ACADEMY OF ACCOUNTING AND FINANCIAL STUDIES JOURNAL

An official Journal of the
Allied Academies, Inc.

Michael Grayson, Jackson State University
Accounting Editor

Denise Woodbury, Southern Utah University
Finance Editor

Academy Information
is published on the Allied Academies web page
www.alliedacademies.org

The Allied Academies, Inc., is a non-profit association of scholars, whose purpose is to support and encourage research and the sharing and exchange of ideas and insights throughout the world.

Academy of Accounting and Financial Studies Journal
Accounting Editorial Review Board Members

Academy of Accounting and Financial Studies Journal
Accounting Editorial Review Board Members

Academy of Accounting and Financial Studies Journal
Finance Editorial Review Board Members

ACADEMY OF ACCOUNTING AND FINANCIAL STUDIES JOURNAL

CONTENTS

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.

Information about the Allied Academies, the *AAFSJ*, and the other journals published by the Academy, as well as calls for conferences, are published on our web site. In addition, we keep the web site updated with the latest activities of the organization. Please visit our site and know that we welcome hearing from you at any time.

Michael Grayson, Jackson State University

Denise Woodbury, Southern Utah University

www.alliedacademies.org

EQUITIES ANALYSIS:
A PROFESSIONAL APPLICATION

Robert Ricks, Wasatch Funds, Inc.
Chad Witcher, Zion's Bancorp
Kyle Mattson, Weber State University

ABSTRACT

An exercise to link senior-level investment courses with real world, equities analysis is described. Whereas many students fulfill the academic requirements during their course work in investment analysis, few truly grasp the real world application of the theories and thus fail to fully develop the skills being taught. The result is that students often gain only a basic-level, academic knowledge of securities analysis and their research product is of inferior quality.

Recognizing this, a proposed senior-level investments course syllabus is described in detail. In essence, rather than focusing solely upon studying and discussing the principles of investing, the focus will shift to high-level analysis. Indeed, rather than performing shallow research on companies, the virtue of channeling student efforts into the study and comprehensive analysis of a single company is explored. This analysis will entail: an in-depth study of financial statements, the building of a standardized financial model to project future earnings, participation in calls with Wall Street analysts and industry experts, and on-site visits to meet with senior management. This high-level analysis will then be captured in a value-added research report on a standardized template which will feature internally-generated earnings projections and a student-analyst investment recommendation.

INTRODUCTION

Equities analysis is one of the most prestigious and sought-after career paths for undergraduate finance majors, yet there is little opportunity to get hands-on, industry-level experience and learn the skills that will qualify students to work as analysts on Wall Street following graduation. In fact, there are only a handful of universities across the country that pursue an equities analysis curriculum above the basic, entry-level application.

At Weber State University, a new curriculum has emerged called Industry Level Equities Analysis, and it is being developed through the efforts of interested students and encouraging professors. This curriculum will consist of focused, hands-on company analysis both in terms of quantitative financial analysis as well as a qualitative assessment of the value of the enterprise.

The objectives of this paper are to explain the vision of this curriculum, which we believe will best prepare students to secure employment in the equities analysis industry, enhance the learning experience, and not to mention drive the performance of the school's endowment fund-sponsored equities investment portfolio. Furthermore, a course of study is described including fundamental philosophies and methodologies considered to be of the utmost importance in making students' upper-division finance coursework the most rewarding and value-added experience possible.

HIGH-LEVEL EQUITIES ANALYSIS PROGRAM

Vision

Through the first-hand experience of several students and professors at Weber State University, a divergence has been identified between academic studies in financial analysis at most universities and common industry practices among professional firms. This discrepancy is impeding a smooth transition by finance students into the investment industry. Furthermore, it has been determined that because of the very basic nature of the analysis performed by students under the status quo, the quality of the end-product-the research reports they generate-is sub-par. Finance students are a tremendous resource waiting to be tapped; capable of producing research reports of superior quality that display the investment potential of various companies. Their research product can be of significant value to the students themselves if they choose to invest personally, as well as to the University - as this student equity research will drive the performance of the school's equity investment portfolio of endowment funds. Finally, through this in-depth, complex research process, students will be empowered with the tools they need to compete successfully for the most attractive career opportunities on Wall Street.

Details

High-Level Equities Analysis will be established as an upper-division two-course series available to business seniors that are particularly passionate about stock analysis and investing. Students will be divided into teams of two to three students each. Each team will choose one company that they will cover for the duration of the semester. Students will meet top management, visit company sites, develop financial models, and publish extensive investment research reports on the companies they follow. In addition to conversations with management, student analysts will utilize various publicly available sources of information in creating these reports, including: SEC filings, the internet, trade associations, competitors, suppliers, customers, industry experts, and industry analysts.

The geographic boundary of the stock universe available to students for analysis will be limited primarily to the Wasatch Front area of Northern Utah. If it becomes necessary to broaden this limit, the school will make allowances on a case-by-case basis, but exceptions must be limited to companies in the intermountain west region. The fundamental purpose for this constraint is to focus on the businesses in our surrounding area, and add value to the local economy by better understanding and supporting, through real-money investment, the firms in our area. Avenues for making the students' research reports available to other members of the community are explored below.

By structuring this program as a two-course series, it is hoped that there will exist a fair amount of continuity in the coverage of the companies being followed. This continuity is crucial to maintain consistent superior results in the appraisal of companies. At various points within each semester, all the student-analysts will have the opportunity to present their stock research to members of the school's student-run investment portfolio. Additionally, an Annual Investor Conference will be held in the spring, at which time representatives from local investment firms and the community at large will be invited to hear students present their analyses. In preparation for the Investor Conference, students will develop a Wasatch Front Anthology - a book of one-to-two page briefs on all the companies under coverage.

In addition to the extensive research that students will be performing throughout the semester, the coursework will also include the reading of a select few books by the greatest in stock investors, as well as special presentations and workshops presented by visiting industry professionals. This will give students a broad education of not only industry-level, hands-on experience, but also of the philosophies, strategies, and theories on financial analysis.

PROGRAM CURRICULUM

Stock Selection

Students will begin the stock selection process with either a quantitative screen or by simply picking a particular company in which they have some degree of interest or exposure. As mentioned previously, the universe of stocks available for selection will be relatively small as it only includes the publicly traded firms, of any size, along the Wasatch Front in Utah. Other sample criteria that may be used in screening could include: historic earnings-per-share growth, stock valuation, and return on assets.

From a qualitative standpoint, students may choose companies that they discover by means of their roles as consumers or informed insiders of a particular company. Often, consumers may have the best perception of the quality of an enterprise since they are constantly confronted with the company's product and make judgments as to their competitive advantages (Lynch, 2000). Also, those who have some connection with a particular business or industry may have an inside edge on

which industry or company could be strong, based on their fundamental knowledge of the respective business or industry.

Students will choose 10 companies from their initial screening. They will then pull summary sheets from a free online service such as Yahoo Finance or Morningstar. The intent here is to become acquainted with each firm's business model and compare profitability and strength with its competitors. The next step will be to narrow the playing field down to just one favorite pick.

Preliminary Research

As the first step in the research process, students will order a copy of their chosen company's most recent annual report and forms 10-K and 10-Q, filed with the SEC. Students will carefully read and study these financial statements to become acquainted with how the company makes money. Next, students will identify the firm's key competitors with which they will compare their company to become acquainted with its strength and weaknesses, and also to perhaps get exposure to other companies that may prove to be better investments than the original. Throughout this process, students will generate and record all of their questions and concerns.

Speak with an Analyst

It is expected that the school will subscribe to an online service that allows students access to sell-side stock analyst company reports. Students will review and analyze the key issues in these reports as pertaining to the firm's weaknesses, strengths, opportunities, & threats. In addition, students will get a glimpse at this analyst's earnings estimates and modeling assumptions to drive future modeling by the students. Again, during this process students will continue to generate important questions and concerns. After this, students will have the opportunity to call several industry analysts covering the stock to get added color on the story and recent fundamental changes, as well as ask the questions and express the concerns that have come up thus far in the research process.

The Earnings Model

In our experience we have found that one of the most valuable exercises one can undertake in researching a company is building an earnings model to project the firm's future earnings. This process begins by breaking out the key revenue segments and determining what the key variables or "drivers" of the income statement are. After replicating past financial data and projecting the entire income statement into the future, analysts will work into the model all the assumptions they have made based on the research they have done thus far in order to generate proprietary earnings projections. In this model, the "drivers" are shaded blue, and student analysts are able to manipulate

them according to their research in order to arrive at a best-estimate of the firm's bottom line: earnings.

The earnings-per-share projections that student analysts make are truly the product of their research efforts, for it is this single figure that drives future cash flows and stock valuation.

To assist students with the modeling process, accounting and finance professors will help students develop financial forecasts and pro-forma financial statements using a spreadsheet program such as Microsoft Excel.

On-Site Management Visit

A key element in judging the quality of the company is the competence, integrity, and good judgment of the management team (Cunningham, 2001). Any analyst or investor who invests in a stock without visiting management is exposing themselves to added risk. Through meeting personally with management, students will be able to ask critical questions generated during all prior research. Ideally students will also have the opportunity to visit the company's headquarters as well as distribution centers and/or other pertinent facilities associated with the firm's operations.

The key to this step of the process is that the analyst simply meet management and have the opportunity to at least talk to them briefly so as to develop a sufficient degree of trust in them. If student analysts become comfortable with a company's numbers AND its management team, then they should look to recommend the stock for immediate purchase.

"Scuttlebutt"

Next students seek to gain information regarding a company and its management from other sources, some biased and others more objective. Students will speak with suppliers, customers, competitors, industry experts, and others. This provides a good opportunity to gain additional background on the management team and check for any trends or negative experiences in their past as executives (Fisher, 1996).

Another great way to gather "scuttlebutt" on a company is to try their products, visit their store, sample their services, etc. It is this "kicking the tires" exercise that will help add that final amount of color to a student-analyst's research that will make it complete and a value-add resource (Lynch, 2000).

Research Report and Recommendation

Finally, students will take all of the information and knowledge they have gained about a company, its prospects, and its downfalls and compile them into an in-depth research report. The purpose of this report is to allow students to formulate all the nebulous thoughts, concerns,

assumptions, and expectations they have developed during the due diligence process into a clear, cohesive report. Also, this is the forum where students will present their earnings estimates and establish a target price. This target price is established by multiplying the projected earnings-per-share (EPS) in two years by the students estimated price-to-earnings (P/E) ratio at that time. This p/e ratio will be determined both by considering past P/E's held by the company as well as the growth rate the company expects to maintain in EPS beyond that point (Reilly & Brown, 2000).

Then, based upon the upside potential in the stock price-from today's price to the projected two-years-out price-the student will make an investment recommendation for the stock. Finally, students will summarize this lengthy report into a one-to-two page stock recommendation. A template for this summary sheet will be made available to students so they only have to fill in the detail for the specific company they are covering.

CONCLUSION

This paper has outlined how schools can initiate true involvement rather than token participation by finance students in high-level stock analysis. Through an in-depth, hands-on, and industry-worthy process, students gain critical experience that will prepare them for successful entry in competitive Wall Street positions upon graduation. Furthermore, the extremely valuable research product that these student-analysts produce will be used to drive the performance of the school's investment portfolio of endowment funds. This exercise will not only enhance the level of education that these finance students receive, but it will also benefit the school, as well as the firms and local economy in the surrounding geographic region.

REFERENCES

Cunningham, L.A. (2001). *The Essays of Warren Buffett: Lessons for Corporate America.* New York, NY: Cardozo Law School.

Fisher, P.A. (1996). *Common Stocks and Uncommon Profits.* New York, NY: John Wiley & Sons, Inc.

Lynch, P. (2000). *One Up on Wall Street.* New York, NY: Simon & Schuster.

Reilly, F.K. & K.C. Brown (2000). *Investment Analysis and Portfolio Management* (Sixth Edition). Stamford, CT: Thomson Learning.

AN EXPLORATION OF MUNICIPAL FINANCIAL DISCLOSURE AND CERTAIN DIMENSIONS OF POLITICAL CULTURE

David Malone, Texas Tech University

ABSTRACT

The study reported herein posits a relationship between the extent of municipal financial disclosure and the political culture of that municipality. Municipal financial disclosure is framed as a monitoring device, serving as a communication tool between municipal government and interested users of that information. Political culture is principally a measure of the interaction between a government and its citizenry. The study builds an argument that when there is a significant amount of interaction between a municipal government and its related population (ie., the political culture construct), the level of disclosure will be greater. The study finds a positive relationship between the political culture of a municipality and the amount of information dissemenated by that municipal government.

INTRODUCTION

Watts and Zimmerman (1990), in an assessment of a decade of positive theory research, asserted that most positive theory studies have focused on three types of variables in explaining management disclosure choice: those associated with management incentives, debt constraints, and political costs. With respect to entities within the private sector, political costs arise as a result of increased exposure. Most often, this has been related to the size of the entity, and studies have probed the relationship between firm size and levels of disclosure (e.g., Depoer ,2000; Malone, 1994; Chow and Wong-Boren, 1987; Buzby, 1975; and Singhvi and Desai, 1971). Extent of disclosure has also been extended to institutions of higher learning, in which systematic relationships between not only traditional measures (e.g., institution size) but also service-related factors were found positively related to extent of disclosure (Gordon, et.al., 2002.) Municipalities have also been studied for the relationship between size and extent of disclosure (Plewa, 1983). This study moves beyond the use of size and other traditional variables in explaining the level of disclosure. Political culture is a measure of a certain dimension of the "personality" of a municipality, dealing primarily with the relative interaction between the government of a municipality and its population. This study offers evidence that the level of that interaction will influence levels of disclosure by the municipality.

Specifically, using a positive theory of predicting institutional behavior, this study posits that in an environment where political culture tends more toward a moralist perspective (higher levels of interaction), exposure of the municipality and participation by the populace are high, and thus the level of monitoring will be increased. For a municipality that tends more toward a traditionalist perspective (lower levels of interaction), exposure of the municipality and participation by the populace are low, and the level of monitoring will be lower.

The results of the study indicated a correlation between extent of disclosure and five of nine variables measuring relatively narrow dimensions of political culture, two of three somewhat broader dimensions of political culture, and with the broadest measure of political culture adopted by the study. Additionally, the study examined the relationship between extent of municipal financial disclosure and five traditional constructs and judged two of those correlations to be significant.

The remainder of the paper discusses the literature associated with extent of disclosure and political culture, research questions and hypotheses, methods to test the hypotheses, analysis of data and results, and conclusions and recommendations for further study.

REVIEW OF THE LITERATURE

Cerf (1961) seems to have been the first to measure the extent of financial disclosure through the construction of an index. Others that followed measured extent of disclosure using various indices of disclosure, sometimes with analyst weightings, and at other times not. Variables that have traditionally been examined in those studies have included firm size, listing status, size of the external auditor, and leverage. For a comprehensive review of the disclosure literature, including the means by which indices have been constructed, see Malone, Fries, and Jones (1993).

Disclosure takes place in a very complex environment, and responds to a variety of needs and pressures. In a municipal environment, within the Watts and Zimmerman (1990) framework, studies have generally focused on debt constraints and political costs. Within that framework, the current study looks more closely at the incentives management (i.e., local government officials) has in disclosing financial information. The study postulates that consistent with findings of Koven and Mausolff (2002), fiscal behaviors in government are influenced by cultural factors, in addition to "objective political and economic factors (74)."

Sharkansky (1969) wrote of the utility of the measurement of political culture as more generally described by Elazar (1966). Sharkansky explained Elazar's classification of governments as a linear scale that included, at one extreme, governments described as Moralist, at the other extreme, Traditionalist, and between the two, Individualist. He defined the bounds of political culture of a governmental entity along this spectrum as a function of government intervention and participation. A moralist culture is observed favoring strong government programs and a high degree of participation, both by the government in the affairs of its populace, and by the populace

in the affairs of the government. An individualist culture would be characterized by government intervention and participation only to the extent that it achieved a balance that maximized the public welfare. A traditionalist culture opposes all government intervention and participation except that required to maintain status quo.

It may be useful to consider the following situation to understand better the nature of the likely reactions of a moralist government relative to a traditionalist one. Consider a municipality that is encountering difficulties with respect to pedestrians and bicyclists using the same sidewalks. The reaction of a moralist government would be to react immediately, enacting ordinances, more rigorously enforcing existing ones, spending money for the construction of separate bike paths, etc. Reaction by the public could come in several forms. There could be full support by certain portions of the voting population. But in other sectors, there might be resistance, either in the form of supporting other alternatives for solving the problem, or not supporting any sort of change (i.e., many of the cyclists may not have perceived a problem, and would have thus been satisfied with the status quo). It is important to note that because of the participative/reactionary nature of a moralist form of government, change is more likely to prompt strong public reaction.

At the other end of the spectrum, traditionalists would examine the issue carefully, and institute changes only if the existing status quo seemed threatened. So if the populace were to indicate a strong dissatisfaction with the lack of bike paths, and the existing rule making body perceived a threat to the tenure of its current elected officials, changes would be instituted. When one considers potential re-election implications, one can also see the variability in potential political exposures associated with the spectrum of reactions.

Consider then, the effect on disclosure. The moralist entity will have significant incentives to disclose fully the reasons for instituting the measures it does. If, for example, there have been several bicycle/pedestrian accidents, the city can cite those statistics in support of their actions. The traditionalist entity, on the other hand, will have relatively little marginal incentive to provide disclosure of their reasons for nonaction. Given, by definition, the moralist entity will be involved in more issues than their traditionalist counterpart, we would expect a greater number of opportunities for reaction, and thus a greater extent of disclosure.

Although Sharkansky described this paradigm as a continuum, other authors have characterized it differently. Miller (1991) described the three dimensions as a polythetic structure, composed of relationships that could combine any or all characteristics of the three cultures. So in Miller's model, a municipality might exhibit any of three political culture traits described by Sharkansky, in two dimensional, rather than one dimensional space.

Hanson (1992) further described political culture as a non static phenomenon. However, it was an acculturation of individuals migrating from one cultural environment to another that was described this way. Some change could be observed in the political entity over time. But the cultural characteristics of the entity were, for the most part, stable.

RESEARCH QUESTIONS AND HYPOTHESES

In the previous section, political culture is described as one where there may be more significant political exposure associated with a moralist culture than a traditionalist one. This exposure can be identified as potential lost votes by elected officials, appointed officials who stand to lose their job with a change in administration, or loss of position due to significant public pressure in relation to the administration of a solution to a controversial issue. They are primarily derived from the additional exposure associated with a more active government body. This study argues that in order to minimize the consequences of political exposure in that context, extent of disclosure is expected to increase as a governmental unit moves from traditionalist to moralist (i.e., from a relatively low political cost environment to a relatively high one).

The current study proposes this as an empirical question: Is the political culture of a municipal entity related to the extent to which it discloses information? Based on the theory developed by Elazar, operationalized by Sharkansky, this study posits a positive relationship between extent of disclosure and the measure of a municipality's political culture. Based on the premise that extent of disclosure is a form of monitoring, and that the measure of political culture is developed along a continuum where a relatively low score represents low interference and low participation, the following testable hypothesis can be developed:

H1:	Extent of financial disclosure by a municipality is positively correlated with its score of political culture (CULTURE).

In an effort to test this question, the current study proposes that the measure of political culture can be disaggregated into several dimensions. Patterson (1968) described political culture as 'a somewhat open-ended concept...open-ended in the sense that a rather wide variety of cognitions, values, and emotional commitments might be included in an analysis. It is multi-faceted, or multi-dimensional, in the sense that it consists of several analytically distinct though presumably inter-related factors (p. 188).' The important implication of this statement is that political culture is not a variable to be summarily measured, but one that may consist of many possible, perhaps non static, dimensions.

Sharkansky (1969) developed a model describing political culture as composed of three dimensions. Those three dimensions included 1) level of participation by the populace in the affairs of its government, 2) size and perquisites of the government bureaucracy, and 3) scope, magnitude, or costs of government programs. Using this model, the study disaggregates the political culture construct into three independent hypotheses:

H2a:	Extent of financial disclosure by a municipality is positively correlated with participation by constituents in the affairs of its government (POPVOTE).
H2b:	Extent of financial disclosure by a municipality is positively correlated with the size and perquisites of the government bureaucracy (SIZE).
H2c:	Extent of financial disclosure by a municipality is positively correlated with the scope magnitude and costs of government programs (SCOPE).

Sharkansky further identified specific variables that could be used to test hypotheses within the domain of these dimensions. In that study, measures of political culture were primarily focused on state jurisdictions. The current study focused on municipal jurisdictions, thus adapted the variables used by Sharkansky accordingly. Perhaps the most difficult dimension to measure was that of participation. The only conveniently measurable proxy for participation was percentage of population voting in the last municipal election.

For the purpose of constructing a proxy of the size of the bureaucracy, four measures from the Sharkansky study were adopted: the ratio of employees to municipal population (RATIOEMP), the number of municipal employees (NUMEMP), the average salary paid municipal employees (SALARY), and the percentage of personal income paid in taxes (INCPAID). RATIOEMP and NUMEMP were defined using all full-time municipal employees plus one-half the number of part-time employees. SALARY was defined as the average full- time annual salary. INCPAID included all federal, state, and municipal taxes, expressed as a proportion of personal income, paid by an individual living within the city limits, as measured by the city.

Scope of government programs was composed of the following measures: municipal expenditures per capita (EXPENCAP), percentage of students finishing high school (SCHOOL), road mileage per capita (ROADS), average aid payments to constituents (AIDPMTS). EXPENCAP was the total expenditures disclosed on the Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, expressed on a per capita basis. SCHOOL was the percentage of ninth grade students who finished high school. Road mileage per capita included all primary and secondary roads within the city limits. And AIDPMTS was measured as the average welfare payment made to recipients of such benefits.

The above measures constituted the variables used in formulating the following hypotheses, each of which was independently tested:

H3a:	Extent of financial disclosure by a municipality is positively correlated with the percentage population voting in the last municipal election (POPVOTE).
H3b:	Extent of financial disclosure by a municipality is positively correlated with the ratio of employees to municipal population (RATIOEMP).

H3c:	Extent of financial disclosure by a municipality is positively correlated with the number of municipal employees (NUMEMP).
H3d:	Extent of financial disclosure by a municipality is positively correlated with the average salary paid municipal employees (SALARY).
H3e:	Extent of financial disclosure by a municipality is positively correlated with percentage of personal income paid in taxes (INCPAID).
H3f:	Extent of financial disclosure by a municipality is positively correlated with municipal expenditures per capita (EXPENCAP).
H3g:	Extent of financial disclosure by a municipality is positively correlated with percentage of students finishing high school (SCHOOL).
H3h:	Extent of financial disclosure by a municipality is positively correlated with road mileage per capita (ROADS).
H3i:	Extent of financial disclosure by a municipality is positively correlated with average aid payments to constituents (AIDPMTS).

Finally, the study, in the process of gathering information related to extent of disclosure and political culture, gathered information necessary to test more conventional variables associated with municipal characteristics. Giroux and Wiggins (1987) forwarded evidence that the complexity of a bureaucracy is associated with increased intergovernmental grant activity. The means of measuring these "political factors" are achieved through two variables: a Simplicity Index and Revenue Breadth. The current study adopted these variables intact, designated SIMPLE and REVSOURCE respectively. The simplicity index is a function defined by Giroux and Wiggins as:

$$S(Simple) = Sum\ R_i^2$$

where R_i^2 is "the share of revenue derived from a particular tax source." Three principal tax sources were identified: property tax, sales tax, and special assessments. This variable, unlike the others examined in the study, has a negative expected correlation with extent of disclosure. SIMPLE will be larger as the number of tax sources becomes more concentrated. Thus, if we interpret fewer tax sources as lower levels of bureaucracy, we would expect a priori an inverse relation to extent of disclosure. Revenue breadth, the other factor examined in the Giroux and Wiggins study was measured as the number of revenue sources of a municipality. As mentioned above, it is designated REVSOURCE

The current study also examined the size of the municipality, a traditional measure of political cost (Watts and Zimmerman, 1990). Total municipal population was used as a proxy for size, and is designated TOTALPOP.

Two variables, total bonded debt (BONDDEBT) and total bonded debt per capita (DEBTCAP) were also examined. Jensen and Meckling (1976) argued that higher proportions of outside financing are associated with greater agency costs. As the costs of the agency relationship increase, the cost effectiveness of monitoring also increases. One form of monitoring is the disclosure of financial information by the agents. Thus, greater proportions of outside financing produce greater marginal incentives to provide additional disclosure.

RESEARCH METHODS

This section is divided into two parts. It first identifies the means by which extent of municipal financial disclosure was measured, including the selection of a sample of municipalities. Second, the measures of political culture are discussed.

Most measurements of extent of financial disclosure have been accomplished using a predetermined list of disclosures that financial analysts and/or loan officers deemed important in the investment decision process. (See for example Cerf, 1961; Copeland and Fredericks, 1968; Singhvi and Desai, 1971; Choi, 1973; Buzby, 1974 and 1975; Plewa, 1983; Chow and Wong-Boren, 1987; Malone, et. al., 1993; Gordon, et. al., 2002). Both weighted and unweighted indices have been used.

Measurement of extent of financial disclosure is problematic. Differing interpretations would include differing sources of financial disclosure. Further, even if there existed a consensus of opinion as to the sources of financial disclosure, the means by which to measure the extent thereof would vary. The literature cited above provides ample guidance on the measurement of extent of disclosure; however, one must interpret this measurement in the context of their own sense of the meaning of "extent of disclosure." Following is a description of how this study measured extent of disclosure.

Letters were mailed requesting the Comprehensive Annual Financial Report (CAFR) of 200 randomly selected municipalities across the United States. After two mailed requests, 57 CAFRs were obtained (for a 28.5% response rate). These municipalities are listed in Appendix A. The CAFRs were examined in order to compile a comprehensive list encompassing all disclosures by each municipality. As these reports were analyzed and the disclosures noted, the financial data necessary for hypothesis testing were recorded. Portions of the data for the measurement of the various independent variables were also gathered in this process.

A survey questionnaire, listing the items of disclosure found in the CAFRs of the sample municipalities was constructed (see Appendix B). The questionnaire elicited, from municipal analysts, the relative importance of each of the items of disclosure within the context of an evaluation of a municipality's bond rating. The sample of analysts surveyed included 384 randomly selected municipal analysts. Of the 384 surveys mailed, 41 were returned undeliverable, and 17 unusable responses were received. Seventy usable responses were received, for a 21.5% response rate. The analysts were asked to weight each item on a scale of 0-4, with 0 representing "of no

importance" in the investment decision, a 1 representing "of little importance," a 2 representing "of moderate importance," a 3 representing "of significant importance," and a 4 representing "of critical importance." Determining the mean weight for a given disclosure provided a surrogate for the relative importance of that item being disclosed in the CAFR.

If the economic circumstances of a municipality indicated that a particular disclosure was appropriate, the mean weight was added to the total possible disclosure. Then, if the particular disclosure was actually made, the same mean weight was added to the total actual disclosure. The actual score was divided by the total score to arrive at the measure of extent of municipal financial disclosure (EXTENT). Thus, the measure of extent of disclosure, as used in this analysis, represented a municipality's total actual disclosure score as a percentage of that municipality's total possible disclosure score.

The current study adopted (and adapted) the methodology of Sharkansky (1969) to measure the political culture of a municipality as a linear function. Elazar (1966) described a continuum whereby political culture is defined within three categories: moralist, individualist, and traditionalist. Sharkansky developed that continuum into a measurable scale, based on observations of surrogate measures of the factors of participation, size of bureaucracy, and scope of government programs. In Elazar's characterization of a governmental entity, a moralist culture would foster, an individualist culture would minimize, and a traditionalist culture would inhibit governmental bureaucratization. Sharkansky's scale affords a relatively high score for entities that fall within a moralist culture, and one that is relatively low for one that is traditionalist.

By more broadly interpreting the construct of political culture, the current study asks: Is the political culture of a municipality related to the extent to which it discloses financial information? Further, are there various dimensions of political culture that are associated with extent of municipal financial disclosure?

In order to answer these questions, the dimensions of political culture were dissected into nine measurable factors, as described above. Much of that information was available in the municipal reports provided. Relevant searches of the County and City Data Book (1988) provided additional statistics for cities with populations over 25,000. And finally, for those data still missing, a survey was sent to the city clerks of the 57 respective cities requesting the additional information. Twenty one responses were received. The principal difficulty of collecting data for the sample was the size of the cities. In previous studies, investigators limited the sample to cities with over 25,000 people, imposing restrictions on the external validity of the results. This did, however afford those investigators the availability of data from census reports. With the inclusion of smaller cities, the current study sacrificed availability of data in order to extend the tests to a more representative sample.

The data gathered for each of the nine independent factors associated with political culture and the five more traditional variables were collected in a form that permitted a direct comparison to extent of disclosure. Participation, size, and scope, however, were combinations of the nine

independent factors. Participation was made up of only one of the factors - percentage of population voting in the last municipal election (POPVOTE). Thus, it did not have to undergo any transformation. However, four variables, RATIOEMP, NUMEMP, SALARY and INCPAID, were combined to form the variable SIZE. And four variables, EXPENCAP, SCHOOL, ROADS, and AIDPMTS, comprised the variable SCOPE.

SIZE and SCOPE were a function of the standard-normal scores of their constituent variables. A mean was computed for each variable, and a Z-score assigned for each observation. For each municipality, the Z-scores were summed, and because of missing data, divided by the number of observations for that municipality within each dimension.

In order to do this, each of the constituent variables was tested for normality of distribution. The Shapiro-Wilk statistic, W, was computed for each variable to test this hypothesis. On the initial examination, only two variables proved to be normally distributed. Distributional problems arising from nonnormally distributed data may be treated in a variety of ways. Foster (1986) described several methods. Two of those methods were adopted for this study. First, extreme values (in this case, values that deviated by more than three standard deviations from the mean) were eliminated. Second, a logarithmic transformation was performed on the remaining problematic variables. After these two methods were applied, only one variable remained distributed nonnormal. That variable, SCHOOL, was eliminated from further consideration in the study. POPVOTE, SIZE, and SCOPE were tested for correlation with EXTENT, consistent with testing the second hypothesis.

To test the first hypothesis, values of POPVOTE (assigned Z- values for this test), SIZE, and SCOPE were then summed to arrive at a value for CULTURE. CULTURE was then tested for significant correlation to the dependent variable EXTENT.

RESULTS AND ANALYSIS OF TESTS

Table 1 presents the results of a correlation analysis of each of the independent variables examined in the study. On the question of the first hypothesis, the study found support for the conclusion that there is a significant correlation between extent of municipal financial disclosure and political culture (p- value=.0478).

The second hypothesis questioned whether a correlation existed between extent of disclosure and the various dimensions of political culture. Three dimensions were identified: POPVOTE, SIZE, and SCOPE. As mentioned above, POPVOTE represented the issue of participation of the population in the affairs of municipal government, and in this study consisted singularly of percentage of population voting in the last municipal election. It was found to be significantly correlated to extent of disclosure (=.0347).

SIZE represented the size and perquisites of the bureaucracy, and consisted of RATIOEMP, NUMEMP, SALARY and INCPAID. Departing from the .05 level of significance, SIZE, for the purpose of the study was judged to be significant (=.0647). This conclusion was reached on the

basis that the current study worked with a relatively new means of measuring political cost, and given the size of the sample, found merit in the argument that the dimension warrants further examination.

