings. It suggests that the competition is significantly more intense in PGA tours than in LPGA tours, which may be part of the reason for the higher prize earnings for PGA players.

Table 2.  
Degree of Earnings Concentration among the Top  
PGA – LPGA Players, 2007

	Top 5 Players	Top 10 Players	Top 20 Players
LPGA	22.51%	33.98%	52.57%
PGA	12.08	19.88	30.36

Sources of data and t-tests for differences between LPGA and PGA

Our model specification is as follows: controlling for the number of events that the player participated in during the season, his or her annual tour earnings is a function of five performance variables:

$$\ln(\text{EARN}) = b_0 + b_1 \ln(\text{DD}) + b_2 \text{DA} + b_3 \text{GIR} + b_4 \text{SS} + b_5 \ln(\text{PUT}) + b_6 \ln(\text{START}) + e \quad (1)$$

where EARN is a player's annual tour earnings, DD is a driving distance, DA is the driving accuracy, GIR is the green in regulation, SS is the sand saves, PUT is the average number of putting per round of 18 holes, and START is the number of tour events that each players played. One interesting finding is that driving distance (DD) and driving accuracy (DA) is

negatively correlated, which is quite expected and understandable : if a player tries to hit a longer driving distance, it is usually at the cost of a lower driving accuracy, especially for players at a lower competency level. The negative correlation between the two is more apparent for PGA players (-0.65) than for LPGA (-0.47), which is high enough to create a co-linearity issue in the regression estimation results as discussed below.

### Estimation Results and Marginal Effect Analysis

Table 3 in the appendix shows the estimation results of earnings determination models for the professional golfers in LPGA and PGA. We show three sets of estimation results – one with both DD and DA included, the second with DA variable only, and the third with DD only. Three variables, DA, GIR, and SS, are included in the model without any transformations because they are already in percentage terms, while DD, PUT, and EVENTS are included in the natural log form because they are in levels. Hence, the estimated coefficients are interpreted as net percentage change in earnings resulting from a one percent change in the performance variables. The results on LPGA players show that all the performance variables except sand saves (SS) are significant determinants of annual tour earnings. Controlling for the number of events in which a player participates, a one-percent increase in driving distance (DD) results in 2.64% increase in her annual earnings, a one percent improvement in driving accuracy (DA) results in 1.97% increase in earnings, while a one percent improvement in green in regulation (GIR) results in 16.26% increase in earnings, and a one percent improvement in putting (PUT) results in 19.50% increase in earnings. Apparently, the most significant effect is found in the variables of PUT and GIR, which suggests that a player's major investment should be on improvement in putting and green in regulation. Another interesting finding for the LPGA players is that the effect of two variables DD and DA is significant only when both variables are included in the earnings model simultaneously. When only one of these variables is included in the model, the effect disappears. The PGA results, on the other hand,

show that when both variables are included in the model, the significant effect of DD disappears, and the effect of DA shows an opposite sign in the results. As briefly mentioned at the beginning of this section, driving distance (DD) is negatively correlated with driving accuracy (DA), but the negative correlation is significantly higher for PGA players (-0.65) compared to that of LPGA (-0.47). It appears that the two variables create a co-linearity problem when they are simultaneously included in the determination model for the PGA players. The simple solution for the issue is to include only one of the variables, as shown on the second and third columns of the PGA results. It appears that the DD variable dominates the results, which is reflected in a strong positive effect as shown in the third column of the PGA results but the sign of DA is negative contrary to our expectations. Summarizing the results for the PGA players based on the third model specification, a one percent improvement in the driving distance (DD) leads to a 4.32% increase in the player's earnings, while a one percent improvement in green in regulation (GIR), results in 17.28% increase. Finally, a one percent improvement in putting (PUT) results in 30.82% increase in his tour earnings. Obviously, the most economically significant performance variable is PUT, and the second is GIR. These results are consistent with those for the LPGA players, but the significance of the PUT effect on earnings is much stronger than that of GIR for the PGA players. While the significance of the GIR effect is about the same for LPGA and PGA results, the effect of the PUT variable is much stronger for PGA players (19.50% vs 30.82%). The longer driving distance 289.05 yards by PGA players over 249.74 yards by LPGA players and the higher GIR 64.56% by PGA players over 61.31% by LPGA players could be a major part of the contributing factors for the earnings disparity for LPGA and PGA players, a result consistent with earlier studies (Shamanske , 2000). The goodness-of-fit of the earnings model appears to be much higher for the LPGA players – the adjusted  $R^2$  is 0.888 versus 0.362 for the PGA model. Finally, an interesting difference between the LPGA and PGA model is that the number of events (EVENTS) is a significant factor for the LPGA model, implying that the more

events LPGA players participate in (whether qualified or invited), the higher are their earnings, which is not the case for the PGA players.

