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LETTER FROM THE EDITORS

Welcome to the *Academy of Accounting and Financial Studies Journal,* an official journal of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The *AAFSJ* is a principal vehicle for achieving the objectives of the organization. The editorial mission of this journal is to publish empirical and theoretical manuscripts which advance the disciplines of accounting and finance.

Dr. Michael Grayson, Jackson State University, is the Accountancy Editor and Dr. Denise Woodbury, Southern Utah University, is the Finance Editor. Their joint mission is to make the *AAFSJ* better known and more widely read.

As has been the case with the previous issues of the *AAFSJ*, the articles contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

The Editors work to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. They will continue to welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

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Michael Grayson, Jackson State University

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ENGAGEMENT RISK: A PRELIMINARY ANALYSIS OF AUDIT FIRMS' CLIENT ACCEPTANCE DECISIONS

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ABSTRACT

The audit function creates several important relationships among the various parties. One of the most significant and potentially problematic relationships is between the audit firm and the audit client. The decision by the audit firm to accept or retain a client is crucial because of the potential risk of being associated with certain clients. The potential damage can range from financial loss, loss of prestige, to the ultimate demise of the audit firm. Engagement risk is considered to be composed of three components: client's business risk, audit risk, and auditor's business risk.

This research questioned whether audit firms have significantly changed their views regarding engagement risk and how they evaluate and manage this risk. An analysis of the surveys revealed that 85 percent of the respondents believed their views regarding the importance of engagement risk have changed, but only to a moderate degree. In evaluating engagement risk, audit partners considered management integrity to be the most important factor, followed by the effect on audit firm solvency. Based upon our preliminary results, it appears there have not been significant changes in audit partners' views regarding the importance of the client acceptance/retention decision.

INTRODUCTION

The audit process creates several important relationships among the various parties. One of the most significant and potentially problematic relationships is between the audit firm and the audit client. Accordingly, the decision by the audit firm to accept or retain a client is crucial because of the potential risk of being associated with certain audit clients. This risk is called engagement risk. The possible damage can range from financial loss (uncollected audit fees or potential litigation), loss of prestige or image, to the ultimate demise of the audit firm. As indicated, the potential consequences may be very serious. Therefore, it is important to understand an audit firm's evaluation process because it has a direct impact on the risk of conducting the audit.

ENGAGEMENT RISK PROBLEMS

Johnstone and Bedard (2003) state that, "Client acceptance decisions are increasingly important due to continued fee pressure and litigation risk, which make it essential that audit firms carefully consider the potential benefits and costs of association with prospective clients." However, just because the acceptance decisions are "increasingly important" does not mean that there is any added clarity associated with the decisions. The problem with engagement risk in the past was that in their haste to take on new clients and retain profitable ones, auditors may not have been totally cognizant of all the risks associated with the client. This is the essence of engagement risk, and it most often occurred because in the ultra-competitive Pre-Enron environment, auditors may have felt the need to take on and retain riskier clients without proper consideration of the risks involved with those clients. The auditor may have been more concerned with getting their share of the wildly profitable late-nineties revenue, and not with the integrity or reliability of the audit client (Johnstone & Bedard, 2003). Accordingly, the questions an auditor must ask are: (1) which clients do they want to accept and/or retain and (2) what is the potential impact of being associated with those clients? These questions must be answered before the auditor begins the audit engagement.

Throughout an audit engagement firms are faced with analyzing the risk of being associated with a client. Engagement risk is evaluated as being composed of three components: client's business risk, audit risk, and auditor's business risk (Johnstone, 2001). Each of these components must be reviewed during the initial acceptance phase as well as during the audit engagement. Evaluation of each component is an essential part of the audit firm's process of analyzing engagement risk.

CLIENT'S BUSINESS RISK

Client's business is with the risk of the entity not being profitable and not continuing to survive. There could be going-concern issues, inflated profit goals, or operations in volatile industries that can impact an entity's risk (Colbert, 1996). Johnstone's (2001) study showed that financial trends are the most important part of client's business risk. Audit firms cannot control the amount of client's business risk. They can only assess it and decide whether or not to accept the risk.

AUDIT RISK

The second component of engagement risk is audit risk. Audit risk is "the risk that the auditor may give an unqualified opinion on materially misstated financial statements" (AICPA 1983, AU 312.02). There are certain factors that will impact the level of audit risk. Some of those factors include high volume of significant year-end transactions, financial reports not prepared in a timely

manner, and material weaknesses in internal controls (Colbert, 1996). More experienced partners tend to rank management's attitude toward internal controls as the most important audit risk factor (Johnstone, 2001). These factors may not be detrimental to the client, but the issuance of an unqualified opinion when not warranted can be devastating to an audit firm.

AUDITOR'S BUSINESS RISK

Auditors also face risk from their existence as a company. By providing services to clients, firms are open to the risk of their business. Auditor's business risk is defined as "...risk to the auditor from association with the client, consisting of ...potential litigation cost...and effects on fee realization "(AICPA, 2005). During the acceptance of a future client, auditors can look for factors that may impact the risk of being associated with the client. According to Colbert (1996), some of the high-risk factors include frequent changes in auditors, high number of lawsuits, and an initial public offering. Auditors have the ability to control their business risk by carefully analyzing future clients.

In the attempt to mitigate the risk of being associated with clients, audit firms are required to have specific procedures in place. Professional standards make audit firms establish procedures for accepting clients (Johnstone, 2001). Johnstone and Bedard (2003) proposed several methodologies to help manage the risks of being associated with the client. Among the methods are managing risks by assigning the right people to the project (use of specialist), utilizing different billing strategies (higher fees), varying audit techniques, and implementing specific monitoring policies.

METHODOLOGY

Based upon previous research, it appears that auditing firms may not have been as concerned about the importance of engagement risk as they should have been. Accordingly, our primary research question addressed whether audit firms have strengthened their client acceptance/retention procedures in the Post-Enron era. To study this issue, a questionnaire was mailed to 300 audit partners in the southwest region of the United States to determine their perceptions of their changes in engagement risk attitude and how they evaluate and manage engagement risk. A total of sixty-one useable responses were received resulting in a response rate of 20 percent. The response rate was considered adequate for this preliminary study.

RESULTS

Table 1 provides a profile of the respondents to the survey. As indicated in the table, over 90 percent of the respondents were male with an average age of 49 and 26 years of experience.

Approximately 96 percent of the respondents held the position of managing partner or audit partner and had the authority either individually, or in combination with others, to make client acceptance/retention decisions. As such, it appears we reached the appropriate individuals within the firm to address our central questions of interest. The respondents held the appropriate position within the firm and had the necessary experience to fully understand the issues.

Table 1: Respondent's Demographic Profile		
Gender	Male 93%	Female 7%
Age (avg.)	49	
Yrs. Experience (avg.)	26	
Yrs. Certified	23	
Employed Positions	Managing Partner, 11% Audit Partner, 85% Manager, 2% Other, 2%	

Table 2 provides a profile of the firms. Approximately 80 percent of the firms had 100 or fewer audit professionals on staff. Audit revenues as a percentage of total revenues were between 5 to 50 percent for approximately 78 percent of the firms. The predominant client base was other for profit firms (not SEC) with 63 percent and governmental entities with 25 percent.

Table 2: Audit Firm Profile					
Professional Audit Staff	1-9	10-50	51-100	101-500	>500
	3%	51%	25%	21%	0%
% Audit Total Rev.	5-25	26-50	51-70	71-90	>90
	11%	67%	18%	4%	0%
Largest Client Base	SEC	Govt.	Health Care	Other For-Profit	Other Non-Profit
	2%	25%	1%	63%	9%

This study focused on three areas. First, we were interested in determining perceptions about engagement risk, procedures in place to evaluate engagement risk, and the risk level of their client base. Second, we investigated the relative importance of three components of engagement risk: client's business risk, audit risk, and auditor's business risk. Finally, we looked at various strategies that were in place to mitigate the risks of being associated with a client. The results are presented in Tables 3 through 5.

Table 3: Perceptions of Engagement Risk					
Engagement Risk Views Changed		Yes 85%		No 15%	
Degree of Change	Slight 1	2	Moderate 3	4	Major 5
Respondents	0	9	22	18	3
Average: 3.29					

Table 4: Existence & Extent of Engagement Risk Procedures					
Existence of Firm Specific Engagement Risk Procedures			Yes, 92%		No, 8%
Extensiveness of Procedures	Not 1	2	Somewhat 3	4	Very 5
Responents	0	8	24	19	5
Average: 3.38					

Table 5: Perceptions of Audit Firms' Client Risk Base			
1. Classify client as Low, Moderate, High	Yes 66%	No 34%	
2. If yes to 1, % classified as:	Low	Moderate	High
	56%	35%	9%
3. % Classification Changed since late 90s:	Yes 23%	No 78%	
4. If yes to 3, changed to:	Less risk 11%	More Risk 89%	

As indicated in Table 3, 85 percent of the respondents believed their views regarding the importance of engagement risk have changed, but only to a moderate degree. Table 4 reports over 90 percent of the respondents indicating they have standards in place to deal with client acceptance/retention decisions. However, these standards were not considered to be very extensive. At first review, this finding was rather surprising given our belief that attitudes would have changed in the current environment. Perhaps, this finding could be partially explained by analyzing how audit firms evaluate the risk level of their clients. As indicated in Table 5, only two-thirds of the audit firms classify their clients by risk categories (low to moderate to high). Of those that did classify by levels of risk, approximately 90 percent of the respondents' clients were considered to be low to moderate risk. However, 23 percent indicated their percentage allocations have changed to a predominantly riskier client base. We question if this changed perception was based on the acceptance of riskier clients, or on a more detailed analysis of their existing clients. It was expected that the current environment would prompt audit firms to review their client base which would be a positive development.

The final part of the research project was concerned with how firms evaluated engagement risk and what strategies are used to mitigate risks of being associated with a client. As indicated

previously, engagement risk is considered to be composed of three components: client' s business risk, audit risk, and auditor's business risk. Factors selected to represent each component and their relative importance are presented in Table 6. The respondents were asked to rate each factor on a five-point scale from very unimportant (1) to very important (5).

Table 6: Importance of Components of Engagement Risk

Engagement Risk Components:	Mean Response
Client Business Risk:	
Client Financial Solvency	4.29
Earnings Manipulation	4.16
Client Specific	4.11
Industry Specific	3.9
Audit Risk:	
Client Audit History	4.16
Client Management Integrity	4.77
Client Corp. Govt. Structure	3.66
Auditor's Business Risk:	
Effect on Firm's Reputation	4.23
Effect on Firm's Solvency*	4.39
Client Reputation**	4.21

*May include potential litigation cost and loss of audit fees (AICPA 2005).
**May include frequency of auditor changes, high number of lawsuits and IPOs (Colbert 1996).

Overall, it appears the respondents consider auditor's business risk to be the most important followed by audit risk and client's business risk. This should not be too surprising since the primary responsibility of the audit partner is to understand how their association with a client will impact their firm and their ability to issue the correct opinion. However, is very likely the client's business risk factors play a direct impact in evaluating audit risk and auditor's business risk. Our results were different from Johnstone (2001) where audit risk was ranked the most important component of engagement risk.

More specifically, as indicated in Table 6, the most important factor for evaluating engagement risk is management integrity. This finding would be consistent with the philosophy of setting the appropriate tone for the organization frequently referred to as the control environment. The appropriate control environment has an impact on the attitudes about internal controls and their ability to mitigate risks. This is consistent with the Johnstone and Bedard (2003) study in which experienced partners tended to rank management's attitude towards internal controls as the most

important audit risk factor. An interesting finding was that the perceived importance of corporate governance was ranked the least important. Both factors should have an impact on the relative importance of internal controls. These results may be partly explained by the client base being composed primarily of government and other for profit clients, where board of directors (audit committee) and corporate governance issues are not as important as they would be for larger SEC clients.

The last area of interest was strategies that audit firms might have in place to mitigate the risks of being associated with a client. Audit standards require firms to have specific procedures in place to evaluate potential clients. As indicated previously, 92 percent of the respondents had specific procedures in place to analyze client acceptance/retention decisions. However, the procedures were considered to be only moderately extensive. Again, based on the profile of the audit firms and their client base this would not on the surface appear to be too alarming.

More specifically our research asked the audit partner if they used certain procedures to mitigate risks of being associated with clients and how effective they believed these procedures would be in mitigating risks. The results are presented in Table 7.

Only approximately one-third of the respondents indicated they used any of the specific strategies. Of the specific strategies used, the most effective related to the assignment of more experienced staff and increasing the extent of evidence gathered to support conclusions. Use of increased fee structure or aggressive collection policies were not considered to be very effective strategies.

Table 7: Risk Strategies

Do you use the following Strategies?	Yes 34%		No 66%
If yes, effectiveness of strategies:	Neutral 3	Effective 4	Very Effective 5
Use of Specialist		4.14	
Increase Fee Structure	3.51		
Indemnification or Hold-Harmless Agreements	3.27		
Assignment of More Experienced Staff		4.15	
Increase Extent of Date Collection		4.14	
Aggressiveness in Collection Fees	3.46		
Extensive Communications w/ Previous Auditor	3.55		

SUMMARY AND CONCLUSIONS

The client acceptance/retention decision is an extremely important part of the audit process because of the potential negative impact on the audit firm. Accordingly, we wanted to investigate

the views of non-Big Four audit partners who were primarily responsible for this process. Specifically, we were interested in investigating whether the attitudes and procedures for evaluating engagement risk have changed substantially in the post-Enron era. We assumed there would be increased awareness of the importance of this process. While an overwhelming majority of the audit partners indicated their views about engagement risk have changed, the degree of the change was not that significant. Possible explanations may include engagement risk has always been a significant issue and a change in environment would therefore have little impact. A more disturbing explanation would be the failure to recognize this environmental change and its potential impacts. Mitigating this last assumption is the indication that most audit firms consider their client base to be low to moderate risk. In addition, the audit firms believe their client risk allocation percentages have not significantly changed indicating their current perception of engagement risk was, and is, currently appropriate. This may also explain why so few respondents were concerned with specific strategies to mitigate the risks of being associated with clients. We hope these firms have correctly evaluated the risk level of their clients.

Since this study was limited to a small number of audit partners in the southwest region of the United States, the findings cannot be generalized to all audit partners in the U.S. An expanded study would be useful to determine if these trends are consistent nation wide. Other factors of interest include an evaluation of male vs. female audit partners, perceptions of engagement risk, and the impact of the period of time since the last significant accounting/auditing scandals/failures.

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ENDNOTE

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CAPITAL GAINS, DIVIDENDS, AND TAXES: MARKET REACTIONS TO TAX CHANGES

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ABSTRACT

The purpose of this study is to examine the effect of a capital gains tax reduction on the stock price of firms that have not historically paid a dividend. If markets are semi-strong-form efficient, one would expect that the market price would have already adjusted prior to the day the announcement was made, assuming no new information was included in the announcement. If markets have not already incorporated the information, there would be a possibility for abnormal returns from investing in the stocks on the date of the announcement. This paper studies the returns from companies prior to, and subsequent to, the capital gains tax reduction announcement date and compares the price changes of non-dividend paying companies to those of similar firms that have historically paid dividends. The a priori expectation of the study is that the majority of a change in prices will take place prior to the announcement date as investors anticipate the likelihood of passage by the Congress and the President.

INTRODUCTION

From the time firms first began paying their stockholders dividends, an argument has raged between those who believe dividends add to stock value and those who believe dividends detract from stock value. Miller & Modigliani (1961) only add another school of thought by proposing that dividends are irrelevant in a world without taxes. The United States, however, is not a world without taxes and previous research finds a significant positive impact on the price of tax-favored assets from an increase in beneficial tax treatments (Scholes & Wolfson, 1992). The focus of this paper is on the effects of the 1997 reduction of the capital gains tax on the price of stocks that have not historically paid dividends to their shareholders. The study incorporates the use of parametric tests to determine the relative impact of the tax reduction on stocks that do not pay dividends compared to those that do pay dividends. This capital gains tax change was unique in that it: 1) occurred during a period of a relatively bullish market, 2) was not coupled with a change in the ordinary tax rate, and 3) occurred during an otherwise uneventful week in the stock market. These factors aid in distinguishing the unique impact of the tax change on the valuation of common stock. Other studies focus on capital gain tax reductions that are accompanied by changes in the ordinary

tax rate and/or market anomalies such as the Crash of '87, which make it much more difficult to gauge the impact of the capital gains tax change.

First, it may be helpful to briefly explain the capital gains tax on equity investments and its implications for the stock market. Capital gains are defined as the increase in an asset's value over its purchase price. When the asset is sold, the resulting gains are said to be realized and now subject to taxation at the capital gains tax rate. Until the asset is sold, the gains are referred to as unrealized and are not subject to taxation. Corporate stocks account for 78% of the total amount of capital gains on all assets with the next closest category being bonds.

When Congress first established the income tax system in 1913, capital gains were taxed as ordinary income. From 1913 until the beginning of the 1980's, the capital gains tax has, at times, been a favorite way of generating revenue and generating votes, as evidenced by the political timing of changes in the tax laws. Prior to 1986, capital gains and dividend payment were taxed differently with 60% of long-term capital gains exempt from taxation. Such incentives made stocks offering higher capital gains, as opposed to higher dividends, more attractive to investors. In 1986, Congress passed the 1986 Tax Reform Act which changed the way capital gains were taxed. It essentially brought the taxation of dividends and capital gains to the same level. The act made all capital gains taxable at the same rates as other income. This removed the essence of the preference bias for capital gains as opposed to dividend income. It has been argued that part of the motivation behind this increase in the capital gains tax rate was an attempt to reduce the level of investment in risky assets, i.e., stocks that rewarded investors with capital gains rather than dividends. The entire history of capital gains tax rates is included in Exhibit 1.

Exhibit 1: Summary of Tax Treatment of Long-Term Capital Gains 1913 - 2010

Years	Maximum tax rate on capital gains(%)	1/	Maximum tax rate on ordinary income (%) 1/	Exclusion percentage for long-term capital gains (%)		Holding period required for long-term gain or loss	
1913-15	7		7	None		n/a	
1916	15		15	None		n/a	
1917	67		67	None		n/a	
1918	77		77	None		n/a	
1919-21	73		73	None	n/a		
1922-33	12.5		24-63	None	2/	2 years	
1934-35	18.9		63	20,40,60,70	3/	1,2,3,5,10 years	
1936-37	23.7		79	20,40,60,70	3/	1,2,3,5,10 years	
1938-41	15		79-81.1	33,50	3/	18 mo.,2 yr.	
1942-51	25		82-94	50		6 mo.	
1952-53	26		92	50		6 mo.	
1954-63	25		91	50		6 mo.	
1964-67	25		70-77	50		6 mo.	

Exhibit 1: Summary of Tax Treatment of Long-Term Capital Gains 1913 - 2010

Years	Maximum tax rate on capital gains(%)	1/	Maximum tax rate on ordinary income (%) 1/	Exclusion percentage for long-term capital gains (%)		Holding period required for long-term gain or loss	
1968	26.9		75.3	50		6 mo.	
1969	27.5		77	50		6 mo.	
1970	32.21		71.8	50		6 mo.	
1971	34.25		70	50		6 mo.	
1972-75	45.5	4/	70	50		6 mo.	
1976-78	49.125	4/	70	50		6 mo.,9 mo., 1 yr.	
1979-80	28		70	60		1 yr.	
1981	28/20	5/	69.125	60		1 yr.	
1982-86	20		50	60		6 mo., 1 yr.	
1987	28		38.5	None		1 yr.	
1988-90	28 (33 in Bubble)		28 (33 in Bubble)	None		1 yr.	
1991-92	28.93 (28)	6/	31.93 (31)	None		1 yr.	
1993-96	29.188 (28)	6/	40.788 (39.6)	None		1 yr.	
1997	21.188 (20)	7/	40.788 (39.6)	None		12,18 months	8/
1998-00	21.188 (20)	7/	40.788 (39.6)	None		1 yr.	
2001	21.173 (20)	7/	40.273 (39.1)	None		1 yr.	
2002	21.158 (20)	7/	39.758 (38.6)	None		1 yr.	
2003-05	16.105 (15)	7/	36.105 (35)	None		1 yr.	
2006-08	15.7 (15)	9/	35.7 (35)	None		1 yr.	
2009-10	18.7 (18)	9/	35.7 (35)	None		1 yr.	

1/ Includes the effects of the exclusion, the alternative tax, the minimum tax, the alternative minimum tax, the maximum tax, the phase-out of itemized deductions, and income tax surcharges.

2/ From 1922 to 1933, taxpayers could elect an alternative tax rate of 12.5 percent.

3/ From 1934 to 1941, the exclusion increased with the holding period.

4/ These rates include the effects of the tax on included gains, the minimum tax on excluded gains and the "spoiling" of the maximum tax on earned income. Without the interaction with the maximum tax, the maximum rates were 36.5 percent in 1972-75 and 39.875 percent in 1976-78.

5/ An alternative 20 percent rate applied to gains on assets sold after June 9, 1981.

6/ The statutory tax rate on capital gains is capped at 28 percent. Effective tax rates can be higher due to various phase-out provisions. Rates for 1991-96 include the effects of the 3 percent phase-out of itemized deductions.

7/ The statutory tax rate on capital gains is capped at 28 percent. Effective tax rates can be higher due to various phase-out provisions. Tax rates for 1997-2005 include the 3% phase-out of itemized deductions.

8/ After May 6, 1997 but before July 29, 1997, gains on assets held over one year were taxed at 10 and 20 percent rates. From July 29 through December 31, 1997 the 10 and 20 rates only applied to gains on assets held over 18 months, and gains on assets held 12 to 18 months were taxed as under pre-1997 law.

9/ Beginning in 2006, gains on assets acquired on or after January 1, 2002 (or marked-to-market and capital gains tax paid on the accrued gains) and held over 5 years are eligible for an 18% rate. Rates for 2006-2007 include a 2% phase-out of itemized deductions.

Taxation of capital gains has long been a source of controversy between those in the financial markets and the federal government. Many in the financial world believe this tax has an adverse effect on the market by limiting investment in growth industries whose gains to investors would be taxed at the higher capital gains rate. For many years, Congress has been petitioned to lower or remove the capital gains tax to give investors the incentive to invest in more small capitalization, growth companies. However, some government leaders have long seen the capital gains tax as a convenient source of funding for government expenditures. Estimates from the Congressional Budget Office place the amount of revenue generated by capital gains taxes at $35 to $50 billion annually. These legislators also believe the tax is borne by a small constituency of wealthy investors who can most afford to pay. This is only partly true. Individuals in the $200,000 and up category account for the major portion of the dollar tax savings from the reduction in capital gains. The Congressional Budget Office found that the top 5% of households, with regard to income, realized 76% of the total dollar gains from capital gains (Rubin, 1997). However, a study by the nonprofit Tax Foundation (1995) finds that 38% of tax returns filed which included capital gains reported from 1942 to 1992 have been filed by taxpayers with less than $100,000 in annual income (measured in constant dollars). By 1995, the figures show that the percentage of total filings by this segment had risen to 82%. Economic analysis shows that lower income investors will benefit proportionally more than high income investors. More and more, the capital gains tax is a matter for middle class America since 40% of the population currently own stock in some form or fashion and this percentage is rapidly increasing with the introduction of discount brokerages and online trading. Thirty percent of capital gains are realized by the fastest growing segment of the population, senior citizens. This class of citizen currently makes up nearly 13% of the population. Others in government believe a reduction in the capital gains tax will promote investment and stimulate growth in the economy. They feel that an increased incentive to invest in small, growth companies can only lead to economic expansion and prosperity. There has been, however, some contradictory evidence concerning the benefit of the tax cut. Eichner & Sinai (2002) attempt to measure capital gains elasticity to tax rate changes. They estimate a long-run elasticity of -0.74 and estimate that -0.97 would be revenue neutral. This is based on the idea that investors would have eventually realized the gains at the higher tax rate in the future if the rate had not been reduced and the PV of these lost revenues is higher than the increased revenues received in 1997 at the lower rate. The evidence to date suggests that a capital gains tax cut, may or may not, be effective for encouraging new capital formation in startup companies. Other tax options are seen as being equally conducive to the formation of capital with fewer of the negative side effects (McGee, 1998). The debate has been sporadic and emotionally charged for many years and will continue to rage for years to come.

In the past two decades, the capital gains tax has undergone four different structural changes. The period from early 1979 to mid 1981 saw a maximum capital gains tax rate of 28%. Capital gains were subject to a 60% deduction and then taxed at a rate no higher than the maximum marginal tax rate of 70%, thus the top capital gains tax rate was 28%. In 1981, the top income tax

bracket was lowered to 50% by the Economic Recovery Tax Act, effectively lowering the capital gains tax rate to 20%. This rate persisted until the Tax Reform Act of 1986 reduced the tax rate on ordinary income and repealed the capital gains deductions. The maximum rate on ordinary income was lowered to 28% and capital gains were then taxed at the ordinary income tax rate. On August 5, 1997, the President signed the Taxpayer Relief Bill of 1997 into law. The effect of the legislation was to lower tax rates on several types of capital gains, from the sale of a home or securities to gifts and inheritances. The top capital gains tax rate for individual taxpayers is reduced from 28% to 20%. Taxpayers in the 15% tax bracket would pay a net capital gains tax rate of 18% and only 8% after the year 2000 for assets held more than five years. It is stipulated that all assets be held for a minimum of 18 months unless sold after May 6, 1997 but before July 29, 1997. If sold during this interval, they must have been held for a minimum of 12 months. Short-term gains on assets held less than the 18-month minimum will still be taxed as ordinary income at the appropriate rate. In 2003 President Bush's tax law changes reduced the top tax rate on long-term capital gains from 20% to 15%. The new rate applies to gains realized after May 5, 2003, but the rate will expire after Dec. 31, 2008. Lower income earners in the 10% and 15% tax brackets now pay 5% on their long-term capital gains instead of the current 8% rate.

The 1997 Tax Relief and Budget Reconciliation Act was viewed at that time by some as an attempt by the government to, once again, encourage risky investment by giving preferential tax treatment to capital gains. Many of the companies which rely on capital gains over dividends to reward their investors are in the pharmaceutical and higher technology industries. Encouraging investment in these industries was seen, by the government, to have a significant impact on the welfare of the nation and the continuance of the economic boom of the 1990's. It would, therefore, be in the best interest of the nation to encourage continued investment in these industries by granting favorable tax consideration to their shareholders. The decrease in capital gains would also allow investors, who were trapped by capital gains tax, to avoid some of the impact of the inflation adjusted capital gains tax rate. Under the 28% maximum rate, an investor with a $100,000 unrealized capital gain in 1992 on a $100,000 investment made in 1980 would have an effective capital gains tax rate of 94.6% after the adjustment for the effects of inflation. Inflation would have eroded 70.4% of the value of the gain and another 28% would be owed in taxes resulting in the effective capital gains tax rate given above. Under such a scenario, an investor is almost condemned to hold a security with a large capital gain due to the abnormally high effective capital gains tax rate. In the above instance, if the assets were sold for less than $197,778, the tax owed would be greater than the inflation adjusted gain from the sale.

LITERATURE REVIEW

Event studies have long been used to test for the presence of abnormal returns on a particular security occurring around a particular announcement (or event). If abnormal returns do coincide

with announcement, then it is possible to conclude that the announcement contained some new information that was not already reflected in the price of the security.

If this is true, then the semi-strong form market efficiency hypothesis does not hold. Fama (1970) defined semi-strong-form market efficiency as investors' inability to earn excess returns using public information. According to this hypothesis, when the announcement of passage of the 1997 Taxpayer Relief bill occurred on May 7, the market should, if there is *new* information contained within the announcement, immediately incorporate that information into the price of securities. Additionally, it is reasonable to believe that there may be a small, possibly significant, impact on stock prices on the day of the actual signing of the legislation into law on August 5. President Clinton had stated that he intended to sign the bill and most people believed he was sincere, but the actual signing removed all uncertainty.

Merton Miller & Franco Modigliani (1961) demonstrate that in the absence of taxation, dividend policy has no effect on the valuation of shares by the market. But in the real world, taxes and tax policies do exist and do impact the way individuals value a share of stock. Poterba & Summers (1984) conduct a study on how the tax codes affect the valuation of dividends by investors. They find that changes in the taxation of dividends have a substantial effect on the premiums required by investors to induce them to receive returns in the form of dividends. This study was conducted when the top tax rate on capital gains had been lowered to 20% from its previous 28%. They also conclude that taxes account for part of the positive relationship between yields and stock market returns. Bolster, Lindsey & Mitrusi (1989) conduct a study of the effect of the 1986 Tax Reform Act on stock market trading. They find that the tax induced effects are significant and that holdings of long term winners fell in 1986 as individuals opted away from the capital gains stocks which were suddenly being taxed as ordinary income.

Does the fact that the announcement is preceded with a pledge to pass a capital gains tax change remove some of the effect of the announcement? Subramanyam (1996) concludes that the average price response declines with the absolute magnitude of the surprise. The amount of information disclosed could change as the market anticipates the outcome of the Congressional fight over the capital gains tax. Subramanyam suggests that, in fact, the level of reaction will be subdued as the level of surprise about the announcement diminishes. Ball & Brown (1968), in a study on the effects of earnings announcements on stock prices, concludes that only 10-15% of the information contained in the announcement is not anticipated prior to the actual announcement. Would the stock market discount the information content of the passage of the Taxpayer Relief Act prior to the actual passage of the bill? Ball suggests that the presence of abnormal returns is often the result of some deficiency in the asset pricing model used in the study, not from inefficiencies of the market. If this is the case, using the proper pricing model, there should be no observable abnormal returns present at the announcement of the bill's passage.