Table 1 : Results of Pearson Product Moment Correlations Between Independent Variables and Extent of Municipal Financial Disclosure			
Independent Variable	Correlation	p	N
CULTURE	.27056	.0478*	54
POPVOTE	.47404	.0347*	20
SIZE	.37504	.0647*	25
SCOPE	-.28814	.2462	18
POPVOTE	.47404	.0347*	20
RATIOEMP	-.11786	.6757	15
NUMEMP	.74271	.0001*	27
SALARY	.26753	.2410	21
INCPAID	.60948	.0814*	9
EXPENCAP	.23517	.0782*	57
SCHOOL	.57063	.0210*	16
ROADS	-.31137	.1139	27
AIDPMTS	.20123	.6036	9
REVSOURCE	.09759	.4913	52
SIMPLE	-.04124	.7716	52
TOTALPOP	.70880	.0001*	57
BONDDEBT	.59698	.0001*	55
DEBTCAP	.18894	.1712	54
* Variables judged by this study to be significant.			

SCOPE represented the scope, magnitude, costs and innovative character of government programs, and was composed of the variables EXPENCAP, ROADS, AND AIDPMTS (SCHOOL was eliminated because of distributional problems). SCOPE was found to be not significantly correlated to extent of disclosure (=.2462).

Rather than attempting to draw conclusions regarding the nine independent components of political culture, and implying a certain precision to the data, it is perhaps more constructive to look at the overall significance of the population of variables. Five of the variables, POPVOTE,

NUMEMP, INCPAID, EXPENCAP, and SCHOOL were observed at significance levels that would provide a strong incentive to investigate these relationships further.

When examining the strength of the independent findings in light of the conclusions drawn with respect to the broader measures of political culture, this study concludes that evidence exists to support the conclusion that extent of municipal financial disclosure is positively associated with political culture.

The study failed to support prior findings by Giroux and Wiggins (1987) that bureaucratic complexity was associated with monitoring. However, when examining more traditional measures of political costs and debt constraints on agents, in the form of total municipal population and total municipal bonded debt, a very strong correlation was found. The study failed to support a relationship between debt per capita and extent of municipal financial disclosure.

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Results of the tests discussed above provide evidence for the argument that extent of financial disclosure by municipalities and political culture are associated. In the process of examining that question, the study further found strong evidence that a relationship exists between extent of disclosure and more traditional measurements of political costs, as well as debt constraints.

Perhaps the most apparent extensions of this study include a broader definition of extent of disclosure, and a refinement of the measurement of political culture. Wright and Groff (1986) argued that extent of financial disclosure encompasses a wide variety of vehicles, including not only formal reports and filings, but also such sources as news releases, newsletters, publication of minutes of council meetings, etc. The current study used only the CAFRs provided by the municipalities, but a more comprehensive study would appropriately encompass a broader set of sources of disclosure.

The measurement of political culture is also one that could be refined. Political culture as explored in political science studies focuses primarily on the state level of government. The current study drew from that literature to forge a similar measure for the municipal form of government. In measuring political culture at that level, there may be better ways of capturing the various dimensions. For example, the percentage of population voting in the last municipal election was used to capture the dimension of participation. That variable was used for its relative availability. Perhaps other variables, such as municipal election candidates per capita, or number of letters per capita received by city hall might foster a more comprehensive measure.

The strength of the findings provide strong incentives to examine further the questions of this study, as well as extending the construct of political culture to other questions in accounting research. Political science literature discusses political culture in the context of government entities. However, measurement of the dimensions of political culture (ie. participation, size, and scope) lend

themselves in the same way to the private sector. It may thus provide a more sophisticated vehicle by which to examine political exposures in private sector studies.

REFERENCES

Buzby, S. L., (1974) Selected Items of Information and Their Disclosure in Annual Reports. *The Accounting Review* 49(3), 423- 435.

Buzby, S. L., (1975). Company Size, Listed Versus Unlisted Stocks, and the Extent of Financial Disclosure. *The Journal of Accounting Research* 13(1), 16-37.

Cerf, R. A., (1961). *Corporate Reporting and Investment Decisions*. Berkeley, CA: The University of California Press.

Choi, F. D. S., (1973). Financial Disclosure and Entry to the European Capital Market. *The Journal of Accounting Research* 11(2), 159-175.

Chow, C. W. and A. Wong-Boren (1987). Voluntary Financial Disclosure by Mexican Corporations. *The Accounting Review* 62(3), 533-541.

County and City Data Book (1988). Washington, D.C.: U.S. Department of Commerce, Bureau of the Census.

Copeland, R. M. and W. Fredericks 43(1968). Extent of Disclosure. *Journal of Accounting Research* 43(1), 106-113.

Depoers, F., (2000). A Cost Benefit Study of Volutary Disclosure: Some Empirical Evidence from French Listed Companies. *European Accounting Review* 9(2), 245-263.

Elazar, D. J., (1966). *American Federalism: A View From the States*. New York: Thomas C. Crowell.

Foster, G., (1986). *Financial Statement Analysis*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Gordon, T., M. Fischer, D. Malone, and G. Tower (2002). A Comparative Empirical Examination of Extent of Disclosure by Private and Public Colleges and Universities in the United States. *Journal of Accounting and Public Policy* 21(3), 235-275.

Giroux, G. and C. Wiggins (1987). Intergovernmental Grants and Local Needs. *Journal of Accounting and Public Policy* 6(3), 169-183.

Hanson, R. L., (1992). The Political Acculturation of Migrants in the American States. *The Western Political Quarterly* 45(2) 355-383.

Jensen, M. C. and W. H. Meckling (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3, 305-360.

Koven, S. G. and C. Mausoloff (2002). The Influence of Political Culture on State Budgets," *American Review of Public Administration* 32(1), 66-77.

Malone, D., C. Fries, and T. Jones (1993). An Empirical Investigation of the Extent of Corporate Financial Disclosure in the Oil and Gas Industry. *Journal of Accounting, Auditing, and Finance* 8(3), 249-275.

Miller, D. Y., (1991). The Impact of Political Culture on Patterns of State and Local Government Expenditures. *Publius: The Journal of Federalism* 21(2), 83-100.

Patterson, S. C., (1968). The Political Cultures of the American States. *The Journal of Politics* 30(1), 187-209.

Plewa, F. J., Jr., (1983). *An Empirical Investigation of the Extent of Disclosure in Municipal Annual Reports*. Ph.D. Dissertation, The Louisiana State University and Agricultural and Mechanical College.

Singhvi, S. and H. B. Desai (1971). An Empirical Analysis of the Quality of Corporate Financial Disclosure. *The Accounting Review* 46(1), 621-632.

Sharkanski, I., (1969). The Utility of Elazar's Political Culture. *Polity* 1, 66-83.

Watts, R. and J. Zimmerman (1990). Positive Accounting Theory: A Ten Year Perspective. *The Accounting Review* 65(1), 131-156.

Wright, C. and J. Groff (1986). Uses of Indexes and Data Bases for Information Release Analysis. *The Accounting Review* 61(1), 91-100.

Appendix A
Sample Municipalities

Azusa, CA	Navasota, TX	Barrington, RI	Nevada, IA
Belton, MO	North Bend, OR	Bozeman, MT	North Muskegon, MI
Brainerd, MN	Ontario, CA	Butler, IN	Oregon City, OR
Bridgeport, OH	Owensboro, KY	Bryan, OH	Pascagoula, MS
Chanhassen, MN	Phoenix, AZ	Cresco, IA	Pine Island, MN
Creskill, NJ	Rangeley, ME	Daingerfield, TX	San Jacinto, CA
Destin, FL	Saugerties, NY	East Palestine, OH	Smyrna, GA
Evansville, WY	Sparks, NV	Fergus Falls, MN	Spencer, WV
Forks, WA	Summit, NJ	Gainesville, GA	Tell City, IN
Gibson, IL	Tillamook City, OR	Guilford, ME	Torrance, CA
Gridley, CA	Ville Platte, LA	Haddonfield, NJ	Waupun, WI
Hattiesburg, MS	West Allis, WI	La Grange, IL	West Burlington, IA
Larchmont, NY	Weston, CT	Liberty, SC	White Sulpher Springs, WV
Marceline, MO	Winooski, VT	Martinez, CA	Yarmouth, ME
Middletown, OH			

Appendix B
MUNICIPAL ANALYSTS QUESTIONNAIRE

Instructions:

Attached is a list of items that could be disclosed in the Comprehensive Annual Financial Report (CAFR) of a municipality. Please evaluate the importance of each item being provided by each municipality in the context of a bond rating decision. To record your evaluation, rate each item according to the following scale:

        0 = Of no importance
        1 = Of little importance
        2 = Of moderate importance
        3 = Of significant importance
        4 = Of critical importance

INTRODUCTORY SECTION OF COMPREHENSIVE ANNUAL FINANCIAL REPORT
_____ Principal Officials
_____ Organizational Chart
_____ Dedication
_____ Financial Highlights

_____ Letter of Transmittal
_____ Report Introduction
_____ Departmental Organization of the City
_____ Form of Municipal Government
_____ Economic Condition and Outlook
_____ Major Projects
_____ Budgetary Controls
_____ Internal Controls
_____ Sources of Revenue
_____ Nature of Expenditures
_____ Fund Activity Summaries
_____ Awards (e.g. Certificate of Achievement in Reporting)
_____ Report Acknowledgements
_____ New Programs
_____ History of the City
_____ City Public Facilities
_____ Industry
_____ Long-term Goals

FINANCIAL SECTION OF COMPREHENSIVE ANNUAL FINANCIAL REPORT
_____ Independent Auditor's Report
_____ Independent Auditor's Report on the Schedule of Federal Financial Assistance
_____ Schedule of Federal Financial Assistance
_____ Independent Auditor's Combined Report on Internal Control Structure

_____ Independent Auditor's Report on Internal Accounting and Administrative Control Systems Used to Administer Federal Financial Assistance Programs

_____ Independent Auditor's Report on Compliance with Laws and Regulations Based on an Audit of General Purpose Financial Statements in Accordance with Governmental Auditing Standards

_____ Independent Auditor's Report on Compliance with Requirements Applicable to Nonmajor Federal Financial Assistance Program Transactions

_____ Schedule of Findings and Questioned Costs

Notes to Financial Statements

_____ Summary of Significant Accounting Policies

Schedules of Fixed Assets

_____ General

_____ Enterprise Fund

_____ Internal Service

_____ Separate Taxing Entity

Schedules of Long-Term Debt

_____ Principal

_____ Terms

_____ Retirements

_____ Computation of Debt Margin

_____ Schedules of Changes in Fund Equity

_____ Budgets and Budgetary Control

_____ Sources of Tax Revenues and Receivables

_____ Intergovernmental Transactions

_____ Interfund Transactions

_____ Schedule of Contributed Capital - Enterprise

_____ Schedules of Cash and Investments

_____ Segment Information - Enterprise Funds

_____ Public Employee Retirement System (PERS)

_____ Trend Data for PERS

_____ Actuarial Values and Funding Status Relative to Pension Benefits

_____ Pending Litigation

_____ Budgetary Compliance

_____ Accumulated Deficits

_____ Commitments and Contingencies

_____ Deferred Compensation

_____ Deferred Revenues

_____ Self-insurance Policy

_____ Restricted Assets

_____ Related Party Transactions

_____ Lease Arrangements

_____ Compensated Absences

_____ Combining Statements
_____ General Fund
_____ Special Revenue Funds
_____ Debt Service Funds
_____ Capital Projects Funds
_____ Enterprise Funds
_____ Internal Service Funds
_____ Trust and Agency Funds
_____ General Fixed Assets
_____ General Long-Term Debt

STATISTICAL SECTION OF COMPREHENSIVE ANNUAL FINANCIAL REPORT

_____ Combined Schedule of Cash and Investments
_____ Delinquent Individual Taxes
_____ Property Acquired through Tax Title Lein
_____ Minutes of Town Meeting
_____ Projected Budget
_____ Schedules of Cash by Fund
_____ General Expenditures
_____ General Revenues
_____ Intergovernmental Revenue by Source
_____ Property Tax Levies and Collections
_____ Assessed Value of Taxable Property
_____ Property Tax Rates - Overlapping
_____ Tax Levy per Capita
_____ Special Assessments
_____ Ratio of Net General Bonded Debt to Assessed Value and Net Bonded Debt Per Capita
_____ Computation of Legal Debt Margin
_____ Computation of Direct and Overlapping Debt
_____ Ratio of Annual Debt Service Expenditures for General Bonded Debt to Total General Expenditures
_____ Revenue Bond Coverage (by fund)
_____ Demographic Statistics
_____ Construction Permits
_____ Principal Real Property Taxpayers
_____ Schedule of Insurance
_____ Surety Bonds on Officials
_____ Date of Incorporation
_____ Date Charter Adopted
_____ Form of Government
_____ Area
_____ Population
_____ Population Density
_____ Miles of Streets
_____ Miles of Sidewalks
_____ Transit Operations (Airports, Bus Systems, etc.)

_____ Fire Protection
_____ Police Protection
_____ Civil Defense Volunteers
_____ Numbers of Schools and Teachers
_____ Wastewater Systems
_____ Utility Consumption
_____ Miles of Sewer Line
_____ Building Permits Issued
_____ Parks and Recreational Facilities
_____ Libraries
_____ City Employees
_____ Registered Voters
_____ Voting in Last Election
_____ Media
_____ Community Facilities (Motels, Hospitals, Churches, Shopping Centers, etc.)
_____ Housing
_____ City Labor Statistics (e.g. Unemployment, Income per Capita, etc.)
_____ Major Employers
_____ License Sales (Dog, Hunting, etc.)
_____ Insurance Coverage
_____ Number of Street Lights
_____ Community Activity Reports
_____ Median Age
_____ Education Level

Please answer the following questions: (Your responses will be used to compile certain demographic statistics.)

1. What was the highest academic degree you earned?

2. What certifications do you hold? (e.g. CFA, CPA, etc.)

3. What type of company do you work for? (e.g. bank, insurance company, broker, retired, etc.)

4. For how many years have you worked as a financial analyst?

TRANSPARENT FINANCIAL REPORTING: CHARACTERISTICS OF COMPANIES THAT VOLUNTARILY ELECT TO EXPENSE STOCK OPTIONS

Leroy F. Christ, Valparaiso University
Mary York Christ, Valparaiso University
Zhenhu Jin, Valparaiso University

ABSTRACT

Recent corporate scandals have focused attention on a number of accounting choice issues as well as the transparency of financial reporting. One heavily debated topic is the question of how to account for stock options. Under existing accounting standards, companies either record an expense on the income statement for stock options granted or simply disclose the information in the financial statement footnotes. Expensing the options is the more transparent choice. This study compares the characteristics of firms that recently switched to voluntarily expensing stock options with those of a control group of similar companies that continue to only disclose options. Results indicate that the larger the number of inside owners, and the larger the percentage of insider ownership, the less likely the company is to switch to expensing stock options. Additionally, companies with a greater number of institutional owners and larger, more independent Boards of Directors switch to expensing stock options more often. Finally, companies with more volatile earnings switch to expensing more often. Results for hypotheses related to companies with steadily growing earnings, a higher use of stock options for executive compensation, and relatively new Chief Executive Officers are not statistically significant.

INTRODUCTION

Recent corporate scandals have caused financial statement users and preparers to debate a variety of topics related to financial reporting, including the topic of financial statement transparency. One issue frequently raised with respect to transparency is the question of how to account for stock options issued to company executives.

In December 2004, the Financial Accounting Standards Board (FASB) amended the rules for accounting for stock options found in Statement of Financial Accounting Standards (SFAS) No. 123 (FASB, 1995 and 2004). Prior to amendment, SFAS No. 123 defined and encouraged (but did

not require) the use of the fair value method. Under this method, an option-pricing model is used to determine the value of stock options, usually at the date the options are granted to employees. Such models factor in the current market price of the stock, its expected volatility, the option exercise price, the expected life of the option, the expected dividends on the stock, and the current risk-free interest rate for the expected life of the option. Compensation expense is recorded using the option values generated by the model.

Alternatively, SFAS No. 123 (prior to amendment) allowed companies to account for stock options using the intrinsic value method described in Accounting Principles Board Opinion No. 25 (APB, 1972). Under the intrinsic value method, compensation expense is measured as the difference between the market price of the stock (usually measured at the date the option is granted) and the option exercise price. Generally, the exercise price is set equal to (or less than) the current market price, the intrinsic value calculation results in a value of zero (or a negative value), and no expense is recorded. If a company uses the APB No. 25 approach, SFAS No. 123 (prior to amendment) requires footnote disclosure of net income, basic and diluted earnings per share as reported, compensation expense that would have been reported if the fair value method had been used, and pro forma net income, basic and diluted earnings per share that would have resulted if the fair value method had been used.

Historically, most companies have opted to use the intrinsic value method, thereby recording no expense for stock options issued and disclosing the fair values of the stock options in the footnotes. Prior to July 2002, the only two companies in the Fortune 500 to opt for the fair value method were Boeing and Winn-Dixie. However, in the wake of recent corporate scandals, there has been a trend towards switching to the fair value method – with over 100 companies announcing such a change since July 2002 (Robinson and Burton, 2004). This trend suggests a voluntary move towards more transparent financial reporting.

In December 2004, the Financial Accounting Standards Board (FASB, 2004) amended SFAS 123 and superseded APB 25. The revised rules require all companies to expense stock options, effective for annual or interim periods beginning June 15, 2005 or later, depending on size and reporting status of the company. Additionally, in February of 2004, the International Accounting Standards Board (IASB, 2004) issued a standard that requires the expensing of options. Lastly, the United States Congress considered legislation to require the expensing of stock options issued to top executives but has not passed any such legislation to date. With the FASB and IASB both now requiring expensing, essentially all stock options issued to employees will be shown on the income statement in the very near future.

During a time period when accounting for stock options has been very controversial, why did some companies chose to voluntarily expense options while others did not? The Coca-Cola Company was the first major company to announce a switch to expensing in July 2002. In discussing the decision, Coca-Cola Senior Vice President and Chief Financial Officer, Gary P. Fayard, stated "And when you review our company's financial statements, you also know exactly

what you're getting–a clear, straightforward presentation of our financial results. Our move to expense stock options adds to that clarity–and we believe that is what people expect from The Coca-Cola Company." (Fayard, 2002, p. 20) In other words, Coke chose to make its financial statements more transparent. The general belief reported in the press is that investor concern about financial reporting transparency is the driving factor behind companies deciding to make the switch (Pippolo, 2002).

However, a large number of companies chose not to voluntarily expense their options, implying there are other factors outweighing the transparency argument. The purpose of this paper is to explore characteristics of those companies that voluntarily opted to switch to expensing stock options as compared to companies that did not switch. Understanding differences between companies that expense versus only disclose option numbers provides insight into why a more transparent reporting choice might be selected as well as into corporate reporting policy decisions, in general.

The post-Enron financial reporting environment combined with the controversies over the use of and accounting for stock options granted to management provide a unique opportunity for research investigating voluntary accounting choices. This paper contributes to the literature by examining a variety of qualitative and quantitative factors that might affect accounting choices. The paper builds on and adds to the existing body of research in this area.

The next sections present background information and review previous research, followed by sections on the hypotheses and methodology used in the study. The last sections present the results, discussion, limitations, and conclusions.

BACKGROUND ON STOCK OPTION USE

The use of stock options became particularly popular during the 1990's. By the end of 2001, stock options were issued by 90% of large U.S. companies and accounted for almost 60% of CEO pay. In recent years, as the movement towards expensing options has escalated, interested parties have argued the pros and cons of disclosure versus expensing, with groups such as the Council for Institutional Investors and most financial analysts supporting expensing, while the Association for Financial Professionals and Financial Executives International oppose the expensing approach (Tuthill, 2002).

According to Standard & Poors data, 79% of the increase in CEO compensation in the 1990's was due primarily to the use of stock options, providing top executives with strong incentives to manage towards a goal of short-term stock price gains (The Conference Board, 2002). Consequently, in their recommendations and best practice suggestions, the Conference Board recommends that Compensation Committees should be made up exclusively of directors who have no other relationship with the company and can act completely independently in making compensation decisions.

When a company elects the fair value method, the expense recorded for stock options is often a significant number. Consequently, a voluntary decision to record the expense (and future mandatory expensing) may affect company decisions about management's total compensation package. The S&P 500 companies that announced a switch to expensing options have begun to reduce their use of options as well. Collectively, these companies issued 40% less options in 2003 versus 2002. Some companies, such as Exxon Mobil Corp., Progressive Corp., Simon Property Group, and Microsoft have announced they will cease using stock options all together (Wei, 2004). In an October 2003 survey by Deloitte, 75% of 165 respondents indicated they plan to reduce the use of stock options in their compensation plan (Deloitte, 2004).

Many argue that the financial reporting issues of the past few years were largely driven by management's focus on short-term stock price gains and that accounting choices were made to help ensure that reported earnings meet expectations. In the wake of the Enron and WorldCom scandals, a large number of companies have voluntarily restated previously published earnings, citing errors in initially reported numbers. During 2002 and 2003, 330 and 323 companies, respectively, made such restatements, versus 270 in 2001, 233 in 2000, 216 in 1999 and 158 in 1998 (Public Accounting Report, 2004). Since existing generally accepted accounting principles allow a choice of accounting methods for stock options, the restatements do not relate to stock option accounting. However, the significant growth in restatements (22% increase from 2001 to 2002) appears to reflect an increased internal focus on the quality of external financial reporting. This raises an important question as to why have some companies have voluntarily switched to expensing stock options and others have not. Are there differences between the two groups of firms? Are the decisions driven by company-specific factors?

RESEARCH ON STOCK OPTION REPORTING

Aboody, Barth, and Kasznik (2004) investigated factors associated with firms deciding to expense stock options. They found that the decision to expense stock options is significantly related to several variables. First, the more active a firm is in the capital markets, the more likely it is to expense options. They suggest that expensing is a signal of probable future positive results, thereby making the securities more attractive. Second, firms whose CEO and board members own more stock are also more likely to expense, perhaps because they will benefit more from the positive signaling. Third, continuing with the positive signal theory, Aboody et al. find that the greater the information asymmetry, the more likely a firm is to expense. Specifically, firms with less institutional ownership (and presumed more information asymmetry) are more likely to expense. Finally, Aboody et al. found that firm profitability and the proportion of options granted to the top five executives were not associated with expense recognition. While firms that expensed options did have a smaller magnitude of expense than the control group, when other factors were controlled

for, the size of the stock option expense was not significant in determining a firm's decision to expense.

Robinson and Burton (2004) studied the stock market's reaction to companies that have voluntarily switched to expensing options. They found significant positive abnormal returns, primarily for those companies that announced the change earlier (in July 2002 versus August or September). Like Aboody, et al. (2004), they conclude the market reaction is consistent with a signaling theory. Those companies choosing a more transparent accounting method are signaling that they have high quality earnings. Robinson and Burton also found that companies switching had higher net income but lower returns than the control sample during the three years preceding the announcement. While the option expense of those changing is significantly less than the expense would have been for their control samples, it is still a significant number for the ones that did switch.

Ashley and Yang (2004) studied executive compensation and earnings persistence. High earnings persistence is associated with firms that exhibit robust and sustainable earnings, whereas low earnings persistence firms exhibit weak, transitory or unsustainable earnings. They found that those with higher earnings persistence focus on cash compensation (salary and bonus) for their executives rather than equity compensation (e.g. stock options).

Conyon, Mallin, and Sadler (2002) studied information disclosures about directors' share options in a sample of United Kingdom companies and found that the quality of information disclosed about share options is a positive function of the presence of non-executive directors because of their monitoring functions. They also found a negative correlation between quality of information disclosure and corporate size. This is consistent with a class of models that suggest that larger firms suffer propriety and political costs from information disclosure. Political costs may include reductions in profits due to regulation, adverse media reporting, or union rent-seeking demands (Pierce-Brown and Steele, 1977).

Jensen (1993) argued that the management team may have an incentive to behave opportunistically and pursue their own interests at the expense of shareholders if there is no effective monitoring or other countervailing mechanisms such as the threat of take-over. Weisbach (1988) studied CEO turnover and found that CEOs are likely to be dismissed for poor performance and the likelihood of dismissal for poor performance is greater the higher the proportion of outside directors on the board. Forker (1992) argued that disclosure of stock options is greater the more outside directors are present.

HYPOTHESES

The purpose of this study is to explore reasons a company would voluntarily choose to make its external financial reporting more transparent. A voluntary decision to change from only disclosing fair values in the footnotes to expensing stock options is used as a measure of increased transparency. Based on previous research, as well as the current financial reporting environment,

we developed seven hypotheses; hypotheses one to three relate to financial factors and hypotheses four to seven relate to corporate governance and ownership structure.

The current financial reporting environment is calling for more transparency in the financial statements. This suggests removing the stock option information from the footnotes and putting it on the face of the income statement. However, electing to expense stock options will always result in reduced earnings. Ashley and Yang (2004) found that companies with high earnings persistence tend to use stock options less. Both Aboody et al. (2004) and Robinson and Burton (2004) found a change to expensing stock options to be consistent with signaling theory. Specifically, companies changing to the expense approach were viewed as sending a positive signal of probable future positive earnings. Firms with high earnings persistence, however, already have readily apparent positive earnings and do not need to switch to expensing options as a means of sending a positive signal or to provide more transparent earnings reporting.

Hypothesis 1:	A company with relatively stable earnings is less likely to expense stock options.
Hypothesis 2:	A company whose earnings have been increasing is less likely to expense stock options.

The magnitude of the stock option expense may also affect the choice of expensing versus disclosing. Although Aboody et al. (2004) found that the size of the stock option was not a determining factor, it was a significant factor in Robinson and Burton (2004). Furthermore, in the current reporting environment, the firms that are most resistant to expensing options are technology companies that tend to use stock options the most (Tuthill 2002).

Hypothesis 3:	The greater stock options are as a percentage of total executive pay the more likely the company will not expense the options.

The current financial reporting environment places a great amount of pressure on companies to expense stock options. The Conference Board maintains "the board of directors must step up to the problem and resolve the remaining issues in its company – including each director taking personal responsibility" (2002, p. 4). Consistent with Aboody et al. (2004), Conyon et al. (2002), and Forker (1992), our fourth hypothesis predicts that a company with more independent members on its Board of Directors is more likely to switch to expensing stock options.

Hypothesis 4:	A company with more independent members on its Board of Directors is more likely to expense stock options.

Changes in management sometimes result in changes in policies, including disclosure policies. Hypothesis five builds on Weisbach (1988); with the increased demand for transparent reporting, new CEOs are more likely to push for expensing options than those who have been in office for a longer time. This hypothesis is also consistent with the argument that new management often likes to start with a clean slate and are willing to "take a hit" to earnings (the big bath theory) when they first take control.

Hypothesis 5:	A company with a new CEO is more likely to expense stock options.

Finally, the ownership structure of the company can influence corporate policy. Our final two hypotheses relate to the effect of ownership on the decision to expense options. Tuthill (2002) reports that the Council for Institutional Investors supports expensing. Furthermore, recent stockholder votes promoting the expensing of options at Hewlett-Packard (Tam, 2004), Intel (Boslet, 2004), and Dell (Taub, 2004) were all initiated by large institutional owners such as Massachusetts Laborers' Pension Fund and the AFL-CIO Reserve Fund. Those fighting these votes are the company's management, many of whom are major stockholders themselves.

Hypothesis 6:	Companies with greater institutional ownership are more likely to expense stock options.
Hypothesis 7:	The more insider ownership the less likely the company is to expense stock options.

DATA COLLECTION AND METHODOLOGY

During the last half of 2002, the Wall Street Journal web site (http://www.wsj.com) began reporting a regularly updated list of companies that had announced they would begin expensing stock options rather than only disclosing pro forma values in the footnotes. The original sample for this study consisted of 119 companies (identified hereafter as the sample firms or companies) reported to be making such a change as of February 2003. Using the Yahoo!ÒFinance web site (http://finance.yahoo.com), a control company that had not announced a change to expensing stock options was selected for each sample firm. The control company was chosen from a list of firms in the same sector and industry, choosing the firm that was closest in size to the sample firm, based on market capitalization. Finally, financial data for the control companies (referred to hereafter as the control firms or companies) were reviewed to verify that each control company granted stock options to employees and did not already expense its stock options. Additionally, several international companies were eliminated during this process, leaving a final sample of 200, 100 sample firms and 100 control firms. Table 1 presents descriptive data about the sample.

Table 1: Descriptive Data Sample Firms					
Sector	Number of Sample Firms	Average Reduction in EPS if Stock Options Expensed[1]	Average Percentage Reduction in EPS if Stock Options Expensed[2]	Total Market Capitalization of Sample Firms[2]	Percentage of Sector Market Capitalization Represented by Sample[2]
Basic Materials	5	$0.07	9.95%	88.44	8.6%
Capital Goods	3	$0.70	12.15%	13.45	2.4%
Conglomerates	3	$0.05	2.58%	367.57	45.8%
Consumer Cyclical	10	$0.13	70.02%	89.98	11.1%
Consumer Non-Cyclical	4	$0.11	6.97%	270.41	21.3%
Energy	6	$0.04	2.30%	28.00	1.5%
Financial	27	$0.16	13.66%	601.81	14.0%
Services	30	$0.21	20.87%	580.25	13.2%
Technology	6	$0.12	52.46%	21.97	0.8%
Transportation	1	$0.04	1.89%	83.47	26.6%
Utilities	5	$0.04	2.41%	23.82	3.4%
Total Sample	100	$0.16	21.59%	2,169.16	10.3%
1 Values are for the year prior to announcement of the accounting change, from data reported at the Wall Street Journal web site (http://www.wsj.com).					
2 Market capitalization as of July 2004.					

For each pair of companies in the sample, the critical date used for data collection was the sample firm's announcement of the change to expensing stock options. Published data for each sample and control company were collected for the fiscal year or quarter ended just prior to the relevant announcement date, using 10-K and Proxy reports filed with the SEC, Thompson Research Database (formerly Disclosure), and Yahoo!ÒFinance. Table 2 summarizes the data collected for each company and how the data were used to operationalize the variable of interest for each hypothesis.

RESULTS

The results for all hypothesis tests are summarized in Table 3 and discussed below. One-tailed t-tests for independent samples (sample versus control firms) were used for testing all numerical data.

Hypothesis	Variable of Interest	Data Collected	Operationalization of Variable of Interest
		Table 2: Data Collected and Operationalization of Hypotheses Variables	
1	Stable Earnings	9 Quarters of Earning Per Share Data	Standard Deviation of Earning per Share Data
2	Increasing Earnings	9 Quarters of Sales Data 9 Quarters of Earnings Per Share Data	Growth in Sales Growth in Earnings Per Share
3	Stock Options as a Percentage of Executive Pay	Sum of all Compensation Paid to Top Executives During the Year Total Number of Stock Options Issued to Top Executives During the Year Estimated Fair Value of Stock Options Reported in the Financial Statement Footnotes (Usually Based on Black-Scholes Option Model)	Number of Stock Options Issued [1] Estimated Fair Value as a Percentage of Executive Compensation (With Stock Option Value Included as Part of Total Executive Compensation)
4	Independence of Board of Directors	Total Number of Members on BOD Number of BOD Members NOT Current or Previous Members of Company Management	Size of Board Number of Non-Management Members of the BOD
5	New CEO	Year That CEO Assumed Position	Three Years or Less as CEO Considered a NEW CEO
6	Institutional Ownership	Number of Institutional Owners	Number of Institutional Owners
7	Insider Ownership	Number of Insiders Who Own 5% or More of Company Stock Number of Shares Owned by Insiders Who Own 5% or More of Company Stock Total Number of Shares Outstanding	Number of Insiders* Who Own 5% or More of Company Stock Percentage of Outstanding Shares Owned by Insiders Who Own 5% or More of Company Stock

[1]   Insiders are defined as directors and senior officers of a corporation as well as anyone who owns more than 10% of the voting shares of a company.