Table 4 in the appendix shows the marginal effect of a one percent improvement in the determinants on a player's annual tour earnings for the LPGA and PGA. Controlling for the effect of EVENTS, a one-percent increase in driving distance (2.49 yards) of an average LPGA player results in \$5,450 increase in her annual earnings, while a one percent improvement in driving accuracy results in \$6,529 increase in earnings. On the other hand, a one percent improvement in green in regulation and putting by a LPGA player results in \$53,896 and \$64,642 increase in her annual tour earnings, respectively. On the other hand, one-percent increase in driving distance (2.89 yards) of a PGA player results in \$56,514 increase in his annual earnings, which is ten times greater than that for an LPGA player. Examining the effect of the two dominant factors, GIR and PUT, a one percent improvement in green in regulation and putting by an average PGA player leads to an increase in his tour earnings by \$226,265 and \$403,412, respectively, both of which are significantly larger than those for an LPGA player.

#### Level of Relative Earnings Efficiency

In the previous section, we discussed the details of estimation results of the earnings determination model. We also analyzed the marginal effect of a one percent improvement in each of the performance variables on annual earnings and identified some critical determinants that each player should concentrate his or her practice efforts on in order to improve annual tour earnings significantly. Another interesting question to ask would be: Given a player's current level of performance, how efficiently he or she played during the year? This is done by comparing a player's actual earnings and expected earnings computed by the estimated determination equation (fitted earnings). Given the golfer's level of performance, if the actual level is higher than expected (fitted) level, it can be said that the player was earnings-efficient during the year. To compute a uniform efficiency measure, we follow the procedure

employed by Nero (2001). We first compute the difference between the natural log of a player's actual earnings and predicted earnings, with the resultant the error term in the estimated regression model. We then compute each player's frontier earnings:

$$\ln(\text{frontier earnings}) =$$

$$\ln(\text{expected earnings}) + \max(\text{error terms}) \quad (2)$$

The efficiency measure is the ratio of actual earnings to frontier earnings. The size of the efficiency measure indicates the efficiency level relative to the player with the highest level of efficiency (1.000) - a higher efficiency measure means that the player was more earnings-efficient given the current performance level, and vice versa.

The results for top 30 player in both LPGA and PGA players are summarized in Table 5 in the appendix. The left panel shows that Ai Miyazato was the most earnings-efficient among the top 30 LPGA players, and Francella, Davies, Lincicome, Gulbis, Inkster, Prammanasudh, Kerr, ... are among the most efficient- player group. Pressel, Matthew, Ochoa, Petterson, ... are still among the efficiency group but not as efficient as the first group. Gustafson, Webb, and Stanford were the ones who got about the right amount of earnings for their performance level. On the other hand, Sorenstam, Creamer, Lee and Kim were among the inefficient group, whose actual earnings were lower than their expected earnings in 2007. Paula Creamer should have got \$1,611K for her performance, but ended up with \$1,385K. Although Sorenstam was not very active in 2007, she could have got \$605K for her performance, but ended up with \$533K for the year. Lee and Kim show a similar story.

The right panel shows the results of the PGA players. It appears that Howell, Wetterich, Weekley, Mickelson, Allenby, Sabbatini, Scott, Johnson, Furyk, Singh, Choi... were among the most-efficient group. Stircker, Woods, Harrington, Ogilvy, Els, Garcia are still among the efficient group but not as efficient as the first group. Clark is the one who got about the right level of earnings for his performance. The results show that most PGA players are earnings-



efficient relative to LPGA players. This means that these golfers were able to generate the most earnings from their given level of performance. One explanation for this difference could be a more intense competition as indicated by the degree of earnings concentration in Table 2. Another explanation for the PGA golfers' higher efficiency is that they receive higher premium for their skills and performance, which would constitute a type of gender inequality – a possible area of future research.

### Conclusion

This study estimates golfers' earnings in LPGA and PGA based on various measures of performance including driving distance, driving accuracy, putting average, green in regulation, and the number of save sands. Controlling for the number of events, the results show that some measures of performance, such as putting and green in regulation, have a greater impact on earnings than driving distance and driving accuracy for both LPGA and PGA golfers. Interestingly, male players are compensated more for these performance measures compared to their female counterparts either due to their greater ability to generate earnings from performance (efficiency), more intense competition in the PGA Tour, or a type of gender inequality.