Anderson and Butler (1997) conduct an experimental market to test the impact of tax incentives on the price of risky securities. Students at an accredited university participate as buyers

and sellers in a simulated market where differing levels of risk are associated with securities depending on their tax status. The students trade the securities during a series of trading sessions. They are told the relative risk of the securities and allowed to buy or sell during each session. The study finds that tax-favored securities did, indeed, enjoy a higher price than that of securities that did not receive preferential capital gains tax treatment. The study uses a benchmark, described as an equally risky, non-tax-favored asset, against which it weighs the impact of the tax incentive. The authors find that the risk premia were greater for stocks with ordinary tax treatment than for those which enjoyed a tax-favored status. Reese (1998) uses IPOs issued prior to TRA 1986 and finds significant price reduction and increased volume for appreciated stocks during the week after qualification. This apparently indicates that investors are motivated to delay capital gain realization until they are treated as long-term instead of short-term due to differential tax treatment. In a supporting theoretical piece, Shackelford & Verrecchia (2002) develop a model dealing with Intertemporal Tax Discontinuity (IDT) defined as "a circumstance in which different tax rates are applied to gains realized at one point in time versus some other point in time". Their model suggests that IDTs amplify price changes at the time of disclosure.

In an attempt to explain the impact on future taxable capital gains resulting from a change in capital gains taxes, Ricketts & White (1992) examine the capital gains tax changes that took place in 1978, 1981 and 1986. They predict that the highest pretax returns should result from the period in which capital gains are highest and that the increases in capital gains taxes should increase a firms cost of capital. The authors test linear regression models for aggregate monthly returns from the DJIA, S&P 500, and the NASDAQ indices. Each of the indices is tested separately since they hypothesize that the composition of the markets should reflect upon the impact of the changes. The OTC markets which are comprised of largely individual investors (Henderson, 1990) should see a more substantial impact than the NYSE market which is more weighted toward large, institutional investors. The S&P, which is more mixed than the others, should lie between the two extremes. Interest rates and an index of indicators are used as control variables to absorb the impact of the changing economic environment over the period between the various tax rate changes. The period around the Crash of 1987 is removed to reduce the impact of the excessive large negative returns associated with the crash. The authors conclude that the pretax returns on stocks are, indeed, higher during the periods of higher capital gains tax rates and fall when the maximum tax rate is reduced.

Lang & Shackleford (1999) document that stock prices moved inversely with dividend yields during the week surrounding the announcement of an agreement on the 1997 budget accord. The authors find that the change in share prices are decreasing in dividend yields among firms paying dividends. Lower dividend payer's share prices are less adversely affected by the reduction in the capital gains tax rate than higher dividend payers. Investors place more value relevance on the expected capital gains tax rate when assessing firms with lower dividend yields. Stocks that will pay their shareholders in the form of capital appreciation become more valuable to the investor with decreases in the capital gains tax rate. Share prices should increase as investors purchase the stocks

in hopes of taking advantage of the preferential tax treatment of the gains. The authors also find no evidence to support the contention that shareholders will sell off their shares of stocks with higher capital gains in order to take full advantage of the lower tax rate on their investments. The increase in price due to the advantage of the tax reduction more than negated any sell off of appreciated assets by investors. The authors, however, limit their data to the 2000 largest U.S. firms and therefore exclude the set of firms which would be expected to have experienced the largest capital gains during the stock market boom of the mid nineties.

Liang, Matsunaga & Morse (2002) using the same data set, but a different methodology, as Lang & Shackleford (1999) find that the market reaction to the capital gains reduction is inversely related to the expected holding period of the stock and that this effect is greater for non-dividend-paying securities. In addition, there is an insignificant negative overall market return for the 3-day window around the announcement day and for the week of announcement and this effect is strongest for non-dividend-paying stocks. Blouin, Raedy & Shackelford (2002) look at the 1998 long-term capital gain holding period change from a minimum of 18 to 12 months. Rather than use all listed securities, this study only uses IPOs that had been listed at least 12 months, but not more than 18 months. Parametric statistical tests are performed on appreciated stocks vs. non-appreciated stocks. They find a -2.54% decline in the price of appreciated stocks compared to non-appreciated stocks on the announcement day. However, when four outliers are removed there is only a -1.3% decline.

DATA DESCRIPTION AND METHODOLOGY

The data used in this study consists of daily returns of stocks trading on the NYSE, AMEX and NASDAQ that had paid regular dividends in each of the twelve quarters prior to announcement of the passage of the tax reform bill and stocks on those same indices which paid no dividend in the past twelve quarters prior to that date. The period of interest is between 1995 and 1997 with the events occurring at the interval around the announcement of the Taxpayer Relief Act of 1997. The first event is the three-day window around May 2, 1997, which is the day President Clinton and the GOP announced their budget. On this date, the two parties made it clear that they intended to pass some form of capital gains tax reduction. The second event is the three-day window around May 7, the effective date of the capital gains tax reduction (also the day it was announced). The amount of the reduction was not announced on this date, but the media consensus was that the new rate would be 20 percent. If the market was sufficiently convinced of the imminent tax reduction on May 2, there should be no abnormal returns generated by the official announcement of the reduction. The third event is the three-day window around August 5, 1997, the day the President signed the legislation into law.

Once the individual companies in each category are identified, the returns are collected from the Center for Research in Security Prices (CRSP) tapes. A screening of the sample is done to detect firm specific announcements around the event windows that would have had a substantial impact

on the value of the firm's securities. Those companies with anomalous market announcements during the event windows are eliminated from the sample to avoid introducing bias into the estimation. A three-day event window is used to aid in capturing the true impact of the announcement given possible information leakage. Brown & Warner (1985) suggest narrowing the window as much as possible to increase the power of statistical tests since a longer window tends to diminish power. A ten day window was originally tested for this research, but no abnormal returns were found to be significant. Therefore, due to the loss of power from larger windows, the lack of significance of any individual abnormal return, and an effort to conserve space, the results are not included.

The estimation period for this study begins 271 trading days before the May 2 declaration of an imminent tax cut and ends 21 days before the actual May 2 announcement. The first event window examined is around May 2, the second event window is around May 7, and the third is around August 5. The estimation period is from -271 to -22 and is used to determine the parameter estimates. Individual events occur between -1 and +1 for each date of interest.

A market model is used to estimate normal expected stock returns on the sample of companies. Returns of the individual securities are regressed against the returns of the market during the same interval. The common market model given by Fama, Fisher, Jensen and Roll (1969) is:

$$R_{it} = a_i + b_i R_{mt} + \epsilon_{it} \quad \text{for } t = 1, 2, ..., T$$

Where:

R_{it} = the return on stock i for period *t*
R_{mt} = the return on the market index for period *t*
a_i = Intercept
b_i = the slope coefficient
ϵ_{it} = the disturbance term
T = the number of periods in the estimation window (250)

The individual security return is given by the following formula:

$R_{i,t} = (P_{i,t} - P_{i,t-1})/ P_{i,t-1}$ for the non-dividend paying companies, and
$R_{i,t} = ((P_{i,t} + D_i) - P_{i,t-1})/ P_{i,t-1}$ for the dividend paying companies

Where:

$R_{i,t}$ = the return of the *i*th security at time *t*
$P_{i,t}$ = the closing price of the *i*th security at time *t*
$P_{i,t-1}$ = the closing price of the *i*th security at time *t*-1
D_i = the dividends paid to the *i*th security during the estimation period

The returns of the dividend paying companies are dividend-adjusted to capture the full impact of their difference from companies that did not pay dividends. Since a part of the return to shareholders in the dividend paying category is the dividends received, these dividends must be included to accurately reflect the security's rate of return. Companies that paid a dividend in the 21 days prior to the May 2 announcement or the 21 days after the August 5 announcement are not included in the sample due to the dividend bias presented by the payment. These returns are then compared to a sample of returns from companies that did not pay dividends during the period in question.

Firms are chosen that had paid dividends in each of the previous twelve quarters to conform to the requirement placed on non-dividend paying companies. Companies that left the market during the event time period are dropped from the sample. The CRSP equally-weighted index will serve as the market proxy. The parameters a_i and b_i are calculated using the 250 trading day period before the first announcement of an imminent agreement. Each firm's residuals (abnormal returns) during the event periods are calculated by the following equation:

$$AR_{i,t} = R_{i,t} - (a_i + b_i R_{m,t})$$

Average abnormal return across companies for a given date *t* is:

$$Average\ AR_t = sum(AR_{i,t}/N)$$

Where:

N = number of companies in the sample

The cumulative abnormal returns during the event windows are calculated as:

$$CAR = sum(average\ AR_t) \qquad \text{For } T = 3$$

Cumulative abnormal returns are computed for each of the intervals of interest. The hypothesis test is that the CARs are equal to zero. If the cumulative abnormal returns are found to be statistically not different from zero, then there is no impact from the events. T-tests are conducted on each of the time intervals to determine if the dividend paying companies differ from the non-dividend paying companies in their average abnormal return and, if so, when the impact occurred.

The t-statistics for the cumulative abnormal returns are calculated as:

$$CT = CAR / (\sigma_{CAR}/sqrt(N))$$

Where:

σ_{CAR} = the standard deviation of the 3-day excess returns, and
N = the number of firms in the sample.

RESULTS

The data is analyzed to meet the criteria given and the result is a sample of 7,359 stocks from the CRSP data files. Of this sample, 3182 were identified as dividend paying and 4177 were identified as non-dividend paying.

Table 1: Deal Announcement Window

This table examines the three-day window around the date of the announcement that a budget deal has been reached which contains a capital gains tax reduction.

		Non-Dividend Paying				Dividend Paying			
	DAY	AR	T	CAR	CT	AR	T	CAR	CT
05/01/97	-1	-0.093	-1.177	-0.093	-1.177	-0.009	-0.561	-0.009	-0.561
05/02/97	0	-0.104	-1.315	-0.196	-1.762*	-0.007	-0.409	-0.016	-0.686
05/05/97	+1	-0.108	-1.376	-0.305	-2.233*	-0.011	-0.655	-0.026	-0.938

* statistically significant at the .10 level
** statistically significant at the .01 level

Table 1 contains the results of examining a three-day window around the budget announcement date of May 2. The findings show that the non-dividend paying companies experienced statistically significant abnormal returns on the day of the announcement of a budget deal and the following trading day. Dividend paying stocks experienced no statistically significant abnormal returns on either of the days. The magnitude of abnormal returns for the non-dividend paying stocks is almost ten times that of the group of dividend paying companies.

Table 2: Announcement of May 7 Effective Date

This table examines the three-day window around the date of the announcement that the effective date would be May 7, 1997.

		Non-Dividend Paying				Dividend Paying			
	DAY	AR	T	CAR	CT	AR	T	CAR	CT
05/06/97	-1	-0.092	-1.173	-0.092	-1.173	-0.010	-0.621	-0.010	-0.621
05/07/97	0	-0.061	-0.780	-0.154	-1.381	-0.010	-0.627	-0.020	-0.882
05/08/97	+1	-0.078	-0.988	-0.232	-1.698*	-0.014	-0.832	-0.034	-1.201

* statistically significant at the .10 level
** statistically significant at the .01 level

Table 2 shows the results of examining a three-day window around the announcement of the effective date of the capital gains reduction. On May 7, an effective date for the tax cut was announced by Senate Finance chairman William Roth and House Ways and Means Chairman William Archer. The effective date was May 7, 1997 but there was no specified capital gains tax rate. It was known that the rate would decline and speculation was that the rate would be between 15 and 20 percent. The results show that there was a statistically significant cumulative abnormal return present on the day following the announcement of the effective date. The lower level of significance may be indicative of the fact that the market participants may have anticipated that the effective date would have been much earlier in the year. If this was true, much of the market adjustment would have already taken place.

Table 3: Signing Date Window

This table examines the three-day window around the date that the legislation was signed by President Clinton.

		Non-Dividend Paying				Dividend Paying			
	DAY	AR	T	CAR	CT	AR	T	CAR	CT
08/04/97	-1	-0.062	-0.787	-0.062	-0.787	-0.012	-0.738	-0.012	-0.738
08/05/97	0	-0.058	-0.742	-0.120	-1.082	-0.011	-0.681	-0.023	-1.003
08/06/97	+1	-0.064	-0.807	-0.184	-1.349	-0.009	-0.581	-0.033	-1.155

* statistically significant at the .10 level
** statistically significant at the .01 level

Table 3 summarizes the results of examining a three-day window around the date the legislation was actually signed by President Clinton. If the market had already responded to the news of the deal and the surprise factor had disappeared, we would expect to see little or no significant information contained in the actual signing. The results show that, indeed, there is no evidence of abnormal returns for either of the two groups on the signing date. This seems to indicate that the market participants had anticipated the outcome and adjusted their holdings to conform with their expectations.

SUMMARY AND CONCLUSIONS

In the summer of 1997 the Congress and President lowered the capital gains tax rate on equities held for at least 18 months (12 months if sold between May 7th and July 28th). This change in the tax structure provides an opportunity to test the relationship between dividend payment, taxes, and the market value of equity. This paper tests the reaction of the stock market to this change by observing the daily returns of firms that have historically paid dividends to their owners and those that have retained their earnings and rewarded their owners in the form of capital gains.

There are three dates of interest to this study. On May 2nd the Congress and President announced their *intent* to lower the capital gains rate. GOP leaders announced on May 7th that the reduction would be effective on transactions from that date forward if approved by the President. On August 5th all uncertainty was resolved when the President signed the Taxpayer Relief Bill of 1997 into law.

The results show a consistently negative reaction by the market on all three dates of interest. No one-day abnormal return is statistically significant, but the three-day cumulative abnormal returns are significant for the non-dividend paying stocks around the Deal Announcement day and the tax change Effective date. This would appear to indicate that rather than stimulate the purchase of non-dividend paying stocks, the tax reduction prompted investors that had felt trapped by the high tax liability to realize their gains. If large numbers of these investors attempted to sell at the same time, the supply increase would force the price down. While few would argue against the market's overall long-term efficiency, there are very few observers of the market that will argue that short-term supply and demand imbalances do not exist and that these imbalances can not result in unusual short-term gains or losses. It is also apparent that some investors jumped the gun and began to sell their holdings around the Deal Announcement date. This early liquidation was probably in anticipation of the new rates being applied to the entire 1997 tax year rather than a mid-year effective date.

The tax policy implications are clear. There was a substantial amount of capital that was tied up in firms that had experienced high appreciation during the previous years. When the burden of high taxes was removed, investors felt freed to move this capital to what they considered to be more productive areas. Even if the work of Eichner & Sinai (2002) is correct and the 1997 tax cut resulted in a small net loss in government revenue, the resultant reallocation of capital by the market to other more attractive firms should be a stimulus to the economy. This reallocation effect is completely overlooked by Eichner. A reasonable argument can be made that *any* level of long-term capital gains tax is a millstone around the neck of the economy. If the markets are allowed to freely move capital from less productive uses to more productive uses without the penalty of taxation, the economy becomes more efficient, produces more jobs, and grows more quickly.

There are several areas yet to be explored. One area is the relative volume of trades around the various dates of dividend and non-dividend stocks. The question of total volume, relative volume, and number of trades is left to later research using *actual* gainers and losers during the years leading up to the tax reduction. A second is the reaction of high dividend yield vs. low dividend yield stocks to the tax change. Finally, after the negative market pressure of investors realizing their gains has subsided, did the market revalue non-dividend paying stocks upwards relative to those that pay high dividends?

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PRICING AND OPERATING EFFICIENCY OF VENTURE-BACKED AND NONVENTURE-BACKED INTERNET IPOS

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ABSTRACT

Initial Public Offerings (IPOs) were the most popular form to raise new capital in the united States during the last decade (1990-2000). Thousands of companies went public for the first time, particularly in the technology-heavy Nasdaq stock market. Along with the regular IPOs came the Internet IPOs backed by the venture-capitalists, who specialize in financing promising start-up companies and bringing them public. When we examine these Internet IPOs issued during 1996-2001, we find that the first-day returns of both the venture-backed and nonventure-backed IPOs were much higher than in other time periods, but they were slightly higher for the nonventure-backed IPOs than that of the venture-backed IPOs. Also, the former group performed better than the latter group regarding operating ratios and the growth of cash flows. The regression results show that the first-day closing price was significantly and negatively associated with the return variables, thus suggesting the underpricing of the Internet IPOs during 1996-2001 – the period covered by our study.

INTRODUCTION

Initial Public Offerings (IPOs) were the most popular form to raise new capital in the United States during the last decade (1990-2000). Thousands of companies went public for the first time, particularly in the technology-heavy Nasdaq stock market. Along with the regular IPOs came to Internet IPOs backed by the venture-capitalists, who specialize in financing promising start-up companies and bringing them public. More than half of the Internet IPOs were backed by the venture-capitalists during 1996-2001. For example, in 1998 venture-capitalists put $13.7 billion into 2,023 start-ups, up from $2.5 billion invested in 627 companies in 1994. In 1999 alone, Internet companies received nearly $20 billion in venture capital funding. As a matter of fact, hardly there was a successful Internet IPO in that year that did not receive funding from at least one big-name venture capitalist.

It was the Internet stocks that fueled the IPO outburst in the late 1990s. In 1991 the World Wide Web (WWW) was born when the new HTML code let programmers combine words, pictures and sound on Web pages. When in 1993, Marc Andressen and fellow University of Illinois students developed *Mossaic* to browse the Web effectively, the number of users grew by leaps and bound at

year's end. Within a very short time, Web-based Internet browsing came into being and the *Online* business was launched. It was online trading, in turn, that helped give rise to the volatile first-day and after-market performances for the Internet IPOs. And the significance of the Internet in reshaping both the United States and the world economy was enormous. It has changed such businesses as the selling of airline tickets and the distribution of financial service products, among many others. It ushered in the information technology we know today.

The Internet stocks took off when the first Web browser Netscape Communications (NSCP) came into being in 1995. It went public on August 1 of that year and its share prices soared 108% on its first day. In 1996, Yahoo went public, and the stock market value of the company was nearly $1 billion within a year. Then in 1997, the first e-commerce company Amazon.com went public. In 1998, during its first half, demand for the IPO stocks were so robust that on average 44 new issues a month were floated. Since then, the Internet stock had dominated the IPO market until March 2000, when the whole stock market in the United States took a nosedive, so to speak, until the recovery process got started in 2003.

In this paper, we have addressed the question whether the venture-backed Internet IPOs performed better than the nonventure-backed Internet IPOs during 1996-2001. We have taken a sample of 117 Internet firms selected randomly, covering both the New York Stock Exchange and the Nasdaq stock market. Our objective here is to examine the pricing performance and operating efficiency of both the venture-backed and nonventure-backed Internet IPOs during the period covered by our study. By probing into these performance measurements of the Internet IPOs, we hope to shed new light into the controversy found in the Finance literature, that in general, the venture-backed IPOs performed better than the nonventure-backed IPOs during the past decade.

LITERATURE REVIEW AND DATA SOURCE

Professor Jay Ritter (Ritter, 1991) and later Ritter and Professor Ivo Welch (Ritter & Welch, 2002) had found that the United States IPOs were underpriced in the short run and underperformed in the long run, suggesting that investors might systematically be too optimistic about the prospects of firms that were issuing equity for the first time. They had also found that the long-run performance of the IPOs was not only sensitive to the choice of econometric methodology, but also to the choice of the sample period. Also, the asymmetric information theories would unlikely be the primary determinant of fluctuations in IPO activity and the underpricing during the so-called 'bubble period' of 1998-1999. Rather, they believed that specific rational explanations and agency conflicts would play a higher role in expounding this underpricing phenomenon, like the allocation of IPO shares and subsequent ownership of stocks.

Professors Along Brav and Paul Gompers (Brav & Gompers, 1997), on the other hand, had posited the contrasting evidence in their research. They had investigated the long-run underperformance of the IPO firms after partitioning the data into venture-backed and nonventure-

backed IPOs during the period of 1975-1992. They had found that the venture-backed IPOs outperformed the nonventure-backed IPOs, using the equally-weighted returns. Also, value-weighting had significantly reduced performance difference between these two groups, and substantially reduced underperformance for the nonventure-backed IPOs in their sample. In their ecenemetric tools using comparable benckmarks and the Fama-French (Fama & French, 1993) three-factor asset pricing model relating to market return, size, and book-to-market ratio, they also found that the venture-backed IPOs in generaldid not significantly underperform while the smallest venture-backed IPOs did.

Brav and Gompers had found that that underperformance in the nonventure-backed sample was driven primarily by small issues, i.e., those with market capitalization of less than $50 million. Underperformance, however, was not unique to firms issuing equity. Eliminating IPOs and SEOs (seasoned equity offerings) from size and book-to-market portfolios demonstrated that IPOs performed no worse than similar nonissuing firms. Thus we should look broadly at types of firms that underperform and not treat IPO firms as a different group. Brav and Gompers have pointed out that as small nonventure-backed IPOs are more likely to be held by individuals, investors' sentiment plays a crucial role in their relative underperformance. These investors are more likely to be influenced by fads or lack of complete information. Venture-backed IPOs, on the other hand, have superior knowledge about the potential of start-up firms they finance.

Professors Barry, Muscarella, Peavy and Vetsuypens (Barry, Muscarella, Peavy & Vettsuypens, (1990), and Professors Megginson and Weiss (Megginson & Weiss, 1991) have found that stock markets react favorably to the presence of venture capital financing at the time of an IPO. Megginson and Weiss have also found that individuals, who are potentially more successful to fads and popular sentiments, hold a large fraction of shares after the IPO for nonventure-backed firms. Also, the fact is that venture capitalists stay on the board of directors long after the IPO issuance and may continue to provide access to capital that nonventure-backed IPOs lack. Professors Hoshi, Kashyap and Scharfstein (Hoshi, Kashyap & Scharfstein, 1991) have pointed out that because venture capitalists generally provide access to top-tier national investment and commercial bankers, they may partly overcome informational asymmetries that are essential with the start-up companies. Moreover, venture capitalists may have a hand in selecting the management team that help the firm perform better in the long run.

Recently, Professors Hellman and Puri (Hellman & Puri, 2002) have found that venture capital is related to a variety of professionalization measures, such as human resource policies, the adoption of stock option plans, and the hiring of a marketing VP. Venture-capital-backed companies are also more likely and faster to replace the founder with an outside CEO, both in situations that appear adversarial and those mutually agreed to. Their evidence also suggests that venture capitalists play roles over and beyond those of traditional financial intermediaries.

Finally, Professor Arvin Ghosh (Ghosh, 2003) has also found that, in general, returns of the venture-backed IPOs were higher than the nonventure-backed IPOs. Also, the first-day returns of

these types of IPOs were higher than any other time periods, thus supporting the findings of others that IPOs in the United States had suffered from initial underpricing. He has also found that only the first-day closing price was significantly and negatively associated with most return variables. Both market capitalization and offer price as explanatory variables were significant only in a very limited number of regression equations, while the number of shares as the explanatory variables was not significant at all in most equations. Ghosh's results confirm the conclusion reached by Brav and Gompers that venture-backed IPOs performed better than the nonventure-backed IPOs during 1990-2000.

We have taken the list of Internet companies from the Securities Data Company (SDC) of Thomson Finance – the prime data source of the United States IPOs. We have accepted its definition of the "Internet stocks" where the stocks of the U.S. companies generated at least 50% of annual sales/revenues from the Internet. Our data-base has been supplemented by the following sources:

- The IPO Reporter
- Securities Data Company of Thomson Financial
- www.Ipo.com
- www.yahoo.com
- www.hoover.com
- Compustat Data File

EMPIRICAL FINDINGS

In Table 1, we have given the descriptive statistics regarding our sample of venture-backed and nonventure-backed IPOs in the United States during 1996-2001. Although out of the total of 117 Internet IPOs, the number of venture-backed IPOs were 40 or 34.19%, the mean offer price of the venture-backed IPOs were higher than nonventure-backed IPOs along with high standard deviation.

Also, both the maximum value and the minimum value of the offer price were higher for the venture-backed IPOs than the nonventure-backed IPOs. However, both the number of shares offered and the value of market capitalization were higher for the nonventure-backed IPOs than the venture-backed IPOs. Also the mean and median value of the closing price of the nonventure-backed IPOs were higher than the venture-backed ones in our sample of the Internet IPOs in the United States during 1996-2001.

In Table 2, we have calculated the returns of different selected periods for the venture-backed Internet IPOs of our sample. Here we find that both the mean value and the median value of the first-day returns were much higher than the returns of other time periods, particularly as compared to the second-day and third-day returns which were drastically reduced. Both the six-month and one-year returns were negative for the venture-backed Internet IPOs. This also proves that the Internet IPOs

were severely underpriced when the first-day closing price was compared with the offer price, as seen in many IPO studies of the United States.

Table 1: Descriptive Statistics of the Venture-Backed and Nonventure-Backed Internet IPOs in the United States

Venture-backed Internet IPOs (n= 40)					
	Mean	Median	Stand. Dev.	Max. Value	Min. Value
Offer Price	$17.06	$15.00	10.90	$76.50	$7.00
Shares Offered (in Millions)	5.84	4.35	4.54	29.52	1.63
Market Cap. (in $mill.)	502.08	232.16	977.98	4,700.00	0.1994
First Day Closing Price	$31.43	$21.05	42.94	$265.01	$3.05
Nonventure-Backed Internet IPOs (n= 77)					
Offer Price	$15.56	$14.02	6.56	$48.00	$5.13
Shares Offered (in Millions)	7.39	4.55	20.09	173.91	1.02
Market Cap.	1,582.08	1,232.08	802.11	56,740.00	0.2604
(in $mill)					
First Day Closing Price	$37.36	$22.86	42.88	$280.03	$4.50

Table 2: Selected Returns of the Venture-Backed Internet IPOs (in Percentage)

	Mean	Median	Stand. Dev.	Max. Value	Min. Value
First Day Return	88.45	48.54	37.73	657.14	-48.53
Second Day Return	8.13	1.44	36.81	194.02	-34.09
Third Day Return	7.47	0.61	37.63	185.89	-40.11
First Month Return	19.32	1.21	70.93	267.00	-82.86
Six Month Return	-20.54	-33.01	52.24	92.83	-93.38
One Year Return	-32.06	-69.27	76.84	261.76	-98.42

Table 3 shows the returns of the nonventure-backed IPOs of different time periods of our sample. We find that the mean and the median value of the first-day return of this group were slightly higher than the returns of the venture-backed Internet IPOs. Also, both the second-day and third-day returns were precipitously lower as compared to the first-day return. But the six-month and one-year returns were positive and quite high as compared to the venture-backed Internet IPOs, as seen in Table 2.

Table 3: Selected Returns of the Nonventure-Backed Internet IPOs (in Percentage)					
	Mean	Median	Stand. Dev	Max. Value	Min. Value
First Day Return	90.82	41.83	144.82	773.08	-50.00
Second Day Return	6.59	-0.25	29.99	149.33	-45.81
Third Day Return	4.20	-2.00	30.32	168.00	-43.67
First Month Return	26.13	8.44	65.42	244.26	-77.95
Six Month Return	59.57	12.60	156.29	713.22	-94.99
One Year Return	48.22	21.37	210.62	1271.00	-97.87

In Table 4, we have calculated the operating ratios and the annual growth of cash flows of the venture-backed Internet IPOs. Except for 1997, both the mean and the median operating ratios were positive during 1996-2001. It was highest in 1996 when the number of Internet IPOs were very small, the second best year being 2000 when the number also started to dwindle. That was also the year when the standard deviation of the mean operating ratio was the highest. As for the annual growth of cash flows, the mean growth rate was the highest in 2001 when the number of IPOs again became much smaller, and the fluctuation of the mean ratio was also the highest as reflected in its standard deviation. However, the negative growth rate of cash flows in 1996 meant that the Internet sector had just started to roll which had no time to build cash flows. Both the high mean and median values in 1998-2000 showed the growth of cash flows of the venture-backed IPOs in the United States.

Table 4: Operating Ratio and Growth of Cash Flows of the Venture-Backed Internet IPOs						
Year	Mean Operating Ratio	Median	Stand. Dev.	Annual Growth of Cash Flows	Median	Stand. Dev.
1996	18.58	7.94	26.05	-0.29	-2.23	3.28
1997	-21.37	-12.44	30.48	0.04	1.11	2.45
1998	11.02	0.78	22.91	5.09	3.42	6.33
1999	7.69	0.96	17.85	5.48	2.85	8.93
2000	16.86	1.78	40.13	6.42	2.51	9.72
2001	4.36	1.13	9.99	9.03	7.93	12.00

Table 5 shows the mean and median operating ratios as well as the mean and median growth of cash flows for the nonventure-backed IPOs. Here we find that both the mean and median operating ratios were positive throughout the time period covering 1996-2001, unlike that of venture-backed IPOs. It was highest in 1997 when the standard deviation was also the highest. The

annual growth of cash flows was also the highest in 1997, the second best result coming in 2000. The very high rate of growth of cash flows again reflects the robustness of this sector among the IPOs. When we compare the results with that of Table 4, we find that the annual growth of cash flows was much higher for the nonventure-backed IPOs than that of the venture-backed IPOs during 1996-2001 – the period covered by our study.

Table 5: Operating Ratio and Growth of Cash Flows of the Nonventure-Backed Internet IPOs

Year	Mean Operating Ratio	Median	Stand. Dev.	Annual Growth of Cash Flows	Median	Stand. Dev.
1996	1.46	1.43	0.48	1.17	1.26	0.42
1997	34.76	3.86	82.51	18.87	4.22	27.33
1998	15.07	1.33	33.97	15.18	6.55	23.03
1999	13.14	1.52	37.89	15.20	3.88	32.44
2000	8.27	1.25	45.44	18.73	3.06	58.59
2001	6.60	1.11	30.76	17.19	3.18	47.27

Ghosh (2003) had successfully used the OLS regression model where he finds that the return statistic as the dependent variable is negatively associated with the first-day closing price, and positively associated with the offer price, shares offered and market capitalization. Ghosh (2005) has also used the model in his latest study of the pricing and performance of the Internet IPOs. So the null hypothesis to be tested here is that the IPO return is negatively associated with the closing price, and positively associated with the offer price, shares offered and market capitalization. The multiple regression equation is of the form:

$$AR = a_0 + b_1\, FC + b_2\, OP + b_3\, SO + b_4\, MC$$

Where:

AR = Returns of different periods;
FC = First-day closing price ($);
OP = Offer Price;
SO = Shares offered (million);
MC = Market capitalization ($ million).