The first three hypotheses involve financial characteristics of the companies. Of these three, only the first is supported with statistically significant results. Hypothesis 1 predicts that companies with stable earnings are less likely to switch to expensing. The stable earnings construct was operationalized by calculating the standard deviation of Earning Per Share (EPS) for the nine quarters preceding the announcement. Sample firms had an average EPS standard deviation of 0.623 while it was 0.424 for control firms and the p-level for the difference was 0.055. For this sample, firms with greater variation in EPS switched to expensing stock options more often, thereby sending a positive signal regarding future earnings.

Table 3: Results of t-tests							
	Sample Firms		Control Firms				p-value
Variable	N**	Mean	N	Mean	t	df	(1-tail)
1. Standard Deviation of EPS	99	0.623	100	0.424	1.603	197	0.055
2. Average Sales Growth Quarter by Quarter	99	6.0%	100	7.1%	-0.358	197	0.360
3. EPS Growth Quarter by Quarter	99	-12.2%	100	-3.5%	-0.282	197	0.389
4. Stock Options as a Pct of Total Compensation	93	39.5%	94	43.7%	-1.142	185	0.127
5. Total Number of BOD Members	100	11.6	98	10.4	2.354	196	0.010
6. Independent BOD Members	100	9.1	98	8.3	1.665	196	0.049
7. Year CEO Assumed Position	99	1993	97	1994	-0.655	194	0.256
8. # of Institutional Investors	93	1038.4	91	659.5	2.133	182	0.017
9. Number of Insider With 5% or More Ownership	96	1.6	95	2.1	-1.976	189	0.025
10. Pct of Stock Owned by Insiders	96	18.3	95	23.4	-1.662	189	0.049
** One hundred sample and one hundred control companies were used. Cells with sample sizes less than 100 occur due to unavailability of data.							

Hypothesis 2 predicts that a company with increasing earnings is less likely to change to expensing options. The trend in Sales Revenue and EPS were used to operationalize this construct. For revenue, the calculation was the average growth in sales quarter by quarter for the nine quarters preceding the announcement date (Sample Mean = 6.0%, Control Mean = 7.1%, p = 0.360). Average growth in EPS quarter by quarter was also calculated (Sample Mean = -12.2%, Control Mean = -3.5%, p = 0.389). While the results are not significant, it is interesting to note that, on average, all firms experienced increasing sales but decreasing EPS during this period. Although not significant, the direction of the differences between the sample and control companies is in the direction of the hypothesized effect.

Hypothesis 3 predicts that when stock options are a greater percentage of total executive compensation, the firm is less likely to change to expensing options. Using the reported estimated value of stock options issued during the most recent fiscal year, the number of options issued to executives, and the reported other compensation paid to executives, we calculated the percent of top executive compensation that relates to stock options. At the 10% level, the differences between the two groups was not significant (Sample Mean = 39.5%, Control Mean = 43.7%, p = 0.127). However, the direction is as predicted and, for both groups, the stock option percentage is a nontrivial one.

Hypotheses 4 through 7 relate to the corporate governance and ownership structure of the companies. Three of these four hypotheses are supported.

Hypothesis 4 predicts that a company that has more independent members on its Board of Directors is more likely to expense stock options. Data for this hypothesis were collected by reviewing the listing of board members in the annual report for each company for the fiscal year just prior to the announcement date. Current or previous members of management are considered not independent. This is a crude measure of independence because there may be other relationships that impair the board's independence that are not readily observable from published names and titles. Both the size of the board and the number of independent members are significantly different between the sample and control firms. With respect to total size of the board, the sample average was 11.6, the control average was 10.4, and the p value was 0.010. The average number of independent members for the sample was 9.1 versus 8.3 for the control sample (p = 0.049).

Hypothesis 5 predicts that a company with a relatively new CEO is more likely to expense stock options. The data for this hypothesis were the years that the current CEOs assumed the position. This measure does not, however, capture the length of time the individual has been with the company and in what other capacities. Two tests were performed, the first was a t-test comparing the starting year of the CEO for each company. The sample average was 1993 and the control average was 1994 (p = 0.256). As an alternative test, all CEOs who had been in the position for three or less year were classified as "new" and those in the position for longer were classified as "old." The p-value for a Mann-Whitney Test for difference resulted in a p-value of 0.342. Therefore, this hypothesis is not supported.

Hypothesis 6 predicts that companies with more institutional ownership are more likely to expense stock options. The number of institutional owners (Sample Mean = 1038.4, Control Mean = 659.5) is significantly different (p = 0.017) between the two groups. Therefore, Hypothesis 6 is supported.

Lastly, Hypothesis 7 predicts that more insider ownership makes a company less likely to expense stock options. Data were collected on the number of insiders owning 5% or more of the outstanding shares as well as the percent of total shares owned by insiders. Both measures are significantly different between the two groups in the predicted direction. The mean number of insider owners for the sample firms was 1.6 versus 2.1 for the control firms (p = 0.025). The percent of insider ownership for the sample firms is 18.3% versus 23.4% for the control firms (p = 0.049).

ADDITIONAL ANALYSES

Companies in our study were from 11 different industry sectors (see Table 1), with 57 of the 100 companies coming from the financial or services sector. Table 4 presents the data just discussed with average values for each industry and variable. Since most industry sectors have a small number of firms represented (1-10 per sector), no statistical tests were performed to compare the sample and control groups. Table 4 can be used, however, to observe whether the general results appear consistent across different industries. For each of the six variables in Table 3 where there is a

statistically significant difference between the sample and control firms overall, the direction of the difference is repeated in six to nine of the sectors. For the ten sectors other than the Basic Materials, the direction of the variable differences in the sample versus control groups is the same as for the overall sample in four to six of the significant variables. In the Basic Materials sector, only two of the significant variables follow the same trend. Overall, there does not appear to be a basis for concluding there are any industry differences driving the empirical results.

Table 4: Average Variable Values by Industry Sector										
Sector	N(1)		Std Dev of EPS	Average Sales Growth Quarter by Quarter	EPS Growth Quarter by Quarter	Stock Options as a % of Total Comp.	Total Number of BOD Members	Independent BOD Members	# of Institutional Investors	Number of Insiders with 5% or More Ownership	Pct of Stock Owned by Insiders
Basic Materials	5	Sample	1.1077	(0.0283)	0.1604	55.7%	10.8	7.5	489.8	3.2	38.2%
		Control	0.4140	0.0119	(0.0949)	45.8%	10.8	9.0	398.0	1.6	21.6%
Capital Goods	3	Sample	0.3520	0.0904	0.1176	27.7%	10.7	7.7	365.7	1.0	10.1%
		Control	1.1793	0.1425	0.2241	39.4%	9.0	7.3	402.3	1.7	14.9%
Conglomerates	3	Sample	0.1892	(0.0395)	(1.0392)	29.9%	16.0	12.7	1,861.7	1.3	10.4%
		Control	0.3293	(0.0871)	(0.1412)	42.5%	11.0	9.5	1,252.3	1.0	11.4%
Consumer Cyclical	10	Sample	0.5861	(0.0156)	(0.1194)	37.0%	11.6	7.8	579.0	1.6	12.9%
		Control	0.5852	0.0703	0.8418	38.6%	9.3	7.3	487.4	2.9	24.3%
Consumer Non-Cyclical	4	Sample	0.2564	0.0730	(0.3302)	45.5%	15.3	10.8	4,312.0	1.5	15.3%
		Control	0.0996	0.0743	0.3408	55.3%	12.0	8.8	1,084.0	2.3	16.1%
Energy	6	Sample	1.0368	13.0332	(1.4857)	33.9%	9.2	7.5	592.4	1.0	16.6%
		Control	0.6859	(0.1870)	0.0773	49.8%	10.3	9.0	468.5	2.6	23.4%
Financial	27	Sample	0.3807	(0.0024)	0.0008	39.7%	13.6	11.5	898.6	1.1	13.3%
		Control	0.50964	0.0247	0.3802	49.5%	11.1	8.7	802.5	1.6	25.0%
Services	30	Sample	0.8416	0.2003	0.4938	36.5%	10.7	8.2	1,083.5	2.1	26.2%
		Control	0.2776	0.1046	(0.6179)	37.2%	9.5	7.3	631.4	2.6	30.1%
Technology	6	Sample	0.6218	(0.1136)	0.2140	60.7%	8.0	6.0	890.7	1.8	18.1%
		Control	0.3673	0.6529	(0.2189)	77.6%	7.7	5.8	540.4	1.5	12.4%
Transportation	1	Sample	0.0605	0.0201	(0.0130)	52.7%	11.0	8.0	NA	0.0	0.0%
		Control	0.0710	0.0050	NA	0.0%	8.0	4.0	254.0	2.0	44.3%
Utilities	5	Sample	0.6033	0.1853	(0.7106)	47.9%	10.2	8.6	876.0	0.8	5.4%
		Control	0.5264	0.0574	(0.4881)	29.3%	12.2	10.6	695.4	1.4	9.0%
(1) N = number of companies in the sample in the sector. Not all data were available for all companies.										

The test results presented in Table 3 represent univariate t-tests of our hypothesized variables. To examine the robustness of these results, additional multivariate tests were completed. A logistic regression was performed with a binary dependent variable based on whether the company was in the sample or control group; the independent variables represented the hypothesized relationships as measured by the ten variables listed in Table 3. The regression eliminates any observation with any missing data, leaving 83 sample companies and 78 control companies in the analysis.

The regression results are consistent with the t-test results, with two notable differences. In the multivariate model, the stock option percentage is a statistically significant factor ($p = 0.049$), whereas it was not significant in the univariate t-test ($p = 0.127$). Second, in the logistic regression, the two variables related to inside ownership (number of inside owners and percentage of total stock owned by insiders) are not statistically significant ($p = 0.346$ and 0.297), whereas they are in the t-tests ($p = 0.025$ and 0.049). A further analysis reveals a statistically significant correlation between the two Board of Directors variables (size of board and number of independent members) and the insider ownership variables. The larger and more independent the Board, the less inside ownership was present. Taken as a whole, the logistic regression results support the univariate results and also provide support for Hypothesis three related to the use of stock options and the decision to expense.

DISCUSSION

Voluntary accounting choices and financial reporting transparency are important issues for financial statement users. The recent environment with respect to stock option reporting provides a unique opportunity to address the question of why some companies make particular financial reporting choices. This paper explores that question and contributes to the literature by complementing and expanding the research reported by Robinson and Burton (2004) and Aboody et al. (2004).

Robinson and Burton (2004) studied the stock market reaction to companies that announced a change to expensing stock options and found a positive reaction. They also explored whether certain financial characteristics differ between announcing companies and a control sample. Specifically, they found that companies changing to the expense approach had significantly higher Net Income than the control group, but found no significant difference in the change in Net Income between the two groups. Our paper explores the profitability construct differently by looking at both the stability (Hypothesis 1) and growth (Hypothesis 2) of sales and earnings per share. Robinson and Burton also found a significant difference between adopting and control companies in the use of stock options, measured as a percent of outstanding stock. Our paper addresses the same question from the perspective of stock options as a percentage of management compensation (Hypothesis 3). Finally, Robinson and Burton examined several other financial variables not addressed in our paper.

Aboody et al. (2004) modeled the likelihood of a company changing to the expense approach. They also tested for significant differences between companies changing to expensing and a control sample, as well as the market reaction to the change announcement. Similar to Robinson and Burton (2004), they found a positive market reaction. In their univariate test, firms with higher profits were more likely to switch to expensing. Aboody et al. also test for the significance of insider ownership, institutional ownership, and stock option usage. However, each of these variables is measured differently in our paper. Lastly, Aboody et al. examined several financial variables not addressed here.

The results of our research complement the previous two papers and help present a more complete picture of factors that relate to voluntary accounting choices and transparent financial reporting. With respect to the financial variables examined, results suggest that companies with more volatile earnings change to a more transparent accounting choice more often. Both Aboody et al. (2004) and Robinson and Burton (2004) suggest that the change to expensing is a positive signal of high quality earnings. Volatile earnings are consistent with lower quality earnings and the results of this study, therefore, support the positive signal theory.

In this paper, we predict that when stock options represent a larger percentage of total executive pay, a company is less likely to switch to expensing those options. Our results are in the right direction, and statistically significant in the multivariate but not the univariate tests. Aboody et al. (2004) and Robinson and Burton (2004) also examined the impact the magnitude of stock options used have on the decision to expense. Using different measurements for the variable, each study found that firms switching to the expense method used options less that a control group. The Robinson and Burton results were statistically significant, whereas the Aboody et al. results were not. Since all the measurements used are surrogates for the actual construct of interest, these collective findings emphasize the importance of examining research issues from different perspectives and with different measurement approaches.

With respect to the non-financial variables, our study finds that companies with larger boards with more independent members, more institutional owners, and less insider ownership are more likely to expense options. These results are as predicted and generally consistent with conventional wisdom regarding reporting decisions. With the exception of the institutional ownership variable examined by Aboody et al. (2004), these results are also consistent with previous research.

LIMITATIONS AND CONCLUSION

It is always the case that any measurements used may not capture the variables of interest. This inherent limitation is one reason that multi-method approaches should be used. Specifically, in this study, we examined two qualitative variables of interest that require judgment and interpretation in their measurement. We measured the independence of the board based on published job titles and the "newness" of the CEO based on the initial year in that position. With

both of these variables, there are likely to be characteristics that are not publicly available that influence the underlying construct. Lastly, with respect to our financial variables we focused on the nine quarters preceding the announcement of a change to stock option expensing. Had we used some other time frame, the results may have differed.

Future research should continue to address the question of accounting choices that affect the degree of reporting transparency. In particular, future research might investigate other non-financial variables such as negative or positive press stories, financial statement restatements, auditor changes, or SEC investigations.

REFERENCES

Aboody, D., M. E. Barth, and R. Kasznik (2004). Firms' voluntary recognition of stock-based compensation expense. *Journal of Accounting Research,* 42(2), 123-150.

Accounting Principles Board (APB) (1972). *Accounting for stock issued to employees. Opinion No. 25.* New York, NY: American Institute of Certified Public Accountants.

Ashley, A. S. and Simon S. M. Yang (2004). Executive compensation and earnings performance. *Journal of Business Ethics*, 50(4), 369-382.

Boslet, M. (2004, May 20). Intel urged to expense options. *Wall Street Journal (Eastern edition)*, B.-4.

Conyon, M. J., C. Mallin, and G. Sadler (2002). The disclosure of directors' share option information in UK companies. *Applied Financial Economics,* (12), 95-103.

Deloitte Consulting LLP. (2004, January). Stock options today: Down but not out. *Human Capital*.

Fayard, G. (2002, September). Stock option expensing at the Coca-Cola Company. *Directorship,* 1-3.

Financial Accounting Standards Board (FASB) (2004). *Share-based payment. Statement of Financial Accounting Standards No. 123 (revised 2004)*. Norwalk, CT: FASB.

Financial Accounting Standards Board (FASB) (1995). *Accounting for Stock-based compensation. Statement of Financial Accounting Standards No. 123*. Norwalk, CT: FASB.

Forker, J. (1992). Corporate governance and disclosure quality. *Accounting and Business Research,* (22), 111-124.

International Accounting Standards Board (IASB) (2004, February 19). IASB Issues Standard on Share-based Payment. Press Release.

Jensen, M. (1993). The modern industrial revolution, exit and the failure of internal control systems. *Journal of Finance*, (48), 831-880.

Pierce-Brown, R. and A. Steele (1977). The economics of accounting for growth. *Mimeograph*, University of
      Warwick.

Pippolo, C. (2002, December). Are you considering a change in your accounting for employee stock options?
      Directorship, 6-20.

Public Accounting Report (2004, February 15). 2003 Annual restatement filings top previous year. *Public Accounting
      Report*, 7.

Robinson, D. and Burton, D. (2004). Discretion in financial reporting: The voluntary adoption of fair value accounting
      for employee stock options. *Accounting Horizons,* 18(2), 97-108.

Tam, P. (2004, March 18). H-P shareholders vote for plan to book options as an expense. *Wall Street Journal (Eastern
      edition),* B.-1.

Taub, S. (2004, June 1). Dell shareholders propose option measure. *CFO.com,* 1.

The Conference Board (2002, September 17). Commission on Public Trust and Private Enterprise Findings and
      Recommendations Part 1: Executive Compensation.

Tuthill, M. (2002, July/August). Stock option announcing: Is a classic American market tool at risk? *AFP Exchange*,
      7-12.

Wei, L. (2004, June 21). Bear Stearns Study Shows Fewer Option Grants In 2003. WSJ.com. Retrieved from
      http://online.wsj.com/article/0,,BT_CO_20040621_004227,00.html

Weisbach, M. (1988). Outside directors and CEO turnover. *Journal of Financial Economics,* (20), 431-460.

THE DECLINING JANUARY EFFECT: EXPERIENCE OF FIVE G7 COUNTRIES

Anthony Yanxiang Gu, State University of New York, Geneseo

ABSTRACT

The January effect exhibits a pronounced declining trend for both large and small firm stock indices for the last few decades and the effect is disappearing in major equity indices of Canada, France, Germany, Japan and United Kingdom. The downward trend is more apparent for the UK indices. The anomaly is more stellar with large stocks in UK, but with smaller stocks in France and Germany. The January effect is positively connected to real GDP growth, risk free rate of interest, and return of the year, and it is negatively related to inflation and market volatility. The power ratio method provides a consistent way to reveal the relative contribution of January return in the year. Finding the pattern of changes in the anomaly has implications for investment strategies.

INTRODUCTION

The January effect--or the abnormally large returns on common stocks in most months of January--has been one of the most intriguing issues in financial economics since 1976. Wachtel (1942) provided the first academic reference to a January seasonal in stock returns. 34 years later, Rozeff and Kinney (1976) pointed out that common stock returns in January are significantly larger than those in other months, and that the anomaly is related to small firms. Reinganum (1981), Keim (1983), and Roll (1983) reaffirm that the January effect is more pronounced in small firms. If this is the case, the January effect may decline as firms become larger. Kohers and Kohli (1991) provided evidence that the January effect is not related to small firm effect.

There are several explanations for the January effect. Stoll and Whaley (1983) attribute the anomaly to transaction costs. Chang and Pinegar (1989, 1990) and Kramer (1994) suggest seasonality in risk premium or expected returns. Ritter (1988) hypothesizes tax-loss selling effects. Haugen and Lakonishok (1988) suggest window dressing. Ogden (1990) relates the January effect to year-end transactions of cash or liquidity. Kohers and Kohli (1992) and Kramer (1994) connect the anomaly to business cycle, and Ligon (1997) reports that higher January returns relate to higher January trading volume and lower real interest rates.

Existing literature does not consider the dynamics of the effect, as previous researchers report constant coefficients of dummy variables, or average returns of the month, for their relatively short sample periods. And obviously with these methodologies, one type of observations would

overweigh the other if the number of years with an abnormal January is greater than the number of years without it, or the effect is extremely strong in certain years. If the January effect exhibits an increasing or declining trend, or is disappearing in certain markets, then the trend may indicate some changes in the factors discussed above or changes in the impacts of these factors on the effect. And there may exist some unidentified factors or new factors that affect the abnormal return in January.

In this study, a power ratio method is developed to calculate the effect in each individual year for sufficiently long time periods, in order to explore the dynamics and trend of the January effect of major stock indices of Canada, France, Germany, Japan and United Kingdom. The indices include the Canadian TSE (Toronto Stock Exchange) 35 from 1987, and TSE 300 from 1970, the French CAC 40 from 1987 and SBF 250 from 1970, the German DAX 30 and FAZ Aktien 100 from 1970, the Japanese Nikkei 225 from 1950, and the British FT 30 and FT 700 from 1976. All the data is through year 2000. The purpose of using the time periods is to reveal the trend with the limit of data availability. The Nikkei 250 is price weighted but using it does not overstate the effect of small stocks on returns because there is no small stock in it. All the other indices are value weighted. Using value weighted indices makes the effect of large stocks on returns more apparent. Using the indices for the study avoids issues related to portfolio formation, such as size-beta correlation, size-price correlation, and survivorship. The impacts of real GDP growth, inflation, risk free rate of interest, return of the year, and market volatility of an index on the January effect are also analyzed. Data on the stock indices is from Global Financial Data Inc., data on the annual real GDP growth, inflation, and risk free rate of interest is from the International Monetary Fund.

METHODOLOGY

An average, or a regression coefficient of a dummy variable, as used in the existing literature, can show the dominant values, but it cannot reveal the dynamics of the January effect over time. To identify any possible trend of the effect, one needs to measure, for each individual year, the return in January relative to the return in the remaining months of the year. It would be difficult to measure the January effect when return in January and return of the year have opposite signs, (i.e., January positive/year negative, January negative/year positive, or when both January and the year are negative). A power ratio method is developed to give a consistent measurement of the contribution of January return to the return of the year. The January and annual returns are calculated as the natural logarithm differentials of the index values. (Excess return, which is the return on the index minus the return on Treasury bills, can also be used with the method.) Then define:

$$R^*_J = (1 + \text{January return})^{12} \qquad\qquad (1)$$

Where the power 12 is used because there are 12 months in a year. Obviously R^*_J is always greater than zero. And,

$$Ry = (1+ \text{return of the year}) \qquad\qquad (2)$$

Ry is always greater than zero. Then, let's compose a ratio

$$R^*_J / Ry \qquad\qquad (3)$$

which may be called "power ratio" since R^*_J is a factor of power. Now it should be clear that when $R^*_J /Ry = 1$, then the January return is as good as the average of other months of the year. When $R^*_J /Ry > 1$, then the January return is better than the average of other months of the year, and when $R^*_J /Ry < 1$, then the January return is below the average of other months of the year.

DYNAMICS OF THE ANOMALY

The results generally confirm the existence of the January effect. For every index in the sample, the power ratio is greater than one for more than half of the years when data is available. For the Canadian Toronto Stock Exchange (TSE) 35, the average of the power ratios is 1.24, and the ratio for 8 of the 14 (57%) years is greater than one. For the TSE 300, the average of the power ratios is 1.47, and the ratio for 19 of the 31 (61%) years is greater than one. For the French CAC 40, the average of the power ratios is 1.29, and the ratio for 8 of the 13 (62%) years is greater than one. For the French SBF 250, the average of the power ratios is 1.67, and the ratio for 22 of the 31 (71%) years is greater than one. For the German DAX 30, the average of the power ratios is 1.27, and the ratio for 20 of the 31 (65%) years is greater than one. For the FAZ 100, the average of the power ratios is 1.4, and the ratio for 20 of the 31 (65%) years is greater than one. For the Japanese Nikkei 225, the average of the power ratios is 1.84, and the ratio for 40 of the 51 (78%) years is greater than one. For the UK FT 30, the average of the power ratios is 1.62, and the ratio for 18 of the 25 (72%) years is greater than one. For the FT700, the average of the power ratios is 1.5, and the ratio for 17 of the 25 (68%) years is greater than one.

As shown in Charts I through V, there is a pronounced downward trend in the power ratios for all the indices. There is an outlier in the French SBF 250 (5.16 for 1975) and two outliers in the Japanese Nikkei 225 (11.52 for 1953 and 4.74 for 1994), which are excluded in the charts for easier view. Including the outliers makes the trend steeper. The declining trend is the strongest for the UK indices and the weakest for the Japanese Nikkei 225. For the FT 30 and FT 700, the trend lines of the power ratios extend below one since late 1990s, which may indicate that the January effect is disappearing from the markets. As Gu and Finnerty (2002) pointed out, the stock market has been moving toward efficiency over the last two decades. The downward trend in the January effect may

indicate further evidence that the markets are moving toward efficiency, or that investors are improving at pricing risk adequately, or both.

Chart I. The UK Indices

Chart II. The Canadian Indices

Chart III. The French Indices

Chart IV. The German Indices

Chart V. The Japanese Nikkei 225
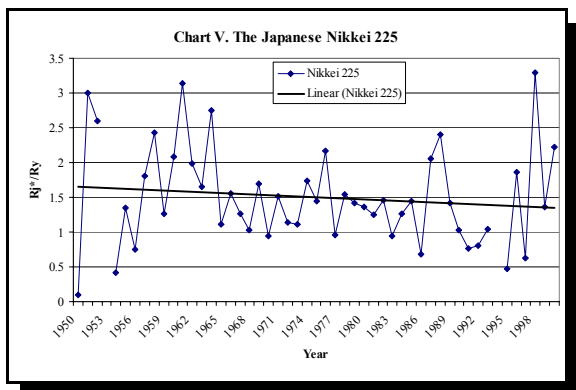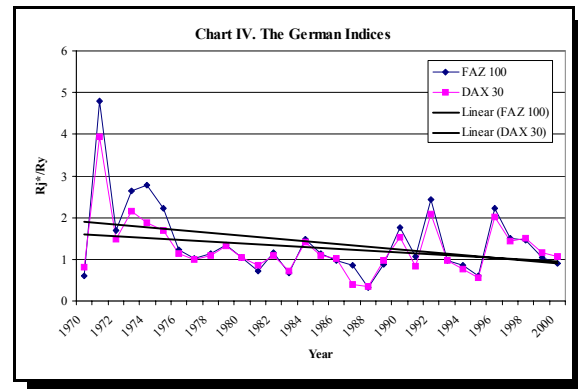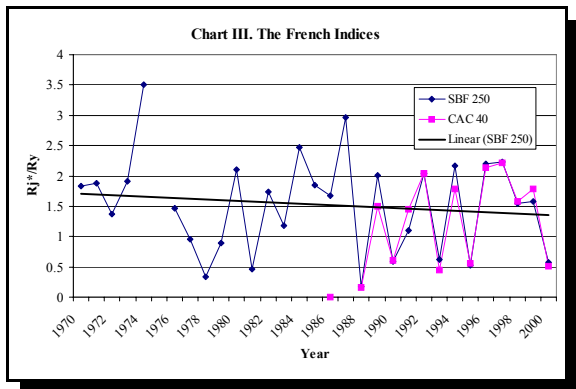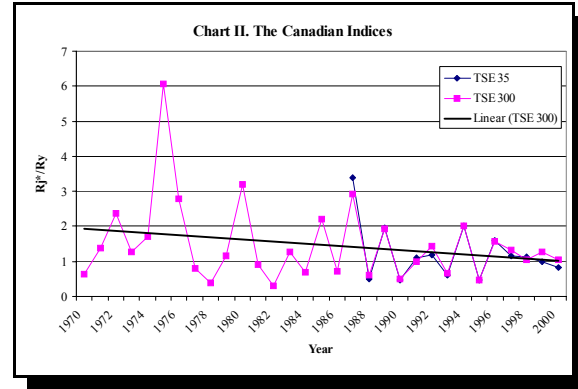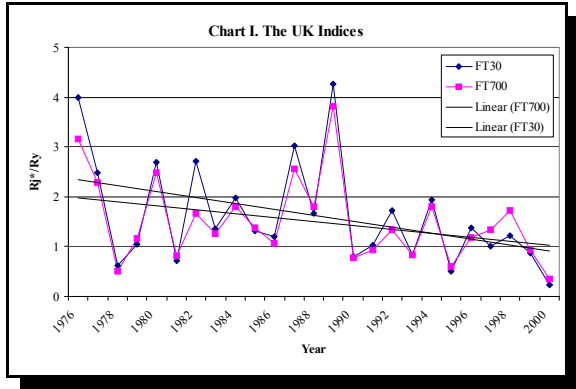
The January effect tends to be more pronounced in large firm stocks for the UK as shown in chart V: the FT 30 consists the largest stocks and has larger power ratios than the FT 700 which consists much smaller stocks. This evidence may support what Ritter and Chopra (1989), and Loughran (1997) have proposed: that there is a value factor in the anomaly, i.e., all sizes of value firms (high book-to-market-ratios) tend to bounce in January. The evidence may also supports Kohers and Kohli's (1991) observation that the January effect is not related to firm size. However, the effect is more apparent in small firm stocks for the French and German indices. This evidence support what Rozeff and Kinney (1976) and Keim, Roll, and Reinganum (1983) have reported.

A possible reason for the declining trend in January effect is investors' experience. As the anomaly became well known since 1980s, more experienced and knowledgeable investors would buy less and sell more in January to take the opportunity of profit. These matured investment activities would diminish the anomaly.

FACTORS RELATED TO THE ANOMALY

Regression analyses are performed to reveal the relation between the January effect and six explanatory variables. The January effect -- the power ratio -- is the dependent variable. The first three explanatory variables, real GDP growth, inflation, and risk free rate of interest capture the market's exposure to macroeconomic forces. The fourth explanatory variable, annual return of the year relates the size of January effect to the annual performance of the index. The last two explanatory variables, standard deviation and variance of daily returns indicate the connection between the effect and volatility. Using daily return volatility is better than using monthly return volatility because a stellar January can increase monthly volatility. Results of the regression analyses for the UK indices are statistically significant and reported in Table 1. Results of the regression analyses for the other countries' indices are not reported because the results are statistically insignificant, but the signs of the estimated coefficients for the variables are the same as these for the UK indices.

Table 1. Estimation Results								
A. The FT 30		GDP		T-bill	Annual	Standard[1]		
Variable	Intercept	Growth	Inflation	Rate	Return	Deviation	Variance[1]	R Square
Estimate	7.2010	0.0148	-0.1226	0.3095	7.4899	-1.6692	87.4051	0.8771
T-value	(4.755)	(1.550)	(-1.623)	(2.160)**	(6.146)***	(-5.723)***	(8.748)***	
B. The FT 700		GDP		T-bill	Annual	Standard[1]		
Variable	Intercept	Growth	Inflation	Rate	Return	Deviation	Variance[1]	R Square
Estimate	16.7171	0.0070	-0.0711	0.2278	5.7297	-3.8411	212.4286	0.8969
T-value	(7.089)	(0.641)	(-0.810)	(1.439)	(4.162)***	(-8.837)***	(12.296)***	
[1] Divided by 1,000 *Significant at the 10 percent level. **Significant at the 5 percent level.								

The coefficients of the variable real GDP growth are positive but not significant for both indices. More investments in the stock market may be made in January when investors expect a stronger economic growth in the year. This evidence indicates a relation supporting what Kohers and Kohli (1992) have reported. They examine the S&P Composite Index from 1948 through 1988

and report that the January effect exists in the expansionary phases but does not preset during recession phases for the period.

Financial economists generally believe that inflation affect risk premium and expected return of equity. Inflation should affect the January return as other months in the year. Kramer (1994) suggests that higher January returns correlate to inflation. The coefficient of the variable is negative, though not significant for the FT 700, which indicates that January return is lower under high inflation. The relation between stock return and inflation has been a heatedly debated issue and there is no consensus answer yet.

Investors require risk premium over the risk free rate of return if they invest in stocks. The positive coefficients of the variable T-bill rate reflect the requirement, January return is positively connected to risk free rate of return. The connection between annual return of the year and January effect is significantly positive, which indicates that the contribution of January return to the year's return is significant for good market years.

The January effect is significantly negatively related to market volatility and the relation is not linear, which is captured by using both standard deviation and variance. This indicates that other months in the year may outperform January when the market is volatile.

CONCLUSIONS

The January effect exhibits a pronounced declining trend for all the indices of the five countries over the last few decades, and the effect is disappearing in most of the indices. Contradictory to previous studies, the anomaly is more apparent with large firm stock indices for the UK indices, which may indicate that January effect is not always related to firm size.