### References

- Ehrenberg, R., and M. Bognanno (1990), "Do Tournaments Have Incentive Effects?" *Journal of Political Economy*, Vol. 98, No. 61, 1307-1324.
- Gius, M., and D. Johnson (2000), "Race and compensation in professional football," *Applied Economic Letters*, Vol. 7-2, 73-75.
- Gustafson, Elizabeth, and Lawrence Hadley (1995), "Arbitration and Salary Gaps in Major League Baseball," *Quarterly Journal of Business and Economics* (Summer 1995).
- Kahn, Lawrence M. (1992), "The effects of race on professional football players' compensation," *Industrial and Labor Relations Review*, Vol. 45-2, 295-310.
- Massey, C., and R. Thaler (2005), Overconfidence vs. Market Efficiency in the National Football League, NBER working paper.
- Moy, R. and T. Liaw (1998), "Determinants of Professional Golf Tournament Earnings," *American Economist*, 42, 65-70.
- Nero, Peter (2001), "Relative Salary Efficiency of PGA Tour Golfers," *American Economist*, 45, 51-56.
- Orszag, Jonathan (1994), "A New Look at Incentive Effects and Golf Tournaments," *Economics Letters*, 46, 77-88.
- Shamanske, C (1992), "Human Capital Formation in Professional Sports: Evidence from the PGA Tours," *Atlantic Economic Journal*, 201, 66-80.
- Scahill, Edward (1985), "The Determinants of Average Salaries in Professional Football," *Atlantic Economic Journal*, Vol. 13.
- Scully, Gerald (1974), "Pay and Performance in Major League Baseball," *American Economic Review*, 915-930.
- Shamanske, C (2000), "Gender, Skill, and Earnings in Golf," *Journal of Sports Economics*, 1, 385-400.
- Sommers, Paul M., and Noel Quinton (1982), "Pay and Performance in Major League Baseball: The Case of the First Family of Free Agents," *The Journal of Human Resources*, Vol. 17.
- Zech, Z.E. (1981), "Empirical Estimation of a Production Function: Major League Baseball," *American Economist*, (Fall 1981).

---

Jonathan K. Ohn is an associate professor of finance at Bloomsburg University of Pennsylvania.

Victoria Geyfinan is an assistant professor of finance at Bloomsburg University of Pennsylvania.

Table 1.  
Descriptive Statistics for the Performance of LPGA and PGA Players, 2007

		EARN\$	DD	DA	GIR	SS	PUT	EVENTS	Number of Players
LPGA	Mean	\$331,565	249.74yds	65.47%	61.31%	38.64%	28.98	20.61	133
	(STDEV)	(485,143)	(8.87)	(5.72)	(3.63)	(8.28)	(1.06)	(4.09)	
PGA	Mean	\$1,309,098	289.05yds	63.49%	64.56%	49.19%	29.30	25.50	194
	(STDEV)	(1,235,792)	(8.60)	(5.20)	(2.50)	(6.08)	(0.52)	(4.57)	

- Standard deviations are in parenthesis.

DD – driving distance (yards)

DA – driving accuracy (%)

GIR – green in regulation (%)

SS – sand saves (%)

PUT – the average number of putting per round of 18 holes

EVENTS – the number of tour events that each player played

Table 3.  
Regression Results for the Performance of Professional Players, 2007

	LPGA			PGA		
	I	II	III	I	II	III
CONST	47.555** ( 6.935)	61.807** ( 2.790)	56.739** ( 6.685)	99.134** ( 30.453)	102.87** ( 22.438)	81.035** ( 22.438)
LOG(DD)	2.644* ( 1.163)		0.564 ( 1.061)	0.759 ( 3.380)		4.317* (1.863)
DA	1.969* ( 0.847)	0.902 ( 0.727)		-2.616 ( 2.302)	-2.951* ( 1.329)	
GIR	16.255** ( 1.192)	17.862** ( 0.949)	17.827** ( 1.021)	19.797** ( 5.218)	20.179** ( 4.310)	17.284** ( 4.012)
SS	0.112 ( 0.377)	0.167 ( 0.409)	0.186 ( 0.412)	1.461 ( 1.276)	1.458 ( 1.274)	1.359 ( 1.267)
LOG(PUT)	-19.496** ( 0.915)	-19.466** ( 0.901)	-19.743** ( 0.971)	-30.186** ( 6.796)	-30.023** ( 6.936)	-30.816** ( 7.073)
LOG(EVENTS)	1.418** ( 0.168)	1.395** ( 0.184)	1.437** ( 0.177)	0.123 ( 0.364)	0.116 ( 0.371)	0.147 ( 0.380)
Adj-R <sup>2</sup>	0.888	0.886	0.884	0.370	0.365	0.362

\*\* Significant at 1%, \* Significant at 5%, + Significant at 10%.