In Table 6, we have shown the regression returns for the venture-backed Internet IPOs listed in both the NYSE and Nasdaq stock markets. We find that only the first-day closing price (FC) was significantly and negatively associated with the return variables in four of the six equations, particularly for the first two days as well as for the six-month and one-year returns. Offer Price (OP) was significant in two out of the six equations, but the sign was negative and consistent for all the equations. Shares Offered (SO) was significant only for the one-year return, as was Market

Capitalization (MC). Thus the significance of the FC variable indicates the underpricing of the IPOs, particularly on the first day, when the IPOs were offered to the public for the first time.

Table 6: Multiple Regression Equations of Returns as the Dependent Variable (Venture-Backed IPOs)

Dependent Variable	Independent Variables					
(ARs)	FC	OP	SO	MC	R^2	F-Ratio
First-Day Return (AR1)	-2.557*	-0.432	0.816	0.024	0.650	6.281
	(-7.254)	(-0.331)	(0.268)	(0.731)		
Second-Day Return (AR2)	-1.028*	-0.656	0.461	0.004	0.556	4.528
	(-1.919)	(1.147)	(0.345)	(0.719)		
Third-Day Return (AR3)	-0.939	-0.725**	0.565	0.008	0.303	4.001
	(-0.397)	(-1.358)	(0.424)	(1.028)		
First Month Return (AR4)	-0.144	-0.998*	0.738	0.013	0.367	5.632
	(-0.157)	(1.911)	(0.288)	(1.065)		
Six Month Return (AR5)	-0.118*	-0.626	0.726	0.018	0.257	4.638
	(-1.818)	(-0.816)	(0.405)	(0.259)		
One Year Return (AR6)	-0.115*	-1.044	-0.264*	0.080*	0.276	3.251
	(-2.421)	(-0.996)	(-1.797)	(2.675)		

t-values of the independent variables are in parenthesis.
*1% level of significance.
**5% level of significance.

Table 7 shows the regression results for the nonventure-backed Internet IPOs, also listed in the NYSE and the Nasdaq market. Here we also find that the first-day closing price (FC) was negatively and significantly associated with the return variables in four out of six equations, also for the same crucial time periods as in Table 6. Offer Price (OP) was also significantly and negatively associated with four out of six equations. But Shares Offered (SO) was significantly (and negatively) associated only with the first-day return as the dependent variable, as Market Capitalization (MC) was significant (positively) only for the one-year return. Both the R^2 and F-ratio indicate the relevancy of the equations, following the methodology of the OLS regression model.

In Table 8, we have combined the data for both the venture-backed and nonventure-backed IPOs in the NYSE and Nasdaq stock market. Here we find that the First-day closing Price (FC) was significantly and negatively associated with the return variables in three out of the six equations, again for the crucial time periods of the IPO issuance. But Offer Price (OP) was significantly and negatively associated with the return variables in *all* of the six equations, not seen in Tables 6 and

7. Shares Offered (SO), however, was significant (negatively) only with the first-day return, as was Market Capitalization (MC). Again, the relatively decent values of R^2 and high F-ratios indicate the statistical relevancy of the equations.

Table 7: Multiple Regression Equations of Returns as the Dependent Variable (Nonventure-Backed IPOs)

Dependent Variable	Independent Variables					
(Ars)	FC	OP	SO	MC	R^2	F-Ratio
First-Day Return (AR1)	-2.996*	-2.492*	-0.701**	-0.008	0.432	6.472
	(-6.229)	(-1.619)	(1.158)	(-0.492)		
Second-Day Return (AR2)	-0.661*	-0.630	-0.073	0.001	0.351	6.031
	(-1.558)	(-0.921)	(-0.482)	(0.557)		
Third-Day Return (AR3)	0.078	-0.921*	-0.036	0.002	0.342	5.370
	(0.696)	(-1.421)	(-0.250)	(0.403)		
First-Month Return (AR4)	0.085	-1.346	-1.191	0.002	0.286	7.704
	(0.282)	(0.817)	(0.522)	(1.083)		
Six Month Return (AR5)	-0.281*	-2.792*	-0.789	0.010	0.324	6.648
	(-1.480)	(2.301)	(-1.046)	(0.857)		
One Year Return (AR6)	-0.378*	-3.513*	-1.013	0.013*	0.485	4.110
	(-2.436)	(-2.701)	(-0.906)	(1.433)		

t-values of the independent variables are in parenthesis.
*1% level of significance.
**5% level of significance.

CONCLUSIONS

We have found that, for both the venture-backed and the nonventure-backed IPOs, the first-day returns were much higher as compared to the second-day and third-day returns, but the first-day return of the nonventure-backed IPOs was slightly higher than that of the venture-backed IPOs. Also, both the six-month and one-year returns of the nonventure-backed IPOs were positive, while they were negative for the venture-backed IPOs. The first-day high returns, thus, supports of the findings of other researchers that the IPOs of the United States had suffered from initial underpricing, which was specially true for the *Internet* IPOs. As for the operating ratios of these two groups as a performance measure, the mean operating ratios were positive during 1996-2001 for the venture-backed IPOs, except for 1997, while they were positive throughout the whole period for the

nonventure-backed IPOs. Also, the annual growth of cash flows was much higher for the nonventure-backed IPOs as compared to the venture-backed IPOs during 1996-2001.

Table 8: Multiple Regression Equation of Returns as the Dependent Variable (Combined Data)

Dependent Variable	Independent Variables					
(Ars)	FC	OP	SO	MC	R^2	F-Ratio
First-Day Return (AR1)	-2.632*	-1.604*	-0.679**	-0.106*	0.477	6.455
	(-3.502)	(1.302)	(-1.406)	(-3.564)		
Second-Day Return (AR2)	-0.346	-0.610**	-0.065	0.002	0.357	5.238
	(-0.571)	(-1.586)	(-0.387)	(0.631)		
Third-Day Return (AR3)	0.057	-0.786*	-0.030	0.003	0.315	7.704
	(0.719)	(-2.082)	(-0.182)	(0.349)		
First Month Return (AR4)	0.021	-1.131**	-0.165**	0.002	0.471	4.133
	(0.116)	(-1.348)	(0.447)	(0.216)		
Six Month Return (AR5)	-0.136**	-3.207*	-0.624	0.012	0.457	6.277
	(-1.433)	(-2.161)	(-0.951)	(0.702)		
One Year Return (AR6)	-0.302*	-2.468*	-0.947	0.013	0.465	6.314
	(-2.644)	(1.966)	(-1.003)	(0.448)		

t-values of the independent variables are in parenthesis.
*1% level of significance.
**5% level of significance.

When we employ the regression equations to estimate the causal relationship between the return statistics as the dependent variable and other relevant variables as the independent variables, we find that only the first-day closing price was significantly and negatively associated with all the return variables. Offer price was also significant and negatively related, but not in all equations, while the number of shares offered as well as market capitalization were significant only in two or three equations. The negative significance of the first-day closing price in the regression results proves, again, the underpricing of the IPOs, as seen in many other studies. But our study has reached the opposite conclusion of Professors Brav and Gompers, as we find that the nonventure-backed Internet IPOs performed better than the venture-backed Internet IPOs when 1996-2001 period was taken into account.

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ESOP FIRM PERFORMANCE PRE- AND POST- MARKET PEAK: EMPIRICAL EVIDENCE

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INTRODUCTION

Ownership in a company is generally regarded as a key motivational tool to reduce agency problems. It should develop within employees and managers, through ownership, the desire to maximize shareholder value rather than to pursue self-serving objectives, such as building managerial fiefdoms, under-investing in capital assets, or allowing other agency problems to materialize that divert or destroy shareholder wealth. Therefore, many companies provide access to ownership in the company as a benefit of employment in a variety of ways. Companies can offer employees a chance to own stock in the company by granting employees stock options that give employees the right to purchase stock at a specified price over a pre-determined time frame. Companies can also allow employees to purchase stock at a discount through formal Stock Purchase Plans. A third option, authorized under the Employee Retirement Income and Security Act of 1974 (ERISA), provides for the establishment of Employee Stock Ownership Plans, or ESOPs. These plans offer substantial advantages to the employee and the employer beyond those available through either stock options or stock purchase plans.

In general, the adoption of an ESOP is considered a productivity and value enhancing action, increasing market price and creating wealth for the firm's owners and employees. This view is supported by most empirical work performed subsequent to the 1974 legislation that created the plan. However, in addition to increased value derived from reduced agency problems, ESOPs can provide significant tax savings to the company, benefiting both current stockholders and employees.

TAX BENEFITS OF ESOPS

Profitable companies have an obligation to pay taxes, but the government encourages companies to grow so they can hire more employees and provide greater stability to the economy. The government accomplishes this through various business tax incentives. A reduction in taxes provides liquidity to companies for growth and potentially more profitability. The original concept of the ESOP was to promote stock ownership among rank and file workers of US companies to make

the capitalist system stronger, and lawmakers became convinced that tax benefits "should be permitted and encouraged under employee benefit law" (NCEO, 2005). Through the years, the legislature passed various enhancements to the original 1974 legislation, including the leveraged ESOP, in order to encourage firms to establish these plans. As a result, firms can now enjoy substantial tax savings from ESOPs.

Most recently, the Reconciliation Act of 2001, exempted employees' elective deferrals to their retirement plans from the calculation of total employer contribution to defined-contribution plans such as ESOPs and 401(k)s. In addition, the maximum contribution percentage was raised to 25% from 15% of total eligible pay. The act also allowed the firm to take a tax deduction for reasonable dividends paid on ESOP shares when employees elect to reinvest the dividends in additional shares of stock (Girard, 2002). The company remained eligible for a tax deduction equal to the value of stock contributions, and the company can deduct 25% of the principal and interest payments due on loans that provide funding for ESOPs. These new allowances further augmented the initial tax benefits provided by the 1974 ERISA and by subsequent legislation.

NOT WITHOUT COSTS

The benefits of an ESOP do not come without some potential costs to its participants, some affecting employees and some affecting the firm and its value. The employee, as an owner, may have a different sense of motivation from that of a worker. This motivation should increase shareholder value since the employee's personal wealth is now impacted directly, and the employee has a personal stake in increasing efficiency and productivity. Additionally, the employee's wealth can grow tax-free during employment since employees' shares held in the trust are not taxable until distribution upon retirement or termination. On the other hand, employee motivation, and therefore profits, can be impacted by the fact that the employee cannot obtain the reward of stock ownership until leaving the company (Hirschfeld, 2002). Furthermore, the employee suffers from a hazardous lack of diversification since retirement, as well as job security, are dependent upon the fortunes of the employing firm. ESOP restrictions prevent diversification of employees' portfolios outside the company until the employee either has been in the ESOP for ten years or is near retirement age.

With motivated employees and tax incentives providing opportunities for growth of the firm and increased profitability, ESOPs may provide shareholders with increased value; however, economic or industry conditions may not always result in a profitable firm. This exposes everyone in the organization to losses when downturns occur. When the company's performance lags, employee shareholders are exposed to market losses in an investment that they cannot divest while employed by the firm. As employees' wealth declines due to factors beyond their control, the sense of pride in ownership may diminish, resulting in the return of agency problems that the ESOP was intended to alleviate. Despite this, the firm must continue to provide the prescribed ESOP benefits.

When a company decides to start an ESOP as a key benefit, the employee's rights are protected through ERISA laws, and the ESOP must be able to pay the employee for the benefit earned in the plan. In general, employee participants in the ESOP receive their benefit upon retirement from the firm, and the firm has the obligation to pay this benefit regardless of how the company is performing at the time. Therefore, when establishing an ESOP, the trustee must establish a mechanism to fund ESOP repurchase obligations. A sinking fund is often used for this purpose, although corporate-owned life insurance, or COLI, and cash contributions are also alternatives. The choice of refunding mechanism may depend on whether the firm is an S or a C corporation and the balance sheet implications of each alternative (Kornfeld, 2000; Hirschfeld, 2002; CPA Journal, 2002). The various choices must be researched carefully in order to implement the optimal, minimum expected cost alternative.

Additional costs for firms adopting ESOPs can be especially onerous, especially for privately held firms. Companies are required to continually maintain accurate valuations of the stock of the company that is held by the ESOP. This is simple when the firm is publicly traded on a stock exchange, since the trading price represents the fair market value of its shares. However, for private firms, an independent appraisal must be done annually so that the ESOP accurately reflects share value.

ESOPS AND FIRM PERFORMANCE

Past research has established that ESOP firms are likely to outperform non-ESOP firms. The positive benefit of establishing a class of employee-owners is often cited as a primary motive to establish an ESOP. The argument is that, through ESOP participation, employees will be more motivated, begin to think and act as owners. They will exercise fiduciary-like responsibility over the resources of the firm, minimize agency costs, and align their behavior with the goals of the firm. Essentially, they will perform in their own best interest - not as employees, but as shareholders. If this is true, then one would anticipate that an ESOP-based firm would outperform comparable firms in its industry group, yet the performance evidence is mixed.

In a study of 382 U.S. public firms that adopted ESOPs over the twenty-year period 1971-1995, Wah (1999) found that total shareholder return for ESOP firms exceeded those of non-ESOP firms by 6.9% and that average annual return on assets (ROA) for ESOPs was 2.7% higher than for industry peers without ESOPs. Kruse and Blasi (2002), in a study of 343 matched pairs of ESOP and non-ESOP closely-held firms, comparing performance differences from three years prior to three years after introduction of the ESOP, found differences in favor of ESOPs of 2.4% in sales, 2.3% in employment, 2.3% in sales/employee, and 4.4% in employee productivity. Lee (2003) found similar productivity gains of 4-5% associated with the introduction of ESOPs into Taiwanese electronics manufacturers, but noted that the effect does not appear immediately after introduction, often taking 3-4 years for the firm to realize the gains.

On the other hand, others have found that over a longer, four-year time period, many of the post-announcement effects erode, concluding, "ESOPs provide, at best, only a short-term boost to corporate performance" (Pugh, Oswald, and Jahera, Jr., 2000). This study found that only a few measures of firm performance increased significantly-return on equity, return on assets, and net profit margin-but only short-term. Further, it was found that firms that leverage their ESOPs show evidence of long-term market underperformance, and a long-term increase in their debt-to-assets ratio. This is in keeping with the proposition that firms that are takeover targets, often attributed to their history of poor performance, create leveraged ESOPs as a takeover defense. This puts more shares in the hands of "friendly shareholders" and also increases the debt load of the firm, itself a defense against takeover. Having survived the takeover, the firm continues under-performing, but now it has a more highly leveraged capital structure (Pugh, Oswald, and Jahera, Jr., 2000).

Iqbal and Hamid (2000) produced some very interesting results when they examined the longitudinal relationship between stock price changes and operating performance of ESOP firms. Their results suggest a causal relationship between the two variables, with stock price changes affecting performance. When stock price increases significantly or declines significantly, operating performance increases. When the changes are modest, either positive or negative, there is no significant impact on operating performance. They also found that this relationship "appears to be significant several quarters after the changes in stock prices occur"(Iqbal and Hamid, 2000). This has some intriguing behavioral implications. The authors conclude, "Ownership in itself may not be enough to improve firm performance. Rather, ownership has a positive impact on a firm's operating performance when there are significant changes in stock prices" (Iqbal and Hamid, 2000). This suggests a certain behavioral insensitivity to modest price fluctuations and that the value of 'ownership' only emerges in times of more significant price changes.

The 12th Annual Economic Performance Survey conducted by the Employee Ownership Foundation, the 501 (C) (3) affiliate of the ESOP Association, surveyed nearly 1300 member firms in July 2003. Results based on 320 responses indicate that for 2002, 80% of ESOP firms outperformed three major stock indices: DJIA, NASDAQ Composite, and S&P 500. Another 8% outperformed at least one index and only 3% performed worse than all three indices. Financial performance data for 2002 compared to 2001 is also reported, and the results were uniformly positive (PR Newswire, 2003). These findings are in alignment with previous findings from a 1992 survey conducted by the National ESOP Association in which they observe, "ESOP firms have weathered the recession better than their non-ESOP counterparts" (Research Studies, 1992, p.15). It is important to note that these results are based on accounting returns where firms can take advantage of the tax incentives, such as dividend distributions policy, principal and interest deductions on ESOP loans, provided under ERISA rules.

The performance of such firms on a cash-flow basis is less certain. At least one study (Ducy, Iqbal, & Akhigbe, 1997) examined the ESOP three-year pre- and post-implementation economic performance of publicly traded firms using operating cash flow (OCF) rather than accounting

returns. They determined that industry-adjusted performance of ESOPs deteriorated on all three measures utilized: OCF to market value of assets, OCF to sales, and OCF per employee. This study clearly suggests that additional studies are needed to examine the cash-flow performance of ESOP and non-ESOP firms on a paired comparison basis (Kruse & Blasi, 2002). While accounting returns are important for highlighting the effects of the incentives contained in the ERISA authorization, cash flow is a major determinant of organizational survival and the creation of shareholder wealth.

An NBER working paper explored the role of human resources policies and the motivation of ESOP employee-owners and concluded that to understand how employee ownership works successfully "requires a three-pronged analysis of: 1) the incentives that ownership gives; 2) the participative mechanisms available to workers to act on those incentives; and 3) the corporate culture that battles against the tendencies to free ride" (Kruse, Freeman, Blasi, Buchele, and Scharf, 2003).

Other studies have also found that participation in decision mechanisms is key to ESOP performance; ESOPs without significant member participation in decision-making do not outperform non-ESOP firms. (See Pendleton, Wilson and Wright [1998] for an extensive review of the literature supporting the linkage between participation in decision-making and ESOP firm performance.) As Kruse, Freeman, et. al. (2003) observe, "It is not ownership, per se, but the cooperative culture that can be fostered by employee ownership, that drives better workplace performance in ESOP firms."

RISK EFFECTS

None of the earlier studies have given consideration to the factors of risk in assessing ESOP performance and the creation of shareholder wealth (Conte, Blasi, Kruse, and Jampani, 1996). In the 1990s, a period of unparalleled prosperity and growth in the U.S., this did not emerge as an issue of major research interest. However, the recession of 2001-2003, the bursting of the 'dot com' bubble, the major correction in virtually all stock markets, and the collapse of Enron and many other firms that destroyed the wealth of many of their employees who were heavily invested in company shares, have all highlighted the need to consider inherent structural risk in evaluating ESOP performance.

A 1996 study examining the financial returns of public ESOP companies found systematic risk, or beta, to be lower for ESOP firms than for non-ESOP firms overall, and for both small and large firms when analyzed separately. Total risk, measured by the standard deviation of returns, was also lower for ESOP-sponsoring firms. This study found that the effects of ESOP adoption were most pronounced in small firms and that the ESOP effect among large companies was small or nonexistent (Conte, Blasi, Kruse, and Jampani, 1996), reducing financial returns by approximately three percent. This negative effect is significant for large firms, but marginal or insignificant in small firms. The finding of these "manager effects" is supportive of agency theory postulates, and also suggests that perhaps size is an important intervening variable affecting ESOP firm performance

(Conti, Blasi, Kruse, and Jampani, 1996; Kruse, Freeman, Blasi, Buchele, Scharf, Rodgers, and Mackin, 2003).

HYPOTHESES

Prior research has found that, on average, firms with ESOP programs in place outperform non-ESOP peer firms. However, these results were obtained during periods of generally rising stock prices. This research examines whether or not this phenomenon persists in a bear-market environment. To examine whether ESOP firms consistently outperform non-ESOP firms, two empirical tests are run. First, average daily returns of the ESOP portfolio are compared to the average daily returns of the S&P 500 Index in the two years immediately before and two years following the market peak. The market peak, defined by the maximum daily closing value of the S&P 500 index, was identified as March 24, 2000. The null hypothesis states that, on average, the ESOP portfolio outperforms the market index.

$$H0: \quad r_{ESOP} > r_{S\&P500}$$
$$HA: \quad r_{ESOP} = r_{S\&P500}$$

Next, average daily returns of the ESOP portfolio is compared to the average daily returns of the peer portfolio over the same two time periods. The ESOP portfolio is expected to out perform the peer-group portfolio.

$$H0: \quad r_{ESOP} > r_{PEER}$$
$$HA: \quad r_{ESOP} = r_{PEER}$$

DATA AND METHODOLOGY

To test the hypotheses, an initial sample of 170 publicly traded U.S. firms with employee stock ownership programs in place as of 12/31/2000 was identified from the database of the National Center for Employee Ownership (NCEO). The sample excludes firms from the financial services sector and includes only U.S. based firms (ADRs are excluded.) For each sample firm, the Compustat database provided total market capitalization and primary SIC code as of May 2001.

We utilize a matched-pair methodology according to that advocated by Spiess and Affleck-Graves (1995) and Barber and Lyon (1997) to estimate buy-and-hold returns to shareholders of ESOP firms. For each sample firm, a peer firm was identified as the firm closest in total market capitalization to the sample firm, within the same three-digit SIC code. While there were instances in which the same control firm was identified for two or more sample firms, care was taken to ensure

that none of the control firms were also part of the sample. Each firm's buy-and-hold return over the sample period was calculated as the geometric average of the daily returns from CRSP. Daily return data were available for each firm and for the S&P 500.

The analysis consists of two parts. First, a straightforward comparison of average daily returns to ESOP firms is made with those of the broader market as measured by the S&P 500. Second, a size- and industry- matched portfolio approach is used to analyze the performance of ESOP firms versus comparable non-ESOP firms.

RESULTS

Results of the analysis are given in Table 1. Consistent with results of prior research, the Panel A reveals that in 4 out of 5 years (both pre- and post- market peak) the stock market performance of ESOP firms exceeds that of the S&P 500 index. This finding supports the prevailing theory that the presence of an ESOP motivates employees to "think and act as owners of the business" (Kruse, Freeman, Blasi, Buchele, Scharf, Rodgers and Mackin, 2003).

A surprising result emerged, however, when the portfolio of size- and industry- matched peers was added to the analysis. We found that with the exception of the 3/25/1999-3/24/2000 period, no significant performance differences exist between ESOP firms and their peers, as seen in Panel C of Table 1. However, during much of our sample period, both of the constructed portfolios outperform the market index by a significant margin (Panels A and B). That is: in the same four years out of five (3/25/1999 - 3/25/2002), both the ESOP firms and the comparable non-ESOP firms outperformed the market. This is true both in up- and down- market environments.

Table 2 provides another view of the results in the form of cumulative annual returns for the three portfolios. Again, it can be seen that during each year of the 1999 - 2002 period, both ESOP firms and non-ESOP peers outperformed the broader market.

Taken together, these findings suggest that the widely-reported superior performance of ESOP firms may not be a direct result of the existence of the ESOP.

CONCLUSION

In summary, this research finds that the superior performance of firms with active ESOPs persists both in up- and down- market environments. ESOP firms in our sample outperformed the S&P 500 index by a significant margin both before and after the market peak of March 2000.

However, we also find that similar performance characteristics exist for a size- and industry-matched portfolio of firms that do not operate ESOPs. While the source of the observed superior performance is not yet apparent, a number of explanations come to mind. For example, it may be that firms adopting Employee Stock Ownership Programs tend to differ from market averages in terms of size or risk characteristics. These traits are also exhibited in the peer group firms.

Regardless, the results of this analysis do tend to suggest that the source of the superior performance of ESOP firms is something other than the presence of the ESOP itself. The source of superior performance thus remains a question for further study.

Table 1: Comparison of Average Daily Returns					
Panel A: ESOP firms vs. S&P 500 index					
Dates			ESOP	SPX	p-value
3/24/1998	-	3/23/1999	-0.000220	0.000637	0.05
3/25/1999	-	3/24/2000	0.000929	0.000806	0.81
3/27/2000	-	3/23/2001	0.000602	-0.001071	0.00
3/26/2001	-	3/22/2002	0.001393	0.000110	0.00
3/25/2002	-	3/24/2003	-0.000603	-0.000981	0.34
Panel B: Size- and Industry- matched peers vs. S&P 500 index					
Dates			Peers	SPX	p-value
3/24/1998	-	3/23/1999	-0.000204	0.000637	0.08
3/25/1999	-	3/24/2000	0.001498	0.000806	0.19
3/27/2000	-	3/23/2001	0.000726	-0.001071	0.00
3/26/2001	-	3/22/2002	0.001132	0.000110	0.01
3/25/2002	-	3/24/2003	-0.000724	-0.000981	0.56
Panel C: ESOP firms vs. size- and industry matched peers					
Dates			ESOP	Peers	p-value
3/24/1998	-	3/23/1999	-0.000220	-0.000204	0.99
3/25/1999	-	3/24/2000	0.000929	0.001498	0.03
3/27/2000	-	3/23/2001	0.000602	0.000726	0.71
3/26/2001	-	3/22/2002	0.001393	0.001132	0.31
3/25/2002	-	3/24/2003	-0.000603	-0.000724	0.65

Table 2: Cumulative Annual Returns					
Dates			ESOP	Peers	SPX
3/24/1998	-	3/23/1999	-6.88%	-6.49%	14.74%
3/25/1999	-	3/24/2000	25.62%	45.17%	20.41%
3/27/2000	-	3/23/2001	14.68%	17.78%	-25.38%
3/26/2001	-	3/22/2002	38.80%	29.67%	0.78%
3/25/2002	-	3/24/2003	-16.39%	-19.01%	-24.76%

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LOCALITY RANKING SYSTEMS: METHODOLOGICAL CONSIDERATIONS AND EVIDENCE FROM STATE RANKINGS

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ABSTRACT

Several articles have ranked states and other localities based on their desirability as a location for doing business. The importance of properly conducting these studies can not be overstated. An inappropriate "bad" ranking can have a significant negative economic impact on an area. Similarly an inappropriate "positive" rating can lead businesspersons to establish businesses in suboptimal locations. Despite the importance of these rankings, surprisingly little research has been done on the issues involved in developing the rankings. In this paper the methodologies used by three studies are examined. The sensitivity of rankings to changes in methodology utilized is examined. A change in methodology is found to result in ranking change of up to twenty two places in a ranking of 50 items. The paper also demonstrates how changing methodologies affects the weightings of the variables in the index. Finally, the paper demonstrates how the inclusion of additional variables affects the rankings.

INTRODUCTION

Numerous studies summarize data and provide rankings of items of interest. Well known rankings include the best universities, best places to do business, best sports teams, winners of scholarship pageants, Olympic games, and the best mutual funds to invest in. The importance of these rankings can not be overemphasized. Many millions of dollars are at stake as a result of these ranking systems. An example of the importance of these rankings is the Bowl Championship Series (BSC) ranking system for college football teams. The teams that will participate in key football games are selected based on the BCS ranking system. Those teams that participate in the games receive millions of dollars in compensation as well as prestige for their football program, University, alumni and local community. An error in the rankings can have million dollar consequences. Another ranking with significant economic impact is rankings of states as a place to conduct business. In these rankings, individual states are ranked on their desirability as a place to conduct business. Certainly business persons incorporate this information into their business location decision making process.

While the world relies heavily on ranking systems, developing these rankings is no simple task and surprisingly little research on the best techniques to use in developing ranking systems has been published. Rather, the task of creating a ranking system is fraught with minefields. The difficulty in developing an equitable rating system can be observed in the BCS rankings. Despite several modifications to the system, there are controversies concerning the appropriateness of the outcome in virtually every year. Many options can be incorporated into a ranking system at the discretion of the developer. While each of the options may be equally correct, he/she must select those options that offer the desired description and ranking of the data. Frequently it is a choice between simplicity of design and a more accurate ranking. In this paper we examine the methodologies used to develop rankings. The sensitivity of one ranking system to changes in the methodology utilized is demonstrated. The demonstration shows that altering the methodology employed can have a significant impact on the resulting rankings and variable weightings. A demonstration of the effects of incorporating additional variables is also provided.

This study explores the methodologies utilized by three previous studies. The current research is not intended as a criticism of these previous studies. To the contrary, the work provided by these previous studies is important and well done research that can help business owners and policymakers make better decisions. Indeed, the importance of these lines of work has increased substantially in recent years as businesses become more mobile. The intent of this study is to extend this body of knowledge by demonstrating the difficulties and choices associated with any such ranking system, and the sensitivity of the final ranking to those choices. In the following section the literature is discussed. Next, the methods used to aggregate the data are examined. The analysis continues by demonstrating how adding additional variables affects the final outcome and computing the impact of each variable on the final rankings. Finally some concluding comments are provided.

LITERATURE

A common practice in the literature today is to rank states and localities based on their tax climates. Studies providing such rankings include Byars, McCormick and Yandle (BMY) (1999) who measure economic freedom, the Beacon Hill Institute's 2001 State Competitiveness Report, Keating's 2003, Small Business Survival Index and Hodge, Moody and Warcholik's, 2004 State Business Tax Climate Index. In addition, other studies such as the Morgan Quinto Press, 2003 Most Livable States Index and the Forbes 2005 Best Places for Business and Careers ratings incorporates elements of the tax system. Indeed the practice of ranking economies has been moved to the international level in Miles, Feulner, and O'Grady (2005).

The extent to which these indexes are used by individuals to make business location decisions is documented by Plaut and Pluta (1983), who find that general business climate indexes explain the movement of businesses across states and regions of the U.S. Papke and Papke (1986)

also find that state tax law changes affect business location decisions. Newman (1983) found that differentials in state corporate income taxes have a significant impact on the movement of industry between states. Ahern (2004) notes how some businesses simply move to another state when the tax exemptions expire. Gentry and Hubbard (2004), find that taxes have a significant impact on individuals decision to become self employed. McGuire and Wasylenko (1985) find that income taxes affect businesses indirectly by influencing the location decisions of individuals. Bartick (1989) found that high sales taxes have a negative effect on small business start-ups. Besley and Rosen (1998) find that the after-tax price of goods increase by at least the amount of the taxes imposed. Thus, consumers stand to benefit from and can reasonably be expected to shop in, low-tax districts. A large stream of literature addresses the valuation of businesses based on tax their capital structures and the tax systems that they are subject to. The seminal article on the issue was written by Modigliani and Miller (1958). Since then many articles have extended this line of literature including, Modigliani and Miller (1963); Miller (1977); DeAngelo and Masulis (1980) and Jalbert (2002). In general the findings from this line of research are mixed concerning the extent to which taxes impact firm value.