The effect is weaker during periods of weak real GDP growth and stronger during periods of strong GDP growth. The anomaly is less apparent for years with higher inflation and more apparent for years with lower inflation. January return is positively related to risk free rate of interest, which proves that investors require risk premium for investing in risky assets. The contribution of January return to the year's return is more significant for good market years. Higher January return is negatively related to market volatility and the relation may not be linear. The negative relation may indicate that other months in the year may outperform January when the market is volatile.

The declining January effect may represent a trend toward market efficiency. More experienced and knowledgeable investors, and advances in information technology (such as greater quantity, better quality, and lower cost of information, and faster communication and order execution) should make the market more efficient. In fact, developed markets are more efficient than less developed and emerging markets: this may encourage believers in the theory of efficient markets to regain some confidence.

Further research is required to discover the unknown factors and the changes in the known factors that can attribute to the anomaly, and to reveal the dynamic correlation between the January effect and the relevant factors. Further tests are needed to investigate trends in other asset market anomalies, such as the weekend and turn-of-month (Ogden, 1990) effects. Finding possible trends and the factors that contribute to the trend would increase knowledge of asset price behavior, which would have valuable implications for investment strategies and risk management.

REFERENCES

Chang, E. C. and L. M. Pinegar, 1989, Seasonal fluctuations in industrial production and stock market seasonals, *Journal of Financial and Quantitative Analysis* 24, 59-74.

Chang, E. C. and L. M. Pinegar, 1990, Stock market seasonal and prespecified multifactor pricing relations, *Journal of Financial and Quantitative Analysis* 25, 517-33.

Gu, Y. Anthony and Joseph Finnerty, 2002, The evolution of market efficiency:103 years daily data of the Dow, *Review of Quantitative Finance and Accounting*, 2002, 18(3): 219-237.

Gu, Y. Anthony and Joseph Finnerty, 2003, The Declining January Effect: Evidence from U.S. Equity Markets. *Quarterly Review of Economics and Finance*, 43(2): 395-404.

Haugen, R. A. and J. Lakonishok, 1988, *The Incredible January Effect: The Stock Market's Unsolved Mystery* (Dow Jones-Irwin, Homewood, IL).

Keim, D.B., 1983 Size related anomalies and stock return seasonality: further empirical evidence, *Journal of Financial Economics* 12, 13-32.

Kohers, T. and Raj K. Kohli, 1991, The anomalous stock market behavior of large firms in January: the evidence from the S&P Composite and component indexes, *Quarterly Journal of Business and Economics* 30, 14-32.

Kohers, T. and Raj K. Kohli, 1992, The yearend effect in stock returns over business cycles: a technical note, *Journal of Economics and Finance* 16, 61-68.

Kramer, C., 1994, Macroeconomic seasonality and the January effect, *Journal of Finance*, 49, 1883-91.

Ligon, James, 1997, A simultaneous test of competing theories regarding the January effect, *Journal of Financial Research* 20, 13-32.

Loughran, Tim, 1997, Book-to-market across firm size, exchange, and seasonality: is there an effect? *Journal of Financial and Quantitative Analysis* 32(3): 249-268.

Ogden, J.P., 1990, Turn-of month evaluations of liquid profits and stock returns: A common explanation for the monthly and January effects, *Journal of Finance* 45, 1259-72.

Reinganum, M. R., 1981, Misspecification of capital asset pricing: Empirical anomalies based on earnings' yields and market values, *Journal of Financial Economics* 9, 19-46.

Ritter, J.R., 1988, The buying and selling behavior of individual investors at the turn of the year, *Journal of Finance* 43, 701-17.

Ritter, J. R. and N. Chopra, 1989, Portfolio rebalancing and the turn-of the-year effect.*Journal of Finance* 44, 149-166.

Roll, Richard, 1983 On computing mean returns and the small firm premium, *Journal of Financial Economics* 12, 371-386.

Rozeff, M. S. and W. R. Kinney Jr., 1976, Capital market seasonality: the case of stock returns, *Journal of Financial Economics* 3, 379-402.

Stoll, H. R. and R. E. Whaley, 1983, Transactions costs and the small firm effect, *Journal of Financial Economics* 12, 57-80.

Wachtel, S. B., 1942, Certain observations on seasonal movements in stock prices, *Journal of Business* 15, 184-193.

ACTIVITY-BASED COSTING, TOTAL QUALITY MANAGEMENT AND BUSINESS PROCESS REENGINEERING: THEIR SEPARATE AND CONCURRENT ASSOCIATION WITH IMPROVEMENT IN FINANCIAL PERFORMANCE

Douglass Cagwin, Zayed University
Katherine J. Barker, SUNY Fredonia

ABSTRACT

This study examines whether use of the strategic business initiatives activity-based costing (ABC), total quality management (TQM), and business process reengineering (BPR), are associated with improvement in financial performance. Top executives of 305 firms operating in the motor carrier industry furnished information regarding use of the initiatives. Dependent variable information is obtained from financial statement data filed with the U.S. government. Multiple regression analysis is used to identify the improvement in ROA associated with the use of each initiative, and concurrent use of two initiatives.

A simple effect for use of TQM and BPR is confirmed. Context-specific benefits obtained from concurrent use of ABC with BPR and TQM are identified. It appears that ABC functions as an enabler of other improvement initiatives since its use provides the information necessary to optimize the effectiveness of TQM and BPR. The positive findings regarding ABC are of particular interest to practicing and academic accountants because they are often the primary proponents and administrators of ABC, and there has been little empirical evidence of ABC efficacy.

INTRODUCTION

The focus on cost, quality and time has generated many management changes with significant accounting implications (Smith, 1998). These changes increasingly include the implementation of strategic business initiatives such as activity-based costing (ABC), total quality management (TQM), and business process reengineering (BPR). Profit-maximizing firms would not implement strategic business initiatives if they did not expect a net financial benefit from their use; however there has been little empirical evidence that demonstrates that ABC, TQM, or BPR improves financial performance in any industry.

Researchers have often suggested that ABC and other strategic business initiatives complement and enhance each other, rather than being individually necessary and sufficient

conditions for improvement (Cooper and Kaplan, 1991; Anderson, 1995; Evans and Ashworth, 1995; Player and Keys, 1995; Swenson, 1998). There has been no empirical investigation of context-specific benefits obtained from ABC or from the concurrent use of TQM and BPR. In this study the contexts investigated include use of ABC to enhance the benefits of other initiatives, concurrent use of BPR and TQM, and non-concurrent use of ABC, TQM, and BPR.

The purpose of this study is to investigate the improvement in financial performance associated with the single and concurrent use of the strategic business initiatives ABC, TQM, and BPR. Data is obtained through a cross-sectional mail survey of 305 motor carrier industry top executives and from a database containing financial statement information reported to the U.S. government. Multiple regression analysis is used to investigate the association between use of initiatives and improvement in financial performance (proxied by ROA) and to identify positive context-specific effects from the use of TQM with BPR and of ABC with TQM and BPR.

This research adds to the limited body of empirical strategic business initiative research in four ways. The first contribution is to provide empirical evidence that the benefits claimed by initiative advocates are net benefits. Second, this research confirms the existence of a context-specific benefit from concurrent use of ABC with TQM and BPR. Third, the study focuses on the motor carrier industry, an important member of the service sector, which has become the dominant sector of the U.S. economy. Researchers have often postulated, but not tested, the efficacy of initiatives in a service setting. Finally, limitations of previous research are addressed (*i.e.*, the lack of control for simultaneous use of multiple initiatives, and prior level of performance).

The remainder of the paper is organized as follows: Section II defines and describes strategic business initiatives, situates this study in the context of past research, and provides hypothesis development. Section III describes sample selection and the survey instrument. Section IV describes the methodology used, including variable selection and specification. Results are presented in Section V, sensitivity tests in Section VI, and the summary and concluding remarks are contained in Section VII.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

A strategic business initiative is an innovative business technique, strategy or technology that is purported to increase business success. All initiatives broadly advocate change through continuous improvement, but each accomplishes continuous improvement somewhat differently. For example, TQM emphasizes "doing the right thing the first time" and ABC advocates using activity-based cost and performance measures to reveal non-value added activities (Gupta *et al*., 1997). In the last decade, two main developmental models have dominated the organizational world, TQM and BPR (O'Neill and Sohal, 1999), while ABC has been a subject of intense interest by practicing accountants, consultants, and academicians. The recent attention that ABC, TQM, and BPR have received motivated their selection for the current study. Each initiative is discussed below.

Total Quality Management (TQM)

Total quality management (TQM) has been one of the most popular business models of the last twenty years, widely embraced by many organizations (Forza and Filippini, 1998; Hendricks and Singhal, 1999). TQM is a concept based on continuous improvement in the performance of all processes in an organization and in the quality of the products and services that are the outputs of those processes. It is defined by *ISO 8402* as a "management approach of an organization centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction and benefits to all members of an organization and to society." Its overriding consideration is building, rather than inspecting, quality into output (Shank and Govindarajan, 1994).

In the literature TQM is described as a collective, interlinked system of quality practices that is associated with organizational performance (Choi and Ebock, 1998). Several quality experts have suggested that a commitment to total quality will result in improved performance in profitability measures (Juran and Gryna, 1970; Crosby, 1979; Feigenbaum, 1986; Deming, 1988). Others have raised concerns about whether TQM programs have actually generated these improvements (Hendricks and Singhal, 1997). As noted by Samson and Terziovski (1999) and Hendricks and Singhal (1997), there is a lack of empirical research confirming the effectiveness of TQM.

Business Process Reengineering (BPR)

Business process reengineering (BPR) has achieved popularity among businesses in a very short period of time (O'Neill and Sohal, 1999). First introduced by Hammer (1990) and Davenport and Short (1990), BPR is a discontinuous improvement practice used by companies to streamline operations and provide enhanced value to customers (Fliedner and Vokurka, 1997). It is defined as the thorough analysis, fundamental rethinking, and radical redesign of business processes to achieve dramatic improvements in critical measures of performance (Hammer and Champy, 1993). BPR is essentially value engineering applied to the system to bring forth, sustain, and retire a product or service, with an emphasis on information flow (Hammer and Champy, 1993).

Both BPR and TQM share certain principles and adopt a process perspective (Jaworski and Kohli, 1993). Klein (1993) suggests that BPR is much more radical than TQM. It is differentiated from TQM in that rather than promoting continuous improvement, it entails fundamental rethinking and radical redesign of business processes. Instead of gradual continuous improvement, BPR is abrupt and discontinuous change (Earl and Khan, 1994; Altinkemer *et al*., 1998).

BPR is purported to produce positive results for firms including improvements in critical, contemporary measures of performance, such as cost, productivity, service, customer satisfaction, and speed (Fliedner and Vokurka, 1997; Raymond *et al*., 1998). It can be used to bring about major

internal and external quality increases, thus increasing value for both the employee and the customer (Dean, 1996).

In the past decade BPR has received considerable attention in the literature; however empirical research, including the relationship between the adoption of BPR and financial performance, has lagged its use (O'Neill and Sohal, 1999).

Activity-Based Costing (ABC)

The arguments in support of activity-based costing (ABC) are generally based on the superiority of information that can be generated in comparison with that generated by traditional cost management systems (The terms activity-based costing (ABC) and activity-based management (ABM) are sometimes used interchangeably. Strictly speaking, ABC refers only to the actual techniques for determining the costs of activities and outputs that those activities produce. Some researchers and practitioners prefer to use the term activity-based management (ABM) when they describe how the activity information is used to support operating decisions. As in Swenson (1995) and Krumwiede (1998), this study defines ABC very broadly to include activity-based costing and activity-based management).

According to the theory of information economics, better information leads to better decision-making, and better decision-making enhances firm value. For example, Drucker (1995) states that history has shown time and again that a company that enjoys a cost advantage, by correctly identifying and managing the costs of the entire value chain, overtakes the established leaders in a market segment.

Many authors also recommend using ABC to support process improvement (Turney, 1991b) and to develop cost-effective product designs (Cooper and Turney, 1989); however several reservations have been expressed regarding the efficacy of ABC (Innes *et al.*, 2000). Recent research has been successful in detecting a link between the use of ABC and financial improvement in specific business environments. Kennedy and Afleck-Graves (2001) were successful in linking the implementation of ABC with net improvement in financial performance for manufacturers. Ittner *et al.* (2002), and Cagwin and Bouwman (2002) found that ABC's contribution was an indirect rather than a direct effect on improvement in financial performance.

ASSOCIATION BETWEEN INITIATIVE USE AND IMPROVEMENT IN FINANCIAL PERFORMANCE

The theories of diffusion of innovations (Kwon and Zmud, 1987), transaction cost economics (Roberts and Sylvester, 1996), and information technology (Dixon, 1996) suggest that organizations adopt an innovation to obtain benefits that directly or indirectly affect financial performance measures. There have been numerous claims and counterclaims, rarely supported by objective and

rigorous empirical evidence, regarding whether programs have yielded net financial gains. Evidence of the benefits of these systems is largely restricted to theoretical models and anecdotal information obtained from case studies that are dependent on anecdotal information related by practitioners (for examples, see Goyal and Deshmukh (1992), and Golhar and Stamm (1991) for JIT; Bruns and Kaplan (1987), Barnes (1991), Brimson (1991), and Harris (1990) for ABC; Romney (1995), and Dean (1996) for BPR; and Sankar (1995) for TQM).

Results from the limited empirical research examining the link between TQM, BPR, and financial performance are mixed (Wouters *et al*., 1999). There is weak evidence of an association between TQM and financial performance. To date, other than an exploratory study by Altinkemer *et al.* (1998) that was hampered by a small sample size of 35 firms, no studies have empirically measured financial performance benefits obtained from using BPR.

Kaynak (1996) found that self-reported "financial and market" performance was enhanced for firms using a combination of TQM and just-in-time purchasing. Easton and Jarrell (1998) found evidence that a very broadly defined TQM is associated with the variance between actual financial performance and that forecasted by *Value Line* analysts. Finally, Hendricks and Singhal (1997) found a link between change in ROA and implementation of TQM for a sample of quality award winners – evidence that firms that possess a "higher level of seriousness and commitment than other firms" and that think enough of their quality programs to apply for awards have seen financial improvement.   Recently, researchers have been successful in detecting a link between use of ABC and improvement in financial performance in specific business environments. Kennedy and Afleck-Graves (2001) were successful in linking the implementation of ABC with a net improvement in financial performance in manufacturers; however, Ittner *et al.* (2002), and Cagwin and Bouwman (2002) found that ABC's contribution was an indirect, rather than a direct effect on improvement in financial performance.

Firms adopt initiatives in attempts to gain or maintain cost and market advantages (Kinney and Wempe, 1998). These advantages should in turn lead to improvement (or to maintenance of favorable values) in composite financial indicators, in the face of competitive pressures. The first hypothesis is in three parts and is consistent with hypotheses contained in prior research, suggesting that initiatives individually contribute toward an improvement in financial performance.

H1a:	*There is a positive association between use of ABC and improvement in financial performance relative to he improvement in financial performance of non-ABC users.*
H1b:	*There is a positive association between use of TQM and improvement in financial performance relative to the improvement in financial performance of non-TQM users.*
H1c:	*There is a positive association between use of BPR and improvement in financial performance relative to the improvement in financial performance of non-BPR users.*

CONTEXT-SPECIFIC BENEFITS OBTAINED FROM
CONCURRENT USE OF INITIATIVES

There may be context-specific benefits (positive or negative) leading to various optimal combinations of factor inputs (*e.g.,* initiatives and management systems (Capon *et al*., 1988). If firms are rationally maximizing value they would choose initiative combinations that they believe lead to this objective.

There has been considerable research interest in investigating possible context-specific benefits of initiatives with management information systems and management techniques. Recently, researchers have had mixed results in investigating the relationship between TQM and information and reward systems (Ittner and Larcker, 1995; Sim and Killough, 1998), TQM and manufacturing performance measures (Chenhall, 1997), TQM and human resource variables (Snell and Dean, 1992; Youndt *et al*., 1996) and TQM and strategic priorities, management techniques, and management accounting practices (Chenhall and Langfield-Smith, 1998). There has been no empirical research investigating the combined effects of TQM and BPR, or of ABC and other strategic business initiatives.

Context-Specific Benefits Obtained From Concurrent Use Of BPR With TQM

An increasing number of authors have suggested a need for both continuous (i.e., TQM) and discontinuous (*i.e.*, BPR) improvement (O'Neill and Sohal, 1999). For example, Harrison and Pratt (1992) suggest that TQM and BPR can and should form an integrated strategic management system within organizations and authors such as Furey (1993), Taylor (1993), and Chang (1994) describe programs that integrate TQM and BPR. Most authors agree that if BPR helps focus attention on transformational change, without damaging core competencies and TQM based continuous improvement, it could effectively benefit an organization (O'Neill and Sohal, 1999). These arguments provide additional support for the hypothesis that both TQM and BPR contribute separate positive direct effects on the financial performance of firms (H1).

There are, however, three conflicting sets of arguments regarding a positive context-specific effect obtained from concurrent use of the two initiatives. Some arguments support a hypothesis for a positive interaction between the two initiatives. O'Neill and Sohal (1999) speculate that BPR is less likely to succeed outside TQM, since it uses the methods, processes, and customer orientation of TQM to deliver changes. Cole (1994) concludes that the two initiatives complement each other and that each is a "building block" for the other. In research similar to Cole (1994), Zairi and Sinclair (1995) and Gadd and Oakland (1996) find that TQM and BPR can be considered as two distinct approaches capable of coexisting in the same organization, but used at different times to achieve different levels of performance improvement (*i.e.,* simple but not context-specific benefit). Jarrar and Aspinwall (1999b) feel that there is a clear opportunity to "unite them to fill each other's

gaps." Wright (1995) argues that reengineering of existing processes (BPR) can be leveraged through existing TQM processes.

Finally, some authors argue that TQM might even be a barrier to the change required by BPR, a negative context-specific benefit (Redman and Grieves, 1999). For example, Hammer (1991) described sequential performance improvements using the two techniques and warned against using the two concurrently.

Because of the conflicting arguments regarding a context-specific effect obtained from concurrent use of TQM and BPR, the second hypothesis is not directional:

> H2: *The improvement in financial performance of firms that use TQM and BPR concurrently is different than that associated with each initiative used alone.*

CONCURRENT USE OF ABC WITH TQM AND BPR

A number of academics, consultants and practitioners have championed the need to link management accounting and strategy (Rangone, 1997). Armitage and Russell (1993), and Shepard (1995), argue that many organizations that are implementing quality systems will see little return on assets in terms of performance improvement, primarily because managers are unable to identify specific opportunities for improvement.

The literature contains many references to the capability of ABC in helping to rectify this lack of information. McConville (1993) stated that ABC complements TQM by providing quantitative data on improvements made as a part of a TQM program. Beheiry (1991) commented that ABC quantifies additional costs regarding non-conformance of requirements by focusing attention on the activities that consume the majority of costs. Steimer (1990) examines ABC in the context of the services performed by the home office for multiple business units. He argues that ABC is perfectly suited to TQM because it encourages management to analyze activities and determine their value to the customer. Shepard (1995) believes that an economics-of-quality approach can be integrated with ABC in order to maximize return-on-investment and begin long-term continuous improvement. Anderson and Sedatole (1998) state that many companies have found that ABC fits well with their cost of quality framework and recommend extending the union of TQM and ABC to the design process. Evidence of the context-specific benefit of TQM and ABC was found in case studies performed by Cooper *et al.* (1992) where all five manufacturing companies studied found ABC and TQM to be highly compatible and mutually supporting.

Cokins (1996) examines ABC's role in BPR. He states that ABC identifies business processes that are non-value-added and can either be reduced or eliminated, which is the heart of BPR. Hammer (1990), Borthick and Roth (1993), Dean (1996), Altinkemer *et al.* (1998) have also commented on the value of combining ABC with BPR.

Theory and anecdotal reports support the proposition that the improved costing information and intensive analysis of business activities provided by ABC lead to improved decision-making, and therefore should be associated with improved performance; however Ittner *et al.* (2002) and Shields *et al.* (2000) argued that ABC has an indirect effect on financial performance by enhancing improvements contributed by other process improvement initiatives. Krumwiede (1998) provided additional weight to this argument by reporting that all fifteen "best practice" firms had linked ABC to another improvement initiative. Further, in an experimental setting, Drake *et al.* (1999) found that combining ABC with an innovative activity can produce a higher or lower level of firm profit, depending on whether workers had incentives to cooperate or could use the improved ABC information for their individual benefit (*i.e.*, increase personal as opposed to group output).

Although, as Shaw (1998) notes, ABC is now recognized as a fundamental business methodology for enabling business improvement, no empirical research has specifically targeted the combination of ABC with either TQM or BPR and their combined association with improvement in financial performance, leading to the following hypothesis:

> H3:   *The financial performance of firms that use ABC concurrently with TQM or BPR has improved more than the improvement associated with each initiative used alone.*

SAMPLE SELECTION AND SURVEY INSTRUMENT

Most research regarding strategic business initiatives has focused on the manufacturing segment of the economy, however, the major changes that manufacturing companies have experienced in recent years (*e.g.,* technology improvements and globalization) have also occurred in virtually all types of service organizations (Atkinson *et al.,* 1995), and researchers have found that strategic business initiatives can be applied in all types of organizations (Rotch,1990; Tanju and Helmi, 1991; Jarrar and Aspinwall,1999a). Since non-manufacturing activities represent the majority of the North American economy, there clearly is opportunity for research to focus on non-manufacturing settings, including transportation (Shields, 1997).

This study focuses on a single service industry: the motor carrier industry (*SIC* 4213). Restricting to a single industry reduces noise, thereby increasing statistical power, and consequently provides a higher likelihood of identifying valid relationships. The motor carrier industry is selected because of 1) the importance of the motor carrier industry to the nation's economy, 2) interest of the members of the industry in use of business initiatives that can potentially improve their competitive positions, and 3) the availability of detailed financial statement data for members of the industry.

Although it can be argued that the focus on a single industry tends to make results less generalizable than a study that crosses industries, the findings of this study have a wide appeal. The motor carrier industry generates about five percent of the gross domestic product and hauls

approximately 55 percent of all domestic freight volume. It affects virtually every organization in every industry and governmental agency in the U.S. economy. Furthermore, transportation is a major component of business logistics and is usually the single largest cost element in the logistics function. Companies not only contract with for-hire carriers but very often maintain private fleets of long-haul vehicles.

The independent variable data used in this study (other than LEVEL) are extracted from an instrument that was used to collect data intended for use both in this study and also for other in-depth analyses of the trucking industry. The instrument is based on a thorough review of prescriptive, conceptual, practitioner, and empirical motor carrier industry literature. Content validity is addressed by asking representatives of the trucking industry, industry experts, and a group of faculty experienced in management innovation and survey research to review the instrument for clarity and meaning. Modifications were made as appropriate.

Most of the questions are closed-ended and ask the respondent to rate or assess the item on a seven-point Likert balanced scale, anchored by 1 = "Almost Always Avoid," and 7 = "Almost Always Use." Some items ask for specific numerical information (*e.g.*, "truckload percent of total freight revenue").

Procedures prescribed by Dillman (1999) are followed to maximize response rates. Specific steps taken to strengthen this study include 1) pre-calling to obtain name of the CEO and to verify the mailing address, 2) sending a preliminary letter and brief summary of the project, 3) pre-calling to ask if the CEO had any questions, 4) including a personalized cover letter, 5) promising to send a summary of results and a technical report, 6) promising confidentiality, 7) including a stamped, self-addressed envelope for reply, 8) mailing a reminder letter at three weeks past initial mailing, and 9) mailing a reminder post card after seven weeks.

The initial population for this study consisted of the 2,002 firms that reported to the Interstate Commerce Commission and were included in the *1999 TTS Blue Book of Trucking Companies*. In order to focus on companies of sufficient size to have an established set of practices for conducting business, the population is limited to those companies that have at least thirty employees or $5 million in gross revenues. This constraint reduced the population by 383. From the remaining 1,619 companies, 1,100 were randomly selected for inclusion in the study. Of these, six were eliminated because they were Canadian companies, two were unable to be contacted by telephone or letter, nine had gone out of business, and 14 withdrew or refused to cooperate upon initial contact. The remaining 1,069 firms comprise the final sample. A total of 332 responses were received, a response rate of 31.1 percent. Because of their larger size, the 332 sample firms represent 16.5 percent of the firms in the TTS database but contribute 23.1 percent (equity) to 41 percent (ton-miles) of the aggregated totals.

Financial data are available for 305 of the responses for 2001 & 1998. Sample selection and response are summarized in Table 1.

Table 1: Summary of Sample			
Initial Population		2,002	
Less: Firms with Less than Thirty Employees or $5 million in Revenues		<u>383</u>	
Population of Interest		1,619	
Random Selection		1,100	
Less: Canadian Companies	6		
Undeliverable	2		
Out of Business	9		
Withdrew or Refused to Cooperate Upon Initial Contact	<u>14</u>	<u>31</u>	
Net Responses Possible		1,069	
Responses Received		332	
Response Rate			31.1%
Less: Data from 1999 Unavailable		<u>27</u>	
Final Sample		<u>305</u>	

The median industry, company, and position experience of the respondents is 25, 17, and nine years, respectively and 96 percent are of the rank of controller or officer (70 percent are president, owner, or CEO). The extensive experience and high rank of the respondents lend considerable credibility to the survey responses.

METHODOLOGY

The impact of strategic business initiatives on a firm's improvement in financial performance is examined using the following model:

PERFORMANCE CHANGE= f (Initiative Use, Initiative Use Interactions, Control Variables)

where PERFORMANCE CHANGE is the change in ROA, measured for year $t + 3$ minus year t. The initial variables are the set of binary measures of use of TQM, BPR and ABC, and are used to identify simple effects (H1). Interaction terms are created for concurrent use of TQM with BPR (H2) and of ABC with TQM and with BPR (H3). Variables of interest are discussed below.

Change in Return on Assets (ROA CHANGE)

ROA, defined as after-tax net income scaled by total assets is generally accepted as a composite financial performance variable in empirical research. Seven studies that recently

attempted to measure improvement in financial performance resulting from the implementation of JIT (Husan and Nanda, 1995; Balakrishnan *et al.,* 1996; Boyd, 1996; Biggart, 1997) and TQM (Engelkeyer, 1991; Dixon, 1996; Easton and Jarrell, 1998) have operationalized financial performance through the use of ROA as defined above. In addition, Ittner and Larcker (1995), Hendricks and Singhal (1997), and Ittner *et al.* (1999) used ROA as a dependent variable in their studies of TQM and TQM and supplier strategies. Furthermore, previous research shows a high correlation between ROA and other profitability measures (Prescott *et al.*, 1986) and suggests that ROA can be more readily available in business units than other measures (Jacobson, 1987). For these reasons ROA is selected as the primary dependent variable.

Testing improvement in financial performance poses significant measurement problems. As Roberts and Silvester (1996) observe, numerous complications arise, including:

1.	Modeling a company's "expected" profitability against which to compare realized profitability achieved after use of an initiative
2.	Controlling for concurrent changes in the organization
3.	Controlling the breadth of implementation and integration of initiatives throughout the firm.

In general, comparison of "expected profitability" requires either specification of control variables which describe the industry in which the firm operates or the use of "industry mean-adjusted" measures. In the current study, expected profitability is addressed through restricting the study to a single industry, using a fixed period of time (the change from 1998 to 2001), which provides control for macroeconomic and industry-specific factors that affect all firms equally, and controlling for differences in the three segments of the industry. These restrictions allow comparison of the profitability of initiative users against that expected without use, proxied by the performance of equivalent non-users.

Concurrent changes in the organization are addressed through identifying and controlling for use of other initiatives and for prior performance. Control for use of other initiatives separates the effects of individual initiatives and allows comparison of users of an individual initiative to non-users of that initiative. Controlling for the moderating effects of length and breadth of implementation is addressed by inclusion of variables measuring extent of use derived from survey responses.

Archival dependent variable information is obtained from the *TTS* database. The *TTS Blue Book of Trucking Companies* is published by *Transportation Technical Services, Inc., New York (TTS)*. The majority of *Blue Book* data is extracted from annual reports (*Form M*) that carriers file with the Interstate Commerce Commission. *Form M* requires use of standardized accounts defined in the *Uniform System of Accounts for Motor Carriers of Property* published by the American Trucking Associations, Inc.

Variables of Interest (ABC, TQM, BPR)

The simple variables of interest measure use of the initiatives TQM, BPR, and ABC. These initiatives are established initiatives of significant interest to the motor carrier industry. ABC is of particular interest to the accounting profession.

Cross-sectional survey data are collected regarding the extent of use (diffusion) of initiatives at the survey date (mid-1999). The variables of interest are developed from 7-point Likert balanced scale (Dillman, 1999) responses to a survey item introduced as "How much do you avoid or use the following competitive tactics to realize your competitive strategies?" Possible responses are:

1 = "Almost Always Avoid,
2 = Mostly Avoid,
3 = Sometimes Avoid,
4 = Neither Avoid or Use,
5 = Sometimes Use,
6 = Mostly Use, and
7 = Almost Always Use."

In addition, respondents furnished the year that they began use of each initiative. Responding firms are classified as significant users if their response was a 6 or 7 to the question regarding ABC, TQM, or BPR, and, because strategic initiatives are inherently multi-year projects, their year of beginning use was not 1999. Binary variables (BPR, TQM and ABC) differentiate significant users from the remainder of the sample. These variables are the variables of interest for testing Hypothesis 1, which tests for a positive simple effect from use of the individual initiatives.

CONTROL VARIABLES

The implications of three control variables— two variables denoting type of company, TL and LTL (with specialized carrier the default), and beginning mean-adjusted LEVEL of performance are discussed in the following section.

Type of Company (TL, LTL)

The motor carrier industry is not entirely homogenous, but can be partitioned into three segments. One important distinction is between less-than-truckload (LTL) and truckload (TL) carriers. LTL carriers provide service to shippers who tender shipments lower than the minimum

truckload quantities (*i.e.*, 500 to 15,000 pounds). Consequently, the LTL carrier must consolidate the numerous smaller shipments into truckload quantities for inter-city movement and break down full truckloads at the destination city for delivery in smaller quantities. In contrast, the truckload carrier picks up a truckload and delivers the same truckload at destination.

Carriers may also be classified by the type of commodity they haul, general or specialized commodities. Specialized equipment carriers are carriers of goods requiring special handling (*e.g.*, liquefied gases, frozen products, automobiles, or household goods). A specialized carrier is not permitted to transport other specialized commodities, or general commodities, in the same equipment.

The LTL segment of the industry requires significant capital assets, including terminal facilities and complex computer and communications systems, a skilled work force, and a large sales organization to operate a network of terminals and freight handling equipment to consolidate and distribute freight (Harmatuck, 1990). This network is generally not needed by the TL carrier. Specialized equipment carriers usually have larger investments in equipment and terminals than those transporting general freight.

Industry type has been demonstrated as important in previous work (*e.g.*, Zmijewski and Hagerman, 1981; Healy, 1985; Watts and Zimmerman, 1986; Capon *et al.,* 1988) explaining cross-sectional variation in financial performance. In effect, the characteristics of the three types of service offered by carriers (TL, LTL, and specialized) reflect three mini-industries. The impact of industry type is appropriately addressed through use of control variables. Because firms often offer more than one type of service, participating in more than a single mini-industry, self-reported continuous variables measuring the percentage of total freight revenues attributable to each classification (TL and LTL, with specialized carrier the default) are created. These variables provide control for differences in competitive environments, accounting practices, and other classification-specific attributes that may affect performance. It is expected that LTL will be negatively signed because that segment of the industry has been underperforming the other segments during this decade.