- Standard errors are for each estimated parameters in parenthesis.

Table 4.

Analysis on the Marginal Effect of a 1% Improvement in the Determinants  
on the Player's Annual Tour Earnings, LPGA vs PGA, 2007.

LPGA (Average Earnings = \$331,565) Based on Model I				PGA (Average Earnings = \$1,309,098) Based on Model III		
Determinants	1% Improvement	Marginal Effect	Marginal Income	1% Improvement	Marginal Effect	Marginal Income
DD	2.496yds	1.644*	\$5,450	2.89yds	4.317*	\$56,514
DA	1%	1.969*	6,529			
GIR	1%	16.255**	53,896	1%	17.284**	226,265
SS	1%	0.112	371	1%	1.359	17,791
PUT	0.290	19.496**	64,642	0.29	30.816**	403,412
START	0.206	1.418**	4,702	0.2	0.147	1,924

\*\* Significant at 1%, \* Significant at 5%, + Significant at 10%.

Table 5.

## Analysis on the Relative Efficiency of the LPGA and PGA Golfers, 2007

LPGA PLAYERS	ACTUAL	PREDICTED	EFFIC	PGA PLAYERS	ACTUAL	PREDICTED	EFFIC
Ai Miyazato	788,477	328,935	1.000	Charl. Howell III	\$2,832,091	\$646,454	1.000
Meag. Francella	507,292	244,955	0.864	Brett Wetterich	2,208,282	591,014	0.853
Laura Davies	692,010	381,000	0.758	Boo Weekley	2,613,211	755,674	0.789
Maria Hjorth	949,055	592,782	0.668	Phil Mickelson	5,819,988	1,884,335	0.705
Brittany Lincicome	871,384	549,320	0.662	Robert Allenby	2,219,538	764,821	0.662
Natalie Gulbis	886,404	592,443	0.624	Rory Sabbatini	4,550,040	1,569,054	0.662
Juli Inkster	736,521	501,609	0.613	Adam Scott	3,413,185	1,196,943	0.651
Seon Hwa Lee	1,100,198	751,862	0.610	Zach Johnson	3,922,338	1,410,937	0.635
S. Prammanasudh	863,045	617,281	0.583	Jim Furyk	4,154,046	1,525,634	0.622
Laura Diaz	528,529	386,652	0.570	Vijay Singh	4,728,376	1,798,745	0.600
Cristie Kerr	1,098,921	814,579	0.563	K.J. Choi	4,587,859	1,754,874	0.597
Mi Hyun Kim	1,273,848	945,381	0.562	M. Calcavecchia	2,993,332	1,179,549	0.579
Jeong Jang	1,038,598	794,618	0.545	Luke Donald	2,190,053	874,469	0.572
Sherri Steinhauer	574,270	463,252	0.517	Woody Austin	2,887,596	1,177,552	0.560
Morgan Pressel	972,452	798,443	0.508	Hunter Mahan	2,858,995	1,217,514	0.536
Cat. Matthew	518,366	427,254	0.506	Steve Stricker	4,663,077	2,022,612	0.526
Lorena Ochoa	\$4,364,994	\$3,616,141	0.504	Tiger Woods	10,867,052	4,823,916	0.514
Suz. Pettersen	1,802,400	1,509,562	0.498	Aaron Baddeley	3,441,119	1,532,699	0.512
Angela Park	983,922	837,459	0.490	Pad. Harrington	2,658,283	1,211,078	0.501
Shi Hyun Ahn	521,467	446,527	0.487	Geoff Ogilvy	2,943,203	1,351,730	0.497
Sarah Lee	713,084	637,107	0.467	Steve Flesch	2,288,899	1,106,761	0.472
Nicole Castrale	854,292	787,948	0.452	Scott Verplank	3,114,289	1,533,375	0.464
Se Ri Pak	820,129	771,236	0.444	John Rollins	2,488,891	1,304,450	0.436
Sophie Gustafson	469,748	466,399	0.420	Ernie Els	2,705,715	1,477,311	0.418
Karrie Webb	630,030	625,796	0.420	Sergio Garcia	3,721,185	2,034,229	0.418
Angela Stanford	713,880	725,019	0.411	Stewart Cink	2,483,146	1,419,769	0.399
Annika Sorenstam	532,718	604,532	0.368	Justin Rose	2,705,875	1,769,233	0.349
Paula Creamer	1,384,798	1,611,779	0.358	Bran. Snedeker	2,836,643	2,000,787	0.324
Jee Young Lee	966,256	1,126,488	0.358	Heath Slocum	2,184,379	1,846,788	0.270
Christina Kim	626,075	860,990	0.303	Tim Clark	2,615,152	2,527,979	0.236