Forbes Magazine provides an analysis of best places for business and careers. Most notable in the 2005 rankings is that North Dakota and South Dakota each have two of the top six best smaller metro areas for conducting business. The best larger metro area is Boise, Idaho. Forbes also ranks the cost of doing business. They consider labor, energy, tax and office space costs. They also consider living costs, specifically incorporating housing, transportation, food and other household expenditures in the ranking. In the 2005 Forbes study, Casper and Cheyenne Wyoming have the two lowest costs of doing business. Unfortunately, Forbes does not indicate how the variables are aggregated together into the ranking.

Raymond J. Keating, Chief Economist for the Small Business and Entrepreneurship Council provides a similar ranking called the Small Business Survivability Index (SBSI) (Keating, 2003). The annual index ranks states based on their desirability as a place to conduct business. The SBSI is intended to provide a ranking of the states based on the friendliness of the state for small business and entrepreneurs. The index combines measures of economic incentives and disincentives, primarily focused on taxes, for conducting business in each state into an overall index. Lower levels of the index indicate a more business friendly state. The index aggregates 13 tax related variables and eight other variables for each state. This study is an absolute index where each variable, in its raw form, is given an equal weighting in computing the index. While Keating ranks the District of Columbia, other studies do not rank it. For comparison purposes, the District of Columbia is eliminated from the analysis. As the District of Columbia was ranked last by Keating, the elimination did not result in ranking issues among other states.

In a comprehensive study Hodge, Moody and Warcholik, (2004), (HMW) provide a measure of state tax climates. They aggregate five equally weighted measures related to a state's tax system into an overall index. The measures considered are the corporate income tax, the individual income

tax, the sales and gross tax receipts tax, the unemployment insurance tax and the state's fiscal balance. These five measures are developed based on several underlying indices, each specifically incorporating both the tax rate and the appropriate taxable base. In contrast to Keating, HMW aggregate the data as an equally weighted relative index. That is, each variable is standardized relative to the range of the variable present among all of the states. Higher figures in this index represent business friendlier environments. The focus of this study is tax neutrality, which HMW define as the extent to which a state's tax system provides a level playing field for all types of businesses and business transactions. They rate states that are neutral, high and punish those that are not neutral.

In another comprehensive study, Byars, McCormick and Yandle (BMY) (1999) provide a measure of economic freedom, defined as the right of individuals to pursue their own interests through voluntary exchange under a rule of law. Their EFI index is based on more than 200 different measures of economic freedom that are aggregated into five sectors. The index included measures of government spending, regulation, welfare, school choice, taxation and the judicial system. They create their final index using a principle components analysis. The raw data is combined into 48 different competing indices. They then develop multivariate statistical models for explaining growth in per capita personal income, net immigration, and growth in value added in manufacturing. The competing indices were included, one at a time, in a regression to objectively determine the ability of the index to explain the dependent variables. The authors acknowledge that to a certain degree their index is subjective, but argue that it performs well when benchmarked with observable economic activity.

Table 1 contains the rankings provided HMW (2004) and Keating (2003) and BMY (1999). In the first set of columns, the index level and rankings for each study are reported. The three papers do not purport to measure the exact same issues, so direct comparison of the rankings must be done with caution; nevertheless, the rankings are clearly related. Each of the studies is attempting to rank the desirability of states, either in part or entirety based on tax burdens. The difference in ranking between the three studies for each state is computed and reported in the next set of columns. The differences in rankings are substantial. The average difference in rank between the Keating, SBSI (2003) and HMW index was 6.14 ranks. The largest positive difference in rank occurs for Oregon that increased in rank by 33 places. The largest negative rank difference occurred for Michigan which declined in ranking by 28 places. As the total number of states ranked is 50, a change of 33 or 28 represents a substantial reversal of fortune for a given state. Comparing Keating's SBSI (2003) to the EFI index of BMY (1999), the largest positive rank change was 28 units while the largest negative was 32 ranks. The average difference in ranks between the two indices is 10.86 ranks. The largest positive and negative changes in rank between the HMW and BMY indices are both 33. The average rank change is 11.92 ranks. Finally in the last set of columns in Table 1, the maximum, and minimum rank assigned to a state by any of the studies is reported. In addition, the range of ranks for each state is reported. The average maximum and minimum ranks are 18.32 and 32.78

respectively. The average range of the ranks, computed as the minimum rank minus the maximum rank, is 14.46 ranks. The maximum range of ranks was 33 for Oregon and the minimum was 2 for both New Jersey and Rhode Island.

The three studies clearly present very different pictures about the desirability of states. While some of the differences can be accounted for based on the differences in goals of the ranking systems, some of the differences in ranking can also be attributed to differences in methodologies employed. These differences in rankings clearly suggest that additional research into the sources of these ranking differences is appropriate. The analysis continues by examining the methods by which the three studies aggregate data into an index. The focus in this paper is on the methodologies of the Keating and HMW studies. The BMY study, which uses a more sophisticated methodology, will be examined in future research. Further, while the methodologies of Keating and HMW are discussed, the impact of the issues involved are demonstrated using only the Keating (2003) rankings. Nevertheless, the issues at stake are equally important for HMW, BMY and any other ranking studies.

DATA AGGREGATION

Each of the three indices analyzed in this paper utilizes a different aggregation methodology as noted above. The importance of the differences in aggregation methods are analyzed next. One specific aggregation problem noted by HMW (2003) is that indexes frequently require the aggregation of different types of variables. Both dummy variables (a variable that takes on a value of 1 or zero) and scale variables (a variable that can take on any value) are commonly used in combination to develop an index. This mixing of data can be seen by examining the variables utilized by Keating. The variables utilized by Keating along with the type of variable and coding are presented in Table 2. The index aggregates eight dummy variables, eight variables in percentage form, three index variables and two dollar figures. The dummy variables are assigned a weight of 0, or 1 and each variable is given an equal weighting in its raw form to determine the Keating SBSI Index level.

Mixing dummy and scale variables together to compute an index creates a methodology issue because the extreme value of a dummy variable can either overstate or understate its importance. To demonstrate the problems involved, consider an index composed of two variables, a dummy variable indicating the presence of an alternative minimum tax (AMT) and a second variable indicating the percentage sales tax. Suppose that a state has an 8.25 percent sales tax and an AMT. An equally weighted index produces an index level of 9.25. If the state did not have an AMT, the index would have a level of 8.25. Now suppose that rather than assigning 0 and 1 values to the dummy variable, a value of 0 and 10 are assigned to the dummy variable. This new weighting of the dummy variable has a substantial impact on the index level. Nevertheless, it is an equally valid assignment of the dummy variable. For the state with an AMT, the index is now 18.25 and for the

state without the AMT the index is 8.25. The differences in values are sufficiently large so that they could have a large impact on the index level and ranking.

Table 1: Levels, Rankings and Differences in Rankings

	HMW		Keating		BMY		Rank Differences			Rank Ranges		
State	Level	Rank	Level	Rank	Level	Rank	K-HMW	K-BMY	HMW-BMY	Max Rank	Min Rank	Rank Range
AL	5.667	16	36.76	11	4.73	11	-5	0	5	11	16	5
AK	6.75	5	42.18	22	6.01	38	17	-16	-33	5	38	33
AZ	5.503	18	41.27	18	5.19	25	0	-7	-7	18	25	7
AR	4.576	39	43	25	4.83	15	-14	10	24	15	39	24
CA	4.621	38	54.36	46	6.39	44	8	2	-6	38	46	8
CO	6.294	10	37.65	12	4.77	14	2	-2	-4	10	14	4
CT	4.748	36	48.18	35	6.66	46	-1	-11	-10	35	46	11
DE	5.405	19	41.65	20	4.56	7	1	13	12	7	20	13
FL	7.003	3	31.66	5	5.45	30	2	-25	-27	3	30	27
GA	5.326	20	42.41	23	4.76	12	3	11	8	12	23	11
HI	3.694	50	57.6	50	6.08	39	0	11	11	39	50	11
ID	4.872	34	44.92	29	3.92	1	-5	28	33	1	34	33
IL	5.285	23	38.54	13	5.95	36	-10	-23	-13	13	36	23
IN	5.904	11	39.61	15	5.02	22	4	-7	-11	11	22	11
IA	4.941	30	52.06	41	5.11	24	11	17	6	24	41	17
KS	4.874	33	46.81	32	4.71	10	-1	22	23	10	33	23
KY	4.262	45	44.86	28	5.38	28	-17	0	17	28	45	17
LA	5.176	24	42.13	21	5.48	31	-3	-10	-7	21	31	10
ME	4.386	42	55.56	48	6.22	42	6	6	0	42	48	6
MD	5.312	21	42.58	24	5.77	35	3	-11	-14	21	35	14
MA	4.991	28	45.79	30	6.71	47	2	-17	-19	28	47	19
MI	4.713	37	35.33	9	5.32	27	-28	-18	10	9	37	28
MN	4.05	48	55.67	49	6.38	43	1	6	5	43	49	6
MS	5.153	25	36.68	10	4.70	9	-15	1	16	9	25	16
MO	5.703	13	41.58	19	4.76	13	6	6	0	13	19	6
MT	5.647	17	50.34	38	5.2	26	21	12	-9	17	38	21
NE	4.936	31	47.73	34	5.03	23	3	11	8	23	34	11
NV	7.091	2	24.85	2	4.99	20	0	-18	-18	2	20	18
NH	6.635	6	30.65	4	4.55	6	-2	-2	0	4	6	2
NJ	4.866	35	49.1	36	6.84	48	1	-12	-13	35	48	13
NM	4.358	43	52.15	43	5.33	28	0	15	15	28	43	15

Table 1: Levels, Rankings and Differences in Rankings

	HMW		Keating		BMY		Rank Differences			Rank Ranges		
State	Level	Rank	Level	Rank	Level	Rank	K-HMW	K-BMY	HMW-BMY	Max Rank	Min Rank	Rank Range
NY	3.948	49	53.42	45	7.90	50	-4	-5	-1	45	50	5
NC	4.881	32	49.18	37	4.91	17	5	20	15	17	37	20
ND	4.528	40	47.67	33	5.00	21	-7	12	19	21	40	19
OH	4.99	29	50.61	39	5.54	33	10	6	-4	29	39	10
OK	5.682	15	44.44	27	4.93	18	12	9	-3	15	27	12
OR	6.298	9	52.09	42	6.20	41	33	1	-32	9	42	33
PA	4.995	27	40.13	17	6.53	45	-10	-28	-18	17	45	28
RI	4.193	47	55.22	47	7.00	49	0	-2	-2	47	49	2
SC	5.295	22	39.83	16	4.85	16	-6	0	6	16	22	6
SD	7.288	1	21.99	1	4.47	5	0	-4	-4	1	5	4
TN	5.89	12	33.04	7	4.95	19	-5	-12	-7	7	19	12
TX	6.781	4	31.69	6	4.62	8	2	-2	-4	4	8	4
UT	5.054	26	44.27	26	4.32	3	0	23	23	3	26	23
VT	4.355	44	52.95	44	5.59	34	0	10	10	34	44	10
VA	5.703	13	39.49	14	4.08	2	1	12	11	2	14	12
WA	6.424	8	33.21	8	6.19	40	0	-32	-32	8	40	32
WV	4.253	46	51.41	40	5.50	32	-6	8	14	32	46	14
WI	4.434	41	46.45	31	5.98	37	-10	-6	4	31	41	10
WY	6.582	7	29.13	3	4.41	4	-4	-1	3	3	7	4
				Max Pos. (Neg.) Chg.			33(28)	28(32	33(33)			
				Mean Change			6.14	10.86	11.92	18.32	32.78	14.46

To further demonstrate the impact that varying the level of the dummy variable can have on an index, the SBSI index of Keating is recomputed with dummy variable values of 0 and 0.001, 2, 5 and 100. Table 3 shows the SBSI Index level, the rank and the change in rank from the original rankings if the alternate dummy variable specifications are used. In addition, the bottom of the table shows the largest increase and decrease in rank for any state relative to the original dummy variable design. The results indicate that the changes in ranks associated with differently designed dummy variables are dramatic. When the dummy variable is set to 0.001, state rankings changed by as much as 7 places higher and 6 places lower. When the dummy variable is set to 100, the rankings changed by as much as 22 places higher and 21 places lower. Clearly the rankings are sensitive to the specification of the dummy variables. HMW handle the dummy variable issue differently than Keating. They do not weigh each variable in the index equally. Rather, they weigh scale variables

at 80 percent and dummy variables at 20 percent. Interestingly, no discussion of the reason for this particular choice of weightings is provided.

Table 2: Keating (2003) SBSI Index Variables	
Variable	Measurement Unit
Top Personal Income Tax Rate	Percentage
Top Capital Gains Tax Rate	Percentage
Top Corporate Income Tax	Percentage
Individual Alternative Minimum Tax	Dummy Variable = 1 if the state has Ind. AMT, = 0 otherwise
Corporate Alternative Minimum Tax	Dummy Variable = 1 if the state has Corp. AMT, = 0 otherwise
Indexing Personal Income Tax Rates for inflation	Dummy Variable = 1 if the state has Indexing, = 0 otherwise
Property Tax as a Share of Personal Income	Percentage
Sales, Gross Receipts, and Excise Taxes.	Percentage
Death Taxes	Dummy Variable = 1 if the state has a Death Tax, = 0 otherwise
Unemployment Tax Rates	Percentage
Health Care Cost Index	Index relative to U.S. average
Index of State's Electricity Cost	Index relative to U.S. average
Workers' Compensation Costs	Benefits per $100 of wages
Total Crime Rate per 100 residents	Percentage
Right to Work Sate	Dummy Variable = 1 if the state does not have right to work, = 0 otherwise
Number of Bureaucrats (FTE per 100 residents)	Percentage
Requiring Supermajority vote to change a tax rate.	Dummy Variable = 1 no supermajority requirement, = 0 otherwise
Internet Sales Taxes	Dummy Variable = 1 if the state has a sales access tax, = 0 otherwise
Gas Tax	Dollars per gallon
Excess State Minimum Wage	State minimum wage-Federal Minimum wage
State Legal Liability Cost Index	From U.S. Chamber of Commerce State Liability Systems Ranking Study

Other variables are also sensitive to the weightings. Recall that Keating equally weighs each of the variables in the index in their raw forms. However, some variables are of a larger magnitude than others. For example, the top personal income tax rate takes on values ranging from 0 to 9.90 while the sales and excise tax variable takes on values from 0.45 to 5.84. As such, a high personal income tax rate penalizes a state more than a high sales and excise tax. While Keating equally weights the variables in their raw form, HMW address the issue by computing an index value by standardizing the data relative to the overall mean for the variable.

Table 3: SBSI Index with Varying Dummy Variable Weightings

State	DV=1		DV = 0.001			DV = 2			DV = 5			DV=100		
	SBSI	Rank	SBSI	Rank	RC	SBSI	Rank	RC	SBSI	Rank	RC	SBSI	Rank	RC
AL	36.76	11	34.76	11	0	38.76	11	0	44.755	9	2	234.76	12	1
AK	42.18	22	39.18	19	3	45.18	24	-2	54.18	25	-3	339.18	27	5
AZ	41.27	18	40.27	23	-5	42.27	15	3	45.268	12	6	140.27	7	-11
AR	43.00	25	42	28	-3	44.00	20	5	47.002	13	12	142.00	8	-17
CA	54.36	46	51.37	48	-2	57.36	45	1	66.364	39	7	351.36	32	-14
CO	37.65	12	34.65	10	2	40.65	12	0	49.65	17	-5	334.65	24	12
CT	48.18	35	42.19	29	6	54.18	39	-4	72.181	46	-11	642.18	49	14
DE	41.65	20	39.65	21	-1	43.65	19	1	49.65	17	3	239.65	14	-6
FL	31.66	5	30.66	8	-3	32.66	5	0	35.662	4	1	130.66	4	-1
GA	42.41	23	40.41	24	-1	44.41	23	0	50.407	20	3	240.41	16	-7
HI	57.60	50	53.61	50	0	61.60	50	0	73.603	47	3	453.60	43	-7
ID	44.92	29	42.92	31	-2	46.92	27	2	52.92	24	5	242.92	18	-11
IL	38.54	13	35.54	12	1	41.54	14	-1	50.537	21	-8	335.54	25	12
IN	39.61	15	35.62	13	2	43.61	18	-3	55.613	26	-11	435.61	33	18
IA	52.06	41	48.07	41	0	56.06	43	-2	68.063	41	0	448.06	40	-1
KS	46.81	32	43.81	34	-2	49.81	31	1	58.81	29	3	343.81	28	-4
KY	44.86	28	40.87	26	2	48.86	29	-1	60.864	32	-4	440.86	35	7
LA	42.13	21	40.13	22	-1	44.13	22	-1	50.13	19	2	240.13	15	-6
ME	55.56	48	51.57	49	-1	59.56	47	1	71.561	45	3	451.56	42	-6
MD	42.58	24	37.58	17	7	47.58	28	-4	62.575	35	-11	537.58	44	20
MA	45.79	30	41.79	27	3	49.79	30	0	61.785	34	-4	441.79	36	6
MI	35.33	9	32.34	9	0	38.33	10	-1	47.332	14	-5	332.33	23	14
MN	55.67	49	50.68	47	2	60.67	49	0	75.67	49	0	550.67	47	-2
MS	36.68	10	35.68	14	-4	37.68	9	1	40.678	7	3	135.68	5	-5
MO	41.58	19	39.58	20	-1	43.58	17	2	49.576	16	3	239.58	13	-6
MT	50.34	38	48.34	42	-4	52.34	35	3	58.338	28	10	248.34	19	-19
NE	47.73	34	43.73	33	1	51.73	33	1	63.725	36	-2	443.73	37	3
NV	24.85	2	24.85	2	0	24.85	2	0	24.852	1	1	24.85	1	-1
NH	30.65	4	28.65	4	0	32.65	4	0	38.646	5	-1	228.65	10	6
NJ	49.10	36	45.1	36	0	53.10	37	-1	65.095	38	-2	445.10	38	2
NM	52.15	43	49.15	44	-1	55.15	40	3	64.15	37	6	349.15	31	-12
NY	53.42	45	47.43	40	5	59.42	46	-1	77.422	50	-5	647.42	50	5
NC	49.18	37	46.18	38	-1	52.18	34	3	61.175	33	4	346.18	30	-7
ND	47.67	33	44.67	35	-2	50.67	32	1	59.665	30	3	344.67	29	-4
OH	50.61	39	45.62	37	2	55.61	42	-3	70.61	44	-5	545.61	45	6
OK	44.44	27	42.44	30	-3	46.44	26	1	52.44	23	4	242.44	17	-10
OR	52.09	42	50.09	45	-3	54.09	38	4	60.09	31	11	250.09	20	-22
PA	40.13	17	36.13	15	2	44.13	21	-4	56.129	27	-10	436.13	34	17

Table 3: SBSI Index with Varying Dummy Variable Weightings														
State	DV=1		DV = 0.001			DV = 2			DV = 5			DV=100		
	SBSI	Rank	SBSI	Rank	RC	SBSI	Rank	RC	SBSI	Rank	RC	SBSI	Rank	RC
RI	55.22	47	50.23	46	1	60.22	48	-1	75.22	48	-1	550.22	46	-1
SC	39.83	16	38.83	18	-2	40.83	13	3	43.828	8	8	138.83	6	-10
SD	21.99	1	20.99	1	0	22.99	1	0	25.99	2	-1	120.99	2	1
TN	33.04	7	30.05	6	1	36.04	7	0	45.044	10	-3	330.04	21	14
TX	31.69	6	29.69	5	1	33.69	6	0	39.69	6	0	229.69	11	5
UT	44.27	26	43.27	32	-6	45.27	25	1	48.265	15	11	143.27	9	-17
VT	52.95	44	48.95	43	1	56.95	44	0	68.95	42	2	448.95	41	-3
VA	39.49	14	36.49	16	-2	42.49	16	-2	51.49	22	-8	336.49	26	12
WA	33.21	8	30.21	7	1	36.21	8	0	45.21	11	-3	330.21	22	14
WV	51.41	40	47.42	39	1	55.41	41	-1	67.414	40	0	447.41	39	-1
WI	46.45	31	40.45	25	6	52.45	36	-5	70.445	43	-12	640.45	48	17
WY	29.13	3	28.13	3	0	30.13	3	0	33.13	3	0	128.13	3	0
Max Pos (Neg) Chg					7(6)			5(5)			12(12)			20(22)

For example, corporate income taxes range from 4.5 percent to 14.83 percent. A state, having a rate of 9.5 percent is near the middle of the range. The index variable value for this state is computed as shown in Equation 1. This procedure is used for each of the scale variables in HMW.

$$Var = \frac{10(Max - Min)}{Max - Raw} = \frac{10(14.83 - 9.5)}{14.83 - 4.5} = 5.16 \qquad (1)$$

Where *Max* is the maximum value for the variable in any state, *Min*, is the minimum value of the variable in any state, and *Raw* is the unadjusted value for the state of interest. To demonstrate the importance of the differences in weightings, the Keating Index is recomputed by standardizing the scale variables in a manner similar to HMW as shown in Equation 2.

$$Var = 1 - \frac{Max - Min}{Max - Raw} \qquad (2)$$

The difference in computation methods applied to the Keating data here are because a higher value in the HMW index indicates a preferred environment while a lower figure in Keating represents a preferred environment. The adjustments above take this difference into account. In addition, HMW set their score relative to a 0 to 10 scale while the methodology employed to re-compute the Keating Index sets the scores relative to a 0 to 1 scale, which is consistent with the original Keating work. While different in computation, the re-computation of the Keating index is consistent with the work of HMW.

The resulting rankings are presented in the first three columns of Table 4. The first column contains the original Keating rankings, the second contains the revised rankings and the third column contains the difference in rankings (Keating Revised-Keating). The difference in rankings is substantial. The changes in rank associated with the change in weighting, varied from 0 to 18 places. The individual state rankings increased by as many as 18 ranks (West Virginia) and declined by as many as 17 ranks (Arkansas). The average change in rank associated with the weighting change is 6.82 places. Again, the evidence clearly indicates the sensitivity of rankings to the methodology employed. While the HMW method for handling scale variables is different than Keating, it is not without its own concerns and has not been demonstrated to produce superior rankings. Specifically, HMW cite difficulties in dealing with states that do not have a certain tax. In addition, differing distributions of the underlying variables in the HMW study can affect the resulting rankings.

OMITTED VARIABLES

An optimal index should include all relevant variables. An entire spectrum of candidate variables can be proposed. Of course, it is not possible to model all variables that affect the business location decisions of each individual. However, two such potentially important variables are examined here. The first variable is the extent to which monopoly profits can be earned. Any number of factors can result in the ability of a firm to earn abnormal profits and these are certainly important to the desirability of an area as a business location. One such factor that can allow firms to earn abnormal profits is natural barriers to doing business. To the extent that natural barriers are present, a business may be able to demand abnormal pricing. This can be thought of much in the same way that a convenience store charges a higher price for milk than a full-scale grocery store. In such a case, the natural barrier is the distance to a full-scale grocery store. In a similar context, these barriers to doing business might be present in states like Hawaii and Alaska that have significant geographic competition issues. Any ability to extract monopoly pricing from these barriers is certainly valuable to businesses and is not measured in either of the two indices. Fleenor (1998) finds that shopping centers tend to develop in low cost localities that shared a border with a high tax locality. This effect would seemingly limit the ability of states to raise tax rates. However, in the case of Hawaii and Alaska, a low tax rate locality is not available nearby where low-tax alternative businesses can locate. Certainly the recent development of internet shopping may provide a low-tax alternative to residents of these states. However, the savings must be sufficient to offset the economies of scale in shipping costs available to large retailers.

Table 4: Levels, Rankings and Differences in Rankings							
State	Keating	Keating Revised Scale Variable	Change in Ranks	Keating with Temp	Change in Ranks	Keating w/Livability	Change in Ranks
AL	11	12	1	7	4	12	-1
AK	22	35	13	27	-5	21	1
AZ	18	6	-12	11	7	23	-5
AR	25	8	-17	20	5	28	-3
CA	46	41	-5	41	5	49	-3
CO	12	19	7	15	-3	10	2
CT	35	50	15	34	1	34	1
DE	20	15	-5	23	-3	17	3
FL	5	47	-4	3	2	7	-1
GA	23	4	-1	18	5	24	-2
HI	50	13	-10	42	8	50	-1
ID	29	49	-1	29	0	26	0
IL	13	21	-8	17	-4	13	3
IN	15	23	10	19	-4	15	0
IA	41	24	9	43	-2	37	0
KS	32	38	-3	30	2	29	4
KY	28	27	-5	26	2	33	3
LA	21	30	2	14	7	27	-5
ME	48	20	-1	49	-1	47	-6
MD	24	45	-3	24	0	18	1
MA	30	36	12	31	-1	25	6
MI	9	39	9	13	-4	9	5
MN	49	22	13	50	-1	43	0
MS	10	44	-5	10	0	14	6
MO	19	7	-3	21	-2	19	-4
MT	38	14	-5	45	-7	38	0
NE	34	25	-13	33	1	32	0
NV	2	34	0	2	0	2	2
NH	4	1	-1	8	-4	4	0
NJ	36	9	5	36	0	36	0
NM	43	37	1	40	3	45	0

Table 4: Levels, Rankings and Differences in Rankings							
State	Keating	Keating Revised Scale Variable	Change in Ranks	Keating with Temp	Change in Ranks	Keating w/Livability	Change in Ranks
NY	45	33	-10	46	-1	46	-2
NC	37	51	6	32	5	39	-1
ND	33	29	-8	37	-4	35	-2
OH	39	31	-2	39	0	40	-2
OK	27	42	3	25	2	31	-1
OR	42	16	-11	44	-2	42	-4
PA	17	28	-14	22	-5	16	0
RI	47	32	15	48	-1	48	1
SC	16	48	1	12	4	20	-1
SD	1	5	-11	1	0	1	-4
TN	7	2	1	5	2	8	0
TX	6	17	10	4	2	5	-1
UT	26	10	4	28	-2	22	1
VT	44	11	-15	47	-3	41	4
VA	14	43	-1	16	-2	11	3
WA	8	18	4	9	-1	6	3
WV	40	26	18	38	2	44	2
WI	31	40	0	35	-4	30	-4
WY	3	46	15	6	-3	3	1
Max Pos (Neg) Chg			18(17)		8(7)		6(6)

Another notably absent measure from both the HMW and Keating studies is the amount of benefits offered by a state. While the tax burden of conducting business in each state is measured in some detail in both studies, the amount of benefits received by businesses from the state is not included in either index. The presence of a tax is only detrimental to a business to the extent that the business does not receive equally valuable benefits from the state. Certainly, the quality of roads, state funded business support services like the Small Business Development Centers, educational facilities, quality of life and educational level of the work force are all important in determining the optimal location to conduct business. Moreover, the difficulty in obtaining services from a state is an important measure. Interestingly, Keating includes the number of bureaucrats in a state as a measure of the regulation in a state that is viewed negatively. An alternative interpretation of this measure is the extent to which valuable services are provided to businesses and

consumers by the state. Using this interpretation, the number of bureaucrats would be a positive consideration for business as opposed to a negative consideration.

To demonstrate the effect of an omitted variable, the Keating Index is recomputed independently incorporating two additional measures. The results are presented in Table 4. The two additional measures focus on the quality of life in a state. One measure of the quality of life in a given state is the Most Livable States Index published by the Morgan Quinto Press (Morgan Quinto Press, 2003). This index incorporates several variables in determining the quality of life in a given state. The index has a value that ranges from 1 to 50 with 1 being the most desirable and 50 being the least desirable. To incorporate the Most Livable States Index into the analysis, the level of the index was divided by 10, to adjust the scale of the index. The resulting variable was then incorporated into the Keating index, in its raw form. Thus the contribution to the index level ranged from .1 units to 5 units. The results are presented in the last set of columns in Table 4. The largest and smallest changes in rankings were 6 ranks. The average change in rankings was 2.08 ranks.

Next, a subset of the Most Livable States index is incorporated into the Keating Index. The subset data that is incorporated here is the average daily temperature for the state. Indeed, the average daily temperature has a significant impact not only on the quality of life but also on the cost of conducting business. Anyone who has lived through a winter in Alaska can attest to the additional costs associated with living and conducting business in an environmentally hostile location. Due to the magnitude of the raw data, index values were assigned to the various temperatures. States with a mean temperature above 72 degrees were assigned a value of 0, 66-72 degrees, 1.5, 60-66 degrees, 3, 54-60 degrees, 4.5, 48-54 degrees, 6 and below 40 degrees, 8. The resulting variable is incorporated into the Keating rankings, equally weighted with the other index variables. The resulting rankings are presented in the last columns of Table 4. The largest rank change occurred for Hawaii that moved up by 8 ranks as a result of incorporating the temperature measure. The largest decline was 7 places by Montana. The average rank change was 2.76 places.

CONTRIBUTION OF EACH VARIABLE TO THE INDEX

A final demonstration of issues in aggregating data is provided by computing the contribution of each variable contained in the index to the final index level and ranking. To determine the contribution of each variable, the average value of each variable incorporated in the index is computed. Next, the average level of the index across the states is computed. Finally, the portion of the overall average index that is determined by each variable is computed by dividing the average for a given variable by the overall average. To demonstrate the computations, suppose that the average level of a variable contained in an index across all states is 10 and a second variable in the index is 15. The average of the final index level, incorporating all variables is 100. Then, the two variable contributed 10 and 15 percent respectively to determine the final index value. This contribution percentage is completed for each variable in the original Keating index along with each

of the modifications made to the Keating Index as discussed above. The results are presented in Table 5.

For the original Keating SBSI Index, the percentage of the final index determined by a single variable ranges from 15.32 percent to 0.31 percent. The corporate tax rate is the largest contributor to the index, accounting for 15.32 percent of the final ranking and 2.3 percent more than the second highest variable. Interestingly the sales/excise tax accounts for 7.54 percent of the index, less than ½ of the weight assigned to the corporate tax rate. The appropriateness of this weighting system is not clear, a full analysis of which is beyond the scope of this paper. However, on one side of the coin, Agostiniand Tulayasathien (2001) find that foreign direct investment is sensitive to states' corporate tax rates. On the other side of the coin, it can certainly be argued that the corporate tax rate is much less important than the personal tax rate. Indeed if a firm organizes as a partnership, or using any other organizational form that is not subject to corporate tax, the corporate tax rate is irrelevant. To that effect Goolsbee (2002) found that the relationship between corporate and personal income taxes plays an important role in the amount of business done by corporations versus partnerships and sole proprietorships.