Level of Performance (LEVEL)

As Balakrishnan *et al.* (1996) noted in their discussion of JIT, a firm's pre-adoption operating efficiency will influence its ROA response to the increased efficiency of initiative use. Because it appears that there are continuing pressures that tend to pull the performance of firms towards the average (Bernard, 1994), higher performing companies may implement business initiatives to retain their comparative advantage, rather than to show improvement. This condition causes problems in detecting the association of the initiatives with improved financial performance (Huson and Nanda, 1995). In addition, firms are generally unable to sustain extremely poor performance for an extended period of time. They must either improve their performance towards the mean, or go out of business and thus would be not included in a cross-sectional study. These

conditions may effectively create a "collar" around the performance of a sample firm, a ceiling limiting the improvement of the top performers and a floor limiting the deterioration of the already poor performers, resulting in a phenomenon with the statistical characteristics of mean reversion.

Significance of the variable of interest could result from lack of control for the effects of this "collar." If below average performers tend to implement initiatives more than successful firms, an upward change in performance may be due to the pressures noted above that tend to pull the performance of firms towards the average rather than efficacy of the initiatives. To control for the effects of mean reversion, beginning of test period (*t*) mean-adjusted level of performance (ROA) is included as an independent variable. It is expected that the sign of the regression coefficient associated with this variable will be negative *(i.e.*, performance will be drawn toward the mean).

Regression Model

Testing of the three hypotheses is accomplished through estimation of the following OLS multiple regression as follows:

$$ROA\ CHANGE = A + B_1 TQM + B_2 BPR + B_3 ABC + B_4 TL + B_5 LTL + B_6 ROA + B_7 TQM * BPR + B_8 TQM * ABC + B_9 BPR * ABC$$

The expected signs of the coefficients are: B_1 through B_3 and B_8 through B_9, positive; B_5 and B_6, negative; B_4 and B_7 are not predicted.

DESCRIPTIVE STATISTICS

Statistics relating to the use of TQM, BPR and ABC are reported in panel A of Table 2. Over thirty percent of the respondents indicated that their firm "mostly" or "almost always" uses TQM or ABC, with 49 (16%) making heavy use of both. As might be expected given the magnitude of firm disruption, fewer respondents (13.1%) use BPR heavily, and approximately nine and seven percent use BPR with TQM or ABC. There appears to be an adequate balance of users and non-users (control firms) to provide the contrast necessary to obtain adequate statistical testing power.

Descriptive statistics relating to the dependent and control variables used in statistical testing are presented in Table 3. The median (mean) change in ROA is slightly negative 0.6 percent (positive 0.1 percent) from 1998 to 2001, reflecting the recent decline in profitability of the industry. The median level of performance for 1998 was a 3.6 percent ROA. Because the sample includes somewhat larger and less TL oriented firms than the industry population, this performance could indicate reduced profitability for the LTL segment of the industry.

Table 2: Descriptive Statistics				
PANEL A **Characteristics of Responding Firms Use of Initiatives** **(n=305)**				
		# Responses		
		Nonusers		*Users*	
		#	*%*	*#*	*%*
Initiative					
Activity-Based Costing (ABC)		211	69.2	94	30.8
Total Quality Management (TQM)		208	68.2	97	31.8
Business Process Reengineering (BPR)		265	86.9	40	13.1
Interactions					
TQM*BPR				28	9.2
TQM*ABC				49	16.0
BPR*ABC				21	6.9
Use of ABC, TQM, and BPR = a response of 6 or 7 with implementation date completed and before 2001.					

PANEL B **Sample Partitioned into Low and High Performing Firms** **Based on LEVEL of Prior ROA**				
	# Nonusers		*# Users*	
	LEVEL		*LEVEL*	
	Low	*High*	*Low*	*High*
Initiative				
Activity-Based Costing (ABC)	102	109	51	43
Total Quality Management (TQM)	101	106	52	46
Business Process Reengineering (BPR)	129	136	24	16
Interactions				
TQM*BPR			16	12
TQM*ABC			26	23
BPR*ABC			13	8
Firms are partitioned into High and Low performance at the median.				

Table 3: Descriptive Statistics			
Panel A: Characteristics of Tested Firms			
	Mean	**Median**	**Std. Dev.**
Financial Performance			
1998 ROA	0.040	0.036	0.096
1998 Net Income (000s)	487.7	419.0	3210.0
Type (%)			
TL	48.360	35.0	44.207
LTL	15.016	0.0	31.499
Specialized	36.524	0.0	35.907
Size (000s)			
Revenue	53,171	29,087	107,992
Assets	27,627	12,415	86,486
Panel B: Dependent and Control Variables			
	Mean	**Median**	**Std. Dev.**
Performance			
DROA	0.001	(0.006)	0.101
%DINC (% Change in Income)	0.087	0.046	0.088
Level (ROA), (t) before mean adjustment	0.039	0.037	0.098
Type (%)			
Truckload (TL)	48.360	35.0	44.207
Less-than-Truckload (LTL)	15.016	0.0	31.499

The correlation matrix of the simple effect and control variables is shown in Table 4. As expected, use of initiatives is moderately positively correlated, with individual correlations ranging from 0.19 for ABC with BPR to 0.32 for BPR with TQM. Initiative users also are more likely to be less-than-truckload (LTL) companies than truckload carriers (TL). Consistent with these pair-wise correlations, regressions of individual variables on the remaining independent variables show that the initiative variables have a moderate multivariate relationship with significance levels in the alpha equals 0.10 range. ABC and BPR are also moderately correlated with LTL. In no case does R^2 exceed 0.19 for these regressions. The extent of these correlations does not suggest that correlation among variables is a serious econometric issue.

There are statistically significant negative correlations between prior level of performance and BPR (-0.22) and ABC (-0.12), an indication of possible endogeneity. Lower performing firms tend to use BPR and ABC more often than high performers. A regression of initiative use on year

t level of ROA (not presented) confirms that heavy users of initiatives tended to be slightly below mean in level of performance. If the form of the LEVEL variable does not adequately model mean-reversion (*e.g.*, due to non-linearity), then performance improvement from lower performing BPR or ABC users cannot be specifically attributed to the initiative. This potential problem is addressed by performing an alternate test where the sample is partitioned into two groups based on prior performance, as shown in panel B of Table 2. As discussed later in the paper, consistent results for both groups indicate that results for the lower performing firms are not biased by improper modeling of mean reversion.

Table 4: Spearman Correlation Matrix of the Independent Variables (N= 305)						
	ABC	TQM	BPR	TL	LTL	LEVEL
Activity-Based Costing (ABC)	1					
Total Quality Management (TQM)	.29	1				
Business Process Reengineering (BPR)	.19	.32	1			
Truckload % (TL)	-.09	-15	-.11	1		
Less-than-Truckload % (LTL)	.20	.13	.15	-.12	1	
LEVEL of year *t* ROA	-.12	-.09	-.22	.01	-.02	1
Use of ABC, TQM, and BPR = a response of 6 or 7 with implementation date completed and before 1999; LTL and LTL = the percentage of truckload and less-than-truckload carriage; and LEVEL=the industry-adjusted level of the prior year's ROA.						

TESTS OF ASSOCIATION BETWEEN INITIATIVE USE AND FINANCIAL PERFORMANCE

Results of the formal hypothesis tests are reported in Table 5. The model is highly significant with an F-statistic of 22.90 and an adjusted R-square of .5212. BPR and TQM have positive simple effects at the $\alpha=0.05$ level. Hypothesis 1 is confirmed for TQM (H1b) and BPR (H1c). Although ABC (H1a) is positively signed, it does not attain statistical significance at conventional levels (p is less than 0.157).

The interactions of ABC with TQM and with BPR are also positively significant, with the TQM-ABC combination significant at $\alpha=0.05$. Significance of a positively signed interaction term confirms that there is a positive effect created from concurrent use of the two tested initiatives (*i.e.*, there is an association with improvement in financial performance over and above that of the sum of the effects of the initiatives used in isolation). Therefore, it appears there is a positive context-specific benefit created from concurrent use of these pairs of initiatives. Hypothesis 3 is therefore confirmed.

There is no evidence, however, that concurrent use of TQM and BPR creates a positive or negative context-specific benefit. This interaction is negatively signed but is not statistically significant (p<0.567). Therefore Hypothesis 2 is not confirmed.

Table 5				
Regression of 1-Year Change in ROA on Initiatives including				
Interactions of TQM with BPR and ABC with TQM and BPR				
$\Delta ROA = \alpha + \beta_1 TQM + \beta_2 BPR + \beta_3 ABC + \beta_4 TL + \beta_5 LTL + \beta_6 LEVEL$				
$+ \beta_7 TQM*BPR + \beta_8 TQM*ABC + \beta_9 BPR*ABC + \varepsilon$				
F			22.90	
P-Value			0.001	
R^2			.5360	
Adjusted R^2			.5212	
	Expected Sign	*Coefficient*	*τ-Stat*	*p-value*
Intercept		-0.007	2.229	0.026
Initiative Simple Effect				
Activity-Based Costing (ABC)	+	0.006	1.007	0.157
Total Quality Management (TQM)	+	0.008	1.658	**0.049**
Business Process Reengineering (BPR)	+	0.015	2.167	**0.015**
Interactions				
TQM*BPR	?	-0.007	-0.574	0.567
TQM*ABC	+	0.013	2.055	**0.020**
BPR*ABC	+	0.007	1.567	*0.059*
Control Variables				
Truckload (TL)	?	-0.000	-0.744	0.458
Less-than-Truckload (LTL)	-	-0.000	-1.436	*0.098*
LEVEL	-	-0.116	4.644	**0.001**

Where use of ABC, TQM, and BPR = a response of 6 or 7 with implementation date completed and before 1999; LTL and LTL = the percentage of truckload and less-than-truckload carriage; and LEVEL=the industry-adjusted level of the prior year's ROA.
Bold = significant at the α=0.05 level; *Italicized* = significant at the α=0.10 level
Tests on the coefficients are one-tailed for variables with an expected sign; two tailed for remaining variables.

Results are consistent when each initiative's set of three variables (one simple and two interaction terms) is dropped from the model. In all cases, the adjusted R^2 decreases. Inclusion of each initiative adds to the explanatory power of the model. Also, the ABC-BPR and ABC-TQM combinations individually contribute a positive adjusted R^2. TQM-BPR does not add to explanatory power.

Of the control variables, LTL is negatively signed and significant at α=0.10, and LEVEL is negatively signed and highly significant at 0.001. The negative significance of LTL confirms that, as discussed in the motor carrier and transportation literatures, LTL and large companies did not

perform as well as specialized carriers or TL companies during this period. The negative significance of LEVEL confirms the mean-reversion of earnings in the motor carrier industry.

SENSITIVITY TESTS

Regression diagnostics reveal no serious problems with multicollinearity. For a model without initiative interaction terms the condition index is 6, with no variance inflation factors above 2, well within the guidelines established by Belsley (1980). Addition of interaction terms increased the condition index to 24, still within acceptable limits. However, the addition of interaction terms tends to bias against finding simple effects and prevents interpretation of the individual initiative coefficients.

White's (1980) heteroskedasticity adjusted t-statistics are reported. Analysis of the Durbin-Watson statistics indicates no misspecification of variables. Influential data points, generally outliers with extreme values of the dependent variable, are identified through analysis of the R-student residuals. Outliers are expected because extreme observations of ratios (*e.g.*, ROA) occur frequently relative to typical level variables. Influential data points are addressed through an iterative process whereby a regression is run, the observation with the largest *r*-student residual (exceeding "3") is identified, investigated and eliminated, and the regression repeated. This process results in the elimination of eight observations (2.6 percent), well within normal limits. As discussed later in the paper, sensitivity testing is performed whereby the values of the dependent variables are transformed to eliminate the need for eliminating observations. Results are robust to these specifications.

Several sensitivity tests are performed including alternative modeling of prior level of performance, and a search for missing variables (*i.e.*, controlling for level of equity and firm size using revenues, log of revenues, total assets and log of total assets). Results are robust to these specifications of the model. Four additional categories of sensitivity tests are described in detail below.

ALTERNATE DEPENDENT VARIABLES

ROA and return on equity (ROE) are both important in analytical and empirical research (Auks, *et al.*, 1996). It can be argued that the goal of the firm is to maximize shareholder wealth and that return on equity (ROE) is more closely tied to shareholder wealth than ROA (Brigham *et al.*,1999; Shapiro and Balbirer, 1999). An alternative test is performed where ROE replaced ROA as the dependent variable. Results (not presented) are robust to this alternative dependent variable definition, except that the simple effect for BPR is significant at the $\alpha=0.10$ rather than at $\alpha=0.05$. A limitation of the use of a ratio-based dependent variable such as ROA is that TQM and BPR often involve improving efficiencies or restructuring, which reduce a firm's asset base. This could cause

ROA of users to grow even though cash flows and firm value may actually decline over the same period. To alleviate concerns over this possible bias, an alternate test is performed where the dependent variable is percentage change in net income from year *t* to year *t +3*, defined as (net income after tax for fiscal 2001 - net income after tax for fiscal 1998) / (net income after tax for fiscal 1998). Results are robust except that the simple effect for BPR is significant at the alpha = 0.10 rather than at alpha = 0.05.

To eliminate the need for dropping outlier observations from the tests and to alleviate possible concern about non-normality of the continuous variables, two additional tests are performed. In the first test, logarithmic transformations ΔROA and level of ROA are substituted for the raw values. In the second the variables are winsorized to the 5th and 95th percentile of the raw variables. Other than a weakening of R^2 of the winsorized model, results are robust to these modifications.

ALTERNATIVE SPECIFICATIONS OF VARIABLES OF INTEREST

The 7-point initiative use data were transformed into binary variables because the meaning of the responses is ambiguous, specifically the interpretation of 3 = "Sometimes Avoid" and 4 = "Neither Avoid or Use" when applied to TQM, BPR or ABC. The transformation allows separation into two classes – those firms that mostly or almost use and those that never or seldom used initiatives. Presumably the users would be expected to receive positive gains from initiative use. Use of binary variables also allows separate identification and interpretation of simple and interaction effects through a factorial design; however transformation means that the inherent properties of the survey information are ignored, potentially affecting results. Therefore, the analysis is run with the original 7-point Likert measures. Results are not materially affected.

Another issue is that there may be significant implementation costs for firms that have implemented but do not heavily use initiatives. If so, categorization of these firms as non-users would bias in favor of finding positive results. To guard against this bias, alternative tests are performed where three categories of initiative use are created: nonuser = response of 1, 2, 3, or 4 for initiative use with no implementation date; these firms would presumably have immaterial gain from using the initiative and zero or insignificant cost from implementation. light user = response of 5, or response of 2, 3, or 4 with an implementation date, or response of 6 or 7 with an implementation date of 1999; these firms presumably have some gains, but gains would likely be at least offset by implementation costs. Heavy user = response of 6 or 7 with implementation date before 1999; these firms would presumably have net gains from use of the initiative. Six binary variables are created, two for each initiative. Interpretation of the results is not affected and no significance, positive or negative, is obtained from of any of the LIGHT variables. The overall benefits and costs of light use may offset each other, and/or implementation costs may not be material. This finding is consistent with Hendricks and Singhal (1997) who found no effect, positive or negative, for recent TQM

implementers. Future research could investigate the alternative explanations by testing recent implementers and light users separately.

THREE-WAY INTERACTION OF VARIABLES OF INTEREST

Nine firms are users of all three initiatives (TQM, BPR, and ABC). When a term is introduced into the model whereby the three initiatives are interacted there is no improvement in adjusted R^2. The three-way interaction is not significant and there is little change in the significance or coefficients of the variables, possibly because of the limited number firms in this category.

PARTITIONED SAMPLE

To ascertain whether the results reported above have been biased by the higher tendency of low-performing firms to use BPR and ABC, the sample is partitioned at the median level of year-*t* performance. Results are consistent for both the high and low performing groups. The TQM-ABC combination remains significant at α=0.05 for both the high and low performers. BPR-ABC increases to α=0.05 for the low performers. TQM-BPR does not attain significance for either group.

The simple effects also are fairly consistent but are slightly weaker, possibly due to the smaller sample size. BPR remains significant at alpha = 0.05 for the low performers but drops to alpha = 0.10 for the high performers. One could easily expect companies that are performing poorly to benefit more from dramatic, discontinuous change than those that are already performing above the industry median. TQM remains significant at alpha = 0.10 for high performers, but is not significant at conventional levels for the low performers. These results suggest that there are similar positive effects generated from use of strategic business initiatives for both high and low performing firms. It does not appear that endogeneity between beginning level of performance and initiative use is a serious concern in interpreting the results of this study.

SUMMARY AND DISCUSSION

This study investigates the use of TQM, BPR and ABC in the motor carrier industry and the association of those initiatives with improvement in financial performance. Knowledge of the efficacy and context-specific benefit of business initiatives is of significant interest to three communities: 1) the practitioner community that use, promote, instruct in the use of, or contemplate the implementation of ABC, TQM, or BPR (including accountants, managerial decision-makers, potential project leaders, professional associations, and consultants), 2) researchers interested in the theoretical and empirical literature regarding these initiatives, and 3) educators who communicate commonly-believed benefits of these initiatives and instruct in their use.

Archival financial information obtained for 305 motor carriers is used to regress one-year changes in financial performance against initiative use. The first finding is that, consistent with the literature and after control for previous level of performance and for use of other initiatives, use of TQM and BPR are significantly associated with ROA improvement. The second finding is that, although there was not a statistically significant simple effect obtained from use of ABC, there is empirical evidence that, consistent with management accounting, TQM, and BPR literatures, context-specific benefits are obtained from concurrent use of ABC with TQM and BPR. These results are robust to the partitioning the sample into high- and low-performing groups. It is likely that ABC functions as an enabler of other improvement initiatives, providing the information necessary to optimize the effectiveness of TQM and BPR. The positive findings regarding ABC are of particular interest to practicing and academic accountants because they are often the primary proponents and administrators of ABC, and previous evidence of ABC efficacy has been theoretical or anecdotal.

Due to the inconsistency of the foregoing results, more research is needed to explain how this effect occurs. It is possible that improvement in performance results more from the introspection and internal and external communication that occurs whenever the initiative is implemented rather than results achieved from its mechanical application. Research that investigates the conditions under which improvement occurs and that identifies the components of financial performance that are affected by initiative use would be of benefit.

There was no evidence of a context-specific benefit (positive or negative) from concurrent use of TQM and BPR. Therefore, the divergence of opinions in the literature regarding concurrent use of continuous and discontinuous improvement initiatives must continue.

A third significant finding of this study is that there is a pronounced mean reversion of earnings, at least in the motor carrier industry. Since deregulation in the 1970s, the industry has become highly competitive, largely because of 1) low entry costs in the TL and specialized carrier segments, and 2) increased competition with other modes of transport. Overall the industry lacks the capital investment requirements, proprietary processes, technology, and territory and patent protection typical of many other industries. Therefore, trucking firms are not able to maintain their competitive position over extended periods of time without continuing improvements in efficiency and service (Coyle *et al.*, 1994). To maintain their position, the best performing firms must implement solutions to counter the "collar" effect that pulls their performance towards the mean. Although cause cannot be directly inferred from this study, there is evidence that the use of initiatives can help to offset this effect, thereby facilitating top performers in maintaining their relative position.

As with all studies, there are several important limitations to the analyses. It is assumed that respondents know the extent of initiative use and have responded honestly. Although respondents were generally top executives who should be knowledgeable about major initiatives, the possibility exists that the responses do not represent actual company practices. Secondly, although this study

is restricted to a single industry, level-of-use may not capture the effectiveness of an individual firm's implementation of an initiative. As argued by previous researchers (*e.g.*, Cooper, 1988; Cooper and Kaplan, 1991), firm-specific factors such as complexity, diversity, and information technology may limit or enhance this effectiveness. Further research testing the arguments of prior researchers would be of value.

Restriction to a single industry yields significant advantages in empirical testing. Although the motor carrier industry affects virtually all firms, there is no assurance that results are generalizable to firms in other industries. Research investigating other industries would complement the findings of this study.

Finally, significant interaction terms preclude interpretation of the individual coefficients of the initiative variables, and prevent the determination of the individual economic effect of TQM, BPR, and ABC. A study that utilizes a different methodology, but maintains control for concurrent use (possibly through control groups) would be welcome.

REFERENCES

Aksu, C., C. Eckstein, W.H. Greene, & J. Ronen (1996). Time-series properties, adjustment processes, and forecasting of financial ratios, *Journal of Accounting, Auditing & Finance, 11*(1), 1-44.

Altinkemer, K., A. Chaturvedi, & S. Knodareddy (1998). Business process reengineering and organizational performance: an exploration of issues, *International Journal of Information Management, 18*(6), 381-392.

Anderson, S. W. (1995). A framework for assessing cost management system changes: the case of activity-based costing implementation at General Motors, 1986-1993, *Journal of Management Accounting Research,* Fall, 1-51.

Anderson, S. W. & K. Sedatole (1998). Designing quality into products: the use of accounting data in new product development, *Accounting Horizons, 12*(3), September, 213-233.

Armitage, H. & G. Russell (1993). Activity-based management information: TQM's missing link, *Cost and Management, 67*(2), March, 7.

Atkinson, A.A., R.D. Banker, R.S. Kaplan, & S.M. Young (1995). *Management Accounting.* Englewood Cliffs, NJ, Prentice-Hall, Inc.

Balakrishnan, R., T.J. Linsmeier, & M. Venkatachalam (1996). Financial benefits from JIT adoption: effects of customer concentration and cost structure, *The Accounting Review,* April, 183-205.

Barnes, F.C. (1991). IES can improve management decisions using activity-based costing, *Industrial Engineering,* September, 44-50.

Beheiry, M.F. (1991). New thoughts on an old concept: the cost of quality, *CMA Magazine,* June, 24-25.

Belsley, D.A., E. Kuh, & R.E. Welsch (1980). *Regression Diagnostics.* New York: John Wiley & Sons.

Bernard, V.L. (1994). Accounting-based valuation methods, determinants of market-to-book ratios, and implications for financial statement analysis, Working Paper, Michigan Business School.

Biggart, T. (1997). *The effects of just-in-time system adoption of firm performance*. Unpublished doctoral dissertation, Florida State University.

Borthick, A.F. & H.P. Roth (1993). Accounting for time: reengineering business processes to improve responsiveness, *Journal of Cost Management*, Fall, 4-14.

Boyd, D. T. III (1996). *An Analysis of Publicly Available Performance Measures of Companies Adopting JIT*. Unpublished doctoral dissertation, Louisiana Tech University.

Brigham, E.F., L.C. Gapenski, & M.C. Ehrhardt (1999). *Financial Management*, 9th edition, New York: The Dryden Press.

Brimson, J.A. (1991). *Activity Costing, An Activity-Based Costing Approach*, New York: John Wiley & Sons, Inc.

Bruns, W. J. & R.S. Kaplan (1987). *Accounting & Management Field Study Perspectives*, Boston, MA: Harvard Business School Press.

Cagwin, D. & M.J. Bouwman (2002). The association between activity-based costing and improvement in financial performance, *Management Accounting Research*, 13, 1-39.

Capon, N., J.U. Farley & S. Hoenig (1988). Determinants of financial performance: A meta-analysis, *Management Science, 36*, 1143-1159.

Chang, R.Y. (1994). Improve processes, reengineer them, or both? *Training and Development, 48*(3), 54-58.

Chenhall, R.H. (1997). Reliance on manufacturing performance measures, total quality management and organizational performance, *Management Accounting Research, 8*,187-206.

Chenhall, R,H. & k. Langfield-Smith (1998). The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a systems approach, *Accounting, Organizations and Society*, *23*(3), 243-264.

Choi, T.Y. & k. Eboch, K (1998). The TQM paradox: relations among TQM practices, plant performance, and customer satisfaction, *Journal of Operations Management*, *17*, 59-75.

Cokins, G. (1996). *Activity-Based Cost Management: Making It Work.* Chicago, IL: Irwin Professional Publishing.

Cole, R. (1994). Reengineering the corporation: a review essay, *Quality Management Journal, 1*(4), 77-85.

Cooper, R. (1988). The rise of activity-based costing – part two: when do I need an activity-based system? *Journal of Cost Management*, Summer, 45-54.

Cooper, R. & R.S. Kaplan (1991). *The Design of Cost Management Systems: Text, Cases, and Readings*. Englewood Cliffs, NJ: Prentice Hall.

Cooper, R., R.S. Kaplan, L. Maisel & R. Oehm (1992). *Implementing Activity-Based Management: Moving from Analysis to Action.* Montvale, NJ: Institute of Management Accountants.

Cooper, R. & P.B. Turney (1989). *Hewlett-Packard: The Roseville Network Division*. Boston, MA: Harvard Business School (Case #9-189-117).

Coyle, J.J., E.J. Bardi & R.A. Novack (1994). *Transportation, 4th ed*ition. St. Paul, MN: West Publishing Company.

Crosby, P.B. (1979). *Quality Is Free: The Art of Making Quality Certain.* New York: McGraw-Hill.

Davenport, T..H. & J.E. Short (1990). The new industrial engineering: information technology and business process redesign, *Sloan Management Review, 31*(4),11-27.

Dean, E.B. (1996). Business process reengineering from the perspective of competitive advantage, http://garcia1.larc.nasa.gov/dfca/bpre.html (December).

Deming, W. E. (1988). Deming's Point Four: A Study, *Quality Progress,* December, 31-35.

Dillman, D.A. (1999). *Mail and Telephone Surveys: The Total Design* Method (Second Edition). New York: John Wiley & Son.

Dixon, J.M. (1996). *Total Quality Management in ISO-9000 Registered Organizations: An Empirical Examination of the Critical Characteristics Associated with Levels of Financial Performance.* Unpublished doctoral dissertation, Florida State University.

Drake, A.R., S.F. Haka & S.P. Ravenscroft (1999). Cost system and incentive structure effects on innovation, efficiency and profitability in teams, *The Accounting Review, 74*(3), July, 323-345.

Drucker, P.F. (1995). The information executives truly need, *Harvard Business Review,* January-February, 55-63.

Earl M. & B. Khan (1994). How new is business process redesign, *European Management Journal, 12*(1), 20-30.

Easton, G.S. & S.J. Jarrell (1998). The effects of total quality management on corporate performance: an empirical investigation, *Journal of Business,* 71(2), April, 253-307.

Engelkemeyer, S.W. (1991). *An Empirical Study of Total Quality Management Practices in U.S. Manufacturing Firms*. Unpublished doctoral dissertation, Clemson University.

Evans, H. & G. Ashworth (1995). Activity-based management: moving beyond adolescence, *Management Accounting-London,* December, 26-30.

Feigenbaum, A.V. (1986). Quality: the strategic business imperative, *Quality Progress,* February, 26-30.

Fliedner, G. & R. Vokurka (1997). Agility: the next competitive weapon, *APICS—The Performance Advantage*, January, 56-59.

Forza, C. & R. Filippini (1998). TQM impact on quality conformance and customer satisfaction: a causal model, *International Journal of Production Economics, 55*, 1-20.

Furey, T.R. (1993). A six-step guide to process reengineering, *Planning Review*, *21*(2), 20-23.

Gadd, K. & J. Oakland (1996). Chimera or culture? Business process reengineering for total quality management, *Quality Management Journal, 3*(3), 20-38.

Golhar, D.Y. & C.L. Stamm (1991). The just-in-time philosophy: a literature review, *International Journal of Production Research, 29*(4), 657-676.

Goyal, S.K. & S.G. Deshmukh (1992). A critique of the literature on just-in-time manufacturing, *International Journal of Operations and Production Management,* January, 18-28.

Gupta, M., S. Baxendale & K. McNamara (1997). Integrating TOC and ABCM in a health care company, *Journal of Cost Management,* July/August, 23-28.

Hammer, M. (1990). Reengineering work. Don't automate, obliterate, *Harvard Business Review,* July/August, 104-112.

Hammer, M. (1991). Why we need both the continuous and discontinuous improvement, *Perspectives on the Management of Information Technology, 8*(1), 6-7.

Hammer, M. & J. Champy (1993). *Reengineering the Corporation: A Manifesto for Business Revolution*. New York: Harper Business.

Harmatuck, D.J. (1990). Motor carrier cost function comparisons, *Transportation Journal,* Summer, 31-46.

Harris, E. (1990). The impact of JIT production on product costing information systems, *Production and Inventory Management Journal,* 1st Qtr, 44-48.

Harrison, D.B. & M.D. Pratt (1992). A methodology for reengineering businesses, *Planning Review, 21*(2), 6-11.

Healy, P.M. (1985). The effect of bonus schemes on accounting decisions, *Journal of Accounting and Economics,* April, 85-107.

Hendricks, K.B. & V.R. Singhal (1997). Does implementing an effective TQM program actually improve operating performance? Empirical evidence from firms that have won quality awards, *Management Science, 43*(9), September, 1258-274.

Hendricks, K.B. & V.R. Singhal (1999). Don't count TQM out, *Quality Progress*, *32*(4), April, 35-42.

Huson, M. & D. Nanda (1995). The impact of just-In-time manufacturing on firm performance, *Journal of Operations Management,* January, 5-14.

Innes, J., F. Mitchell & D. Sinclair (2000). Activity-based costing in the UK's largest companies: a comparison of 1994 and 1999 survey results, *Management Accounting Research, 11*, 349-362.

Ittner, C.D. & D.F. Larcker (1995). Total quality management and the choice of information and reward systems, *Journal of Accounting Research,* Supplement, 1-34.

Ittner, C.D. & D.F. Larcker. (1999). Quality strategy, strategic control systems, and organizational performance, *Accounting, Organizations and Society, 22*(3/4), 293-314.

Jacobson, R. (1987). The validity of ROA as a measure of business performance, *The American Economic Review, 77*, 470-478.

Jarrar, Y.F. & E.M. Aspinwall (1999a). Business process reengineering: learning from organizational experience, *Total Quality Management, 10*(2),March, 173-186.

Jarrar, Y.F. & E.M. Aspinwall (1999b). Integrating total quality management and business process reengineering: is it enough? *Total Quality Management, 10*(4/5), July, S584-S593.

Jaworski, B. & A.K. Kohli (1993). Market orientation: antecedents and consequences, *Journal of Marketing, 57*, 53-70.

Juran, J.M. & F.M. Gryna Jr. (1970). *Quality, Planning and Analysis*, New York, McGraw-Hill.

Kaynak, H. (1996). *The Relationship between Just-in-Time Purchasing and Total Quality Management and Their Effects on the Performance of Firms Operating in the U.S.: An Empirical Investigation,* Unpublished doctoral dissertation, University of North Texas.

Kennedy, T. & J. Affleck-Graves (2001). The impact of activity-based costing techniques on firm performance, *Journal of Management Accounting Research, 13*, 19-45.

Kinney, M.R. & W.F. Wempe (1998). Further evidence on the extent and origins of JIT's profitability effects, Working Paper, Texas A&M University.

Klein, M. M. 1993. The fill facilitator role in benchmarking operations to improve performance, *Industrial Engineering*, *25*(9), 40-42.

Krumwiede K.R. (1998). ABC: why it's tried and how it succeeds, *Management Accounting,* April, 38-38.

Kwon, T.H. & R.W. Zmud (1987). Unifying the fragmented models of information systems and implementation, in *Critical Issues in Information Systems Research*, edited by R. J. Boland and R. Hirscheim. New York: John Wiley & Sons.