When the dummy variable are set to 0 and 0.001, the contribution of the dummy variables to the index is substantially reduced, in some case contributing less than 1/10th of 1 percent to the overall index. When the dummy variables are set to 0 and 100, the dummy variables contribute substantially to the index. Indeed, in this case, one dummy variable is responsible for more than 19 percent of the total index. When the scale variables of the Keating Index are standardized, the weightings of the variables become much more uniform, though substantial differences still remain. Finally, the addition of the two new variables, despite contributing as much as 10.55 percent to the overall index, does not dramatically change the contribution of any other variable.

The average level of the index, the standard deviation of the index level and the coefficient of variation are presented at the bottom of Table 5. As expected the average level of the index increases with the level of the dummy variables and the addition of new variables. The coefficient of variation remains relatively constant across the analysis with the exception of the revised scale variable computation and DV = 100 computations. Overall, the results suggest that the rankings are highly sensitive to both dummy variable and scale variable specification, but less sensitive to the addition of a new variable.

Table 5: Contribution of Variables to the Index

Variable	Keating	Keat ing DV = 0.001	Keating DV = 2	Keating DV = 5	Kea ting DV= 100	Keating Revised	Keating w/ temp	Keating w/ livability
Top Personal Income Tax Rate	11.99	12.87	11.23	9.42	1.55	6.18	10.73	11.33
Top Capital Gains Tax Rate	10.95	11.75	10.25	8.60	1.41	5.69	9.80	10.35
Top Corporate Income Tax	15.29	16.41	14.32	12.02	1.97	7.81	13.68	14.45
Individual Alternative Minimum Tax	0.55	0.0006	1.04	2.17	7.13	2.82	0.49	0.52

Table 5: Contribution of Variables to the Index								
Variable	Keating	Keat ing DV = 0.001	Keating DV = 2	Keating DV = 5	Kea ting DV= 100	Keating Revised	Keating w/ temp	Keating w/ livability
Corporate Alternative Minimum Tax	0.32	0.0003	0.60	1.27	4.16	1.65	0.29	0.30
Inflation Indexed Pers. Income Tax Rates	1.52	0.0016	2.85	5.97	19.62	7.76	1.36	1.44
Property Tax as a Share of Personal Income	6.78	7.28	6.35	5.33	0.87	5.40	6.07	6.41
Sales, Gross Receipts, and Excise Taxes.	7.55	8.11	7.07	5.94	0.97	6.17	6.76	7.14
Death Taxes	1.06	0.0011	1.98	4.16	13.67	5.41	0.95	1.00
Unemployment Tax Rates	5.94	6.38	5.56	4.67	0.77	3.31	5.31	5.61
Health Care Cost Index	2.26	2.43	2.12	1.78	0.29	2.17	2.02	2.14
Index of State's Electricity Cost	2.32	2.49	2.17	1.82	0.30	3.39	2.07	2.19
Workers' Compensation Costs	2.53	2.72	2.37	1.99	0.33	2.36	2.26	2.39
Total Crime Rate per 100 residents	9.21	9.89	8.62	7.24	1.19	3.66	8.24	8.70
Right to Work Sate	1.29	0.0014	2.42	5.07	16.65	6.58	1.15	1.22
Number of Bureaucrats	12.99	13.94	12.16	10.21	1.68	4.38	11.62	12.27
Super majority vote to change a tax rate.	1.71	0.0018	3.19	6.70	22	8.70	1.53	1.61
Internet Sales Taxes	0.37	0.0004	0.69	1.45	4.76	1.88	0.33	0.35
Gas Tax	0.54	0.57	0.50	0.42	0.07	6.33	0.48	0.51
Excess State Minimum Wage	0.73	0.78	0.68	0.57	0.09	1.86	0.65	0.69
State Legal Liability Cost Index	4.08	4.38	3.82	3.21	0.53	6.51	3.65	3.86
Temperature Index							10.55	
Livability Index								5.54
Mean Index Level	43.40	40.44	46.35	55.23	342.80	8.51	48.52	45.94
Standard Deviation	8.37	7.57	9.34	12.83	148.23	2.25	8.77	8.37
Coefficient of Variation	0.1923	0.1872	.2015	0.2323	0.4324	0.2639	0.1808	0.1822

CONCLUDING COMMENTS

In this paper the methodologies incorporated into ranking systems are examined. Specifically, state ranking systems are analyzed. The methodologies utilized by three state ranking systems are examined. We find that the final rankings are highly sensitive to variable measurement and the methodology used to aggregate the data. Specifically, it is demonstrated that the values assigned to dummy variables can change the resulting rankings by as much as 22 ranks! It is further

found that the methodology used to incorporate scale variables into the analysis can change the rankings by 18 ranks or more. The paper also analyzes the impact of incorporating additional variables. The two added variables are the Most Livable States Index, published by the Morgan Quinto Press and a subset of this data, the mean temperature of the state. Incorporating a single additional variable into a ranking system which aggregates 21 variables is found to change the final rankings by as many as 8 places. We also argue that studies based on the tax costs of doing business should incorporate measures of the services provided by the state to the businesses.

Ranking systems have been developed for many items of interest in the economy. These rankings have huge financial implications for the economy. Very little academic research has addressed the issue of how these rankings are developed. This paper represents a first pass at examining this issue. The paper is not intended as a criticism of the previous research discussed here. Indeed, the prior research in the area is well done. Substantial additional research is necessary in this area that should help developers and users better design and use these ranking systems. Of great value would be the identification of those methodologies that provide the best and most consistent rankings and further examination of the extent to which various methodologies impact the resulting rankings.

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ACHIEVING COMPETITIVE ADVANTAGE IN DEPARTMENTS OF ACCOUNTING: MANAGEMENT PRINCIPLES AND THE BALANCED SCORECARD

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ABSTRACT

This paper presents and discusses a series of principles for managing departments of accounting. We categorize these principles as guiding, resource management, and performance measurement, and combine them with the balanced scorecard to provide a framework for planning, managing, and evaluating individual and departmental performance. The framework is useful to department chairs and faculty for developing policies and practices designed to promote an integrative approach to the primary concerns of teaching, research, service, and development. In addition, this framework promotes managing departments as a portfolio of assets instead of discrete resources and directs the attention of department chairs and faculty to consider potential areas of strategic advantage.

INTRODUCTION

The purpose of this paper is to present and discuss a series of management principles and application of the balanced scorecard for managing academic departments of accounting. These principles, when combined with a balanced scorecard approach to performance measurement, provide a framework that links teaching, research, service, and development activities. If successfully employed, this approach may lead an accounting department to achieve competitive advantage in efforts to attract students, faculty, and external support.

Several important factors make departments of accounting successful. To begin with, successful efforts to respond to the demands placed on academic departments of accounting lie in part to good management, leadership, and planning. Also important are a clear understanding of the department's competitive environment, sources of particular strength and weakness, and the value of collaboration, patience, and persistence. Frequently overlooked in the planning process are efforts to link the department's primary missions in teaching, research, and service and development activities. Success in integrating these efforts leads to efficiency, higher levels of productivity, and successful relationships with constituents.

Academic organizations often neglect the development of management skills and capabilities. For many years higher education operated in a relatively stable environment that changed slowly at a pace determined by faculty. Many individuals inside and outside of academia consider that higher education either does not change or only changes very slowly. However, we live in a world where demands for organizations to be lean, nimble, and relevant are greater than ever before. This may tempt some academic leaders to push the rate of change, which can produce disastrous results if faculty are not ready. Yet departments that fail to respond to emerging areas of knowledge, demographic changes in student populations, technological developments, demands by employers, and other societal expectations may endanger their future or squander potential sources of competitive advantage.

Many individuals have written numerous articles about strategic planning and leadership in academic institutions (Edge 2004; Villano 2004; Hoppe and Speck 2003). Other papers focus on management and planning at the college or department level (Hesel 2004; Settoon and Wyld 2004; Karentz-Andrews 2001; Fountoukidis et al. 1995). This group of articles addresses the need to plan and the processes necessary to generate successful plans. Other authors are concerned with planning for a narrow aspect of departmental operations such as development, curriculum, or research (Rooney et al. 1999; Epper 1998; Sark et al. 1997; Worth 1993; Campbell and Flynn 1990). However, these works make no attempt to treat the principal efforts of academic units in a cohesive manner.

We organized this paper into five major sections. In section one we discuss the changing academic environment for accounting departments and the need to plan. Section two outlines important concerns common to accounting departments and presents reasons why leaders should focus on formulating management strategies that help support departmental efforts to meet demands from their customers. The third section presents a series of management principles that focus on faculty and academic leadership activities that support good planning. In section four the balanced scorecard approach to evaluating individual and departmental performance is presented. Section five shows the benefits to an accounting department from employing these principles and the balanced scorecard to managing its resources.

CHANGES IN THE ACADEMIC ENVIRONMENT

Academic institutions are experiencing pressure from stakeholders (government, employers, students, etc.) to change (Davies 2001). Change is being encouraged in several areas. There are calls from government and the public to improve the efficiency of higher education in response to increased tuition costs. Over the past 20 years, state government financial support for higher education has fallen steadily while productivity has improved in virtually every sector of the economy except higher education (Hooker 1997; also see http://www.nea.org/he/fiscalcrisis/ for state-by-state details of funding and college tuition increases). Typically, universities react by

seeking alternative sources of funding. Furthermore, there is increasing pressure on universities to respond to labor markets that demand more relevant education designed to make graduates productive earlier in their careers.

Finally, alternative education providers have emerged to compete with traditional universities and course delivery methods. For-profit institutions are leading the way in applying technology to deliver education to reach student customers previously unable to attend traditional, residential campuses. These providers adopt business practices to control costs and achieve profitability while traditional universities continue to operate on a model where revenue determines cost. This model perpetuates an environment that, thus far, is highly resistant to change, not customer responsive, and does a poor job of managing resources, versus the private sector.

These facts suggest consideration of alternative approaches to managing academic operations and resources. Generally, stakeholders are asking management in academic organizations to operate in a more business-like fashion to satisfy customers and control costs in order to compete and be successful. Albrecht and Sack (2000) discuss reasons for restructuring accounting education. The Institute of Management Accountants, The American Institute of Certified Public Accountants, and American Accounting Association each issued several warnings about the need to change accounting education (IMA 1999, 1996, 1994; AICPA 1998; AAA 1986). Barsky et al. (2003) illustrate how to use KPMG's Business Measurement Process to identify and manage the major risks affecting accounting education at the college and university levels. Although the authors of these papers focus primarily on curricular issues, they imply that how accounting department management must change. Academic departments need to develop more thoughtful and proactive approaches to planning their activities and managing their resources.

MANAGEMENT ISSUES FOR DEPARTMENTS OF ACCOUNTING

There are two important management issues facing departments of accounting. First, managing an academic department is a complex undertaking and the source of academic leaders has traditionally been individuals who either did not seek leadership roles when entering academia or do not have management experience outside of academia (Hoppe 2003; Land 2003; Speck 2003). Second, there is growing pressure to implement change in academic management in response to demands from external stakeholders (Petrides et al. 2004; Alexander 2000). These pressures come in the form of cuts in funding from government, dissatisfaction from government and employers about the quality of graduates, faculty teaching evaluation systems that lack objective measures in favor of student evaluations of teaching that may promote grade inflation (see Koon and Murray 1995). The results are graduates that do not satisfy our customers, parents paying higher tuition (Sahadi 2004), escalating costs for faculty in the face of increasing demand and decreasing supply, and a growing number of high school graduates matriculating to colleges and universities.

Managing academic departments is complex, multidimensional, and critical to the success of colleges and universities. There is extensive research on the roles of academic department chairs in colleges and universities. Gmelch and Miskin (1993), Seagren (1994), and Lucas (2000) report on the multi-part role of midlevel academic managers in higher education. Tucker (1993) lists fifty-five duties performed by department chairs. The duties performed by department chairs are important to academic institutions. Pettitt's (1999) research confirms that department chairs are critical to the effectiveness of a college in carrying out its mission and achieving its vision for the future. Lucas (2000) argues that the increasing emphasis on accountability and performance-based management, including change leadership and high-performance teams, contributes significantly to leadership at the department chair level in post-secondary education.

Filan and Seagren (2003) discuss six critical components of leadership; 1) understanding self, 2) understanding transformational leadership, 3) establishing and maintaining relationships, 4) leading teams, 5) leading strategic planning and change, and 6) connecting through the community. The authors argue that integrating the roles and responsibilities of academic leaders within these six issues provides a framework for understanding the knowledge and skills necessary to midlevel higher education leadership.

Many outside of academia, and some within, regard the academic model as anachronistic, particularly in the case of business schools, and in dire need of overhaul (Tierney 1998; Keller 1998; Bok 1994; Peirce 1991; Goldberg and Lindstromberg 1969). However, at least three factors mitigate efforts to change management and operational practices. The first is a lack of individuals within academia who want to assume leadership roles. Many, perhaps most, individuals who enter academic life do so because of their interests in teaching and research rather than any desire to assume administrative responsibilities. Second, few academics who eventually aspire to academic leadership positions have management experience (especially outside of academia, thus serving to perpetuate the existing model) and are prepared to lead change. This makes it difficult for academic institutions to secure good leaders because individuals don't have experience with alternative models even as pressures increase for universities to behave in a more business-like fashion. Third, even if individuals with management experience rise to leadership positions, they may find that academic leadership is unlike that in the business world and, therefore, that their prior training and experience is not relevant.

"The Three Wants"

Fundamentally, all academic units want three things in various combinations; 1) more and/or "better" students, 2) more and/or "better" faculty, and 3) more external support. Accounting departments usually want students with greater academic ability. Periodically, departments seek to increase enrollments, however recent accounting enrollment growth at some universities may cause departments to limit enrollment in the coming years (Gullapalli, 2004). Research is often the

measure of "better" faculty, although this criterion is arguably not more important than good teaching. Frequent advertisements for faculty positions that make statements emphasizing research productivity as a requirement for new hires support this view. Finally, departments of accounting typically seek external support for professorships, scholarships, internships, and unrestricted gifts. As a prelude to developing a management strategy, the department must ask several questions. Answers to these questions provide a starting point for determining how a department will approach satisfying "the three wants."

> *Who are we or who do we intend to become? The answer to this question helps establish your identity with your constituents and your mission.*
>
> *What important problems and opportunities do we face? The answer to this question identifies characteristics of your environment that may influence development of management practices and plans. This is the opportunities and threats of your SWOT analysis.*
>
> *What options exist for alternative approaches to work and performance measurement? This question addresses the willingness of faculty and administrators to modify current practices or undertake creative efforts to improve competitive position. Here you must consider the strengths and weaknesses of your SWOT analysis.*
>
> *Who is willing to help and how? The answer to this question identifies individuals who are willing to contribute and in what specific ways.*

Establishing goals and objectives is the first order of any strategic plan, followed by performance measures constructed to evaluate results. Traditionally, academic managers govern on a collegiate basis, focusing primarily on the efforts and performance of individual faculty. However, a manager (department head or chair), in order to be successful, must manage the collective group of assets known as the faculty and staff. Thus, at least some measures of success must focus, not on the individuals, but rather on the department as a whole. As a result, we propose the following management principles to guide departments developing goals, measurable objectives, and performance measurements.

MANAGEMENT PRINCIPLES FOR DEPARTMENTS OF ACCOUNTING

The focus of management in academic departments has historically been on faculty activities. The functions considered are narrow, short-term, and individual. Academic leaders often do not manage the department as a collection of resources (faculty, staff, facilities, financial, etc.) to achieve clear, customer-oriented objectives. To this end, we present and discuss three categories of management principles, labeled guiding, resource management, and performance measurement to clarify specific policies and practices in the management of an academic department of accounting. These principles are adapted from Rhoades (2001).

Guiding Management Principles (GMP)

We present guiding management principles in order to lead departments to achieve their long-term strategic goals. Guiding management principles relate to the mission and vision of the department, i.e., what the department wants to become.

GMP#1: Emphasize broad, long-term, interdisciplinary issues that support fundamental educational, social, and economic functions of the college/institution.

Managing to achieve short-term efficiencies and effectiveness, although common, often is counterproductive. Reliance on government support, the relatively brief periods of time that department chairs serve, and the transitory nature of accounting faculty leadership promote a short-term focus. Accounting departments have the potential to help the economy adapt to the challenges of the international economic environment and educate students to be well-rounded, competent citizens in addition to capable technicians who can close a business deal or produce an accurate report. A goal of managing for efficiency in the short run and in the face of declining state support for higher education may lead a department away from basic functions of instruction and access.

GMP#2: Consult important constituents within larger populations about performance improvement efforts beyond general categories such as "students," "the profession," and "business."

Accounting departments serve multiple constituencies. A guiding principle for managing departments of accounting should include identifying important stakeholders. The interests of faculty frequently determines how institutions are organized. Other important stakeholder groups are students, employers, the public, and the subgroups within each of these categories. Departments segregate students between those who are accounting majors and those who are not. A large percentage of accounting students, primarily in first and second year courses, are not accounting majors. This fact suggests an approach to teaching accounting that places greater emphasis on accounting as a tool for other disciplines. Employer groups include small and large companies, small and large CPA firms, and government. The interests of these groups differ greatly. The public also has various views on the understanding of accounting and their interest in it for economic development.

GMP#3: Consider teaching, research, service, and development activities as related efforts to achieve overall departmental goals.

Academic management and faculty often regard teaching, research, service, and development as independent efforts in departments of accounting. Faculty members' primary responsibilities are

teaching and research while department chairs are principally responsible for development and service activities. However, departments that characterize these efforts as integrated activities and align appropriate faculty with significant responsibilities for development and service may prove more successful in the long run.

GMP#4: *Know that every action results in a reaction and, therefore, potentially triggers counterproductive responses and outcomes.*

There are interactions among faculty and departmental responsibilities. Faculty many respond to incentives/directives in ways that lead to unintended and undesirable outcomes. For example, encouraging greater student interactions with faculty may enhance student learning but reduce faculty research output. College or department objectives to encourage faculty/departments to engage in consulting activities or professional development programs may result in detrimental impacts on teaching and research activities.

GMP#5: *Focus on development activities that support established, long-term goals of the department.*

Gift opportunities sometimes require accounting departments to consider initiatives that are inconsistent with established objectives or areas of strength and may take the department in unsustainable directions. One characteristic of good management is clear direction. The development portion of the plan should include specific areas of emphasis such as equipment replacement, chaired professorships, or unrestricted gifts. Accounting department management must refuse gifts that do not support established goals. Furthermore, knowing what you need before you ask is a key to successful development efforts.

Resource Management Principles (RMP)

Resource management principles provide guidance for departments to manage their largest asset, their people—faculty and staff. Considering the collective efforts of the department's resources may yield greater results than measuring only individual efforts.

RMP#1: *Focus on encouraging improved performance and quality outcomes of the department instead of focusing just on controlling individuals' activities.*

Good academic management yields improved outcomes in all areas of academic performance. However, improved outcomes are rarely the result of attempts to manage time allocations between teaching, research, and service. Frequently, management devotes too much effort to directing faculty teaching loads and contact hours at the expense of teaching outcomes such

as student learning, student credit hour generation, timely graduation, and out-of-class activities. Faculty give too much attention to "counts" of research papers and too little attention is paid to quality of output, collaborative efforts with faculty in other departments, and how scholarship efforts support higher-level department goals and objectives. Finally, service is typically such a small component of faculty responsibility that it is often ignored even though selected faculty may further departmental interests to a greater degree in service than in teaching or research. Furthermore, service is often a good forerunner to development efforts. When administration gives service a larger percentage weight, faculty may share responsibility for development activities.

RMP#2: Recognize individuals' specific talents and abilities when assigning job responsibilities.

Because faculty are the department's most important resource, management must recognize their specific talents and abilities when assigning job responsibilities. Just as all of the resources of a department are managed as a portfolio of assets, faculty too possess varying mixtures of capabilities in research, teaching, service, and their abilities to connect with constituents to serve departmental needs. Continuing to treat faculty as interchangeable parts with the same assigned responsibilities is counterproductive. Some faculty are clearly better teachers than other faculty, while some faculty are clearly better at scholarship. Simply adopting the Boyer (1990) model of scholarship, that is recognizing the scholarship of discovery, integration, application, and teaching/learning, enables faculty to develop broader interests and promotes a more well-rounded faculty (as a whole).

RMP#3: Consider non-faculty employees in efforts to promote improved performance.

Non-faculty technical and professional employees are an increasingly important part of instructional and service efforts, particularly as accounting faculty salaries escalate and doctoral graduation rates decline. Failure to recognize the collective efforts of these individuals minimizes their importance to the department. In addition, academic professionals (those with no research responsibilities) often inform and contribute to faculty development activities in the scholarship of teaching/learning.

RMP#4: Encourage exploration and development of alternative models for achieving individual and departmental goals.

There are four principal components of accounting education that are controllable; time of day, content, duration of the instructional period, and mode of delivery. Education research has established that most students do not learn best by the lecture method, we continue to rely on this approach. For example, Caldwell, Weishar, and Glezen (1996) show that students in cooperative

learning sections of introductory accounting perform marginally better and have more positive attitudes toward accounting than do introductory accounting students in traditional lecture sections. Breton (1999) reports that students in a problem-based learning environment outperformed students in a traditional lecture-based environment. Lancaster and Strand (2001) find that students in cooperative learning classes perform as well as students in lecture-based courses supplemented with team activities. In addition, strict adherence to 50- or 75-minute class schedules, the semester or quarter schedule, and large class sizes may hinder teaching (and learning). Although research results are mixed, Murdoch and Guy (2002) find that small class sizes lead to higher scores. Finally, developments in instructional technology provide many options for teaching and learning including use of the Web that are underutilized. For example, Jensen and Sandlin (1992) find that students utilizing course management software had significantly higher final exam scores compared to students who were taught using more traditional materials (textbooks, lecture notes, etc.).

Performance Measurement Principles (PMP)

Performance measurement principles seek to guide what and how a department measures its success (or lack thereof). Departments must remember that the management concept "what gets measured gets done" is also applicable in academic settings.

PMP#1: *Develop performance measures that encourage cooperative behavior among department members and between departments in order to optimize the performance of multiple goals and functions instead of maximizing the performance of any single goal or function.*

The most common functions in an academic department are teaching and research. Management in most public institutions focuses on teaching, with less emphasis on research. However, departments cooperate most often in research efforts, not in the classroom. This is despite trends in business during the past decade to place greater emphasis on cross-functional activities. The concept of *process*, in contrast to function-based, management, common in the business world, is not prevalent in academia.

PMP#2: *Develop performance measures that encourage efficiencies between teaching, research, service, and development efforts in the short and long term.*

There are interactions between faculty activities that contribute to the teaching, research, service, and development objectives of the department. For example, encouraging student participation in faculty research activities improves educational outcomes. Thus, a manager should employ measures of faculty instructional performance to encourage this behavior. Departments that support instructional and research activities that provide clear links to service and development

efforts tend to yield more of these activities. In addition, innovative curricula that appeal to employers may translate to employment opportunities for graduates and service/consulting opportunities for faculty. Curriculum and research activities may also serve as ways to engage prospective donors. However, departments must evaluate these activities in the context of achieving the long-term goals of the department.

PMP#3: Tailor performance measures to the department's distinctive capabilities (e.g., teaching, research, etc.) and consider the department's roles within the college.

As with individual faculty, departments of accounting possess their own distinctive capabilities derived from the sum of faculty, staff, financial, and other resources. In addition, colleges of business make varying degrees of effort to create synergies between departments to generate competitive advantage. When developing individual and departmental performance measures, direct attention to what resources are present and how they are being utilized to promote individual, department, and college performance, as well as to the vision for the department.

PMP#4: Although it seems most "objective" for management to develop and apply uniform performance measures to all faculty members, it is unfair and counterproductive to do so.

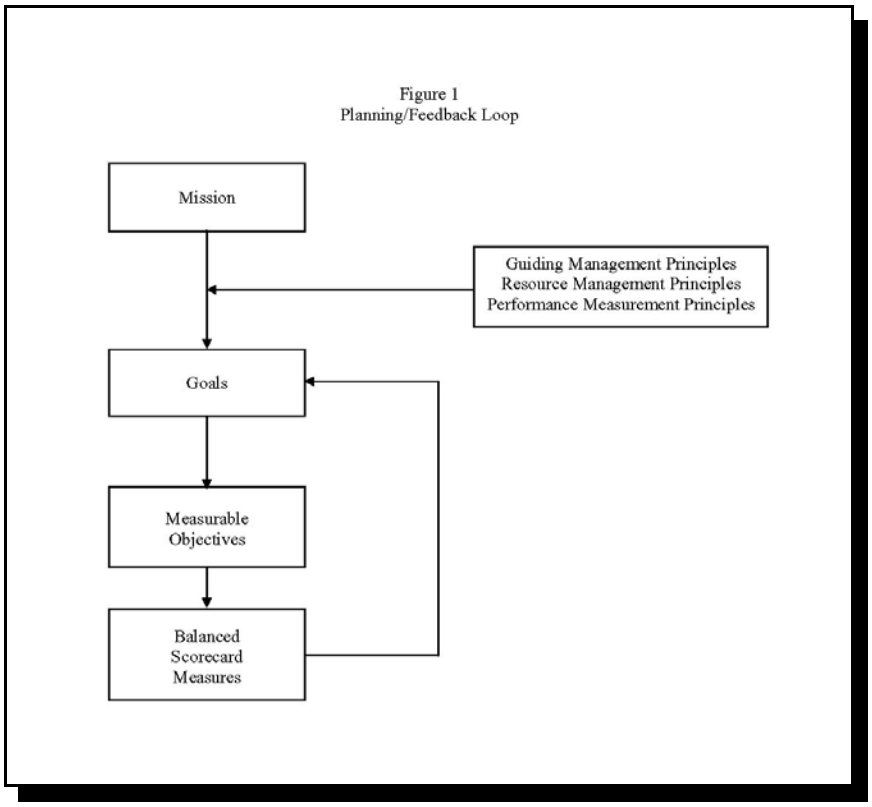
Individual faculty performance in their various responsibilities is a function of several variables including work experience inside and outside of academia, where degrees were earned and when, aptitudes for research activities, personal characteristics that impact on a person's ability and willingness to interact with students, and a variety of other factors. Applying a "one size fits all" approach dooms many individuals to failure in one or more elements of performance and may provide a disincentive to improve.

After determining its mission and adopting its guiding, resource management, and performance measurement principles, the department must develop its goals and objectives. Goals are broad, long-term aspirations while objectives tend toward specific, more short-term, and, most importantly, measurable targets. The balanced scorecard presented next measures performance against established objectives in light of the principles developed previously. Figure 1 illustrates this planning feedback loop.

THE BALANCED SCORECARD

The balanced scorecard (BSC) was originally developed by Kaplan and Norton (1992) from the notion that reliance on financial measures of performance alone is not sufficient for managing complex organizations, especially as those organizations become more customer focused and want to benefit from their knowledge-based human capital. The BSC is a strategic management system

that uses a framework and core principles to translate an organization's mission and strategy into a comprehensive set of performance measures (see Brewer 2004; Kaplan and Norton 1993, 1996).



Kaplan and Norton suggest measuring an organization's performance around four perspectives: (1) financial, (2) customer, (3) internal processes and (4) learning and growth. This framework provides a balance between short- and long-term objectives, financial and non-financial measures, and external and internal performance indicators. The scorecard also balances the results the organization wants to achieve (typically the financial and customer perspectives) with the drivers of those results (typically the internal processes and the learning and growth perspectives) (Inamdar and Kaplan 2002).

Academic institutions do not commonly use the BSC but it is growing in popularity. Stewart and Carpenter-Hubin (2001) discuss how the adaptation of the BSC to higher education, although considerable skepticism exists among academic employees regarding the quantitative measurement of university performance. However, the authors suggest that, at a minimum, the BSC is useful to academic management for moving the discussion of performance from externally driven, and

sometimes easily manipulated, ranking systems to internally driven measures of institutional effectiveness.

Armitage and Scholey (2004) report on use of the BSC in connection with the Master of Business, Entrepreneurship, and Technology at the University of Waterloo. The program is now in the early phases of the second-generation scorecard in which the organization's mission, vision, and strategies provide the foundation for developing objectives and measures in each scorecard dimension. This program adopted the balanced scorecard to help it become a self-sufficient organization.

A search of the Web reveals a number of BSC projects implemented and underway in universities. The University of Edinburgh publishes BSC measures on its Web site at http://www.planning.ed.ac.uk/BSC/0304BSC.htm. Several other universities including University of Alabama at Birmingham, University of California Berkeley, Wheaton College, and University of Wisconsin – Stout employ the balanced scorecard. The University of Akron is embarking on an effort to implement the BSC.

The guiding, resource, and performance management principles discussed earlier provide a foundation and context for developing balanced scorecard measures useful for evaluating performance of an accounting department and its members. The management principles help identify important factors and boundaries that help determine suitable measures such as the time period(s) for measuring performance, constituent groups to involve, resource limitations, degree of emphasis on cross-functional/integrative/cooperative efforts, flexibility in the workplace, and consistency between short- and long-term goals. Put another way, the management principles and related performance measures help academic management to answer the following questions;

To achieve our vision, how should we appear to our customers?
To satisfy our customers and stakeholders, at what processes should we excel?
To achieve our vision, how will we sustain our ability to change and improve?
To succeed financially, how should we appear to our stakeholders?

Measures are based on inputs (e.g., faculty, staff, services, supplies, equipment, facilities), outputs (services rendered, e.g., student credit hours, professional service/advice, training, external support), and outcomes (results of inputs and outputs, e.g., placement, retention rates, grade point averages, research productivity, gifts received). Table 1 provides examples of accounting department services, outputs, and outcomes.

Table 2 shows a generic balanced scorecard for an accounting department. Assuming that "customer" is defined broadly (guiding management principle #2), departments should monitor trends including student enrollments (majors and minors), service delivery satisfaction measured via surveys of alumni, employers, students, and parents, employment rates (where, with whom, starting salaries), statistics of entering students (high school GPA, SAT scores, etc.), and types and numbers

of employers recruiting students. By applying the BSC approach, department chairs may postulate answers to the following questions about performance:

Where performance targets reasonable?
Has performance improved?
Do stakeholders recognize that we are delivering more value?
Have we improved key services & processes so that we can deliver more value to stakeholders?
Are we maintaining our ability to learn and improve?