McConville, D.J. (1993). Start with ABC, *Industry Week,* September, 6, 33-36.

O'Neill, P. & A.S. Sohal (1999). Business process reengineering: a review of the current literature, *Technovation, 19*, 571-581.

Player, R.S. & D.E. Keys (1995). Lessons from the ABM battlefield: moving from pilot to mainstream, *Journal of Cost Management*, Fall, 31-41.

Prescott, J.E., A.K. Kohli & N. Venkatraman, N. (1986). The market share-profitability relationship: an empirical assessment of major assertions and contradictions, *Strategic Management Journal, 7*, 377-394.

Rangone, A. (1997). Linking organizational effectiveness, key success factors and performance measures: An analytical framework, *Management Accounting Research, 8,* 207-219.

Raymond, L., F. Bergeron & S. Rivard (1998). Determinants of business process reengineering success in small and large enterprises: an empirical study in the Canadian context, *Journal of Small Business Management, 36*, January, 72-85.

Redman, T. & J. Grieves (1999). Managing strategic change through TQM: learning from failure, *New Technology, Work and Employment, 14*(1), 45-61.

Roberts, M.W. & K.J. Silvester (1996). Why ABC failed and how it may yet succeed, *Journal of Cost Management,* Winter, 23-35.

Romney, M. (1995). Business process reengineering, *Internal Auditor,* June, 24-29.

Rotch, W. (1990). Activity-based costing in service industries, *Journal of Cost Management,* Summer, 4-14.

Samson, D. & M. Terzioski (1999). The relationship between total quality management practices and operational performance, J*ournal of Operations Management, 17*, 393-409.

Sankar, M. (1995). *Self-Assessment Using the Baldrige Criteria*, Milwaukee, WI, ASQC Professional Technical Development.

Shank, J.K. & V. Govindarajan (1994). Measuring the "cost of quality": a strategic cost management perspective, *Journal of Cost Management,* Summer, 5-17.

Shapiro, A.C. & S.D. Balbirer (1999). *Modern Corporate Finance*. Upper Saddle River, NJ: Prentice Hall.

Shaw, R. (1998). ABC and ERP: partners at last? *Management Accounting,* November, 56-58.

Shepard, N. (1995). The bridge to continuous improvement, *CMA Magazine,* March, 29-32.

Shields, M.D. (1997). Research in management accounting by North Americans in the 1980s, *Journal of Management Accounting Research, 9*, 4-61.

Shields, M.D., F.J. Deng & Y. Kato (2000). The design and effects of control systems: tests of direct- and indirect-effect models, *Accounting Organizations & Society, 25*(2), 185-202.

Sim, K.L. & L.N. Killough (1998). The performance effects of complementarities between manufacturing practices and management accounting systems, *Journal of Management Accounting Systems, 10*, 325-346.

Smith, M. (1998). Innovation and the great ABM trade-off, *Management Accounting-London, 76*(1), Jan, 24-26.

Snell, S.A. & J.W. Dean, Jr. (1992). Integrated manufacturing and human resource management, *Academy of Management Journal, 35*(3), August, 467-504.

Steimer, T.E. (1990). Activity-based accounting for total quality, *Management Accounting*, October, 39-42.

Swenson, D. (1995). The benefits of activity-based cost management to the manufacturing industry, *Journal of Management Accounting Research*, Fall,167-180.

Swenson, D. (1998). Managing costs through complexity reduction at Carrier Corporation, *Management Accounting*, April, 20-28.

Tanju, D.W. & M. Helmi (1991). ABCs for internal auditors, *Internal Auditor,* December, 33-37.

Taylor, S. (1993). Eastman Chemical strives for better than world class, *Industrial Engineering,* November, 28-34.

Transportation Technical Services, Inc. (TTS), (1999). *TTS Blue Book of Trucking Companies 1998-1999*. New York: Transportation Technical Services, Inc.

Turney, P.B.B. (1991b). How activity-based costing helps reduce cost, *Journal of Cost Management,* Winter, 29-35.

Watts, R. & J. Zimmerman, J. (1986). *Positive Accounting Theory*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity, *Econometrica, 48*, 817-838.

Wouters, M., K. Kokke, J. Theeuwes & K. van Donselaar (1999). Identification of critical operational performance measures – a research note on a benchmarking study in the transportation and distribution sector, *Management Accounting Research, 10*, 439-452.

Wright, B. (1995). Leveraging TQM through TQM, *The TQM Magazine, 7*, 50-53.

Youndt, M.A., S.A. Snell, J.W. Dean, Jr. & D.P. Lepak (1996). Human resource management, manufacturing strategy, and firm performance, *Academy of Management Journal, 39*(4), August, 836-867.

Zairi, M. & D. Sinclair (1995). Business process reengineering and process management: A survey of current practice and future trends in integrated management, *Business Process Reengineering and Management Journal, 1*(1), 8-30.

Zmijewski, M.E. & R.L. Hagerman (1981). An income strategy approach to the positive theory of accounting setting/choice, *Journal of Accounting and Economics,* March, 129-149.

IS AUDITOR SWITCHING ASSOCIATED WITH DELAYED ACCOUNTING RECOGNITION OF BAD NEWS?

Michael M. Grayson, Jackson State University
Michael S. Luehlfing, Louisiana Tech University

ABSTRACT

We study the association between auditor switching and the delayed accounting recognition of bad news about net income. Using a nonparametric sign test and a test of proportions, we analyze 305 auditor switches which occurred during the event period 1976 to 1994, a period which predated a significant increase in the number of financial-statement restatements (General Accounting Office 2002). The results (null hypothesis rejected at z > 5 for each test) suggest that some association exists between the fact of auditor switching (whether reported as resignation or dismissal) and the occurrence of decreases in net income from the year preceding the auditor switch (t-1) to the year following the auditor switch (t+1).

INTRODUCTION

Time-series research shows that accounting net income is normally expected to rise from year to year, not fall. We assert that when management expects accounting net income to fall, management may switch auditors in an attempt to delay accounting recognition of bad news. In this regard, we study the association between auditor switching and the delayed accounting recognition of bad news about net income.

The remainder of the paper is organized as follows. We begin by providing a brief background overview. Thereafter, we develop the research hypothesis. After explaining the methods used (including sample selection and statistical tests), we discuss the results, contributions and limitations. Finally, we provide several comments regarding future research.

BACKGROUND

As indicated in the Appendix, there are numerous possible reasons for auditor switching. However, as already stated, we focus on management's desire to delay the recognition of bad news about net income as a reason for auditor switching.

Knapp and Elikai's (1990) information suppression hypothesis assumes that management needs to suppress information permanently. In contrast, Kluger and Shields (1991, 255), suggest that auditor switches may be associated with attempts to "*delay* the release of unfavourable information." (emphasis added) Thus, management may be satisfied by suppressing information temporarily rather than permanently. Indeed, if management wants to delay accounting recognition of bad news, and succeeds in doing so, then the bad news would be recognized subsequent to the year of the auditor switch.

While managements have incentives to voluntarily disclose bad news (Skinner 1994 and 1997), they also have incentives *not* to disclose bad news; or, at least, to delay the disclosure. For example, by switching auditors, management may delay recognition of the bad news until such time that management is able to downwardly adjust market expectations so that investors will already be expecting bad news by the time the bad news becomes public. Management gains at least the delay involved in the switch, which is entirely contained within the annual reporting cycle (that is, year t, the year in which the auditor switch occurs). However, if recognition of the bad news can be delayed until the year following the auditor switch, management also has time to reset annual compensation and bonus targets so that managers still receive high compensation and bonuses even for meeting targets which were set lower than they otherwise would have been set. Healy (1985) demonstrated that managers change decisions as a result of compensation arrangements, including moving recognition in financial statements (both accelerating and delaying recognition) from one fiscal year to another. Knapp (1991, 41, Table 1) reported that managers do control the selection of auditors, either by selecting them outright or by giving the board of directors a list from which the board is permitted to select.

RESEARCH HYPOTHESIS

Ball and Watts (1972, 680) concluded that accounting net "income can be characterized on average as a submartingale or some similar process." That is, the net income for each year is expected to be greater than or equal to the preceding year's net income. Mathematically, $Y_t \geq Y_{t-1}$. Taking the mathematical expression literally, this is an extreme expectation because it never permits net income to be lower than in any preceding year.

Another extreme expectation is that accounting net income always moves randomly; that is, accounting net income moves down from one year to the next as often as it moves up. This expectation of random movement of accounting net income is the opposite of the Ball and Watts (1972, 680) expectation. However, we know from the time-series literature in accounting that accounting net income does not move randomly (e.g., Brown and Rozeff 1979, Foster 1977, Griffin 1977, Watts 1975, and Bathke and Lorek 1984). Nevertheless, the existence of the time-series literature demonstrates that the true pattern of movement of accounting net incomes is somewhere along the continuum from completely random to the Ball and Watts (1972) expectation.

If lower net incomes do indeed occur systematically with respect to auditor switches, this suggests some association, causal or otherwise, exists between the two. If management is promptly reporting all bad news, then management has no incentive to switch auditors in order to delay any reporting of any bad news. On the other hand, if management is desirous of delaying the reporting of bad news, and management suspects that the auditors will both find the bad news and insist that its effects be recognized in the current year's financial statements, then management may decide that the delayed reporting of bad news is more important to them than the continued good relationship with their incumbent auditor. In such a case, management can then choose a course of action whereby it (1) attempts (whether successfully or unsuccessfully) to find new auditors who will not require that the bad news be recognized in the current year's financial statements, (2) issues guidance to lower investors' expectations for the following year, and (3) gives accounting recognition to the bad news in that following year (or later, or never). This conceptual sequence gives rise to the following null hypothesis:

H_o:	Among client companies that switched auditors, the net income in the year after the auditor switch (t+1) was greater than or equal to the net income in the year before the switch (t-1).

In substance, this hypothesis tests for an association between auditor switching and the delayed revelation of bad news. This hypothesis is based on the assumption that decreases in net income either are bad news themselves or else proxy for bad news.

METHODS

Sample Selection

The sample was selected from the Compustat data base (that is, a limited subscription to Compustat composed of 4,106 companies reported to have been randomly selected by Compustat from the full Compustat data base) for the years 1975 through 1994. Use of this period avoids the increased number of financial-statement restatements found by the General Accounting Office (2002) to have occurred in subsequent years, that is, 1997 to 2002, and therefore avoids a potential problem whereby some additional companies ought to have restated, but did not do so. See Tables 1 and 2 for companies included in the data base, but excluded from the sample. See Table 3 for information on the final sample.

To be selected, companies must have had different auditor codes reported by Compustat from one year to the next, plus have had two following years of data. If a company was taken over (Anderson, Stokes and Zimmer 1993) or merged (Hribar and Collins 2002), then it did not have two following years of data and was not included in this study. The purpose of using multiple years in which auditor switches occurred was to guard against any systematic effects in the economic

environment causing auditor changes and/or declines in net incomes in particular calendar years. Auditor codes were not available from Compustat for banks, life insurance, or property and casualty companies (Compustat 1994, 5-26), so those companies were excluded from selection.

Table 1: Companies with only one switch which were excluded from sample of auditor switches	
Company	Reason(s) for exclusion
American Stores Co.	Auditor was switched simultaneous with change in end of fiscal year.
Chiquita Brands	Compustat indicates four changes in fiscal year end during 1975 to 1994.
Craig Corp.	Auditor was switched simultaneous with change in end of fiscal year.
Decorator Industries	Fiscal year end was changed within two years following auditor switch.
Dole Food Co Inc.	Auditor was switched simultaneous with change in end of fiscal year.
FoxMeyer Health Corp.	The company changed its fiscal year the year after switching auditors.
General Motors Class E	The company changed its fiscal year the year after switching auditors.
Hondo Oil & Gas	The auditor switch occurred when Pauley Petroleum bought 81% of Hondo.
Placer Dome	Income and auditor data were incorrect.
Ranger Oil Ltd.	The auditor codes per Compustat were 9, 4, 4, and 6 for years ended 12/86 through 12/89. Per Moody's, the auditors were Thorne Riddell for 1985, Thorne Ernst & Whinney for 1986 to 1988, and Peat Marwick Thorne for 1989. This appears to be the same Canadian audit firm, but the audit firm changed affiliations during the period.

Unlike DeFond (1992, 23), this study included companies with multiple switches. Suppose a company were to switch auditors solely to obtain lower audit fees. Since the company would then be paying less to its outside vendor of audit services, its net income would be higher than otherwise. Because we hypothesize that auditor switching is associated with lower net incomes rather than higher net incomes, including multiple auditor switches tends to bias against finding lower net incomes. Thus, inclusion of companies with multiple switches biases against finding the hypothesized effect. Therefore, if significant results are found, they may understate what other researchers, who would have made different research design choices, would have found.

Kluger and Shields (1991, 263) tested two bankruptcy prediction models based on companies which either switched or did not switch auditors two to three years before bankruptcy, and found that the switched companies were more likely to go bankrupt. By selecting companies which survived two fiscal years beyond switching auditors, even though the tests were conducted only on one fiscal year beyond switching auditors, any possible effects attributable to attempts to stave off bankruptcy, or to suppress information concerning severe financial distress culminating in bankruptcy, were lessened.

Table 2: Companies excluded (E) or data changed (C)			
Part A. Differences in Auditor between Compustat and Moody's			
Auditor per Company	FYE	Moody's	Auditor per Compustat
Avon Products (E)	12/88	6	Coopers & Lybrand
Crystal Oil Co.	12/86	8	Touche Ross
Crystal Oil Co. (C)	12/87	6	Touche Ross
Crystal Oil Co. (C)	12/88	8	Peat Marwick
Crystal Oil Co.	12/89	6	Peat Marwick
CSS Industries Inc. (E)	1/80	8	Arthur Andersen
Gerber Scientific (E)	4/75	N/A	Peat Marwick
Gerber Scientific (E)	4/76	7	Peat Marwick
Gerber Scientific (E)	4/77	6	Peat Marwick
Gerber Scientific (E)	4/78	6	Peat Marwick
Lee Pharmaceuticals (E)	9/80	5	Deloitte Haskins & Sells
Lee Pharmaceuticals (E)	9/81	7	Deloitte Haskins & Sells
Lehigh Group Inc. (E)	12/91	1	KPMG Peat Marwick in summary listing, but mentions Arthur Andersen's audit report
Lehigh Group Inc. (E)	12/92	11	Arthur Andersen
Noble Affiliates	12/88	7	Price Waterhouse
Noble Affiliates (C)	12/89	1	Price Waterhouse
Noble Affiliates	12/90	1	Arthur Andersen
Placer Dome (E)	12/87	7	Clarkson Gordon; Price Waterhouse
Placer Dome (E)	12/88	14	Clarkson Gordon; Price Waterhouse
Placer Dome (E)	12/89	4	Ernst & Young; Price Waterhouse
Placer Dome (E)	12/90	7	Price Waterhouse
Ply-Gem Industries (E)	12/82	9	(not determined)
Ply-Gem Industries (E)	12/83	7	Weinick, Sanders & Co.
Ply-Gem Industries (E)	12/84	9	(not determined)
Republic Gypsum (E)	6/88	2	Arthur Young
Republic Gypsum (E)	6/89	4	Ernst & Young
Republic Gypsum (E)	6/90	1	Ernst & Young
Republic Gypsum (E)	6/91	1	Ernst & Young
Scherer, R. P. (E)	3/89	1	(not determined)
Scherer, R. P. (E)	3/90	3	(unable to locate in Moody's)
Scherer, R. P. (E)	3/91	1	(not determined)

Table 2: Companies excluded (E) or data changed (C)			
Part B. Differences in Net Income between Compustat and Moody's			
Company	FYE	Compustat	Moody's
Placer Dome (E)	12/87	121.672	C$158.2
Placer Dome (E)	12/88	219.996	C$262.4
Placer Dome (E)	12/89	108.036	C$125.1
Placer Dome (E)	12/90	164.583	C$191.0
Placer Dome (E)	12/91	-236.200	C$236.2 loss
Placer Dome (E)	12/92	111.000	C$111.0
Note: C$ indicates amounts in Canadian dollars. Data sources give net income in millions of dollars.			

Table 3: Analyses of audit switches by Compustat variable DNUM (SIC code) and by year of switch	
Part A. Audit switches by Compustat variable DNUM (four-digit SIC code)	
less than 1000	0
1000 series	24
2000 series	52
3000 series	110
4000 series	16
5000 series	52
6000 series*	21
7000 series	20
8000 series	9
9000 series	1
Total	305
*Auditor codes are not available for banks, life insurance, or property and casualty companies (Compustat 1994, 5-26), so those companies are excluded.	

Statistical Tests

We tested the null hypothesis using the Fisher distribution-free sign test (Hollander and Wolfe 1973, 39-40). This test analyzes the direction of movement, if any, and results in a pattern of ones (for movement in the hypothesized direction) and zeroes. Once the direction of movement is determined, the ones and zeroes are distributed according to a binomial distribution (Hollander and Wolfe 1973, 40). When the sample is large, Hollander and Wolfe (1973, 40) show that the test

statistic *B** is approximately normally distributed. The sample of 305 auditor switches is considered a large sample, and therefore the standard deviation and the z score were computed according to Devore and Peck (1986, 223).

To perform a test of significance on the direction of changes in net income, it is necessary to have an expectation for the number of times net income should move in the specified direction. The observed number of changes in net income is then compared as a proportion or number or percentage of the sample against an expected proportion or number or percentage. We performed two tests, using two expectations.

The expectation for net income according to Ball and Watts (1972, 680) is that accounting net "income can be characterized on average as a submartingale or some similar process." That is, the net income for each year is expected to be greater than or equal to the preceding year's net income. However, the Ball and Watts expectation can be characterized as an expectation which is extreme, because it allows zero lower net incomes.

Another extreme expectation is that accounting net income always moves randomly; that is, accounting net income moves down from one year to the next as often as it moves up. This expectation of random movement of accounting net income is the opposite of the Ball and Watts (1972, 680) expectation. However, we know from the time-series literature in accounting that accounting net income does not move randomly (e.g., Brown and Rozeff 1979, Foster 1977, Griffin 1977, Watts 1975, and Bathke and Lorek 1984). Nevertheless, the existence of the time-series literature demonstrates that the true pattern of movement of accounting net incomes is somewhere along the continuum from completely random to the Ball and Watts (1972) expectation.

If accounting net incomes were to move randomly, then the movement from year (t-1) to year (t) is either up or down, and, similarly, the movement from year (t) to year (t+1) is either up or down. Thus, the movement from year (t-1) to year (t+1) is either up up, up down, down up, or down down. Making a simplifying assumption of equal-sized movements in net income, then only in the "down down" pattern of net income will net income be lower in (t+1) than in (t-1). Thus, an expectation of random movement of accounting net incomes means that twenty-five percent of the time, net incomes should be lower in (t+1) than in (t-1), which allows for a different test of the same null hypothesis. This expectation that net income is lower twenty-five percent of the time in (t+1) than (t-1) actually overstates the percentage because the movement of accounting net incomes is upward rather than random; from the time-series literature findings of patterns rather than randomness, the true but unknown percentage has to be lower than twenty-five percent.

Use of a matched-pairs test is not appropriate because the relevant population characteristic (direction of changes in net income) is known from the Ball and Watts (1972) study and from the time-series literature (e.g., Brown and Rozeff 1979, Foster 1977, Griffin 1977, Watts 1975, and Bathke and Lorek 1984). Unlike Garsombke and Armitage (1993), we tested the direction of changes in net income, not the quantity of net income, for two reasons. First, we needed to be consistent with our hypothesis, which deals with direction--not magnitude--of change in net income.

Second, even a small percentage change in net income by a very large company may, by itself, be larger than the combined changes in net incomes of many small companies.

RESULTS

H_o:	Among client companies that switched auditors, the net income in the year after the auditor switch (t+1) was greater than or equal to the net income in the year before the switch (t-1).

There were 121 observed lower net incomes (out of 305 switches). When the proportion of 121/305 was compared against the Ball and Watts (1972, 680) income expectation, the null hypothesis was rejected at a z value of 13.9. When the proportion of 121/305 was compared against an expectation of random movement of accounting net incomes, the null hypothesis was rejected at a z value of 5.1.

Given the results of both these tests, the null hypothesis was strongly rejected at a z value somewhere between 5.1 and 13.9. The z value of 5.1 is based on an extreme expectation that net income is lower in (t+1) than in (t-1) twenty-five percent of the time, which overstates the actual percentage. The z value of 13.9 is based on an expectation, which is extreme in the opposite direction, that net income is never lower in (t+1) than in (t-1), which understates the actual percentage. Therefore, any reasonable income expectation which falls between these two extremes would also result in the null hypothesis being rejected at some z value which falls between 5.1 and 13.9.

The =NORMSDIST(Z) function in an Excel spreadsheet was used to compute the cumulative area under the curve for these z values. At a z value of 5.1, the cumulative area is 0.9999998+, for a p value of <0.0000002. At a z value of 13.9, the cumulative area, correct to twenty-five decimal places, is 1, for a p value of <.0000000000000000000000001. This means that, much more frequently than expected, and with little probability of having reached an incorrect conclusion, net income is lower the year following an auditor switch (t+1) than the year preceding an auditor switch (t-1).

CONTRIBUTIONS AND LIMITATIONS

We discussed a possible sequence of events regarding possible attempts by management to delay accounting recognition of bad news, and from that formulated a testable hypothesis. We then documented a strong statistical association between the fact of auditor switching (whether reported as resignation or dismissal) and the occurrence of lower net incomes in the year following the auditor switch (t+1) than in the year preceding the auditor switch (t-1).

While we found strong evidence of an association, we cannot state with certainty what causes this association since we have not conducted a critical experiment--that is, an experiment which not only supports one causative factor, but also rules out all other possible causative factors. We also did not test whether managers' compensation targets are actually adjusted when companies' incomes decrease. Nevertheless, the large z score suggests that further research is warranted.

This study did not distinguish between auditor dismissals and auditor resignations because this study tested for an association between auditor switching (regardless of who initiated the switch) and bad news which may have become public after the switch. While some studies may have used sources such as 8-K filings to determine whether auditor switches were reported as dismissals or resignations (Nichols and Smith 1983, and Wells and Louder 1997), we ignore the *characterization* of the switch and concentrate instead on the *fact* of the switch. Krishnan and Stephens (1995, 180) referred to McConnell in acknowledging that it may be difficult to determine the true reason for an auditor switch, no matter what people or documents say. As seen below, McConnell (1984, 46) recognized that what is stated in 8-K filings or other sources may be false information.

> Not acknowledging known unreported disagreements in his exhibit letter reviewing client disagreement assertions allows an auditor to avoid potential litigation, as well as the stigma of being "a poor loser."

Wells and Loudder (1997, 140) stated, "empirical evidence suggests that resignations are associated with unfavorable events within a firm." There was no reason to infer that the bad news being examined herein would differ across auditor dismissals and auditor resignations, particularly when both dismissals and resignations could each be disguised as the other. Auditors who do not wish to continue as auditors may raise their fees to such an extent that clients decide to switch. Clients who do not wish to continue their relationship with their incumbent audit firm can decide to have disagreements with the auditors or otherwise to make life difficult for the auditors.

The use of the Compustat data base caused a bias against finding the hypothesized effect. This bias occurred because the Compustat data base companies tend to be larger than the average of all publicly-owned companies. Those larger companies are more closely followed by market participants who may have, or seek, private information which may bear on price movements of the companies' securities. Consequently, the extra effort devoted to obtaining information about those companies made it less likely that management could have known material bad news and kept it from the market for an extended period.

FUTURE RESEARCH

There are several avenues for future research. First, cash flows could be examined in lieu of net incomes or other income-statement items. Second, differences among industries could be examined. Third, differences among audit firms could be examined.

In addition, methodology could be varied. For example, managements' incentives and resulting actions can be addressed not only by capital-markets studies, but also by behaviorally-based studies, analytical modeling, and studies which use experimental markets. This would provide triangulation as suggested by Abdel-khalik and Ajinkya (1979).

REFERENCES

Abdel-khalik, A. R., and B. B. Ajinkya. 1979. *Empirical research in accounting: a methodological viewpoint*. Sarasota, FL: American Accounting Association.

Anderson, D., D. Stokes, and I. Zimmer. 1993. Corporate takeovers and auditor switching. *Auditing: A Journal of Practice & Theory* 12 (Spring): 65-73.

Ball, R., and R. Watts. 1972. Some time series properties of accounting income. *Journal of Finance* (June): 663-81.

Bathke, A. W., Jr., and K. S. Lorek. 1984. The relationship between time-series models and the security market's expectation of quarterly earnings. *The Accounting Review* Volume 59, Issue 2 (April): 163-176.

Bedingfield, J. P., and S. E. Loeb. 1974. Auditor changes--an examination. *Journal of Accountancy* (March): 66-69. Cited in Knapp, M. C. 1988. Toward a more coherent regulatory policy for auditor changes: an empirical study of their impact on financial statement credibility. *Research in Accounting Regulation* 2: 41-59.

Brown, L., and M. Rozeff. 1979. Univariate time-series models of quarterly accounting earnings per share: a proposed model. *Journal of Accounting Research* (Spring): 179-189. Cited in Bathke, A. W., Jr. and K. S. Lorek. 1984. The relationship between time-series models and the security market's expectation of quarterly earnings. *The Accounting Review* Volume 59, Issue 2 (April): 163-176.

Burton, J. C., and W. Roberts. 1967. A study of auditor changes. *Journal of Accountancy* (April): 31-36. Cited in Chow, C. W., and S. J. Rice. 1982. Qualified audit opinions and auditor switching. *The Accounting Review* 57: 327-35.

Chaney, P. K., D. C. Jeter, and P. E. Shaw. 1997. Client-auditor realignment and restrictions on auditor solicitation. *The Accounting Review* (July): 433-453.

Chow, C. W., and S. J. Rice. 1982. Qualified audit opinions and auditor switching. *The Accounting Review* 57: 327-35.

DeFond, M. L. 1992. The association between changes in client firm agency costs and auditor switching. *Auditing: A Journal of Practice & Theory* 11 (Spring): 16-31.

Devore, J., and R. Peck. 1986. *Statistics: The Exploration and Analysis of Data*. St. Paul: West Publishing Company.

Dhaliwal, D. S., J. W. Schatzberg, and M. A. Trombley. 1993. An analysis of the economic factors related to auditor-client disagreements preceding auditor changes. *Auditing: A Journal of Practice & Theory* 12 (Fall): 22-38.

Foster, G. 1977. Quarterly accounting data: time series properties and predictive ability results. *The Accounting Review* (January): 1-21. Cited in Bathke, A. W., Jr. and K. S. Lorek. 1984. The relationship between time-series models and the security market's expectation of quarterly earnings. *The Accounting Review* Volume 59, Issue 2 (April): 163-176.

Francis, J. R., and E. R. Wilson. 1988. Auditor changes: a joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review* 63 (October): 663-682. Cited in Haskins, M. E., and D. D. Williams. 1990. A contingent model of intra-Big Eight auditor changes. *Auditing: A Journal of Practice & Theory* 9 (Fall): 55-74.

Fried, D., and A. Schiff. 1981. CPA switches and associated market reactions. *The Accounting Review* 56 (April): 326-41.

Garsombke, H. P., and J. L. Armitage. 1993. Competitive bidding, fees and auditor changes: additional evidence. *Journal of Applied Business Research* 9 (Summer): 93-99.

Griffin, P. 1977. The time series behavior of quarterly earnings: preliminary evidence. *Journal of Accounting Research* (Spring): 71-83. Cited in Bathke, A. W., Jr. and K. S. Lorek. 1984. The relationship between time-series models and the security market's expectation of quarterly earnings. *The Accounting Review* Volume 59, Issue 2 (April): 163-176.

Haskins, M. E., and D. D. Williams. 1990. A contingent model of intra-Big Eight auditor changes. *Auditing: A Journal of Practice & Theory* 9 (Fall): 55-74.

Healy, Paul M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting & Economics* 7(1/2/3): 85-107.

Hollander, M., and D. A. Wolfe. 1973. *Nonparametric Statistical Methods*. New York: John Wiley & Sons.

Hribar, P., and D. W. Collins. 2002. Errors in estimating accruals: implications for empirical research. *Journal of Accounting Research* 40:1 (March), 105-134.

Klott, G. 1984. Auditors feel the heat of new scrutiny. *New York Times*, May 13, pp. 1 and 26 (Section 3). Cited in Knapp, M. C. 1988. Toward a more coherent regulatory policy for auditor changes: an empirical study of their impact on financial statement credibility. *Research in Accounting Regulation* 2: 41-59.

Kluger, B. D., and D. Shields. 1991. Managerial moral hazard and auditor changes. *Critical Perspectives on Accounting* 2 (September): 255-272.

Kluger, B. D., and D. Shields. 1987. Auditor changes, information suppression and bankruptcy prediction. Working paper, Rice University, February 25, 1987. Cited in Haskins, M. E., and D. D. Williams. 1990. A contingent model of intra-Big Eight auditor changes. *Auditing: A Journal of Practice & Theory* 9 (Fall): 55-74.

Knapp, M. C. 1988. Toward a more coherent regulatory policy for auditor changes: an empirical study of their impact on financial statement credibility. *Research in Accounting Regulation* 2: 41-59.

Knapp, M. C. 1991. Factors that audit committee members use as surrogates for audit quality. *Auditing: A Journal of Practice & Theory* 10 (Spring): 35-52.

Knapp, M. C., and F. M. Elikai. 1990. Auditor changes and information suppression. *Research in Accounting Regulation* 4 (Fall): 3-20.

Krishnan, J. 1994. Auditor switching and conservatism. *The Accounting Review* 69 (January): 200-215.

Krishnan, J., and R. G. Stephens. 1995. Evidence on opinion shopping from audit opinion conservatism. *Journal of Accounting and Public Policy* 14: 179-201.

Laventhol & Horwath. 1985. Investor protection is reason for SEC's 'opinion shopping' proposals. *SEC Newsletter* (November-December 1985): 1-2. Cited in Knapp, M. C. 1988. Toward a more coherent regulatory policy for auditor changes: an empirical study of their impact on financial statement credibility. *Research in Accounting Regulation* 2: 41-59.

McConnell, Jr., D. K. 1984. Auditor changes and related disagreements. *Auditing: A Journal of Practice & Theory* 3 (Spring): 44-56. Cited in Krishnan, J., and R. G. Stephens. 1995. Evidence on opinion shopping from audit opinion conservatism. *Journal of Accounting and Public Policy* 14: 179-201.

Nichols, D. R., and D. B. Smith. 1983. Auditor credibility and auditor changes. *Journal of Accounting Research* 21 (Autumn): 534-544.

Schwartz, K. B., and K. Menon. 1985. Auditor switches by failing firms. *The Accounting Review* 60 (April): 248-61.

Simunic, D. A., and M. T. Stein. 1987. *Product Differentiation in Auditing: Auditor Choice in the Market for Unseasoned New Issues*. Vancouver, B.C.: The Canadian Certified General Accountants' Research Foundation. Cited in Krishnan, J. 1994. Auditor switching and conservatism. *The Accounting Review* 69 (January): 200-215.

Skinner, Douglas J. 1997. Earnings disclosures and stockholder lawsuits. *Journal of Accounting & Economics* 23 (November): 249-282.

Skinner, Douglas J. 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research* 32:1 (Spring): 38-60.

Standard & Poor's Compustat. 1994. *Compustat User's Guide*. Englewood, CO: McGraw-Hill, Inc.