Table 1: Examples of Accounting Department Services, Outputs, and Outcomes

Service	Output	Outcome
Education	Accounting degree graduates	Job placement
Professional Development	Continuing Professional Education	Updated knowledge/skills, attendee maintains license to practice
Research	Published articles Conference presentations	Improved reputation Notoriety for department
Consulting	Professional advice	Satisfied customers Financial reports
Development	Public awareness of faculty/department performance	Financial gifts

Table 2: Generic Balanced Scorecard Measures

Customer Perspective Measurements Student enrollment (major, minors) Student credit hours generated (major courses, service courses) Service delivery satisfaction (alumni, employers, students, parents) Numbers of employers (type, location) Employment rates (salary, where, whom)	**Learning and Growth Perspective Measurements** Quality and quantity of scholarly activity Teaching innovations Curriculum innovations Faculty/staff turnover Assessment efforts Participation in meeting as presenters, discussants, panelists Faculty/staff taking classes
Internal Processes Measurements Curriculum development efforts Teaching portfolios Teaching evaluations Scholarship efforts published Workplace satisfaction (faculty, staff) Faculty/staff turnover Assessment efforts	**Financial Perspective** Number and dollar amount of scholarships available for students Number and dollar amount of fellowship/professorships available for faculty Number of internships available for students Number of students completing internships Amount of unrestricted giving

To measure internal processes, departments should focus on the faculty and staff's collective efforts (guiding principles #3 and #4, resource management principles #1, #2, and #3, and performance measurement principles #3 and #4). The department should monitor workplace satisfaction through surveys, employee turnover rates, and exit interviews. To acknowledge curriculum development efforts as well as the number of scholarly works resulting in publication, monitor both activities. Measure teaching evaluation trends and conduct peer reviews of teaching portfolios. Assessment efforts are also included in this category (which is ironic since the balanced scorecard is an assessment effort itself).

In the learning and growth perspective, guiding management principles #1 and #5, resource management principle #4, and performance measurement principles #1 and #2 indicate that department focus on current activities that support long-term goals. This category is by far the most difficult to measure, but is perhaps the most important for the long-term success of the department. Therefore, the department should monitor both the quality and quantity of scholarship for the department as a whole as this denotes continuing intellectual growth of the faculty. It should determine faculty (and staff) turnover and deduce reasons for it through exit interviews. To acknowledge teaching innovations (even if they are not very successful), conduct teaching seminars in addition to research seminars because change occurs only through trial and error. Document the number of faculty participating in conferences as presenters, discussants, and panelists because these efforts lead to faculty development and growth. Reward and encourage curriculum development efforts so that curriculum does not become outdated.

Finally in the financial perspective, guiding principle #5 cautions departments with regard to development efforts. Some useful measures for departments are the numbers and dollar amounts of scholarships available for students. Track the numbers and dollar amounts of fellowships or professorships available for faculty over time. Assess the number of internships available for, and used by, students. Finally, evaluate the dollar amount of unrestricted giving over time.

For each perspective, academic management must develop specific measures to ensure desired outcomes. Measures for some perspectives, i.e., internal processes and financial, will be easier to identify, ongoing and continuous. Measures for the learning and growth perspective are more difficult. Departments select strategies and implement them or not. The translation of learning and growth objectives into useful metrics is very important but beyond the scope of this paper.

CONCLUSION

Accounting departments can benefit by using the guiding, resource, and performance measurement principles we have proposed along with a *balanced scorecard* (BSC). These tools help establish clear and well-aligned mission, goals, and objectives, determine suitable measures of performance and productivity, communicate with and satisfy constituents. The scorecard consists of an integrated set of performance measures derived from the department's management strategy

and a logical result of the management principles discussed earlier. The BSC is designed to translate management's strategy into performance measures that faculty will understand and implement.

Faced with cost pressures, reductions in government support, high expectations by the public and criticism from the accounting profession, accounting educators must communicate their achievements in a clear and concise manner. Accounting departments can benefit from these management principles and a balanced scorecard approach to measuring performance because they:

- *Align the department around a more customer-focused strategy,*
- *Facilitate, monitor, and assess the implementation of an overall strategy,*
- *Provide a communication and collaboration mechanism, and*
- *Assign accountability for performance of faculty and chairs.*

In addition, balanced scorecard performance measures provide continual feedback on the strategy and promote adjustments to changing market, demographic, and competitive factors. Taken together, this approach is capable of assisting any department of accounting to improve management practices and help achieve competitive advantage.

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CORPORATE SCANDALS, THE SARBANES-OXLEY ACT OF 2002 AND EQUITY PRICES

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ABSTRACT

Recently, a series of corporate scandals has hit the U.S. financial markets. The improper accounting practices of such large and well known companies as Enron, WorldCom, Xerox, Merck, and Bristol Myers has shaken investors' confidence in the financial markets thereby shaking the very foundation of a free enterprise system. In response, the U.S. Congress passed the Sarbanes-Oxley Act and President Bush signed the Act into law on July 30, 2002. This study investigates the stock market reaction to the signing of this Act into law. We detect a significant positive stock price reaction to this event, indicating that investors believe the Sarbanes-Oxley law will provide for better corporate governance in the future.

INTRODUCTION

Recently, several corporate scandals have rocked the U.S. financial markets. Starting with the debacle of Enron, many more scandals have come to light. For example, WorldCom overstated cash flows by recording $3.8 billion in operating expenses as capital expenditure and later on admitted another $3.3 billion in revenue was improperly booked. Similarly, Adelphia Communications overstated revenues by inflating capital expenses and hiding debt. They backed a $3.1 billion loan to the Rigas family, founders of Adelphia Communications. Bristol Myers inflated its 2001 revenue by $1.5 billion, Qwest communications admitted that it incorrectly accounted for $1.3 billion in sales and will restate results for 2000-2002, and Xerox misstated financial results for 5 years boosting income by $1.5 billion and is restating financials dating back to 1997 (see Patsuris, 2002 for the scandal sheet). A sample of the well publicized, high profile cases are shown in Table 1. These are all well known large public companies. Their improper accounting practices and, in some cases fraudulent reporting, has shaken investors' confidence in the stock market.

In order to improve corporate governance and restore investors' confidence in the stock markets, President Bush signed into law the Sarbanes Oxley Act on July 30, 2002. This Act contains the most far reaching reforms of American business practices since the time of Franklin Delano Roosevelt (Miller and Pashkoff, 2002). The purpose of this study is to investigate the stock market reaction to the passage of this Act into law.

Although, there have been numerous articles written on the Sarbanes-Oxley Act, no rigorous econometrics investigation of the stock market reaction to the passage of Sarbanes–Oxley Act has appeared in the literature to date. Since the passage of the Act into law introduces sweeping reforms in corporate governance, this type of econometrics study enhances the Finance literature.

Table 1: Recent Corporate Scandals

Company	When Scandal Went Public	Allegations
Adelphia Communications	Apr-02	Founding Rigas family collected $3.1 billion in off-balance-sheet loans backed by Adelphia; overstated results by inflating capital expenses and hiding debt.
AOL Time Warner	Jul-02	As the ad market faltered and AOL's purchase of Time Warner loomed, AOL inflated sales by booking barter deals and ads it sold on behalf of others as revenue to keep its growth rate up and seal the deal. AOL also boosted sales via "round-trip" deals with advertisers and suppliers.
Bristol-Myers Squibb	Jul-02	Inflated its 2001 revenue by $1.5 billion by "channel stuffing," or forcing wholesalers to accept more inventory than they can sell to get it off the manufacturer's books
Duke Energy	Jul-02	Engaged in 23 "round-trip" trades to boost trading volumes and revenue.
Enron	Oct-01	Boosted profits and hid debts totaling over $1 billion by improperly using off-the-books partnerships; manipulated the Texas power market; bribed foreign governments to win contracts abroad; manipulated California energy market
Global Crossing	Feb-02	Engaged in network capacity "swaps" with other carriers to inflate revenue; shredded documents related to accounting practices
Halliburton	May-02	Improperly booked $100 million in annual construction cost overruns before customers agreed to pay for them.
Kmart	Jan-02	Anonymous letters from people claiming to be Kmart employees allege that the company's accounting practices intended to mislead investors about its financial health.
Merck	Jul-02	Recorded $12.4 billion in consumer-to-pharmacy co-payments that Merck never collected.
Qwest Communications International	Feb-02	Inflated revenue using network capacity "swaps" and improper accounting for long-term deals.
Tyco	May-02	Ex-CEO L. Dennis Kozlowski indicted for tax evasion. SEC investigating whether the company was aware of his actions, possible improper use of company funds and related-party transactions, as well

Table 1: Recent Corporate Scandals		
Company	**When Scandal Went Public**	**Allegations**
		as improper merger accounting practices.
WorldCom	Mar-02	Overstated cash flow by booking $3.8 billion in operating expenses as capital expenses; gave founder Bernard Ebbers $400 million in off-the-books loans.
Xerox	Jun-00	Falsifying financial results for five years, boosting income by $1.5 billion
Source: Patsuris, P. (2002) The Corporate Scandal Sheet, www. Forbes.com, August 26, 2002		

SARBANES-OXLEY ACT OF 2002

This Act significantly changes federal regulation of public company corporate governance and reporting obligations, and tightens accountability standards for directors, officers, auditors, securities analysts and legal counsel. The Act has eleven provisions (titles) and impacts many of the parties involved in capital formation process - management, auditors, accountants, security analysts, attorneys and regulators. Its key provisions are:

- establishes Public Company Accounting Oversight Board (PCAOB). The PCAOB is an independent, nongovernmental and non-profit organization and its purpose is to oversee the audits of public companies,
- imposes specific requirements for audit committee. The audit committee must consist solely of independent directors,
- CEO/CFOs must certify financial statements stating that the reports fairly present the company's financial and operating results. Penalties can be up to $5 million and/or up to 20 yrs in prison for false certification,
- prohibits loans to executive officers,
- requires real-time disclosure of information useful to investors and requires more detailed financial information and other disclosures in SEC filings,
- changes the deadline for insiders to report trading in company's securities to within two business days of the transaction,
- requires issuers to review their relationship with their auditors to ensure continued independence,
- imposes more stringent rules for U.S. attorneys,
- protects whistleblowers, and
- imposes sanctions and penalties on violators of the provisions of this Act.

IMPLICATIONS FOR THE STOCK MARKET

For a free market economy to work properly, investors, who are the suppliers of capital, must have trust and confidence that capital markets are functioning in an efficient and ethical manner. But the spate of recent corporate scandals has eroded public confidence in the system. As one scandal after another unfolded, it was revealed that many of the key players in the market - corporate executives, auditors, lawyers, security analysts and regulators were either engaged in unethical behavior and/or outright fraud or were lax in carrying out their responsibilities.

As can be seen from the provisions, Sarbanes-Oxley Act attempts to influence corporate executives' behavior by imposing new regulations and punitive measures in cases of non-compliance in order to improve corporate governance and restore investors' confidence in the stock market. Specifically, it requires companies to divulge detailed information about company activities in real-time, certify the veracity of financial reports, set up independent audit committees, and also provides for severe penalties for any fraudulent activities (Leeds, 2003 and Guerra, 2004). Hence, the passage of this act into law should have a positive impact on stock prices.

Critics, on the other hand argue that the recent examples of corporate fraud do not justify a new set of regulations. They maintain that federal regulation is not the answer, that the financial markets have mechanisms to correct such practices. Additional regulations simply add layers of bureaucracy and the cost for complying is significant. Further, they argue that this Act may change the risk taking behavior of honest managers, which is so important for the growth and success of a company (Rebistian, 2002 and Morgan, 2003). Although, this viewpoint has some merit, we argue that the intended impact of Sarbanes-Oxley on corporate governance, auditing, and management accountability far outweighs the burden it imposes on companies. Hence, the passage of this Act into law should have a net positive impact on the stock market.

LITERATURE REVIEW

The literature review consists of two parts: the first part consists of studies that measure stock price reactions to various events, and the second part consists of articles on the Sarbanes-Oxley act. The finance literature is replete with event studies, such as changes in dividend policies, stock splits, changes in accounting rules, mergers & acquisitions, changes in tax laws and regulatory practices. Since event studies have become so standard in finance literature, we will review only a few of them here.

Khurana (1991) investigates the stock price reaction of firms to the adoption of SFAS No. 94, which requires firms to consolidate all majority-owned subsidiaries, including foreign subsidiaries and subsidiaries with heterogeneous operations. They report a negative stock price reaction to the adoption of this rule. Similarly, Espahbodi, Strock, and Tehranian (1991) study the impact of SFAS No. 106 on equity prices and report a negative stock price reaction. SFAS 106

requires companies to use the accrual method of accounting for nonpension postretirement benefits. Beatty, Chamberlain and Magliolo (1996) study the impact of the adoption of SFAS 115 on equity prices of bank holding companies and insurance companies. This rule requires the use of fair value accounting for some categories of investment securities and requires that unrecognized gains and losses on these securities be accounted for on the balance sheet. (see also, Boyd, Hayt, Reynolds and Smithson, 1993 and Mittelstaedt and Warshawsky,1993).

Numerous articles have appeared on the Sarbanes–Oxley act in the literature. The majority of these articles view this act as a positive development., but there are some critical of this Act.

Miller and Pashkoff (2002) argue that Sarbanes-Oxley is one of the largest reform packages in corporate governance since Franklin D. Roosevelt's New Deal. They focus on provisions most important to accounting companies engaged in the auditing function. Highlighting the role of Public Company Accounting Oversight Board (PCAOB), they point out that this board (PCAOB) should develop guidelines detailing which public accounting companies should register with the board. Burns and Musmon, 2003 state that instead of looking at Sarbanes-Oxley as a burden, corporations should take it as an opportunity to communicate the corporate mission, values and ethics to all potential investors.

Leeds (2003) argues that the loss of investor confidence in the capital markets is because of a breach of trust by corporate managers by their unethical behavior and non- disclosure of information to investors. One of the essential requirements for functioning of a market economy is public disclosure. But the spate of corporate scandals revealed that information about the misconduct of the executives was withheld from shareholders, regulators, rating agencies and others. This revelation eroded the public confidence in the functioning of financial markets. The passage of the Sarbanes-Oxley act should help the markets function properly.

Guerra (2004) states that the cause of the investor confidence crisis is lax corporate governance processes. Sarbanes-Oxley is an attempt to correct this problem. He urges regulators to strictly enforce the new rules set by the Sarbanes-Oxley act. Similarly, Guerra (2004) argues that the Sarbanes-Oxley act is the response to minimize the conflict of interests in the process of issuing and marketing securities. They argue that this reform package is based on fostering integrity, independence, transparency, and accountability.

But there are some articles critical of the Sarbanes-Oxley act. For example, Ribostein (2002) argues that new corporate regulations are not the answer to the recent occurrences of corporate frauds. New regulations will simply add significant direct and indirect costs by fostering distrust and bureaucracy in firms. Although, imperfect, market based approaches are more efficient and effective in enhancing corporate governance. Similarly, Morgan (2003) critique the provisions of Sarbanes-Oxley directed at lawyers. They argue that provisions contained in the Sarbanes-Oxley act pertaining to lawyers are more likely to complicate than improve lawyers' conduct.

Despite numerous articles on Sarbanes-Oxley act, we did not find any empirical studies investigating the impact of this act on securities' prices. That is the focus of this paper.

DATA

The event examined in this investigation is the signing of the Sarbanes-Oxley act into law on July 30, 2002. The sample consists of companies in the Standard and Poors 500. In order to be included in the sample, companies had to have returns in the CRSP database for the 255 day control period prior to the event period and for the 30 day event period. Firms with significant events during the event period that were not related to the Sarbanes-Oxley Act were removed from the sample. The final sample includes 442 firms. Historically, the Wall Street Journal Index has been the major source of information for event dates. We also reviewed the Wall Street Journal for any other major events around this time. The only major event during that period was the ongoing debate over the Iraq war.

RESEARCH METHODOLOGY

Event study methodology is used to model stock price reactions. We employ a single factor market model using the following equation to calculate expected stock price returns:

$$r_{jt} = a_j + b_j r_{mt} + e_{jt}, \quad (1)$$

where

r_{jt}	=	the return on security j for period t,
a_j	=	the intercept term,
b_j	=	the covariance of the returns on the jth security with those of the market portfolio's returns,
r_{mt}	=	the return on the CRSP equally-weighted market portfolio for period t, and
e_{jt}	=	the residual error term on security j for period t.

The parameters of the market model were estimated during a 255-day control period that began 271 days before the announcement date and ended 16 days before the announcement date. The announcement date (Day 0) is July 30, 2002, the date that the Sarbanes-Oxley Act was signed into law by President Bush. The market model parameters from the estimation period are used to estimate the expected returns for each day of the event period. The event period begins 15 days (Day -15) before the announcement date and ends 15 days (Day 15) after the announcement date. The abnormal return (ABR_{jt}) is the difference between the actual return and the expected return. It is calculated by subtracting the expected return (which uses the parameters of the firm from the estimation period and the actual market return for a particular date in the event period) from the actual return (R_{jt}) on that date. The equation is as follows:

$$ABR_{jt} = R_{jt} - (a_j + b_j R_{mt}), \quad (2)$$

where each of the parameters are as previously defined. The average abnormal return for a specific event date is the mean of all the individual firm abnormal returns for that date:

$$AR_t = \frac{\sum_{j=1}^{N} ABR_{jt}}{N} \quad (3)$$

where N is the number of firms used in calculation. The cumulative average return (*CAR*) for each interval is calculated as follows:

$$CAR_{T_1,T_2} = \sum_{T_1}^{T_2} AR_t \quad (4)$$

We perform a Z-test to determine if the CARs are significantly nonzero. We use the cross-sectional test proposed by Boehmer, Musumeci and Poulson (1991*)*. The event study returns are normalized and a cross-sectional test is performed on the standardized residuals to determine if the abnormal returns are significantly different from zero. Boehmer, Musumeci and Poulson (1991) find this cross-sectional test is less likely to have Type I errors (i.e., rejecting the null hypothesis when the null is true) than the traditional Z-test.

FINDINGS AND CONCLUSIONS

The findings are reported in Table 2. The cumulative abnormal return (CAR) for the firms in the sample for the event window (0, +1) is 0.34% (significant at the .01 level) and for the event window (-1, +1) the CAR is 1.35% (significant at the .001 level). There appears to be some reaction to the passage of the bill in the days leading up to President Bush's signing of the Act. Given the media attention around passage of the Act, and given that President Bush indicated his intention to sign the bill into law, this is expected. In fact, the CAR for the event window (-5, 0) is 5.39% (significant at the .01 level). This translates into an annualized return of approximately 280%. The positive stock price reaction to the passage of the Sarbanes-Oxley Act is an indication that investors believe the Act will provide for better oversight of management by the board of directors and that accounting records will be more closely scrutinized by the board of directors, independent auditors, and regulators.

Table 2: Cumulative Abnormal Returns (CARs)			
Event Window	CAR	Z-stat	P-value
Day 0 to +1	0.34%*	3.22	< .01
Day –1 to +1	1.35%**	8.65	< .001
Day –5 to 0	5.37%**	27.61	< .001
Day –5 to +5	4.29%**	17.57	< .001
*significant at .01 level **significant at .001 level			

Based on the positive stock price reaction to the passage of Sarbanes-Oxley, investors don't seem to be concerned about the financial costs borne by corporations to comply with the Act or by the restraints that may be placed on managers by boards or the reduced risk-taking by managers to avoid personal liability for their decisions. The stock price reaction indicates that investors believe the positive impact of Sarbanes-Oxley on financial reporting and board oversight outweigh the potential negative impact of increased costs to comply with the Act, reduced risk-taking by managers, and restraints that may be placed on managers by boards of directors.

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GEOGRAPHIC FOCUSED MUTUAL FUNDS: AN EMPIRICAL ANALYSIS OF THE PORTFOLIO PROPERTIES OF A HAWAII FUND

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ABSTRACT

The economies of various states and geographic areas behave differently than the U.S. economy as a whole. Because of these differences, this paper explores the potential for offering geographically focused mutual funds. Geographically focused mutual funds would allow investors to custom tailor their geographic investments, risk exposure and diversification. In this paper, the development and portfolio properties of a Hawaii based mutual fund are discussed. Hawaii is distinct in its location and has a unique blend of customs and cultures. Firms that operate in Hawaii tend to be quite different than mainland firms. Because of these differences, Hawaii firms have unique portfolio properties that are not present in mainland U.S. firms and thereby provide unique contributions to portfolios. The Hawaii mutual fund proposed here is compared to the Dow Jones Industrial Average, NASDAQ, Russell 2000, S&P 500 and Nikkei 225, over a period of 18 years. Geographic focused mutual funds, specifically in this case a Hawaii Mutual fund, are found to hold substantial promise as an investment tool.

INTRODUCTION

Many financial products have been developed to diversify portfolios and to insulate them from various risks. One such financial product, mutual funds, have been developed for many industries, sectors, types of securities and along many other lines. While closed-end mutual funds trade based on the stocks of a specific country, no known closed end-fund has been developed based on the stocks of a specific state. Moreover, no known open-end equity fund or Exchange Traded fund (ETF) follows a specific country or a specific state. In this paper we explore the desirability of mutual funds focused on firms in specific geographic areas.

Geographic focused mutual funds are of interest because the economies and fortunes of firms in various locations are not perfectly correlated. Examples of the lack of correlation between state economies are easily identifiable. A number of states are highly dependent upon a particular crop, natural resource or upon a specific industry. When the fortunes of the important sector improve or decline, the economy is disproportionately affected. The Alaskan economy boomed as a result of construction of the trans-Alaska oil pipeline. The economies of many areas have been boosted by the discovery of oil, coal or other natural resources in the area, or the construction of a major manufacturing

plant. Conversely, the economies of oil producing states were severely hurt by the drop in oil prices in the mid 1980's. The economies of tourism dependent states experienced a set back because of the events of September 11, 2001. The closure of military bases, automobile production plants or other major facilities can have severe impacts on the surrounding communities, businesses and individuals. Events that are specific to the economies of a single state or locality most certainly exist in large numbers. These differing economic prospects suggest that geographic diversification within the U.S. may have desirable risk reducing or return enhancing properties.

Individuals that might be interested in purchasing such a mutual fund include those that want to speculate on the prospects of an area, those who want to hedge an existing risk and those that wish to incorporate specific risk reduction properties into their portfolios. An investor that wishes to make a bet that the prospects of an area might improve or decline might wish to invest in the portfolio. These might include individuals that wish to bet that a major facility will be constructed or closed in the area. Individuals desiring to use the fund for hedging might include individuals that wish to hedge their own employment portfolio. Individuals with employment fortunes that are closely tied to a particular state might wish to reduce the risk associated with their employment. Still others may simply wish to diversify their portfolio.

While geographic diversification is interesting in many geographic areas of the U.S., this paper focuses on a Hawaii focused mutual fund. Hawaii is in a unique position because of its geographical location, cultural and ethnic diversity, and economic makeup. Located near the middle of the Pacific Ocean, this island archipelago bridges the vast distance between the U.S. mainland and Asia.

PRIOR RESEARCH

Many articles have addressed the effects of diversification and how holding more than one security in a portfolio can reduce risk while maintaining returns. The seminal article on the issue was written by Markowitz (1952) and has been extended by a great many authors including Sharpe (1964), Lintner (1965), Fama and French (1992) Roll (1977) and Ross (1976). A more recent body of literature finds that correlation between U.S. and foreign stock markets evolve through time (see Longin and Solnick, 1995; Campbell, Koedijk and Koffman, 2002; and Hon, Strauss and Yong, 2004).

A substantial body of literature has examined the performance of mutual funds. The evidence is mixed. Jensen (1968) examined 115 funds finding that risk adjusted returns of mutual funds are significantly lower than randomly selected portfolios having equivalent risk. Later studies have contradicted this finding however, Grinblatt and Titman (1992), Goetzmann and Ibbotson (1994) and others find positive mutual fund performance persistence and repeated winners among fund managers. Still other studies argue the validity of these findings by focusing on survivorship bias and benchmark errors (Elton, Guber, Das and Hlavka, 1993, and Cohart, 1997). Other studies examine the expenses of funds with mixed evidence on the relationship between fund expense ratios and performance (Sharpe, 1966 and Golec, 1996, Ippolito, 1989). Latzko (1999) finds that there are economies of sale in mutual

fund expense ratios up to about $3.5 billion in assets under management. Prather, Bertin and Henker (2005), consider a broader set of fund-specific factors in analyzing mutual fund performance. They consider fund popularity, growth, cost, management as well as general variables. They conclude that fund performance is related to an extensive list of specific fund and/or management variables.

Much of the literature related to closed-end mutual funds, where country specific funds are currently available, has examined the disparity between market price and fund net asset value (NAV). A number of papers have verified that the discounts are significantly different from zero and that on average the discounts are negative (Hardouvelis, La Porta and Wizman (1994), Lee, Shleiffer and Thaler (1991) and others. Many factors have been shown to explain the discounts and premiums at least in part. Bourdeaux (1973) pointed out that the discount or premium on a closed-end fund can be explained by difference in managers ability. Lee, Shleiffer and Thalor (1991) argue that noise trading and investor sentiment explain the puzzle. Others argue that the NAV does not accurately reflect the true underlying value of the closed-end fund portfolio. This can occur because the mutual fund holds letter stock that is not easily transferable (Malkiel, 1977, Lee Shleiffer and Thalor,1991), or because managers incorrectly assign values to securities where market prices are not available. Other explanations include accumulated tax liabilities Brickley, Manaster and Schallheim (1991), and the existence of fees (Gemmill and Thomsas (2002) and Cherkes (2003).

THE UNIQUENESS OF HAWAII

The uniqueness of a geographic business climate is critical for the desirability of geographic based mutual funds. In the absence of uniqueness, there would be no advantage to investing in a geographic focused mutual fund. Indeed, in the absence of uniqueness, there would be no motivation to diversify at all. Thus the analysis begins by examining the uniqueness of Hawaii.

The uniqueness of Hawaii can be seen on a number of fronts. The population mix of Hawaii is substantially different than the U.S. mainland. Nearly 42% of the population is of Asian descent, compared to less than 4% of the overall U.S. population (2000 census). The U.S. has an overall white persons population of 75.1% compared to Hawaii of 24.3%. The islands have a Native Hawaiian or other pacific islander population of just under 10% compared to the U.S. overall of only 0.10%. Indeed, Hawaii is sometimes referred to as the "melting Pot" for its diversity in ethnic back grounds. In addition, the tropical climate and unique culture of Hawaii draws tourists in large numbers. In 2003, Hawaii enjoyed 6.3 million visitors as compared to a local population of 1.2 million, making tourism one of Hawaii's main industries. Over 2.1 million of those tourists came from Japan and other Asian countries. Japanese investment in the islands is also a big part of the Hawaiian economy. In 2001 Japan had over $8.2 billion in direct investment in Hawaii in gross property, plant and equipment of non-bank affiliates (Hawaii Data Book, 2003) out of a total foreign direct investment of $9.95 billion direct investments from all foreign nations.

To further explore the uniqueness of the Hawaiian economy we compare it to the economy of the U.S. Mainland as a whole. The 1997 Economic Report of the Bank of Hawaii notes that "since the early 1990s, Hawaii has not participated in the economic recovery and expansion enjoyed by the US economy as a whole and especially the Western states and upper Midwest." There exists little literature regarding the correlation between Gross State Product of the various states. To confirm the differences in Gross State product, annual data on Gross State Product from 1977-1997 for individual states as well as aggregated across the 50 United States were obtained from the Bureau of Economic Analysis website. While more recent data is available, because of a methodology change, this data is not compatible with the more historical data. The BEA explicitly cautions against utilizing the two types of data in combination. Data for the Japan GDE from 1980-2001, and data on per capita income from 1952-2003 were obtained from Economagic.com. Data on unemployment from 1976-2004 were obtained from the University of Hawaii Economic Research Organization, Economic Information System.

To determine the extent of economic differences, the Pearson's correlation coefficient is computed for several combinations of series. The analysis begins by computing the Pearson's correlation coefficient between changes in GSP for Hawaii and the other states in the Union. In general, changes in the Hawaiian GSP are not highly correlated with changes in the GSP of other states. Correlations ranged from 0.00668 with Michigan to 0.73495 with California, with most correlations being in the .20 to .65 range. Changes in the Hawaii GSP were correlated with changes in the overall U.S. GSP at 0.566. Overall, the absence of correlation is rejected for 18 states and not rejected for 32 states. Generally, the Hawaii GSP is more correlated with states on the coasts of the U.S. and lest correlated with Midwest states. A full analysis of the correlations of changes in the Hawaii GSP to that of other states are presented in Table 1. The first figure in each cell is the correlation. The second figure in each cell is the p-value. *** indicates significance at the 1 percent level, ** indicates significance at the 5 percent level and * indicates significance at the 10 percent level.

Next, an examination of the correlation between changes in U.S. and Hawaii unemployment rates is completed. The correlation coefficient is found to be 0.371, significantly different from zero at the ten percent level. Changes in income per capital between the U.S. and Hawaii are correlated at 0.634, significant at the 1 percent level. The correlation between Gross State product in Hawaii and the Gross national product of Japan is 0.847, significantly different from zero at the one percent level.

Population growth also tells a story. Population data were obtained for Hawaii and the U.S. from 1952-2000 from Economagic.com. Each year from 1995 through 2001, Hawaii experienced a population growth that was slower than that of the U.S. Indeed, in 1999, Hawaii experienced a net migration outflow and throughout much of the 1990's population growth was well below 1 percent per year. The correlation between changes in the mainland population and changes in the Hawaiian population is 0.5297, significantly different from zero at the one percent level.

Table 1: Correlation Between Changes in GSP for Hawaii and Changes in GSP for Other States and the U.S.

U.S.	0.5663 0.0092***	IN	0.1945 0.4112	NE	0.3195 0.1697	SC	0.5917 0.006***
AL	0.5115 0.0212	IA	0.2111 0.3718	NV	0.5048 0.0232**	SD	0.3118 0.1808
AK	0.3410 0.1413	KS	0.4699 0.0366**	NH	0.3158 0.175	TN	0.3207 0.1681
AZ	0.3129 0.1792	KY	0.2718 0.2464	NJ	0.6296 0.0029***	TX	0.3363 0.1471
AR	0.3135 0.1783	LA	0.3174 0.1728	NM	0.1851 0.4348	UT	0.2566 0.2748
CA	0.7350 0.0002***	ME	0.5960 0.0056**	NY	0.5706 0.0086***	VT	0.6689 0.0013***
CO	0.2649 0.2591	MD	0.6213 0.0035**	NC	0.4396 0.0524*	VA	0.6558 0.0017***
CT	0.5411 0.0137**	MA	0.3999 0.0807*	ND	0.1901 0.4221	WA	0.7071 0.0005***
DE	0.4873 0.0293*	MI	0.0067 0.9777	OH	0.3369 0.1464	WV	0.3014 0.1965
FL	0.6778 0.001***	MN	0.3938 0.0858*	OK	0.3266 0.1599	WI	0.4446 0.0495**
GA	0.3279 0.1582	MS	0.3134 0.1784	OR	0.1375 0.5632	WY	0.4277 0.0599*
ID	0.2024 0.3921	MO	0.2369 0.3145	PA	0.6232 0.0033***		
IL	0.3434 0.1382	MT	0.3371 0.1461	RI	0.5519 0.0116**		

The combined evidence suggests that at least some elements the Hawaiian economy behave substantially differently than the mainland economy and in particular differently than certain states on the mainland. It is important to note that while the results frequently reject that the series are uncorrelated, the fact that the series are correlated to some degree does not mean they are perfectly correlated. Indeed, most stocks that are combined into a portfolio to reduce risk have a certain amount of correlation. The important thing, as is the case here, is that the returns are not perfectly correlated. In these instances, risk can be reduced through diversification.

DATA AND METHODOLOGY

To explore the prospects of a Hawaiian mutual fund, data is collected on Hawaiian firms. Publicly traded Hawaiian firms were identified from Yahoo Finance and a general internet search. The dataset was initially constructed with all Hawaii headquartered publicly traded firms identified as of December 2004 (Yahoo Finance). Those companies that ceased operations or that merged with larger international or US mainland companies before December 2004 were eliminated from the sample. Twenty firms were identified. Of those twenty firms, complete data were available for nine firms. These nine firms, listed in Table 2, are the basis for this study. The first column in Table 2 shows the company name, the second shows the ticker symbol, the third column the stock exchange on which the security is traded, and the fourth shows the first date for which data was available. For each firm, data on the daily closing stock prices as adjusted for stock splits and dividends were collected. The data extends from January 4, 1988 through December 30, 2004 including as many as 4,354 daily observations for each stock.

Data were also collected for the Dow Jones Industrial Average, S&P 500, NASDAQ, Russell 2000, and the Nikkei 225 for the corresponding time periods. The index data were aligned to account for non-synchronous trading by assuming the closing price on a day without trading equals the same price as the previous day. For example the Nikkei 225 is open on December 25th of each year, a day when the U.S. exchanges are closed. Finally, data on the risk free rate of interest were required. Data on the risk free rate of interest, as measured by the one-year constant maturity Treasury rate, was obtained from the Federal Reserve Bank of St. Louis.

Table 2: Hawaii Publicly Traded Firms

Company Name	Symbol	Exchange	Data Starting Date
Alexander & Baldwin	ALEX	NNM	1/4/1988
Bank of Hawaii	BOH	NYSE	1/4/1988
Barnwell Industries, Inc	BRN	AMEX	1/4/1988
Central Pacific Financial Corp	CPF	NYSE	3/26/1990
Cyanotech Corp.	CYAN	NASDAQ	6/23/1993
Hawaiian Airlines	HA	AMEX	6/21/1995
Hawaiian Electric Industries, Inc	HE	NYSE	1/4/1998
Maui Land & Pinapple Co., Inc	MLP	AMEX	5/1/1998
ML Macadamia Orchards L.P.	NUT	NYSE	1/4/1998

The mutual fund proposed here is a price weighted portfolio of all publicly traded Hawaiian Stocks. The mutual fund portfolio was created by adding the prices, *Pi*, of the stocks to be included in

the mutual fund together and dividing by the number of companies in the fun on that day, *n*. Thus, the Net Asset Value (NAV) of the mutual fund is computed as follows

$$NAV = \frac{\sum_{i=1}^{n} Pi}{n}$$

For convenience it is assumed that there are no fees or sales charges for the portfolio. While we only examine a price weighted mutual fund in this paper, other weightings certainly could be utilized in formulating the mutual fund. It is possible that these alternative weightings would prove to produce a better mutual fund. Nevertheless, this paper is limited to the price weighted case.

TOTAL FUND RETURN

One measure of mutual fund performance is the total return of the fund. Every mutual fund prospectus shows the growth of an investment over time. The total return tells how much money an individual would have at the end of the period if they had invested $1 at the beginning of the period. Comparing the total return of the portfolio to the indices gives the fund and investors a performance benchmark. The total return of the fund and indices along with the annual returns are computed next. The results are presented in Table 3. The total return for the Hawaii portfolio for the entire eighteen year period is over 877.10 percent. Over the same time period the return for the DJIA was 420.8 percent, S&P 500 was 353.4 percent, NASDAQ was 492.3 percent, Russell 2000 was 374.4 and the Nikkei 225 was -54.8. Clearly, the Hawaiian Mutual fund substantially outperformed the indices.

The results of the annual return computations presented in Table 3 indicate that the returns of the Hawaii Mutual Fund Portfolio are different than the indices of the overall US stock market and the Nikkei 225. In the early 1990s the Japanese economy declined with the Nikkei 225 dropping 38.7 percent in 1990. By comparison, during 1990 the Hawaii portfolio declined by 29.8 percent. In 1992 the Nikkei 225 had another major decline of 26.36 percent, although the Hawaii portfolio did not have a notable decline it was flat with movement of less than one percent. Prior to 2000, the Nikkei 225 and Hawaii portfolio are loosely related. In 2000 both the US markets and the Japanese market indices show sharp declines. The NASDAQ with the largest decline of 40.2 percent was followed by the Nikkei 225 with a 27.2 percent decline. During this same time period, the Hawaii portfolio showed a gain of over 24.7 percent. Similar results are found for 2001 and 2002. In this time period, the Hawaiian fund proved to be a good hedge for either the U.S. or Japanese indices. Through 2002 the indices had a decline or remained approximately even. The Hawaii portfolio had a gain of 17.4 percent in 2001 and an 8.7 percent gain in 2003. The Hawaii companies although loosely following the returns of the Nikkei 225 in the early 1990s by the early 2000s was showing returns not tied to either the market indices of

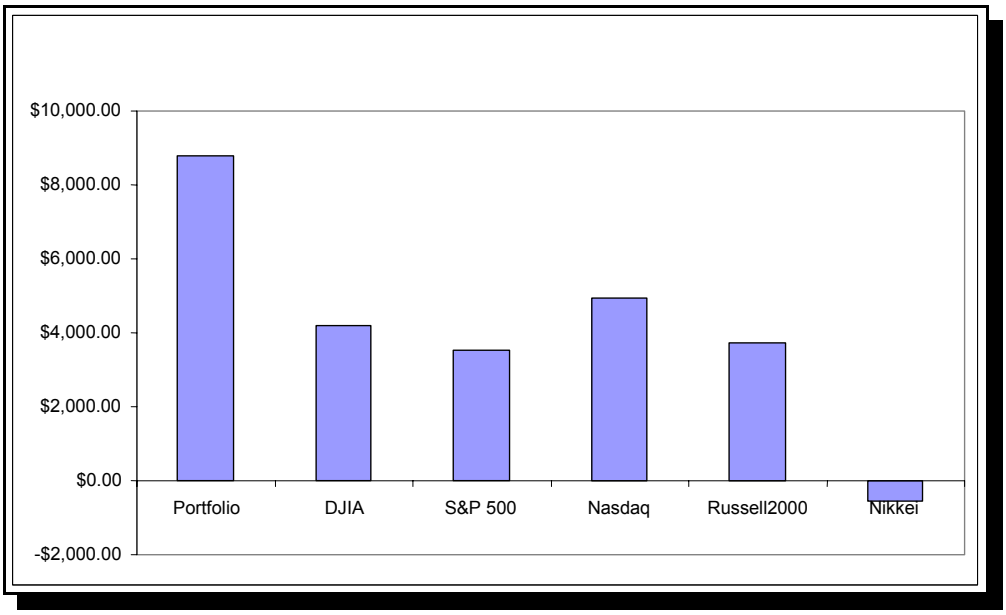
Japan or the US stock market. A matched-pair two-tailed T-test for differences in means indicates that the only significant difference in mean returns is between the Nikkei and the Hawaiian Mutual Fund.

Table 3: Average Total Yearly Returns from 1988-2004

	Portfolio	DJIA	S&P 500	Nasdaq	Russell 2000	Nikkei
2004	0.360	0.036	0.076	0.084	0.145	0.076
2003	0.415	0.215	0.218	0.447	0.437	0.245
2002	0.087	-0.172	-0.202	-0.325	-0.208	-0.186
2001	0.174	-0.059	-0.097	-0.149	0.006	-0.235
2000	0.247	-0.050	-0.050	-0.402	-0.033	-0.272
1999	0.176	0.252	0.104	0.843	0.176	0.411
1998	-0.065	0.153	0.320	0.386	-0.036	-0.093
1997	0.102	0.228	0.283	0.226	0.206	-0.212
1996	0.075	0.245	0.212	0.220	0.139	-0.026
1995	0.368	0.333	0.341	0.415	0.279	0.007
1994	0.009	0.021	-0.015	-0.024	-0.038	0.132
1993	0.016	0.134	0.085	0.156	0.166	0.025
1992	-0.001	0.041	0.041	0.154	0.144	-0.264
1991	0.113	0.214	0.325	0.575	0.448	-0.036
1990	-0.298	-0.063	-0.089	-0.186	-0.229	-0.387
1989	0.639	0.284	0.267	0.201	0.145	0.290
1988	0.607	0.076	0.072	0.127	0.164	0.421
Mean	0.178	0.111	0.111	0.162	0.112	-0.006
Geom.	0.155	0.102	0.099	0.117	0.097	-0.034
T-Test Statistic		0.7064	0.633	-0.1307	0.6690	3.018***

To further illustrate these returns, we graph the payoff on an investment in the Hawaii mutual fund and each of the indexes discussed thus far. An individual who invested $1,000 in the each the Hawaii fund and the corresponding index funds on January 4, 1988 would produce the total dollar returns indicated in Figure 1 by December 30, 2004. The Hawaii mutual fund produced $8,771.01, much higher than any of the indices. The indices produced returns in the following amounts: The DJIA $4,208.00, the NASDAQ $4,922.79, the S&P 500, $3533.76, the Russell 2000, $3743.52, and the Nikkei, -$548.33.

Figure 1: Growth of a $1,000 investment from January 4, 1988 to December 30, 2004



It is important to note that these raw returns are not risk adjusted. The higher return of some portfolios over others is likely at least in part a manifestation of higher levels of risk. Nonetheless, Figure 1 does clearly demonstrate the Hawaii mutual fund had distinctly higher returns than the indices. We turn next to examining the risk properties of the Hawaiian mutual fund as compared to the indices.

RISK ANALYSIS

As noted above, examining only the returns on the portfolio is a once sided analysis. To get a more complete picture it is necessary to examine the risk and portfolio properties of the mutual fund. The analysis continues by computing three measures of risk followed by an analysis of portfolio properties. First, we examine the standard deviation of daily holding period returns. The results are presented in Table 4: Over the entire time period, the standard deviation of returns for the Hawaii mutual fund is higher than the DJIA, S&P 500 and Russell 2000, but lower than the Nikkei, and NASDAQ. That the return on the Hawaii mutual fund is higher than the NASDAQ as noted in the previous section but the risk of the Hawaii mutual fund is less than the NASDAQ is an interesting result. Again, it is clear that the Hawaii mutual fund has interesting portfolio properties. A matched-pair two-tailed T-test for differences in means indicates that the only significant difference in standard deviation means is between the Russell 2000 and the Hawaiian Mutual Fund.

Table 4: Standard Deviation of Daily Holding Period Returns						
Year	Portfolio	DJIA	S&P500	NASDAQ	Russell 2000	Nikkei
2004	0.0088	0.0068	0.0069	0.0106	0.0112	0.0111
2003	0.0167	0.0104	0.0104	0.0139	0.0117	0.0141
2002	0.0110	0.0159	0.0164	0.0215	0.0158	0.0160
2001	0.0091	0.0132	0.0128	0.0269	0.0142	0.0181
2000	0.0116	0.0129	0.0141	0.0304	0.0188	0.0141
1999	0.0090	0.0101	0.0115	0.0171	0.0090	0.0127
1998	0.0150	0.0124	0.0128	0.0166	0.0126	0.0169
1997	0.0073	0.0117	0.0114	0.0116	0.0081	0.0172
1996	0.0106	0.0075	0.0074	0.0096	0.0067	0.0097
1995	0.0224	0.0054	0.0049	0.0083	0.0050	0.0141
1994	0.0072	0.0068	0.0062	0.0072	0.0063	0.0111
1993	0.0179	0.0054	0.0054	0.0072	0.0055	0.0127
1992	0.0105	0.0065	0.0061	0.0081	0.0063	0.0186
1991	0.0102	0.0091	0.0088	0.0092	0.0078	0.0130
1990	0.0141	0.0102	0.0100	0.0099	0.0082	0.0203
1989	0.0108	0.0089	0.0074	0.0054	0.0051	0.0054
1988	0.0125	0.0111	0.0105	0.0061	0.0060	0.0074
1988-2004	0.0127	0.0101	0.0101	0.0148	0.0101	0.0142
T-Stat		1.726	1.737	-0.412	1.819*	-1.239

Next, we compute the Beta of the Hawaii mutual fund, both on an annual basis and covering the entire time period in question. The beta is computed using each of the indexes discussed thus far as a measure of the return on the market. The results are presented in Table 5. The results are quite interesting and provide a clear picture of the desirable portfolio properties that the mutual fund would have. From 1988 through 1995, the beta for the Hawaii Mutual fund is negative when the S&P 500 is used as the measure of the market. This finding is consistent with the observation that the Hawaii economy behaved differently than the U.S. economy as a whole during this time period. The first positive beta occurs in 1996, and the beta remains positive from 1998 to the present day. When computing the beta using data for the entire time period examined, the beta is 0.00688. This near-zero beta clearly indicates that the Hawaii mutual fund behaves differently than the market as a whole and has different risk properties. When the Nikkie is used as a measure of the market performance, the beta is positive throughout most of the 1980's and 1990's, however, it turns negative in the 2000's.

Overall, the results of this section indicate that the Hawaii mutual fund has different risk characteristics than the market as a whole when measured by the standard deviation or the beta of the portfolio. These findings are most interesting in situations where the Hawaii mutual fund is found to produce a higher return and a lower risk. Next the analysis turns to a detailed analysis of the portfolio properties of the fund.

Table 5: Beta for Hawaii Mutual Fund

Year	DJIA	S&P500	NASDAQ	Russell 2000	Nikkei
2004	0.8708	0.1836	0.5363	0.2828	0.0987
2003	0.5355	0.1071	0.3826	0.0438	-0.0424
2002	0.4831	0.0425	0.3509	-0.0700	-0.0420
2001	0.2938	0.0051	0.1231	0.0136	-0.0336
2000	0.2365	0.0112	0.1150	0.0584	-0.0474
1999	0.0717	0.0683	0.0172	0.0660	0.0180
1998	0.2191	0.0613	0.1519	0.0561	0.0370
1997	0.0969	-0.0380	0.1462	0.0816	0.0567
1996	0.1817	0.0147	0.2205	0.0378	-0.0455
1995	0.5213	-0.1179	0.2942	-0.1655	0.0296
1994	0.0597	-0.0863	0.1287	-0.0292	0.1028
1993	0.5134	-0.3013	0.3017	0.3749	0.0720
1992	0.2699	-0.0667	0.3191	0.0574	-0.0003
1991	0.4267	-0.0045	0.4700	-0.0100	0.0317
1990	0.3209	-0.1155	0.3423	0.2821	0.0301
1989	0.2151	-0.0972	0.4477	0.1594	0.2091
1988	0.1230	-0.0563	0.3348	0.2525	0.0285
1988-2004	0.3012	0.0069	0.2004	0.0650	0.0180

PORTFOLIO PROPERTIES

Finally, we examine the portfolio properties of the Hawaii mutual fund. Some evidence of the portfolio properties of the fund can be seen based on the computations of Beta in the previous section. The analysis in this section focuses on the correlation between the mutual fund and various measures of the market. The pairwise correlation coefficients are computed for the indices and the portfolio over the entire time period. The correlations are computed for both the levels and the returns on the series. The correlation coefficients between the mutual fund and the indexes are also computed on a year-by-

year basis. Table 6 shows the correlation coefficient for the portfolio NAV as compared to the levels of the Dow Jones industrial average, the S & P 500, the NASDAQ, Russell 2000 and the Nikkei 225. During the period from January 1988 to December 2004, the Hawaii portfolio correlation to the DJIA is 0.771722 to the S&P 500 is 0.678302, the NASDAQ, 0.535183, the Russell 2000, 0.838765 and the Nikkei 225, -0.69035. Although the Hawaii portfolio is somewhat correlated to the indices it is in general less correlated than the indices are to each other. This finding suggests the existence of a risk reducing property of a Hawaii mutual fund.

The correlations between the annual return on the mutual fund and each of the indexes are presented in Table 7. As one would expect, the changes are not nearly as correlated as the levels of the index. The correlations are generally low and approaching zero for the S&P 500 Index. Again, the evidence suggests that the Hawaii fund offers different portfolio properties to investors.

Table 6 Correlation Coefficient for the Index Levels

	Portfolio	DJIA	S&P 500	NASDAQ	Russell 2000
Portfolio	1.000				
DJIA	0.7717	1.000			
S&P 500	0.6783	0.9840	1.000		
NASDAQ	0.5352	0.8887	0.9404	1.000	
Russell 2000	0.8388	0.9631	0.9338	0.8448	1.000
Nikkei 225	-0.6903	-0.7387	-0.6770	-0.5226	-0.7491

Table 7: Pairwise Correlation Coefficients of Returns
Correlation Matrix of Daily Returns

	Port	DJIA	S&P 500	Nasdaq	Russel	Nikkei
Port		0.2404	0.0054	0.2340	0.0520	0.0201
DJIA			-0.0233	0.6848	0.0968	0.0613
SP500				-0.0233	-0.0361	0.0246
NASDAQ					0.1200	0.0696
Russell						-0.0122

In Table 8, the annual correlations between the daily returns on the indexes and the Hawaii Portfolio are presented by year. The results indicate a positive correlation between the return on the portfolio and the return on the DJIA in each of the years in the sample. Interestingly, the Hawaii portfolio is negatively correlated with the S&P 500 index throughout the latter part of the 1980's and the early part of the 1990's

Table 8: Correlation of returns between the Hawaii Portfolio and National Indexes					
	DJIA	S&P500	NASDAQ	Russell 2000	Nikkei
2004	0.6699	0.1436	0.6452	0.3599	0.1244
2003	0.3320	0.0669	0.3184	0.0307	-0.0358
2002	0.6987	0.0634	0.6846	-0.1002	-0.0608
2001	0.4238	0.0071	0.3622	0.0210	-0.0664
2000	0.2647	0.0137	0.3029	0.0951	-0.0576
1999	0.0809	0.0875	0.0327	0.0661	0.0254
1998	0.1811	0.0521	0.1674	0.0471	0.0415
1997	0.1563	-0.0592	0.2335	0.0912	0.1339
1996	0.1288	0.0103	0.2008	0.0240	-0.0416
1995	0.1265	-0.0259	0.1095	-0.0373	0.0187
1994	0.0562	-0.0732	0.1287	-0.0253	0.1573
1993	0.1563	-0.0910	0.1217	0.1158	0.0511
1992	0.1664	-0.0385	0.2471	0.0341	-0.0005
1991	0.3840	-0.0039	0.4281	-0.0076	0.0407
1990	0.2320	-0.0815	0.2404	0.1641	0.0431
1989	0.1771	-0.0663	0.2258	0.0756	0.1054
1988	0.1094	-0.0473	0.1620	0.1205	0.0169
1988-2004	0.2404	0.0055	0.2340	0.0520	0.0202

RISK ADJUSTED PERFORMANCE

Thus far we have examined the return and risk on the indexes and the mutual fund as well as the portfolio properties of the mutual fund. Next, we examine the risk adjusted performance. Two commonly used methods have been developed to evaluate the risk adjusted performance of mutual funds. Sharpe (1966) and Treynor (1966) each developed measures of performance of firms stock. The Sharpe measure of performance measures the excess return on a portfolio relative to the standard deviation of the portfolio. Consider an investment that has provided a realized return, R_p, and standard deviation, σ_p, during a time period when the risk free rate of return has been R_f. The Sharpe measure of performance is then computed as:

$$Sharpe = \frac{R_p - R_f}{\sigma_p}$$

The Treynor measure of performance measures the excess return on a portfolio relative to the Beta of the portfolio. The Treynor measure of performance for a portfolio with a Beta of β_i is:

$$Treynor = \frac{R_p - R_f}{\beta i}$$

The risk free rate of return is measured as the average on-year constant maturity Treasury rate that occurs during the year in question. The computations of excess returns are presented in Table 9. The results indicate that overall, the Hawaii fund produces positive excess returns using the Sharpe measure. Excess returns are present, using each index as a measure of the market return, for the Treynor measure as well. Again this evidence is quite positive for the prospects of offering a Hawaii mutual fund.

CONCLUDING COMMENTS

In this paper the portfolio properties of a geographically based mutual fund are examined. Specifically, the prospects for a Hawaii focused mutual fund are examined. The evidence indicates that the Hawaiian economy is not highly correlated with the U.S. mainland economy or the Japanese economy across an 18 year time period. We find that a Hawaii mutual fund has interesting portfolio properties. Specifically, the Hawaii fund developed here produced a substantially higher return than any of the indexes examined, and produced positive risk adjusted returns using either the Sharpe or Treynor Measures.

The prospects for geographically based mutual funds are not limited to Hawaii. Many other states offer prospects for a geographic mutual fund. Alaska, Las Vegas, and Florida would seem to be other logical places to explore the desirability of a mutual fund. Regional mutual funds might also be explored, based on the Midwest, West Coast, East Coast, Southwest or some other geographic region.

An opportunity to invest in a fund of Hawaii publicly traded companies would offer diversity to an overall investment portfolio. Hawaii's location in the pacific ties it to both the US market and Asian markets. Tourism as a major industry also gives it tie to all international markets. The total returns show there is a unique opportunity to invest in a domestic fund, the Hawaii focused fund, that would have ties to other markets. The portfolio properties of the Hawaii focused fund indicate that an investment in the fund has the potential to offset losses in the mainland U.S. market as was experienced in 2000.

While the analysis here suggests there are clearly desirable properties associated with such a fund, additional research should be done before such a fund is offered. The analysis here is limited to a price weighted mutual fund. Other candidate weightings exist, the desirability of which should be explored in future research. The fee structure of such a mutual fund must be determined as well as if sufficient demand exists for the fund. The companies in Hawaii are relatively small, and as such, some

limitations on the size of the fund would be necessary. The desirability of including mainland headquartered firms that have substantial presence in Hawaii should be explored. In the absence of size limitations or the inclusion of mainland firms with significant presence in Hawaii, the fund could own undesirably large portions of the companies in the fund. This paper offers a preliminary exploration of the desirability of offering a Hawaii mutual fund. While more research needs to be done on geographic based mutual funds, the evidence found here suggests that such a fund clearly has promise.

Table 9: Excess Return Computations:

	Excess Return Computations						
	Risk Free		DJIA	S&P500	NASDAQ	Russell	Nikkei
Year	Rate	Sharpe	Treynor	Treynor	Treynor	Treynor	Treynor
2004	0.0765	-21.6458	-0.2190	-1.0385	-0.3555	-0.6742	-1.9323
2003	0.0854	19.7255	0.6159	3.0781	0.8620	7.5259	-7.7859
2002	0.0788	0.7797	0.0178	0.2019	0.0245	-0.1227	-0.2047
2001	0.0586	12.5983	0.3921	22.8099	0.9355	8.4904	-3.4285
2000	0.0389	18.0093	0.8802	18.5513	1.8098	3.5636	-4.3903
1999	0.0343	15.8471	1.9823	2.0792	8.2801	2.1525	7.9100
1998	0.0531	-7.8241	-0.5367	-1.9200	-0.7742	-2.0946	-3.1791
1997	0.0595	5.7668	0.4335	-1.1066	0.2874	0.5153	0.7419
1996	0.0551	1.8793	0.1095	1.3559	0.0902	0.5261	-0.4376
1995	0.0563	13.9525	0.5985	-2.6469	1.0603	-1.8853	10.5359
1994	0.0505	-5.7277	-0.6957	0.4810	-0.3225	1.4231	-0.4041
1993	0.0508	-1.9227	-0.0669	0.1139	-0.1137	-0.0916	-0.4768
1992	0.0611	-5.8741	-0.2288	0.9253	-0.1935	-1.0756	229.2555
1991	0.0348	7.7422	0.1843	-17.5014	0.1673	-7.8632	2.4775
1990	0.0200	-22.5123	-0.9916	2.7552	-0.9296	-1.1283	-10.5836
1989	0.0124	58.1213	2.9150	-6.4532	1.4007	3.9339	2.9986
1988	0.0189	46.9343	4.7798	-10.4465	1.7560	2.3284	20.6242
1988-2004	0.0497	7.9315	0.3334	14.5996	0.5011	1.5447	5.5898

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A SURVEY OF INVENTORY HOLDING COST ASSESSMENT AND SAFETY STOCK ALLOCATION

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ABSTRACT

Inventory holding cost (IHC) and safety stock inventory (SSI) are critical to the effective management of inventory, and their quantification has impact at the highest levels of many manufacturing and service industries. This study demonstrates the necessity of accurately measuring and monitoring IHC. It is further demonstrated that knowledge of the underlying statistical pattern of supply and demand variations can significantly improve forecasting and impact the appropriate the levels of safety stock inventory in a variety of industries.

INTRODUCTION

Controlling inventory is a fundamental purpose of supply-chain design for manufacturers. The key driver to the success of just-in-time (JIT) manufacturing is the minimization of work-in-process (WIP) inventory. This WIP inventory is minimized through an efficient matching of the manufacturing process and the rate of supply of component parts. Lean manufacturing systems are designed to minimize supply variability, both internally and externally, thereby minimizing concerns associated with inventory holding cost (IHC), and safety stock inventory (SSI) for raw materials and WIP. However, most businesses that carry inventory are unable to take advantage of the lean manufacturing concept. This concept is most applicable for firms who either mass produce make-to-stock finished goods or supply such firms. A prime example of this would be an automobile manufacturer and its first level suppliers. Most other firms are faced with the task of quantifying the costs associated with holding inventory, and deriving meaningful safety stock estimates for each particular product. For that reason, it is important for the remainder of firm types (even non-manufacturing firms) to give a diligent analysis to IHC and SSI, two very important elements of inventory management.

INVENTORY HOLDING COST

Inventory holding cost (IHC) is the variable cost of keeping inventory on hand, and is a combination of the costs associated with opportunity costs, storage, taxes, insurance, shrinkage, and other variables. Typically, the IHC is expressed as a percentage of the value of an item, which betrays that there may be a "fudge factor" associated with the IHC. In truth, few ultimately know its true value.

Assigning a set percentage to IHC assumes that the IHC is linearly proportional to the amount of inventory held, when the rate itself very well may decay (or increase) with increasing quantities. In fact, IHC may change from one accounting period to the next. Failure to accurately determine IHC and use this cost to make decisions fails to recognize that inventory can represent one-third to one-half of a company's assets. A company with a 36% IHC will pay for the inventory twice in slightly more than two years: once to purchase it, and a second time to carry it for about 25 months. Hence, it seems problematic that nearly one half of companies do not use IHC to make their inventory management decisions. The IHC affects profitability, and may affect a company's business plan in terms of make-buy, or make-to-order/make-to-stock, as well as other top-level decisions (IOMA, Dec. 2002).

FACTORS INCLUDED IN HOLDING COST

A part of the holding cost should include the actual cost of the item, and in many ways, it does. Cost of capital (opportunity cost) is the main component of holding cost that considers the item cost. In fact, the calculation of holding cost should ideally be divided between the price-dependent and quantity-dependent components, namely:

Inventory Holding Cost (Price, Quantity) = Cost(Price) + Cost(Quantity)

This quantity cost would include the allocations from overhead that affect all physical inventory to one extent or another. However, in practice, most stocking strategies do not incorporate the cost of the item; and as a result, expensive items are stocked the same way as cheap ones.

Calculating holding costs differs from industry to industry, but a general method can be illustrated from the used vehicle sales sector. In calculating holding cost, the following should be ascertained:

The average inventory for a period = I_{avg};
The inventory floor plan rate, which is the cost of capital = R;
The average inventory at a particular point in time = I_{cur}
The average monthly fixed overhead = OH;
The average time that an item remains in inventory before sale = T.

Once these quantities are known, then the following calculations can be made:

Daily Interest Cost Per Unit $$C_{Int} = \frac{\left(I_{avg} R \Big/ 365 \right)}{I_{cur}}$$

Daily Fixed Overhead Cost Per Unit $$C_{OH} = \frac{\left(OH/30\right)}{I_{cur}}$$

Daily Holding Cost Per Unit $DHC = C_{int}\, C_{OH}$

Inventory Holding Cost Per Unit $IHC = DHC \times T$

In this example, the hidden costs of damage, shrinkage, and opportunity cost are not included. In a survey conducted by Inventory Management Report, Harding (2005) noted the following factors in determining IHC:

- Scrap, obsolescence, shrinkage, and inventory losses;
- Facility overhead cost and storage;
- Inventory and handling personnel;
- Inventory-handling capital equipment;
- Rework and repair of inventory; and
- Other business-specific factors.