Teoh, S. H. 1992. Auditor independence, dismissal threats, and the market reaction to auditor switches. *Journal of Accounting Research* 30 (Spring): 1-23.

United States General Accounting Office. 2002. Financial Statement Restatements: Trends, Market Impacts, Regulatory Responses, and Remaining Challenges, GAO report GAO-03-138 dated October 4, 2002. Available at the GAO's Web site at www.gao.gov.

Watts, R. 1975. The time series behavior of quarterly earnings. Unpublished paper, University of New Castle. Cited in Bathke, A. W., Jr. and K. S. Lorek. 1984. The relationship between time-series models and the security market's expectation of quarterly earnings. *The Accounting Review* Volume 59, Issue 2 (April): 163-176.

Wells, D. W. and M. L. Louder. 1997. The market effects of auditor resignations. *Auditing: A Journal of Practice & Theory* 16:1 (Spring): 138-144.

Williams, D. D. 1988. The potential determinants of auditor change. *Journal of Business Finance & Accounting* 15 (Summer): 243-261.

APPENDIX **Some Reasons for Auditor Switching**	
Burton and Roberts (1967) as cited by Chow and Rice (1982, 327-328)	accounting standards disputes changes in management demand for additional services needs arising out of new financing
Fried and Schiff (1981, 327)	changes in auditor fee structure client's need for additional services regular auditor rotation policy
Chow and Rice (1982, 328)	qualified opinion rendered by audit firm
Schwartz and Menon (1985) and Teoh (1992)	attempts to influence the auditor
Kluger and Shields (1987, also cited in Haskins and Williams 1990)	information suppression
Simunic and Stein (1987) and Francis and Wilson (1988), both cited in Haskins and Williams (1990)	agency-theory-based Big 8 versus non-Big 8 product differentiation approach
Williams (1988)	a management change in which new management wishes to deal with the firm it previously dealt with (247) fast growth causing a need for a larger audit firm (250) industry or other specialization available in the audit firm (250)
Francis and Wilson (1988, 668)	diffusion of ownership leverage new securities issues
Knapp (1988, 42, who cited Bedingfield and Loeb 1974, 67; Klott 1984; and Laventhol & Horwath 1985)	corporate managers' desire to manipulate their firm's reported financial condition
Haskins and Williams (1990), citing Chow and Rice (1982)	opinion shopping
DeFond (1992, 17)	agency conflicts
Anderson, Stokes, and Zimmer (1993)	corporate takeovers
Garsombke and Armitage (1993, 95)	timeliness of service lack of responsiveness
Dhaliwal, Schatzberg, and Trombley (1993)	economic factors
Krishnan (1994, 210-211)	dissatisfaction with service dissatisfaction over fees disagreements over accounting issues (opinion shopping) management change change of engagement partner resignation of the account initial public offerings rapid growth search for "credible auditors"

CHINESE CURRENCY: TO APPRECIATE OR NOT TO APPRECIATE-THAT'S THE QUESTION

Bala Maniam, Sam Houston State University
Mei Mei, Sam Houston State University
Prakash Dheeriya, California State University-Dominguez-Hills

ABSTRACT

This paper discusses the pros and cons of appreciating the Chinese currency. The Governmental stances and views of economists and businessmen both for and against the RMB appreciation are discussed, followed by the analysis of the fundamental motives of American and Japanese government and industrialists for pressing China to revaluate RMB. This is followed by a brief discussion and analysis of what should be done about RMB's value. This paper concludes that it is not in the interest of China to appreciate RMB at the moment or in the near future. Before China succeeds in systematic structural reforms and its economy gets strong enough to withstand risks of RMB appreciation, it should and will maintain the current RMB-dollar exchange rate.

INTRODUCTION

Over the past few months there has been heated discussion about the issue of China's currency revaluation. There are generally two positions in this currency dispute. American politicians, scholars, and business people, particularly those in manufacturing industry are accusing China of deliberately and severely undervaluing its currency. They blame the low value of the Chinese RMB for US job losses, trade deficits, and other economic problems, and are pressing the Chinese government to abandon artificial manipulation of foreign exchange rate system and allow RMB to appreciate. If it remains unchanged, the American government has threatened to inflict trade sanctions against a series of products imported from China, e.g. TV sets, textile products, furniture, etc in order to force China to raise the value of RMB. It has sought allies from other governments through G-7 meeting and held other high-ranking bilateral talks. Japan is responding most actively to America's call for the revaluation of RMB. In September 2003, US Treasury Secretary John Snow visited China specifically to discuss the Chinese currency issues.

The US governmental efforts to press China to appreciate RMB seem to be futile. However, Chinese politicians, economists, and business people are taking the opposite view. Chinese central governmental officials have reiterated that China would not appreciate RMB in the near future. During Chinese Premier Wen Jiabao's visit to Washington in late November 2003, he again stressed

the need for Chinese currency to maintain its stability. The Chinese currency revaluation issue has sparked international controversy. To appreciate or not to appreciate, that's a big problem.

This research paper will proceed as follows: To begin with, a literature review of the key relevant articles will be conducted. Next, the governmental stances and views of economists and businessmen concerning the RMB's revaluation issue will be discussed. Subsequently the fundamental motives behind the US and Japan's aggressive action to call for RMB appreciation will be explored. This will lead to a brief discussion and analysis of what should be done about RMB's value and finally followed by a summary and conclusion.

LITERATURE REVIEW

During the recent years, economists worldwide have done extensive research on the RMB revaluation issue. Xu (2000) examines in detail the fundamentals that determine the exchange rate in China and concludes two important findings. Firstly, the past two decades of economic reform has made the domestic prices in China sufficiently market-determined and linked to the world prices so that the exchange rate stability leads to domestic price stability. Secondly, due to the flexibility of domestic prices, a change in the exchange rate has only a modest and ephemeral effect on the terms of trade and trade flows. Therefore, the exchange rate flexibility is not essential to keep the current account in balance. Such evidence suggests that China should continue its exchange rate policy which has been carried out since 1994 to maintain stability.

An article in *International Economy* (2003) presents the views of thirty two economists on the impact of the *Chinese currency* on the global economy. The discussions are centered on the increase in the global deflationary pressure on manufactured goods, the need for China to float the RMB and the concerns of the U.S. and Japanese regarding the value of RMB. The proponents for RMB appreciation hold that China should float the renminbi and permit it to appreciate in the currency markets, for both internal and international reasons. They accuse the Chinese government of intentionally undervaluing RMB and placing additional pressure on America's trading partners to accommodate the needed reduction in the U.S. deficit. The opponents of RMB appreciation believe that the U.S. and Japanese concerns about an undervalued RMB come from the flood of cheap products from China and that the revaluation of RMB can not solve the domestic economic problems of the U.S and Japan. According to them, the rapid growth of the Chinese economy, rather than a revaluation of RMB, is the most effective solution for the concerned problems.

Another article in *International Economy* (2003) *presents the opinions of various financial executives and economists concerning the global* implications of the *U.S. dollar* devaluation. The dominant view in this study is that a depreciating dollar, by making exports more competitive and imports less competitive, will by itself stimulate economic activity in the United States, but this can not bring about global economic boom. The Dollar decline is no panacea for lifting the U.S. and global economies out of their doldrums.

Quinlan (2001) argues strongly against the U.S. government and economists using the trade deficit as an excuse to press China to appreciate Chinese RMB. He points out that the trade balance is no longer a valid scorecard for America's global sales and competitiveness. The truth underlying the huge deficit is that, U.S. firms prefer to sell goods and services abroad through their affiliates overseas instead of exporting them from the U.S. Besides, U.S. global engagement involves far more than just trade. Trade deficit should not be viewed as a loss of global competitivity.

Cockerill (2003) regards the American industrial lobbying for Chinese RMB appreciation as hypocrisy stemming out of protectionism. He summarizes the stances of Chinese government on this issue and analyzes the reasons why the Chinese government refuses to back down on the revaluation issue. He also refutes the Japanese outcry that the undervalued RMB is consuming Japanese jobs and pushing it into deflation. The article ends with a summary of the various speculations prevalent internationally about the RMB revaluation issue. In a word, the author holds that the US and Japan are finding a scapegoat in China for their own economic and social problems.

Mahajan (2004) holds that the loss of low-human-capital jobs to less developed countries such as China and Bangladesh is not necessarily a bad thing for the U.S. Not only do the American consumers benefit from the lower-priced quality goods imported from foreign countries but also the American manufacturing force will have to evolve into a highly efficient, skilled resource capable of competing in the global arena. The future of American manufacturing lies in the creation of high-skilled, high-human-capital jobs, not in pressing China to appreciate RMB and curbing import from China.

Blecker (2003) presents a comprehensive analysis of why the U.S. *dollar* is still too high. He analyzed in detail the correlation between the rising dollar and the down sliding U.S. trade performance and found that the overvalued dollar had a notable impact in worsening America's trade deficit. He suggests that the U.S. government should encourage the dollar to fall further, using methods that include pressuring countries, in particular China, that artificially undervalue their currencies to abandon their manipulation of exchange rates. At the same time, he voices concerns over the numerous problems that might occur as a result of a falling dollar.

Hauskrecht (2003) argues that a controlled decrease of the dollar value is a welcomed and necessary adjustment of exchange rates that might help to bring *international* trade more into balance. However, this necessary adjustment process is hampered by conflicting regional interests. China and some other emerging countries have pegged their currencies to the dollar. Thus, the burden of adjustment stays with a few industrial countries that adopt free floating system.

Rossi and Knapp (2003) discuss the likelihood of the RMB revaluation and its implications for the economic outlook. Their study addresses some of the misconceptions surrounding the RMB revaluation issue. First, Americans and Japanese ignore China import growth. Second, a high foreign exchange reserve is necessary for China. Third, Japan has much bigger trade surplus than China. Forth, America bitterness stems from the fact that it has a small share of China imports from abroad. But in fact both have 10% of each other imports. Fifth, U.S. imports from China may not

be very sensitive to changes in RMB-dollar exchange rate. Sixth, U.S. trade deficit is not a China-specific problem. A range of factors form this long-standing trend in US trade. Seventh, Japan can not benefit from RMB appreciation in the long run. Eighth, RMB appreciation will have negative effects on China.

Einhorn (2003) explains why China huge trade surplus with U.S. easily made it a political scapegoat for U.S. politicians. He argues that RMB appreciation would not help U.S. jobs, but will really hurt U.S. consumers. He concludes with a prediction that the RMB-dollar tension is likely to heat up even more in the near future and that the Chinese government will eventually make some changes to its currency. But that process will be very slow.

Wolf (2003) criticizes the U.S. politicians for blaming *China's* fixed exchange rate for just about all of the U.S. economy's problems. He points out that *China* will not freely float the RMB any time soon and explains why incremental changing to a flexible exchange rate would benefit *China*. The author believes that *China's* concession to revaluation will prevent U.S. protectionism. He suggests that China should make certain degree of concession to international pressure for RMB appreciation to prevent the surging U.S. protectionism.

Bremner and Dexter (2004) discuss the major issues concerning the possible appreciation of RMB. They predict that Beijing would allow the *RMB* to appreciate just enough to quell critics abroad, but not enough to jeopardize growth prospects at home. They propose three options for China to revaluate RMB. They believe that the Chinese officials already see the benefits of a more flexible currency regime and that the Chinese government is committed to financial reforms.

RMB REVALUATION DISPUTE

There has been a growing voice for the RMB's appreciation in the western countries. Although the central bank, the People's Bank of China, (PBoC), has officially followed a managed-float exchange-rate regime since 1994, since the onset on the Asian financial crisis in July 1997, the PBoC has followed a de facto pegged exchange-rate at *RMB*8.28/US$ (Asia Monitor, 2003). China has increasingly been accused of exporting deflation and has been called upon to re-value its exchange rate so as to increase the price of its goods in international markets. Given China's large balance of payments surplus and rising foreign exchange reserves, revaluating RMB or allowing a more flexible exchange rate for RMB would actually result in an appreciating exchange rate and therefore will raise the price of Chinese goods in overseas markets. So asking China to re-value RMB or to unpeg its exchange rate against dollar is the same as asking it to appreciate RMB.

U.S. officials and manufacturers have voiced strong complaints about China's currency peg, which they say is severely undervalued and gives Chinese exporters an unfair advantage and it is blamed in many quarters for the loss of U.S. jobs and exports. US high-ranking officials visited Japan, South Korea and some Europeans to rally support to push China to appreciate RMB. When President Bush met with China's premier, Wen Jiabao in Washington in December last year, he

urged the Chinese side to float the RMB rather than peg it to the dollar. Some manufacturing and agricultural trade associations in USA even formed coalitions in an effort to lobby the government and the Congress into taking actions against China for alleged currency manipulation. The US Federal Reserve Chairman Alan Greenspan fanned the flames further when he argued that China would not be able to keep the RMB pegged at 8.28 to the dollar indefinitely. Many believe that such observations were tantamount to saying that China should allow their currency to appreciate immediately (Cockerill, 2003). To press China to appreciate RMB, US government decided to levy import tariffs of between 28 to 46% on TV's manufactured by Chinese companies in late 2003. In early 2004, the American government declared that it would increase the tariff on certain Chinese textile exports by 7.5% (Asia Weekly Financial Alert, 2003).

Despite the international clamor for RMB appreciation and the threatening statements made by U.S. and Japanese governments, the Chinese government appears to be firm that it will not give in to pressure from U.S to end its currency peg and appreciate RMB in the near future. China insists on not revaluing the RMB because it's afraid that the appreciation may weaken its competitiveness in the international market, decrease its annual economic growth and increase the unemployment rate, which will cause social instability. It's also afraid that the exchange rate speculations may shake and even collapse its seriously ill financial system. Nevertheless, the Chinese government has tried to soothe the US side by placing a large order for US civilian aircrafts, automobiles, and soy beans in early 2004.

PROS OF RMB APPRECIATION

The most active proponents of RMB appreciation are the hard-hit US manufacturers who complain the RMB is vastly undervalued, making US goods too expensive for Chinese and Chinese exports cheap in US markets. Washington, D.C.-based National Association of Manufacturers (NAM) has been saying that the RMB is as much as 40% below its true value (McClenahen and Purdum, 2003). *The Economist* states that the RMB is 56% undervalued against the dollar because a Big Mac costs on average $2.71 in the US in April, but only $1.20 in China (Santos, 2003). Many economists believe that the RMB has been undervalued between 20 and 40 percent (International Economy, 2003). The seriously undervalued exchange rate provides an unfair cost advantage to Chinese exports and is therefore costing US jobs. According to Elizabeth Dole, a republican senator, China has been undervaluing its currency so it can undercut US manufacturers by artificially lowering the cost of Chinese goods, thus making it impossible for US manufacturers to compete. Another republic senator Jim Bunning also said that China's unfair trade practices have played a major role in the loss of millions of US manufacturing jobs. American manufacturers believe that appreciating the RMB would level the playing field for American companies trying to compete with goods and services coming from China.

The proponents of RMB appreciation associate the US trade deficit with the dollar-RMB exchange rate issue. According to the US Treasury Secretary John Snow, the undervalued RMB has had a devastating effect on US trade performance (Blecker, 2003). The US trade deficit with China makes up a major portion of the bulging US trade deficit. In 2002, China's exports to US surged to 125 billion dollars while its imports from US were just 19 billion dollars, resulting in a trade deficit of 106 billion dollars. Analysts expect the trade deficit with China to reach a record $125 billion in 2003 (Asia Weekly Financial Alert, 2003).

The US and other industrialized nations are accusing China of keeping RMB undervalued by buying enormous quantities of US dollars and dollar-denominated securities in the foreign exchange market and holding them as foreign exchange reserves. China's foreign exchange reserve was $495 billion at the end of this January, second only to Japan, and an increase of $58 billion since 2002. The extensive buildup of China's reserves suggests that the RMB would have appreciated if it were not for the artificial manipulation by the Chinese government.

According to proponents of RMB appreciation, China should permit RMB to appreciate in the international currency market for certain international reasons. China is now the world's third or fourth largest economy and must increasingly think of itself as a key participant in the global adjustment process. As the US dollar has been declining over the past two years by over 15% against the euro and yen, the RMB falls along with it due to the fixed exchange rate between RMB and dollar. Thus China's international competitive position strengthens and its current account surplus rises further, placing additional pressure on America's other trading partners to accommodate the much needed reduction in the US deficit. What's more, the arbitrarily low RMB accelerates the shift of foreign direct investment (FDI) from Southeast Asia to China, thus seriously affecting the hope for economic development of the Southeast Asia countries.

Proponents of RMB appreciation argue that such a move also serves the interest of China. To begin with, they believe that RMB appreciation would encourage Chinese producers to focus on complex, specialized and branded exports, which are relatively price-inelastic, rather than commodity-type exports of basic materials and semi-manufactured goods. Second, China is wasting large amounts of resources by piling up excessive and low-yielding foreign exchange reserves. Much of those reserves are placed in US treasury liquid assets, earning a return of less than 2%, while investments in China's booming economy typically yield at least five to ten times as much (Bergsten, 2004). Greenspan warned that Beijing's massive buying of dollars was leading to the creation of a glut in its monetary base and a consequently overheating of the Chinese economy. China can use its savings more productively by reducing its dollar reserves. Third, the RMB appreciation will raise the income of the Chinese and boost their domestic demand. The Chinese per capita incomes were around just US$969 in 2002, compared with US$34,975 for the US and US$31,356 for Japan (Asia Monitor, 2003). Chinese consumers are, in other words, much too poor to act as a force of global demand. If RMB appreciates, the Chinese can afford to buy more imported goods. Fourth, RMB appreciation makes it easier for China to pay back foreign debts. China has

taken large loans from the International Monetary Fund, the World Bank, the US, and Japan. Its *foreign debts* outstanding at the end of September 2003 totaled US$184 billion, up 9.22 percent from the end of 2002 (Wolf, 2003). RMB appreciation would greatly relieve the heavy pressure from the huge foreign debts. Fifth, it will encourage Chinese enterprises to engage in more market development by investing overseas, particularly in East Asia and Southeast Asia countries.

CONS OF RMB APPRECIATION

Some Chinese economists think that RMB is as greatly undervalued as proclaimed by western economists calling for RMB appreciation. The purchasing power of the RMB is higher than its official exchange rate, a 4.75:1 ratio, but this is common for all developing countries. The same ratios for India and Russia are 5.33 and 4.18 respectively, and average ratios for low-income and lower-middle-income countries are 4.85 and 4.05 respectively. The RMB is not abnormal (Chang, 2003). Besides, if RMB is severely undervalued, the exchange rate in the black market would be much higher than 8.3:1. However, the truth is that the black market exchange rate for RMB in 2002 and 2003 were almost the same as the official rate.

Those who openly criticize China fail to see that while China's exports have been increasing rapidly, its imports have been growing even faster. In 2003 China's imports increased by 45%, shrinking its trade surplus by 70%. It had $350 billion in total imports and exports were just a little over the same amount (Einhorn, 2003). Hence, China's overall trade surplus was modest even though the figure with the US was huge. As a matter of fact, in the first quarter of 2004, China ran into a trade deficit. Much of this can be accounted for by the bilateral trade deficit that China has with most of Asia.

China's holding of large foreign exchange reserves provides a form of insurance for foreign investors against domestic instability. It's essential to China's efforts to sustain liquidity and facilitate trade. The evidence from the financial crises in the late 1990s shows that countries with larger foreign exchange reserves were more successful in avoiding speculative attacks on their currencies or contagious effects from other countries crises. China views high reserves as a buffer to withstand such risks. What's more, China's foreign exchange reserves cover about 10 months of imports, very similar to South Korea and other Southeast Asia countries. Japan's foreign exchange reserves cover nearly 20 months of imports (Rossi and Knapp, 2003). Apparently all regional governments have become very risk averse since the Asian economic crisis. China holding of high reserves looks normal when compared with the other Asian countries.

For China, appreciating the RMB could have an enormous impact on the flow of manufacturing jobs into the country. A sudden change in exchange rate could profoundly affect China status as the world leading low-cost manufacturing center. A RMB appreciation will definitely undermine the advantage of competitively-priced Chinese exports, most of them labor-intensive ones such as shoes, toys, clothes and textiles, by pushing up export prices. Moreover,

China is already facing serious unemployment problem in the manufacturing sector, particularly in the relatively weak industries such as steel, automobiles, chemicals, shipbuilding, and so forth. With unemployment in cities at around 8% to 10%, China has to maintain 15% to 20% export growth per year so as not to increase the urban unemployment rate a lot (Einhorn, 2003). Due to the Chinese economy's increasing dependence on exports, the appreciation of the RMB could wipe out millions of jobs in China and worsen the country's already-grim employment situation. The government cannot afford to take any policy action which would jeopardize export growth. What more, a RMB appreciation could also seriously challenge China already dire rural economy. Cheaper imported foreign foodstuffs and falling domestic agricultural prices would severely strain incomes of the 70 percent of Chinese stilling living in rural areas, possibly leading to political instability.

The non-performing loan problem in Chinese banks and a immature financial system are sources of potential risk which are best kept localized until the banks are revamped and the financial system restructured and strengthened to provide a resilient intermediation of international capital flows. A shift in the exchange rate at this moment could deliver a hard blow to a growing economy with huge amounts of non-performing loans. Revaluation without reform of the financial system would cause confusion and chaos in China. A big threat to the world economy would arise from instability in China if it were to unpeg RMB to dollar before its financial system is prepared to take the heat. This would be particularly dangerous if it leads to a dramatic appreciation and the economic growth would be undermined, followed by social unrest.

The appreciation of RMB is not a solution for the economic problems of US manufacturers. For one thing, China biggest advantage is not the currency but the relatively low wage in the manufacturing sector, which was only three percent of those in the United States. The low Chinese labor cost is due to an unlimited supply (over 120 million) of rural surplus labor, who are willing to work at the subsistence level. It is a market outcome and little can be done to change this fact at this stage. Even with a 20% appreciation of RMB, Chinese products are still less pricy than those manufactured in US. American manufacturing cost is not just incompetitive when compared with China, but also with the rest of the world. China primarily competes with other emerging market and not with the domestic US producers. If the US consumer did not buy the cheap products from China, they would purchase them from somewhere else. US would run a similar deficit as with China. To regain its lost competitiveness, American manufacturing would have to be restructured and transformed into the low-cost, high quality growth engine that it used to be historically. The RMB appreciation or any trade protectionist actions would not create miracles for American manufacturers.

RMB appreciation would work against the interest of the US economy. Corporate America now has nearly 10,000 majority- and minority-owned affiliates operating in China. Only 30% of the good produced by these affiliates go back to US. The bulk of the rest are sold either in China or in other regional markets close to China. In 2002, US affiliates sales in China totaled $30 billion, roughly equal to US exports there (Quinlan, 2001). RMB appreciation would only make it more

expensive for US affiliates to do business in China. Besides, an attempt to improve the trade balance by forcing RMB to appreciate would mean less FDI from US to China. A more substantial penetration of Chinese market by corporate America will only come through more direct investments. US would thus lose more promising opportunities of direct investment in China. Moreover, US companies are responsible for much of the trade with China through their sourcing of components in China. RMB appreciation would damage US companies by allowing other foreign competition into the US. For example, if US car companies cannot get low cost components from China to maintain low US car prices, then foreign competitors from the likes of Japan and Korea may force US producers out of the car market.

The argument that China exports deflation to Japan by deliberately lowering the value of RMB is not well grounded. Although China now is the biggest trade partner of Japan, it still accounts for only some 1.5% of Japan GDP. A large share of Japan import from China is still in products such as textiles, which have low weights in Japan price indexes. The influence of the import from China on Japan economy is minimal. Besides, China is already running a $24 billion deficit with Japan (Chang, 2003). Furthermore, while the Japanese are being particularly vocal in suggesting that the undervalued RMB is consuming Japanese jobs and pushing it into deflation, its own companies, such as Mitsubishi, Nissan, and Canon have experienced growth rates in China as high as 20%. These companies are exporting enormously to other countries. Japanese companies manufacturing in China also greatly benefit from the so-called ndervalued Chinese RMB. They use China as a cheaper production base and as the launch pad for entry into the US and other markets.

The rapid growth of the Chinese economy, rather than the appreciation of RMB, will be greatly beneficial to other countries. FDI flocked to China in recent years because of the vast market potentials in China and the recessions in the US, Japan and unstable situations in Indonesia, Philippines and other countries, not because of an undervalued RMB. As China accession to the WTO takes increasing hold and its current import barriers are reduced, its imports from other countries greatly rise. China has emerged as a top export market for US goods despite the wide gap in trade. The US trade figures show that while US exports to the rest of the world fell during the past three years, its exports to China rose by 66% (US Embassy in China, 2003). China has become a major consumer of some US manufactured goods, including electrical machinery. Therefore, the steady growth of the Chinese economy is the most effective solution for the economic problems of US, Japan, and other countries in the world.

MOTIVATIONS OF THE U.S. AND JAPAN

Politicians in the US and Japan are blaming the low value of the Chinese RMB for all manner of economic ills in their countries and are pressing for its revaluation upward. The truth underlying the finger-pointing is two-fold. First, their governments have failed to take effective steps to deal with their economic problems and find China to be an easy scapegoat for political reasons.

Second, these developed countries view China rapid development as a threat to their national interest and therefore try to lay obstacles to obstruct China advancement.

The US is facing worsening deficit situation. According to the White House, in 2004 its current account shortfall is estimated to make up 6% of GDP, and its budget deficit is estimated to reach US $500 billion, or 4.5% of GDP (Asia Weekly Financial Alert, 2003). The likelihood of additional unforeseen expenditure associated with reconstructing Iraq raises the potential for further budget strain. The burgeoning U.S. trade deficit has become a political issue, with the Democrats tying the loss of two million U.S. manufacturing jobs to rising imports. Coinciding with this is the fact that the US trade deficit with China has increased more than any other bilateral trade deficit. As US politicians prepare for the 2004 presidential elections, they realize that attacking China will strike a chord with their domestic audience. Both democrats and republicans are expecting to score political points by blaming China currency for ballooning trade deficits, US job losses, and other economic problems. Obviously the Bush team sees his reelection being guaranteed by getting manufacturing in the US going again. With no other effective strategies of reviving US manufacturing in sight, the government has to resort to RMB appreciation strategy. In the run-up to elections, opportunist politicians will say anything in an attempt to win votes from the domestic manufacturers and unemployed workers who are tired of seeing products labeled ade in China swamping the US. They are eager to show voters that they are doing something to address the worries that the US is losing jobs to its low cost rival China.

The RMB controversy and ill-feeling towards China is also prevalent with Japanese politicians who claim that China should shoulder much of the blame for Japan protracted economic slump. The Japanese Finance Minister Masajuro Shiokawa has said that an undervalued RMB is the key driver of China gain in the global export market and is responsible for exporting deflation to countries all over the world, including Japan. Such talk simply proves Japan hypocrisy because Japan spent a record of $38.4 billion in April, May and June of 2003 to weaken the yen (Cockerill, 2003). It ironic that while Japan is pressing China to appreciate RMB, it is pouring billions of yen into the market to weaken its own currency. Apparently Japan is once again considering trying to export its way out of recession and to facilitate this by forcing down the yen. It wants to divert the world attention from the weakening Japanese yen. What more, Japan is already in its tenth consecutive year of serious recession and its deflation is expected to accelerate in 2004. Japanese politicians are eager to divert the anger of Japanese with the poor handling of economic development by blaming it on the Chinese RMB.

Another underlying reason why the US and Japan are strongly arguing for RMB appreciation is that they feel threatened by China remarkable economic achievements through effective measures of market reform. Chinese economy has been growing at a rate of 7.9% during the past two years and is expected to show very robust growth in 2004. China has surpassed the US in 2003 as a major recipient of FDI (Hauskrecht, 2003). While the US fears that China might displace it as the world

economic growth locomotive, Japan fears that it will no longer be the sole dominator in Asia. The US and Japan are trying to create an impression of hina threat.

CHINA SHOULD NOT APPRECIATE RMB

The arguments against RMB appreciation are much more convincing than those for the RMB appreciation. China cannot afford to take the potential economic and the social cost of RMB appreciation considering its present national situation. There is no doubt that the Chinese government should maintain the current RMB-US dollar exchange rate before systematic financial and industrial structural reforms are successfully carried out and that China economy gets strong enough to withstand risks that the RMB appreciation will cause. Furthermore, social stability has been the top priority for the Chinese government ever since it started to open up and implement reform policies. Any change that might bring about social unrest should be avoided as much as possible. It foreseeable that at least within the next 5 five years, China will continue to maintain high foreign exchange reserves and Chinese currency will remain pegged to US dollar at 8.27. China will seek to retain its labor cost advantage and continue to rely on export-oriented manufacturing industry for employment growth opportunities. China economic development and social stability has also great international significance. The rapidly developing Chinese economy and its rising domestic demand as a result of China consistent economic policies, particularly foreign exchange rate policy in this case will benefit the US, Japan and other countries.

SUMMARY AND CONCLUSION

The US and Japanese governments attribute their economic woes to the undervalued Chinese currency. They are using various political leverages to pressure China to appreciate RMB. Many western politicians and economists hold that the world economy would be better off with a substantial appreciation of the RMB and China could also benefit from doing so. The fundamental truth is that these countries have exhausted the traditional means of economic recovery and still could not reel their country out of recession. They find China an easy scapegoat for their incompetent economic policies. What more, targeting China can help politicians in these countries score more political points. And it facilitates their purpose to spread the panic of hina threat in the world. The current RMB-dollar exchange rate is consistent with the current stage of China economy, its level of financial regulation and the sustainability of its enterprises. Keeping the exchange rate of the RMB stable serves the interest of China economic performance and conforms to the requirements of economic development in the Asia Pacific Region and the whole world. RMB appreciation could hinder China economic development and create social instability. What more, RMB appreciation can not solve the economic problems of the US, Japan, or any other countries. Instead, China healthy economic development rising out of a stable exchange rate will provide the

other countries with better opportunities of economic development. The stability of the RMB is conducive to the national economy as well as a global economic recovery.

Although a case has been made in this paper for China to maintain RMB-dollar stability at present, more exchange rate flexibility will be needed in the long run, as China gradually opens the capital market and becomes a full-fledged member of the international community. The Chinese government is already considering options such as widening the range of RMB-dollar exchange rate fluctuation and pegging RMB to a basket of major currencies in the world instead of US dollar solely. Nevertheless, before China succeeds in its systematic structural reforms and the Chinese economy gets strong enough to withstand risks of RMB appreciation, it should and will maintain the current RMB-dollar exchange rate.

REFERENCES

Anonymous. (2003). *CNY*: No *Revaluation Yet*. Asia Weekly Financial Alert. 7(11): 1-2.

Anonymous. (2003). Chinese president vows to keep currency stable. *Agency France Press*. http://quickstart.clari.net/qs_se/webnews/wed/bk/qapec-china-forex.rcs__doj.html

Anonymous. (2003). Is the *Chinese currency*, the renminbi, dangerously undervalued and a threat to the global economy?. *International Economy*. 17(2): 25-40.

Anonymous. (2003). Resisting Pressure To Change. *Asia Monitor: China & North East Asia Monitor*. 10(6): 2-3.

Anonymous. (2003). Trade Tariffs Send Negative Signal. *Asia Weekly Financial Alert*. 7(12): 1-2.

Anonymous. (2003). Will the fallen *U.S. dollar* set the stage for a global economic boom a year or two from now?. *International Economy*. 13(3): 30-44.

Blecker, Robert.(2003). Why the Dollar Needs to Fall Further. *Challenge*. 46(5): 15-37.