Harding further elaborates that IHC can be divided into fixed and variable components; the variable factors depending upon the dollar value of the inventory. She mentions that the fixed factors may change with volume, but will usually do so in a step-function manner. Variable cost factors include

A. *Cost of money.* This is the interest rate of borrowed money, or, in the absence of loans, the rate that could be earned if the money were invested

B. *Inventory taxes*

C. *Insurance*

D. *Obsolescence reserve*

A holding cost that is given as a percentage of the value of inventory usually comprises only variable costs. Fixed cost factors include: Storage space (in square feet); Capital equipment; and Personnel

These fixed costs fluctuate with inventory volumes, but can be expressed as a rate based on average inventory levels. Depending on the industry, fixed costs may contribute just as much to IHC as variable costs. Additional cost factors may be used, depending on the type of inventory being stored.

Two that Harding mentions are secondary quality costs, and computation costs. Secondary quality costs are incurred when re-inspecting inventory which is easily damaged, or has a short shelf-life. Computation costs are incurred when there is a substantial investment in inventory tracking systems. When all of the relevant costs of inventory are properly calculated, the true value of IHC can be 50% or more of the value of the inventory. An additional component of fixed overhead would include utilities such as electricity, heat, refrigeration, etc. as appropriate to the type of inventory. It is important to realize that these and other external and internal factors for a firm may fluctuate, and can therefore change the holding costs from one period to the next. Forecasting these changes is also important to assigning a meaningful IHC.

Halskau (2003) discusses the impact of postponed payments and discounts on the inventory holding cost. Essentially, these both serve as discounts to the IHC, and accurately calculating them will usually change the value of the EOQ. An application of this would evaluate two purchasing offers, one with no interest and no payments for a certain period, and the other with a price discount. He then provides instructions and formulae that would help to determine which offer has the most favorable impact on cost.

SAFETY STOCK INVENTORY

Safety stock inventory (SSI) is excess inventory that is maintained to avoid the costs associated with uncertain supply and demand. These costs can include lost revenues from stock-outs and production delays due to depletion of necessary components.

The amount of safety stock inventory (SSI) that a firm invests in is a measure of the relative uncertainty of the product demand, component supply, or both. Where demand and supply are constant (JIT systems), SSI is minimized. Most manufacturing firms exhibit variable demand and fairly determinable supply. Agricultural and fishing type firms, on the other hand exhibit fairly predictable demand, but uncertain supply in the form of rainfall, catch amounts, etc. Safety stocks of these different industry types have manifested themselves in items on the shelf, silos of grain, fish farms, and frozen foods.

Supply and demand can be described by statistical distributions, of which there are many (normal, chi-square, Gumbel, etc.). Therefore, in order to quantify the safety stock of a product, which is a function of the distribution of its supply and demand, it is necessary to understand the statistical nature of both supply and demand separately, since they may exhibit different behaviors.

Supply planning executives at Schering-Plough HealthCare (IOMA, April 2003) use a methodology called “statistical safety stock” in order to estimate the SSI. Statistical safety stock “attempts to quantify each factor of variability and place a value based on probability and desired service levels." In calculating the SSI, Schering-Plough managers use information related to the product life cycle of finished goods, and forecasting based on tracking the stock-keeping units (SKU’s). Four variables that are essential to the Schering-Plough method are:

- The variance of demand;
- The desired service level;
- The lead time for replenishment; and
- The reliability of the supplier or manufacturing process.

These last two items measure the variability of supply. Schering-Plough uses the standard formula for calculating the safety stock, namely,

Service Level Factor *x* (Square Root [weekly demand variance *x* lead time in weeks]), or

$$SS = z\sigma_L = z\sqrt{\sigma_t^2 L} \tag{3}$$

The Schering-Plough group uses several methods to determine demand variance. One method is to evaluate forecast variability, which is the variance between actual demand and forecasted demand. A second method is to calculate the variance of customer orders. The Schering-Plough methodology applies statistical models using products classified according to ABC analysis, which classifies products based on their relative importance and dollar value. In addition to ABC classifications, the model also classifies products based on their demand characteristics (lumpy, seasonal, mature, new, etc.). The Schering-Plough group found that for their calculation of statistical safety stock, forecast variability (variance) is usually the most important factor. Although service level was only the second most important factor, it is interesting to note that the group used another statistical model to examine different scenarios in order to evaluate the tradeoffs between the investment in inventory and customer service. Evaluating such tradeoffs is essential to establishing a meaningful service level, rather than a "rule of thumb" value. In their safety stock study, the Schering-Plough managers demonstrated that high service levels on the more costly, low-volume inventory caused an inventory investment that was disproportionately higher than the increases in customer service. This challenges the conventional wisdom that tends to overestimate service levels for expensive items. Alternatively, assigning higher service levels to low-cost, high-volume inventory does not significantly impact overall inventory levels. It seems from this analysis that the service level for an item should be assigned based on the relative demand of the item (variance), and that demand rather than cost should drive the ABC analysis. Using ABC stratification has been shown in other studies to reduce inventory levels by 33% over methods that maintain the same inventory levels for all items.

BASF Corporation (IOMA, May 2003) has developed a process that enables them to assess and respond to the ever-changing demand landscape through active management and forecasting. The system that BASF has designed consists of six stages:

1. Kickoff Meeting
2. Review "As Is"
3. Design "To Be"
4. Pilot "To Be"
5. Roll Out "To Be"
6. Handoff Project

BASF treats each improved planning management process as if it were a new product, assigning managers, budgets, and post-implementation audits to each one. This process highlights the fact that demand variance is central to the determination of safety levels and SSI.

A poll among inventory managers (IOMA, December 2002) showed that one of the key strategies used to reduce inventory investment was ABC analysis, where products were categorized based primarily on turnover rate and other measures of demand. Such categorizations resulted in significant reductions in inventory costs. A corollary practice that is suggested is "adopting a variable customer service level approach for different inventory segments." This technique involves categorizing products based on their demand, then adjusting the service level of each segment based on demand. In addition to reducing inventory investment, this practice has also significantly improved forecasting accuracy in some cases.

Talluri and Gardner (2004), analyzed the supply and demand variability in the computation of ISS. These findings are presented in Table 1.

Table 1. Different Inventory Models and Safety Stock Formulations

		Lead Time		Key
		Constant	Variable	
Demand	Constant	I No Safety Stock	II $R_L = RL$ $\sigma_L = \sqrt{R^2 s_L^2}$ $SS = F_S^{-1}(CSL)\sigma_L$	R = Average Demand per period
				L = Average Lead-Time for Replenishment
				R_L = Reorder Point
				SS = Safety Stock
	Variable	III $R_L = RL$ $\sigma_L = \sqrt{\sigma_R^2 L}$ $SS = F_S^{-1}(CSL)\sigma_L$	IV $R_L = RL$ $\sigma_L = \sqrt{\sigma_R^2 L + R^2 s_L^2}$ $SS = F_S^{-1}(CSL)\sigma_L$	σ_R = Standard Deviation of demand per period
				s_L = Standard Deviation for lead time
				F_S^{-1} = Inverse Normal
				CSL = Cycle Service Level

Table 1 shows that no static amount of safety stock is appropriate across an enterprise. Each quadrant describes different combination of supply and demand, which may also imply a different combination of statistical distributions. Even though the figure shows F_s^{-1} as the "Inverse Normal," it could just as easily be the inverse of some other less convenient distribution. Quadrant I represents JIT manufacturing, where supply and demand in the manufacturing setting are both matched. Quadrant II might represent a fishing or farming enterprise, with stable demand, but unpredictable supply. Quadrant III represents most firms, namely exhibiting random demand and fairly reliable suppliers. It seems that these safety stock computations are fairly simple to determine, yet many firms resort to industry averages and fudge factors in establishing these critical values.

SERVICE LEVELS

A key component to determining the amount of safety stock necessary is choosing the appropriate service-level policy, which is the probability that an out of stock condition will be observed during an inventory cycle. An inventory cycle is the period between receipt of an order and the receipt of the subsequent order. The higher the service level, the higher the SSI. It is essential that the service level be properly selected, since unnecessarily high service levels result in large excesses of inventory, thereby increasing IHC. Low service levels expose the firm to the costs that SSI is intended to prevent. Service level and SSI are related in the equation for safety stock, given below:

$$SS = z\sigma_i \qquad (1)$$

Where z is a function of the service level under conditions of normally distributed demand, and σ_L is the standard deviation of the demand during lead time. Once σ_L is determined, then selecting z becomes a simple task of determining how frequently (in terms of order cycles) the firm is willing to risk running out of inventory. While the determination of service level for a particular item is arbitrary, studies have shown that properly evaluating the SSI alone can lead to service level improvements (IOMA, 2003, 2004).

TOTAL INVENTORY COST

The standard technique used to minimize total inventory costs is the economic order quantity (EOQ), which is the lot size that minimizes the sum of holding and ordering costs. Although the ideal assumptions underlying the EOQ generally do not hold, the theoretical value itself is the most helpful estimate available for optimizing inventory levels. These assumptions include: uniform demand; no constraints on lot sizes; no other relevant costs beyond holding and ordering; and no uncertainty in lead time or supply. The EOQ is related to the total cost for inventory, and is expressed by the following equation:

$$EOQ = \sqrt{\frac{2DS}{H}} \quad (2)$$

Where D is the annual demand, S is the ordering cost for a single lot, and H is the annual unit holding cost. Since H is in the denominator, decreasing its value justifies increasing on-hand inventory. However, an accurate calculation of IHC will include previously omitted costs, and will tend to increase H, thereby reducing the EOQ.

FORECASTING INVENTORY HOLDING COSTS

If all supply and demand variability for a particular product were known, then the holding cost for inventory could be optimized. An important technique to reduce inventory costs is to reduce supply variability by including suppliers in demand planning activities. This leads to improved lead times, and can result in up to 25% lower inventory carrying costs. This is possible because the uncertainty of lead times is normally hedged by an increased safety stock, which has the associated carrying cost. In Fig. 1, eliminating the lead time variability reduces the amount of SSI by a factor of $\sqrt{R^2 s_L^2}$. Sharing reliable demand information with suppliers is a hallmark of lean manufacturing systems, but there is no reason why firms across all sectors cannot use this powerful tool to achieve reductions in the "flab" of excess inventory.

The usual demand forecast for a product is made using models based on time series methodologies and previous demand data. This method, however, creates problems in cases of very low-demand, expensive items. Caterpillar Logistics Technology Services LLC has developed two techniques to deal with slow-moving inventory (IOMA, May 2004). The first technique uses the Poisson distribution to forecast the interaction with customers and the time between orders, instead of a time series of quantity demanded. According to Caterpillar, this method works extremely efficiently for slow-moving inventory. The second Caterpillar technique is used in the replenishment process, and is also based on the Poisson distribution. Caterpillar uses the historical time between orders to forecast the next order, and then delays the purchase of the replacement until close to that date. This method dramatically reduces the inventory costs for slow-moving items, while maintaining the desired service level.

SUMMARY

Inventory holding cost (IHC) and safety stock inventory (SSI) are critical to the effective management of inventory, and their quantification has impact at the highest levels of many manufacturing and service industries. The measurement of the economic order quantity (EOQ) is

impacted by the IHC. Even though the effect of the IHC upon the EOQ is smoothed by taking its square root (Equation 2), nothing smoothes out its impact when it is drastically underestimated and applied to an unnecessary excess of inventory. It is evident from the studies presented that IHC should be painstakingly measured, and routinely monitored for accuracy, especially in an economy that shows as many macroeconomic swings as have been exhibited in recent years. Safety in SSI means knowing the up-to-date variability of supply and demand, as these are the key components to formulating SSI. Since not all demand and supply distributions are alike, knowing the underlying statistical pattern of these variations have been shown to significantly improve forecasting and the levels of inventory in every kind of industry. Armed with these lessons of analysis, inventory managers should demonstrate more expertise in defining actual values for these quantities, and less reliance upon age-old, arbitrary estimates.

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CORPORATE GOVERNANCE IN RELIGIOUS ORGANIZATIONS: A STUDY OF CURRENT PRACTICES IN THE LOCAL CHURCH

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ABSTRACT

This paper addresses corporate governance practices in religious organizations by examining fiscal oversight and financial management practices in the local church. Fiscal oversight includes the existence of an independent board of directors with a financial expert and documented policies and procedures. Financial management includes the existence and use of a budget, controls over cash receipts and disbursements, financial reporting and tax reporting and compliance. A questionnaire was used to collect data from various denominations. The results showed that churches do have adequate fiscal oversight and financial management controls. However, opportunity exists for improvement. Churches can do a better job of documenting their policies and procedures. In addition, they should communicate these policies and procedures to all employees. It also appears that church accounting personnel do not really know the requirements for preparing financial reports using generally accepted accounting principles. These personnel should consider attending a nonprofit course or seminar to increase their understanding of accounting standards relating to nonprofit reporting, especially Statement of Financial Accounting Standards No. 116, "Accounting for Contributions Received and Contributions Made" and Statement of Financial Accounting Standards No. 117, "Financial Statements of Not-for-Profit Organizations."

INTRODUCTION

The accounting and ethical scandals within such public companies as Enron and WorldCom created an uproar in the marketplace. The United States Congress reacted with sweeping legislation which forced public companies to implement procedures to improve internal controls over financial reporting. Nonprofit organizations may be facing the same peril as scandals continue to affect the sector. The fund raising practices at the American Red Cross after the September 11, 2001, and excessive salaries paid to executives and board members at other nonprofit organizations are some of the actions that are raising concerns among the various constituents.

Religious organizations are also caught in the spotlight because of such issues as the sex abuse scandals in the Catholic Church, embezzlement of funds in various organizations and the use of government funds to support social services and other programs in faith based organizations. For instance, the director of a Christian community was charged with stealing $23,000 and other items from the organization over a two year period (Anonymous, 2000). The tax-exempt status of an organization controlled by a well known televangelist was revoked because of illegal politicking by the organization (Anonymous, 2004a). A Christian charity was accused of using government funds to pay for a job training program that included religious instruction at a local prison (Wilhelm, 2005). A California TV preacher was accused of using donations from supporters to finance a lavish lifestyle that included 30 homes, fancy cars and a private jet (Anonymous, 2004b).

BACKGROUND

Religious and other non profit organizations have a responsibility to their various constituents to be fiscally responsible and transparent in carrying out their missions. These organizations rely on the public for a significant portion of their annual budget. Support is received by nonprofit organizations in the form of tithes, pledges or donations. Some donations are quite generous such as the $40 million unrestricted gift received from an anonymous donor by a religious organization in the State of Missouri (Preston, 2005a). Others are more modest such as the $1.8 million received by a Baptist church in Alabama for its scholarship fund, and the $1 million received by another religious organization to help victims of the South Asian tsunamis (Preston, 2005b). The Annual Giving USA study published by the American Association of Fundraising Council noted that Americans donated $248.52 billions to charity in 2004, with individual donors providing the largest share at 75.6% or $187.92 billion. Religious organizations received the highest percentage of these donations at 35.5% or $88.3 billion.

Churches have always played a role in social services and their involvement in hurricanes Katrina and Rita relief efforts along the Gulf Coast, demonstrate their capability. The federal government recognizes this and it continues to actively promote diverting government funds to faith based organizations to support social service and public health programs such as youth development and substance abuse treatment. For instance, in fiscal year 2003, 5.1% or $6.8 million of the Department of Education's discretionary grants went to faith based organizations up from 2.1% just two years earlier (Davis, 2004).

Boston (1999) believes that government money is for the first time underwriting social services programs by religious organizations with virtually no significant oversight or strings attached. Some foundations are not deterred and they are showing their financial support by increasing their donations to religious organizations. A recent report noted that 37 foundations provided $168 million to approximately 700 evangelical Christian organizations over a four year period. The organizations focus primarily on such issues as making abortion illegal, banning same-sex marriage and promoting school prayer (Wilhelm, 2005).

Donors are increasing looking to nonprofit organizations to provide transparency in their operations. The Sarbanes-Oxley Act of 2002 (SOX) is one legislation that might provide a starting point. SOX placed increased responsibilities on the board of directors of pubic companies to improve their governance practices by having the financial expertise and independence needed to oversee their managers' performance. Although SOX does not apply to non-profit organizations, there is an expectation in the marketplace for non-for-profit organizations to adopt some of its requirements.

Some nonprofits are doing just that and are early adopters of SOX. A study of nonprofit organizations performed by the accounting firm Grant Thornton found that 48% of the respondents voluntarily made changes to their operations because of SOX (Williams, 2004). The changes were effected in such areas as establishing conflict-of-interest policies, developing procedures for internal financial controls and record retention, drafting code of ethics and audit committee charters, and in codifying protection for whistle-blowers. One organization went a step further by contracting for an internal controls audit to be performed by an independent accountant. The audit focused on the areas of grant making, contract management, and travel and entertainment as part of the organization's efforts to voluntarily comply with SOX (Anft and Williams, 2004b).

Congress is also looking specifically at improving accountability within nonprofit organizations. One of the federal government's proposals is for tax-exempt organizations with $250,000 or more in annual gross receipts to be subject to an annual independent audit of their financial statements (Anft and Williams, 2004a). Some states are not waiting for the federal government and are proposing their own legislation. For instance, a California State proposal would require charities with annual gross income of $2 million or more to file annual financial statements prepared by independent certified public accountants with the state. Among New York State's proposals is one that would require leaders of larger organization to verify that they have reviewed the effectiveness of their groups' internal financial controls (Anft and Williams, 2004a). Wolverton (2005) recommends that nonprofit groups voluntarily improve governance by adopting conflict of interest policies, obtaining a financial statement audit if they have $2 million or more in total revenue, including financially literate individuals, and consider establishing a separate board committee to oversee audits of the organization.

Clearly religious organizations are impacted by these recommendations since they are also nonprofit organizations having obtained exemptions under Sec 501(c)(3) of the Internal Revenue Code. In the broadest sense, a church is a special type of religious organization that includes synagogues, temples, mosques and other organizations with church type characteristics (Runquist, 2005). So churches could be impacted by any legislation intended to improve oversight in nonprofit organizations.

As noted earlier in the paper, churches receive a large portion of the donations made by individuals to charities. Some churches are also receiving a new stream of income or support from the federal government that has specifically targeted faith based organization as part of its social services initiatives. Clearly there is a need for churches to be more prudent in their missions. Churches have varied sizes and expertise. A typical church is a local congregation or community consisting of

approximately 150 members. The mega churches seen on television such as The Lakewood Church and The Potter's House, both from Texas with approximately 18,000 members each, are the exception.

Churches will be challenged by their constituents to be more transparent in their operations. They may need to implement any new legislation that is passed by the government addressing governance in nonprofit organizations. Due to limited resources, churches will need to find creative solutions to implement the legislative actions. Perhaps the current governance practices in churches are not bleak. However, very little research is available that addresses corporate governance in churches so the current state of affair is difficult to ascertain. This led to the current research that attempts to address the questions: (1) do churches have adequate fiscal oversight of their operations and (2) are there adequate controls in place in churches over financial management.

In terms of the research, fiscal oversight includes the existence of an independent board of director with a financial expert and documented policies and procedures. Financial management includes the existence and use of a budget, controls over cash receipts and disbursements, financial reporting, and tax reporting and compliance.

THE STUDY

The purpose of the study was to provide preliminary insight into fiscal oversight and financial management in the religious community. The study examined fiscal oversight and financial management practices in churches with Christian based doctrine and excluded mosques and temples. The study used churches representing various denominations with a physical presence in the State of Georgia. They were identified haphazardly by searching the website of umbrella organizations (e.g., Episcopal churches in the state of Georgia) and by using a local telephone directory. Churches were excluded if a mailing address was not available or the name of the pastor or minister could not be easily obtained from available sources. An attempt was made to identify multiple churches across a wide spectrum of denominations to ensure diversity within the population. Approximately 249 individual churches were initially identified and contacted during the initial phase of the study. This number was subsequently reduced to 221 since questionnaires were returned undeliverable by the post office i.e., the address of record was unknown.

A questionnaire was developed and used to collect data for the study. It was pre-tested with a small number of churches through which the researcher had prior relationships. A cover letter along with the questionnaire was mailed to the pastor or minister of the churches. The cover letter described the research purpose, provided a time estimate for its completion, and a note thanking the ministers for participating in the research. The cover letter encouraged the pastor to complete the survey if possible or to delegate it to either a member of the board of directors or vestry, or the accounting personnel on staff. A second questionnaire was mailed to non-respondents after approximately two weeks to request participation in the study. Additional attempts were made via e-mail (if e-mail address was known) to non respondents to encourage their participation.

RESULTS AND ANALYSIS

Sixty useable surveys representing a response rate of 27% was achieved. As expected, respondents represented a board range of denominations. However the vast majority (53%) were from churches within the Episcopalian denomination. In terms of membership level, most respondents (75%) had 300 or fewer members as of their most recent year end. The gross revenue of the respondents was consistent with their membership levels with 71% reporting revenue of $300,000 or less.

One church reported employing as many as 42 individuals other than the minister, with the average number of employees at six per church. In terms of full time employees, one church reported having 17 full time employees compared to an average of three full time employees for all churches. Respondents reported having an average of two personnel as part of the church's accounting staff, with one reporting a high of six individuals. More information on the study participants can be found in Table 1.

Table 1: Church Profile

1.	The denomination in which the church belongs:					
	6	Southern Baptist	2	Methodist	32	Episcopal
	1	Holiness	3	Protestant	6	Presbyterian
	1	Free Will Baptist	2	Baptist	1	Lutheran
	1	Pentecostal	1	United Methodist		
	2	Non-denominational	1	Interdenominational		
	1	Unitarian Universalist				
2.	The membership level of the church as of the most recent year end					
	23	100 or less,	22	101-300	6	301-500
	9	501 or more				
3.	The approximate gross revenue of the church (as reported to the membership) as of the most recent year end.					
	23	$100,000 or less,	19	$100,001-300,000	9	$300, 001-500,000
	8	$500,001 or more				
4.	Number of individuals employed by the church, including the minister					
	42	(0-5 employees),	10	(6-10 employees),	3	(11-15 employees),
	8	(16 or more employees)				
5.	Number of fulltime employees employed by the church:					
	50	(0-5 employees),	3	(6-10 employees),	3	(11-15 employees),
	2	(16 or more employees)				
6.	The number of personnel who are part of the church's accounting staff:					
	59	(0-5 employees),	1	(6-10 employees),	0	(11-15 employees),
	0	(16 or more employees)				

Fiscal oversight

In terms of fiscal oversight, a large majority of churches (92%) had a separate board of directors or similar organization. The number of board members ranged from a low of three to a high of 40 members, with a typical board averaging 11 members. For those with a separate board of directors, 71% reported that the chair of the board was someone other than the minister while 33% reported that the minister was a voting member of the board. A majority of respondents (95%) noted that board meetings were held on a regular basis, with meetings ranging from a low of four to a high of 50 times per year. The average board met 12 times during a typical year.

Ninety-eight percent (98%) of the respondents reported that the financial information and other significant church activities were discussed with the board on a regular basis and 93% required board authorization of significant financial transactions such as leases and capital improvement projects before the costs were incurred. A majority (87%) noted that their board membership included individuals who were considered financially literate. However, the questionnaire did not ask for the qualification(s) of such individual(s).

In terms of the committee structure within the board of directors, 78% of the respondents reported having separate committees within their organizations with a separate audit or financial committee being the most common (55%). In most cases (89%), the members of the board of directors were appointed via elections held by the church membership. A majority of boards also determined the pastor's compensation package (91%) and a majority (85%) used resolutions to review and approve the minister's compensation on an annual basis.

The responses to questions on policies and procedures used by the churches provide some insight into the control consciousness of these organizations. Only seventy-five percent (75%) of the respondents had formal policies and procedures regarding significant church activities. However, only 62% of these policies were actually documented with a smaller majority (58%) actually communicating the policies to employees. More information on fiscal oversight can be found in Table 2.

Table 2: Fiscal Oversight (Percentages)

		Yes	No	N/A
1	The church have a board of directors or similar group	92	5	3
	(#2 -11 applies to those organizations with a separate board of directors)			
2	The chairperson of the board of directors is someone other than the minister	71	29	
3	The minister/pastor is a voting member of the board of directors	36	62	2
4	The board of directors hold regular board meetings	95	4	1
5	Financial information and other significant church activities are discussed with the board of directors on a regular basis	98	2	

Table 2: Fiscal Oversight (Percentages)				
		Yes	No	N/A
6	The board of directors include members who are considered "financially literate"	87	13	
7	The board authorize significant financial transactions (such as leases, capital improvement projects) before they are incurred.	93	7	
8	Board members are elected by the church membership	89	9	3
9	Separate committees are established within the board of directors	78	18	4
10	The board is involved in determining the pastor's compensation package	91	5	4
11	Resolutions relating to the minister's compensation, benefits and other significant matters are prepared annually and approved by the board	85	7	8
12	The church has formal policies and procedures regarding significant activities	75	25	
13	The church's policies and procedures are documented	62	20	18
14	The policies and procedures are communicated to all employees	58	12	30
N/A – not applicable or no response was received.				

Financial management

The majority of respondents (95%) reported that their organization operated with an annual budget. Of those churches that used a budget, 94% reported that their budget was approved by the board prior to the start of the church year. A majority of the respondents (65%) used ushers to collect the offerings during church services. Other respondents reported using deacons, finance teams, the treasurer and various other personnel, to perform this function. One reported using a board member to collect the offerings during church services.

Funds were held in a secured environment by most churches (92%) before they were deposited. Collections were often deposited in the bank at least weekly in a majority (93%) of the churches. Some respondents reported that the bank deposit was made by the treasurer (38%) or the financial secretary (27%). Other churches reported using ushers, vestry members, office managers, and various other personnel to make their deposits.

Bank reconciliations were prepared at least monthly for all bank accounts by most respondents (97%), and the reconciliations were reviewed by someone other than the preparer in most cases (95%). Petty cash was not often used by the churches with only 30% of the respondents reporting having such accounts. When used, these accounts were reconciled and replenished at least weekly by 56% of the respondents.

In terms of financial reporting, most churches (93%) ensured that the pastor or close family member was not involved in the accounting process. A number of churches (62%) had an independent party such as a certified public accountant review their financial statements at least annually, but only

57% had an actual audit performed. When asked if the financial statements were prepared in accordance with generally accepted accounting standards, 90% of the respondents agreed. However, only 43% of the respondents were familiar with Statement of Financial Accounting Standards Numbers 116 and 117, which governs nonprofit financial reporting.

In terms of their tax exempt status, 84% of the churches reported that they were tax-exempt, having obtained it on their own or through an umbrella organization. However, approximately ten of the churches are not tax-exempted which means that donations provided by individuals to these organizations might not be deductible for tax purposes. In terms of payroll processing, 72% of the respondents prepared their payroll in-house while 12% used a third party service provider such as Automated Data Processing. Most were current with their payroll filings and payments with a large majority (78%) not incurring any penalties in the last two years due to delinquent payroll tax returns or payments. However, 5% or approximately three churches did incur financial penalties due to late filings which might indicate that churches may not be aware of the filing dates for various payroll related documents. More information on financial management can be found in Table 3.

Table 3: Financial Management (Percentages)

	Yes	No	N/A
The church operates with an annual operating budget	95	5	
The budget is presented to and approved by the board prior to the start of the church year (if the church has a budget)	94	6	
1. Collections or offerings are maintained in a secured environment before they are deposited	92	5	3
2. Bank reconciliation(s) are prepared of all church bank accounts at least monthly	97	3	
3. The reconciliation(s) is (are) reviewed by someone other than the preparer	82	8	
4. The church uses petty cash accounts	30	70	
5. If used, petty cash accounts are reconciled and replenished at least weekly	33	67	
6. The pastor or close family member is involved in the accounting process	5	93	2
7. An independent party (such as a CPA) reviews the church's finances at least annually	62	37	1
8. An annual audit is performed of the church's finances	57	40	3
9. Financial statements are prepared in accordance with general accepted accounting standards	90	5	5
10. The church is familiar with Statement of Accounting Standards Numbers 116 and 117	43	42	15
11. The church is a tax exempt organization with its own 501(c)(3) exemption	67	28	5
12. The church is a tax exempt organization through a separate or umbrella organization	17	18	65

Table 3: Financial Management (Percentages)			
	Yes	No	N/A
13. The church has incurred penalties in the last two years because of late filing or payment of payroll taxes and returns	5	78	17
14. The church is aware of the filing dates of all payroll related documents (such as W-2s)	78	2	20
N/A – not applicable or no response was received.			

CONCLUSION

The purpose of the study was to determine if churches have adequate fiscal oversight of their operations and that adequate internal controls are in place over financial management. The results of the study suggest that corporate governance in churches in the area of fiscal oversight and financial management appears to be adequate. However there are many opportunities for improvement. Churches can do a better job of documenting their policies and procedures. In addition, they should communicate these policies and procedures to all employees. It also appears that church accounting personnel do not really know the requirements for preparing financial reports using generally accepted accounting principles. These personnel should consider attending a nonprofit course or seminar to increase their understanding of accounting standards relating to nonprofit reporting, especially Statement of Financial Accounting Standards No. 116, "Accounting for Contributions Received and Contributions Made" and Statement of Financial Accounting Standards No. 117, "Financial Statements of Not-for-Profit Organizations."

LIMITATIONS

A number of factors in this study limit the generalizability of the findings. The findings are based on a haphazard sampling scheme, exclude religious institutions such as temples and mosques and were selected from only one state. In addition, there were a large percentage of respondents from one denomination. This denomination may have standing operating procedures for all its churches that could result in the research findings indicating better fiscal management results than actually exist. Although the findings may not be generalizable to all religious institutions across the Unites States, they do provide an indication of the need for increased awareness of the status of fiscal responsibility in the religious segment of the nonprofit environment and a need for more research in this area.

Future researchers may wish to continue this research in a different setting i.e., multiple states and diverse denominations, to determine if the results obtained in this study are consistent with other types of religious organizations. The scale used in the questionnaire did not possess the flexibility for

a more detailed analysis. Future researchers may wish to design and use a more robust scale to continue in this research stream.

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