Bremner, Brian and Roberts, Dexter. (2004). A *SCOUTING REPORT* ON THE *RMB*. *Business Week*. Issue 3873. p31.

Cockerill, Chris. (2003). China's Currency Conundrum. *Euromoney*. 34(412): 242-244

Einhorn, Bruce. (2003). China Is Getting a Bad Trade-Gap Rap. *Business Week Online*.

Hamel, Gary. and Prahalad, C.K. (1996). *Competing for the Future*. Harvard Business School Press. 296-298.

Hauskrecht, Andreas.(2003). The International Economy. *Indiana Business Review*. 78(4): 3-6.

Mahajan, Vivek. (2004). American manufacturing is not dead. *Industrial Engineer*. 36(1): 24-25.

McClenahen, John S. and Purdum, Traci. (2003). Challenging China's Currency. *Industry Week*. 252(11): 60.

Quinlan, Joseph. (2001). The U.S. Trade Deficit: A Dangerous Obsession. *Foreign Affairs*. 80(3): 87-98.

Rossi, Vanessa & Knapp, Simon.(2003). What is the Chance of RMB Revaluation?. *Economic Outlook*. 28(1): 15-24.

Santos, Gary. (2003). http://csf.colorado.edu/forums/pkt/2003II/msg00638.html.

Wolf, David. (2003). *China could win* -- by *giving* in. *Canadian Business*. 76(22): 21.

Xu, Yingfeng. (2000). China Exchange Rate Policy. *China Economic Review*. 11(3): 262-278.

AN EMPIRICAL STUDY OF GROWTH OPPORTUNITY AND EARNINGS MANAGEMENT OF JAPANESE FIRMS

Richard File, University of Nebraska at Omaha
Wikil Kwak, University of Nebraska at Omaha

ABSTRACT

This paper examines the relationship between the level of investment opportunity sets and managers' accounting choices in Japanese firms from 1990 to 1998. Previously, studies of multinational American manufacturing and services firms found that, compared to low growth opportunity firms, high growth opportunity firms make accounting choices to reduce income and net worth.

This study utilizes similar research methodologies to provide information on earnings management practices in a Japanese context. Our results show that the changes in sales and the fixed asset balance are statistically significant in explaining the variation in accruals of Japanese companies. As expected, changes in sales have a positive relation with discretionary accruals, while fixed assets have a negative relation with discretionary accruals. The results of this study do not present a consistent negative relationship between high growth opportunities and earnings management as has been found in the U.S. Other studies of growth opportunity in international contexts have also had mixed results. These results suggest a need to first examine the correlation between common proxies for the investment opportunity set and future growth in the Japanese context. Additional studies should further examine the relation between investment opportunity, use of discretionary accruals to manage earnings, and the unique Japanese business environment.

INTRODUCTION

Managers in the U.S. are often considered more myopic than their Japanese counterparts because the Japanese corporate control structure eases short-term pressure from stakeholders (Morck & Nakamura, 1999). The Japanese corporate control system and the related financial and capital markets differ from those of the U.S. in many dimensions. For example, the main-bank system, cross-shareholdings (keiretsu), low-dividend payments, stable shareholding, focus on growth or market share, and long-term employment are common practices in Japanese firms (Suzuki & Wright, 1985; Ide, 1996; Kikuya, 2001). However, there is growing evidence that Japanese managers face short-term pressure similar to those in the U.S., especially after the stock market crash of 1991 (Mande, File & Kwak, 2000; Kaplan, 1994). Accordingly, an interesting empirical question is

whether Japanese mangers have motivations similar to those of their U.S. counterparts concerning earnings management and a short-term focus on profits even within different financial and capital market contexts.

Previous studies have used U.S. data to examine the relationship between the level of investment opportunity sets and managers' accounting choices. However, the results of empirical capital market studies (for example, Prowse, 1992; Rajan & Zingales, 1995; Fama & French, 1998) suggest that the Japanese business and accounting environments differ from those of the U.S. This paper expands the investment opportunity set literature by examining its linkage with managers' accounting choices in Japanese firms from 1990 to 1998. The results show that the relationship between growth opportunity and discretionary accruals is dependent on the proxy that is used to identify high and low growth opportunity firms. This mixed result is consistent with other studies of the investment opportunity set in an international context, suggesting the need for further research.

BACKGROUND

Growth opportunity includes opportunities to expand capacity, make new product introductions, acquire other firms, increase budgets for advertising, basic research and commercial development programs, and makes outlays for maintenance and replacement projects (Kester, 1984, p.154). The enhanced value of the firm and increased stock price can be realized by improving future investment opportunities (so-called growth opportunity).

Myers (1977) introduced the term investment opportunity set (IOS) referring to the extent the value of a firm depends on its future discretionary expenditures. This term refers to traditional investment opportunities, such as a newly invented energy efficient hybrid-car, but also to other discretionary expenditures, such as brand advertising, that are essential to the future success of the firm (Mason & Merton, 1985). Myers (1977) referred to these investment opportunities as call options, noting that their value is determined by the probability of exercise. In general, the firm's investment opportunity set depends on firm-specific factors, such as physical and human capital in place, as well as on industry-specific and macro-economic factors (Kallapur & Trombley, 1999). The firm's investment opportunity set consists of business projects, which allow the firm to grow. For this reason, the investment opportunity set can be understood as the growth prospects of the firm.

The value of a firm exceeds the value of tangible assets in use. AlNajjar and Riahi-Belkaoui (2001) propose that the rest of the firm's value is attributable to the value of future growth opportunity. Supposing that the market value of the firm is given, the less value attributed to assets in place, the more value attributable to growth opportunity. Therefore, as a firm's growth opportunities increase, the ratio of the value of assets to the market value of the firm decreases. However, even though the concept of growth opportunity is an important consideration in capital

budgeting and strategic planning, and in determining the value of the firm (Kester, 1984), it is inherently impossible to objectively measure (Gaver & Gaver, 1993).

Kallapur and Trombley (1999) identified three types of empirical proxies for IOS: price-based proxies, investment-based proxies, and variance measures. The price-based IOS proxy relies on the idea that the growth prospects of the firm are at least partially impounded in stock prices. Therefore, a firm having greater growth prospects will have higher market value, exceeding the value of assets in place. The conceptual basis of investment-based proxies is that a high level of investment activity is positively related to the investment opportunity set of the firm. Variance measures rely on the variability of returns on the increase of the underlying assets.

Price-based Investment Opportunity Set Proxies

Smith and Watts (1992) measured growth opportunity as the ratio of book value of assets to total market value of the firm (A/V). They argued that the higher the A/V ratio, the higher the ratio of the value of assets in place to the market value of a firm and the smaller the ratio of investment opportunity to firm value. Smith and Watts note a disadvantage of using the A/V ratio is that significant measurement error may occur when the firm has long-lived assets because these assets are measured at depreciated historical cost, rather than at market value, because the variable of interest is the actual value of the assets, not their depreciated cost. This means that error in the measurement of the value of long-lived assets may introduce measurement error in the residual measure, the investment opportunity. This problem could have been a more serious problem for Japanese firms due to the rapid inflation in Japanese land values during the 1980s. In addition, the A/V ratio also may introduce measurement error for highly leveraged companies because the relatively smaller owner's equity reduces the difference between the value of the assets in place and the market value (Gaver & Gaver, 1993). Despite these potential weaknesses, the A/V ratio is the most commonly used proxy.[1]

Another price-based measure of investment opportunity is the ratio of the market value of equity to the book value of equity (Collins & Kothari, 1989; Chung & Charoenwong, 1991). Collins and Kothari argue that the difference between the market value and the book value of equity roughly represents the value of investment opportunities of the firm. The market-to-book equity ratio depends on the extent to which the firm's return on its existing assets and expected future investments exceed its required rate of return on equity.

A third price-based measure of the investment opportunity set is the earnings/price (E/P) ratio (Chung & Charoenwong, 1991). Chung and Charoenwong modeled equity value as the sum of the capitalized value of earnings generated from assets in place plus the net present value of the firm's future investment opportunity. They showed that the larger the E/P ratio, the larger the proportion of equity value attributable to earnings generated from assets in place, relative to growth opportunities. However, the results of this analysis are partially driven by portfolio grouping

procedures. In addition, this analysis is only meaningful for companies with a positive earnings stream.

Investment-based Investment Opportunity Set Proxies

Kole (1991) used research intensity, or expenditures for research and development (R&D) divided by total assets, to proxy for growth opportunity. A related measure is the ratio of R&D expenditures to sales used by Skinner (1993). The higher the outlays for R&D, the greater the investment made by the firms in creating new products and potential barriers to entry. However, the disadvantage of these measures is that research and development is only one example of the vast array of discretionary expenditures available to support growth opportunity and is not relevant in many industries. Because of this, we do not utilize investment-based proxies for IOS in our study.

Variance-based Investment Opportunity Set Proxies

Christie (1989) uses variability of return measures to assess the magnitude of growth opportunity, focusing on revenue volatility. Conversely, Smith and Watts (1992) use the variance of the rate of return for the firm as an index of investment opportunities (Gaver & Gaver, 1993). Their rationale is that the value of any option is an increasing function of the variability of the underlying performance measures. We do not use the variability measures due to unique characteristics of the Japanese capital market, including thin trading, leverage, and the unsettlement caused by the stock market crash.

This study follows the price-based approaches (AlNajjar & Riahi-Belkaoui, 2001): the book value of assets to total firm value, the market value of equity to the book value of equity, and the earnings/price ratio. These ratios are used as proxies for the investment opportunity set due to their robustness and acceptance. Kallapur and Trombley (1999) found the price-based IOS proxies to have the highest correlation with future growth. These three proxies for the investment opportunity set are tested for correlation with earnings management practices in Japan.

Earnings Management

Earnings management is one of the most discussed issues in accounting. In the U.S., managers use discretion in making accounting policies and procedures choices. Japanese accounting and taxation rules permit many allowances and reserves (Jinnai, 1990), providing a ready mechanism for earnings management. Recent studies support the notion that Japanese managers smooth income. For example, Kaplan (1994) states that Japanese managers, like U.S. managers, focus on current earnings performance. This does not prove earnings management, but there are some factors that focus on current earnings in Japan lead to income smoothing behavior. Herman

and Inoue (1996) found that management bonuses in Japan were related to income smoothing. Bonuses are adversely affected if dividends are less than ¥5 per share or if income is less than dividends (Xu, 1997). Mande et al. (2000) found that Japanese firms adjust their R & D budgets to smooth profits. Therefore, the presence of earnings management, such as income smoothing practices, is expected in Japan.

Much of the evidence on earnings management suggests that it is more likely to be present when a firm's performance is either unusually good or unusually bad. Therefore, earnings management can be understood as a temporary, rather than chronic, adjustment in reporting. There are three approaches to evaluating the existence of earnings management (Beneish, 2001). One approach uses regression models to calculate expected and unexpected aggregate accruals. A second approach focuses on specific accruals such as the provision for bad debt, or on accruals in specific sectors, such as the claim loss reserve in the insurance industry. The third approach investigates discontinuities in the distribution of earnings. This study follows Jones (1991), which is widely used in studies of aggregate accruals. More detailed information will follow in the research design section.

Japanese Corporate Environment

Japan is the second largest economy in the world and Japanese corporations are actively involved in the world market. However, the social, economic and institutional environments in Japan differ significantly from those in the U.S. Since its market crashed in 1990, Japan has made efforts to raise its business environment to world standards. However, many characteristics of the Japanese economy differ from those of other westernized economies.

Darrough, Pourjalali and Saudagaran (1998) reviewed the accounting framework in Japan and its industrial groups, or keiretsu. The required conformity between tax reporting and financial reporting increases the cost of income increasing earnings management. Japanese accounting practices are largely subject to two legal frameworks: the Japanese Commercial Code and the Security and Exchange Law (Oguri & Hara, 1990). "Interestingly, the Commercial Code has a creditor (balance sheet) orientation, while the Securities and Exchange Law has an investor (income statement) orientation (Iqbal, 2002)." Recently, Japan has adopted international accounting standards to harmonize with global practices (Kikuya, 2001). However, there is a significant difference between Japan and the U.S. with respect to the accounting environment (Jinnai, 1990).

Tax law plays a distinctive role in Japanese financial reporting compared to its role in the U.S. For example, Corporation Tax Law and its related regulations specify the methods of recording various expenses and allowances, which would not be tax deductible in other countries. Because the marginal tax rate can exceed 50 percent in extreme situations, tax consideration is an important factor in the Japanese business environment (Darrough, Pourjalali & Saudagaran, 1998). Temporary differences between expenses for tax and financial purposes commonly occur in the U.S. However,

Japan requires conformity between tax and financial reporting. Due to that required conformity, higher reported earnings result in higher tax liabilities and, subsequently, in higher cash outflows. This in turn pressures Japanese managers to reduce reported earnings, rather than increase them, by recognizing the maximum expenses allowable for both purposes. While Japanese managers have motivation to increase reported earnings to increase their bonuses, the high level of conformity required between financial reporting and tax reporting generally reduces the opportunity and increases the cost to increase reported earnings (Oguri & Hara, 1990). Previous studies such as Ide (1996) have shown that Japanese managers tend to report lower net income.

The presence of industrial groups (keiretsu) reduces the need to increase reported income. A large parent firm controls many subsidiaries using cross-shareholding to increase its efficiency and effectiveness. Stable shareholders, such as main banks, other financial institutions and other companies within industrial groups, hold almost half of all outstanding shares (Ide, 1996). Currently, the top six industrial groups (Mitsui, Mitsubishi, Sumitomo, Fuji, Sanwa, and Dai-ichi Kangyo) produce approximately 25 % of the GDP in Japan (Darrough, Pourjalali & Saudagaran, 1998). The keiretsu practice in Japan insulates management from outside pressure. In addition, ownership is generally based on a long-term, strategic business relationship rather than an attempt to attain short-term capital gains. The practice protects against hostile takeovers because cross-shareholding within keiretsu reduces the portion of outstanding shares that are actually traded in the markets. Culturally, the Japanese corporate environment looks negatively on non-friendly mergers and hostile acquisitions, enabling the ownership structure to be more stable and predictable and reducing the pressure on managers to defend their position (Suzuki & Wright, 1985).

Japanese industrial groups enjoy a close relationship with a main-bank, the primary creditor for that group (Prowse, 1992). This close relationship between industrial groups and main banks allows the main bank to act as both a credit rating agency and a security analysis agency. The main bank monitors, screens and evaluates the performance of the industrial groups because the success or failure of the industrial group is directly related to that of the main bank. In addition, Japanese banks are likely to send their directors to debtor companies to resolve financial and earnings problems (Kaplan & Minton, 1994). Accordingly, the role of banks in Japan is not simply a lending service provider as in the U.S., but also is a proactive participant in the industrial group. Suzuki and Wright (1985) found that measures of a Japanese firm's social importance and its bank relationship may be more important for financially distressed firms than accounting information. This relationship between a firm and its main bank allows managers to focus on a long-term perspective.

The Japanese cultural preference for retaining ownership control explains why Japanese corporations historically have relied more heavily on debt rather than equity. According to McKinnon (1984), the typical debt ratio exceeded 80% in the 1980s, although the ratio is smaller now. For this reason, the equity market in Japan is less active and smaller than it might otherwise be.

Because of the active role of banks, cross-shareholding, and the relatively inactive equity market, Japanese managers do not have as much need or motive to disclose financial information to the equity market as do U.S. managers. Under this corporate environment, the ownership structure is more concentrated within management than in the U.S. and other Westernized economies. For this reason, financial statements are mainly prepared for reporting to other companies, financial institutions, and government rather than to individual investors.

Other unique features of the Japanese corporate environment are corporate governance and the role of labor unions. Due to cross-shareholding practices and insider board structures, the Japanese market for corporate control may be underdeveloped (Pochet, 2002). The stock price of the companies may not accurately represent the business performance because cross-shareholding within industrial groups reduces the trade volume of equity and because Japanese corporations rely heavily on debt. The role of the equity market is relatively small in Japan and the board members from related parties support management without fully exposing the firm to hostile intervention. Accordingly, when deciding accounting standards, Japanese corporate managers are not motivated to choose income increasing earnings management through accruals, which is the most common way to manage earnings (Ide, 1996).

In addition, Darrough et al. (1998) note that labor unions are organized within the firm and are associated with national industry unions. Labor unions negotiate their wages with each employer on an annual basis. During the negotiation, management has a negative perspective of labor unions. If reported earnings are less profitable, management will find it easier to negotiate contracts favorable to the employer. Darrough et al. (1998) demonstrated that Japanese managers tended to choose accounting accruals which reduce reported earnings in order to weaken the bargaining power of the labor unions.

The managers of Japanese companies could choose income-increasing accounting accruals to increase their bonuses and to increase their access to outside funding. However, according to the political cost hypothesis, high growth opportunity Japanese firms may choose income-decreasing accounting accruals to minimize tax liability and weaken the bargaining power of unions (Darrough, Pourjalali & Saudagaran, 1998). Japanese managers are subject to conflicting pressures, and it is unknown which will dominate in a particular instance.

RESEARCH DESIGN

This study examines the relationship between growth opportunity as reflected in the IOS and discretionary accruals. It adopts the methodology used by AlNajjar and Riahi-Belkaoui (2001), Jones (1991), and Cahan (1992) by estimating non-discretionary accruals by regressing total accruals on the changes in sales and on fixed assets. This technique leads to an estimate of discretionary accruals that is less biased and less noisy than earlier models. Furthermore, the approach eliminates the assumption that accruals remain stationary over time. The basic model is:

$$A_{it} = b_0 + b_1 \text{ CHASALES}_{it} + b_2 \text{ FIXASSETS}_{it} + e_{it} \tag{1}$$

where:

A_{it} = total accruals in year t /total assets$_{it}$,

CHASALES = (net sales$_{it}$ - net sales$_{it-1}$)/ TA_{it}^2,

FIXASSETS= fixed assets$_{it}$ / TA_{it}, and

e_{it} = error term or residual.

Total accruals are the sum of discretionary (DA) and nondiscretionary accruals (NDA). Like Cahan (1992) and Jones (1990), we define the estimated nondiscretionary accruals as:

$$NDA = b_0 + b_1 \text{ CHASALES}_{it} + b_2 \text{ FIXASSETS}_{it}$$

It then follows that e_{it} is the estimate of discretionary accruals. We believe that this measure of discretionary accruals should be relatively free of bias and noise.

We expand Model 1 by including an indicator variable to measure the discretionary accruals of high growth firms, as well as a control variable for total assets and dummy variables for each year of analysis. This expansion results in Model 2 which is used to test the effect of Investment Opportunity Set (IOS).

$$A_{it} = b_0 + b_1 \text{ CHASALES}_{it} + b_2 \text{ FIXASSETS}_{it} + b_3 \text{ IOS}_1 + b_4 \text{ TA}_{it} + b_5 \text{ YR}_t \ldots + b_{13} \text{ YR}_t + e_{it} \tag{2}$$

where:

A_{it} = total accruals in year t /total assets$_{it}$,

CHASALES = (net sales$_{it}$ - net sales$_{it-1}$)/ TA_{it},

FIXASSETS= fixed assets$_{it}$ / TA_{it},

IOS is the investment opportunity set indicator,

TA is total assets,

YR is a dummy variable for a year of analysis, and

e_{it} = error term or residual.

The expected sign of the coefficient for CHASALES is positive. It is expected to be negative for all other explanatory variables. The coefficient of IOS will be negative (positive) if managers lower (increase) accruals for high growth firms.

The sample consisted of Japanese companies in the PACAP database from 1990 to 1998. The majority of financial data were obtained from PACAP database, but other data were collected from Japan Company Handbook. All sample data were recorded in thousand Yen.

First, we began with 1,390 Japanese companies with complete financial data available for the 1990 to 1998 period. 1,390 Japanese companies produced 12,510 observations in the sample set. Financial institutions were excluded because their financial profile differs considerably from non-financial institutions. Firms from regulated industries were excluded because their managers are subject to different pressures than those of non-regulated industries. March 31 is the most common fiscal-year of Japanese companies. Non-March 31 fiscal-year companies were removed to eliminate noise due to different year ends. After excluding financial institutions, firms from regulated industries, and non-March 31 fiscal-year companies from the sample, 7,565 observations remained. Table 1 presents sample observations used in the test.

Table 1: Number of Sample Observations	
Observations for the year 1990 and 1998 period	Firm years
after data adjustments	7,565
after excluding top and bottom 5% total assets	6,812
only including high IOS and low IOS	3,783
only including high IOS and low IOS excluding top and bottom 5% TA	3,407

Total accruals are calculated for each firm as defined in Models 1 and 2 using the same approach as AlNajjar and Riahi-Belkaoui (2001).

A_{it} = total accruals in year t / total assets it
$$= [- DEP_{it} + (AR_{it} - AR_{it-1}) + (INV_{it} - INV_{it-1}) - (AP_{it} - AP_{it-1}) - (TP_{it} - TP_{it-1}) - DT_{it}] / TA_{it}$$

where:
DEP_{it} = depreciation expense and the depletion charge for firm i in year t,
AR_{it} = accounts receivable balance for firm i, at the end of year t,
INV_{it} = inventory balance for firm i, at the end of year t,
AP_{it} = accounts payable for firm i, at the end of year t,
TP_{it} = taxes payable balance for firm i, at the end of year t,
DT_{it} = deferred tax expense for firm i at the end of year t, and
TA_{it} = total asset balance for firm i at the end of year t.

Then, to examine the relationship between the level of investment opportunity sets and managers' accounting choices on discretionary accruals, we utilized regression Model 2 as defined previously.

Consistent with Kallapur and Trombley (1999), three IOS proxies for growth opportunity were developed: Market-to-book assets (MASS), market-to-book equity (MV), and the earnings/price ratio (EP). The three proxies are calculated as follows:

MASS = [(assets - total common equity) + (shares outstanding x share closing price)] / assets,
MV = (shares outstanding x share closing price) / total common equity,
EP = primary EPS before extraordinary items / share closing price.

OS was treated as a dummy variable with 1 assigned to high growth opportunity companies and 0 to low growth opportunity companies. In addition, YRt, a dummy variable coded as 1 for year t to measure the time effect for each year of analysis (AlNajjar & Riahi-Belkaoui, 2001). The total assets of the firm, TAit, were included because "large firms are expected to make income decreasing choices relative to small firms (Christie 1990)."

RESULTS

The results of these measures of investment opportunity set were categorized under MASS, MV and EP, respectively. Based on these results, following AlNaijar and Riahi-Belkaoui (2001), we defined high growth firms as the top 25% of the distribution on a yearly basis, while we defined low growth firms as the bottom 25% of the annual distribution.

Next, nine years of individually-sorted samples were added together with dummy variables; 1 was assigned to the top 25% companies of the distribution and 0 was assigned to the bottom 25%. This reduced the 7,565 observations to two-tailed observations of 1,892 and 1,891. Therefore, the study tested the effect of the investment opportunity set on discretionary accruals with three distinctive IOS proxies, resulting in three approaches.

We performed sensitivity analysis by excluding the top and bottom 5% companies in terms of total assets. This process reduced the total observations of 7,565 to 6,812 observations. It also affected IOS proxies, meaning that the more extreme sample companies were excluded from testing. However, the more normal companies remain in the sample. For this reason, we report results based on a winsorized sample of 6,812 observations.[4]

Descriptive statistics for the three proxies of investment opportunity sets are presented in Table 2. High growth companies were the top 25% quartile in terms of market-to-book assets (MASS), market-to-book equity (MV), and the earnings/price ratio (EP). Low growth companies were the bottom 25% quartile using the three perspectives.

The MV and EP approaches resulted in similar data descriptions. As expected, high growth companies had larger total revenues, larger total assets, and even larger net profits than low growth companies. The sample had large standard deviations (not reported here). For this reason, we excluded the top and bottom 5% of observations to eliminate extreme observations. The resulting

standard deviations became distinctively smaller. The maximum, minimum and median measures of the observations were in a narrower range, as reported here.

Interestingly, the MASS approach provided a sample that differed from those of the MV and EP approaches. Low growth opportunity companies showed slightly larger total revenue and total asset variables, but lower net profits. The standard deviation was relatively small in the high growth sample although it was large in the low growth sample. After the top and bottom 5% observations were eliminated, standard deviations became distinctively smaller in each variable. Although the difference between high and low growth companies between means of each variable became smaller, low growth opportunity companies still had slightly larger total revenues and total assets.

The descriptive statistics presented in Table 2 provided a general view of the variables in the observations. High growth opportunity did not always mean higher numbers in financial statements because the size of companies was not comparable, and each firm was in a different stage of its development cycle. However, interestingly, high growth opportunity companies had larger net profits in comparison to low growth opportunity companies using all definitions of the investment opportunity set. The relative magnitude of total revenues and total assets differed depending on the definition of the investment opportunity set and whether the measure used was the mean or the median. The descriptive statistics of our samples also differ from those of AlNajjar and Riahi-Belkaoui (2001). Their sample showed that the high growth opportunity firms had greater total assets and lower net profits than the low growth opportunity firms, while the total revenue measures differed depending on whether the metric used was the mean or the median.

The results for the regression estimation of Model 1 are reported in Table 3. Both CHASALES and FIXASSETS are statistically significant as expected. The model is significant with an F value of 395.78 and an adjusted R^2 of 10.39 percent. As expected, both changes in sales and changes in fixed assets are statistically significant in explaining discretionary accruals. These results are similar to those provided by AlNajjar and Riahi-Belkaoui (2001)[5].

The results for Model 2 are reported in Tables 4, 5, and 6.[6] As was the case with Model 1, both CHASALES and FIXASSETS are statistically significant when using each of the three of IOS proxies. These results again indicate that the changes in sales are positively associated with discretionary accruals and changes in fixed asset balance are negatively associated with it.

Table 4 shows the results with IOS1 using the market-to-book asset ratio (MASS) as a proxy. The variable of interest, IOS1, is significant at the 0.01 level with a two-tailed test, and its sign is negative as expected. Because high growth opportunity is coded as 1, the negative sign of IOS indicates that discretionary accruals of high growth firms were lower than for low growth firms. Total assets is not statistically significant in this model. The time dummy variables generally show that the accruals in any specific year are significantly less than the accruals in 1990, except for 1991 and 1995. 1991 is the first year of the Japanese stock market crash and the results are not significant.

Table 2: Descriptive Statistics						

Unit: 1,000 Yen						
Variables	Mean	Standard Deviation	Maximum	Median	Minimum
IOS definition as MASS A.1. High Growth Sample, Obs = 1,704					
Total Revenues	132,166	161,948	1,395,359	72,761	5,332
Total Assets	152,583	169,437	943,991	82,984	10,910
Net Profit	9,450	15,829	150,528	4,076	(27,947)
B.1. Low Growth Sample, Obs = 1,703					
Total Revenues	153,234	217,546	2,263,587	79,047	3,331
Total Assets	154,849	180,787	913,534	80,544	10,589
Net Profit	2,386	6,081	51,333	1,274	(87,265)
IOS definition as MV					
A.2. High Growth Sample, Obs = 1,704					
Total Revenues	159,949	177,754	1,423,849	93,317	6,096
Total Assets	172,531	180,484	943,991	96,421	11,368
Net Profit	9,966	15,814	150,528	4,452	(27,947)
B.2. Low Growth Sample, Obs = 1,703					
Total Revenues	100,939	156,147	1,742,584	52,984	3,331
Total Assets	109,772	137,581	913,534	60,048	10,589
Net Profit	1,458	4,679	53,622	912	(87,265)
IOS definition as EP A.3. High Growth Sample, Obs = 1,704					
Total Revenues	143,879	198,507	2,263,587	75,959	5,038
Total Assets	145,847	173,075	933,242	75,493	10,366
Net Profit	6,736	11,594	150,528	6,460	178
B.3. Low Growth Sample, Obs = 1,703					
Total Revenues	100,557	118,908	784,946	53,816	3,331
Total Assets	117,703	137,735	911,762	59,838	10,589
Net Profit	(96)	4,935	29,683	124	(87,265)
*Highest and lowest quartiles with most extreme 5% of total firms winsorized.					

Table 3: Results of Regression Estimation - Model 1 (Using dataset excluding top and bottom 5%) $A_{it} = b_0 + b_1 \text{CHASALES}_{it} + b_2 \text{FIXASSETS}_{it} + e_{it}$					
Independent Variables	Expected Sign	Coefficient	Standard Error	t Value	Pr > | t |
Intercept		-0.00309	0.0012	-2.58	<0.0099
CHASALES	+	0.08244	0.00489	16.85	<0.0001
FIXASSETS	-	-0.08822	0.00398	-22.15	<0.0001

n = 6,812
$R^2 = 0.1041$
Adjusted $R^2 = 0.1039$
F Value = 395.78
Probability <0.0001
Variable definitions:
A_{it} = total accruals in year t / total assets it
$= [- \text{DEP}_{it} + (\text{AR}_{it} - \text{AR}_{it-1}) + (\text{INV}_{it} - \text{INV}_{it-1}) - (\text{AP}_{it} - \text{AP}_{it-1}) - (\text{TP}_{it} - \text{TP}_{it-1}) - \text{DT}_{it}] / \text{TA}_{it}$
where:
DEP_{it} = depreciation expense and the depletion charge for firm i in year t,
AR_{it} = accounts receivable balance for firm i, at the end of year t,
INV_{it} = inventory balance for firm i, at the end of year t,
AP_{it} = accounts payable for firm i, at the end of year t,
TP_{it} = taxes payable balance for firm i, at the end of year t,
DT_{it} = deferred tax expense for firm i at the end of year t, and
TA_{it} = total asset balance for firm i at the end of year t.
$\text{CHASALES} = (\text{net sales}_{it} - \text{net sales}_{it-1}) / \text{TA}_{it}$,
$\text{FIXASSETS} = \text{fixed assets}_{it} / \text{TA}_{it}$,

Table 5 reports the results with IOS_2 using market-to-book equity (MV) ratio as the proxy. The changes in sales and fixed assets variables are significant and their signs are the same as IOS_1. However, IOS_2 is not significant and the sign is positive, which is not consistent with the results of IOS_1 or with expectations. Year-specific accruals are generally significant and consistent with the results of Table 4.

Table 4: Results of Regression Estimation - Model 2 with IOS_1
(Market-to-Book Assets)
$A_{it} = b_0 + b_1 CHASALES_{it} + b_2 FIXASSETS_{it} + b_3 IOS_1 + b_4 TA_{it} + b_5 YR_t \ldots + b_{13} YR_t + e_{it}$

Independent Variables	Expected Sign	Coefficient	Standard Error	t Value	Pr > | t |
Intercept		0.01366	0.00431	3.17	<0.0016
CHASALES	+	0.0794	0.00789	10.06	<0.0001
FIXASSETS	-	-0.08596	0.006	-14.33	<0.0001
IOS_1	-	-0.00886	0.00213	-4.15	<0.0001
TA	-	3.64E-10	5.13E-09	0.07	<0.9435
YR91		-0.00454	0.00493	-0.92	<0.3571
YR92		-0.01417	0.0046	-3.08	<0.0021
YR93		-0.01373	0.00448	-3.07	<0.0022
YR94		-0.01308	0.00476	-2.75	<0.006
YR95		-0.00365	0.00443	-0.82	<0.4097
YR96		-0.01365	0.00462	-2.95	<0.0032
YR97		-0.01698	0.00455	-3.73	<0.0002
YR98		-0.02527	0.00465	-5.44	<0.0001

n = 3,407
R^2 = 0.1183
Adjusted R^2 = 0.1152
F Value = 37.96
Probability <0.0001
Variable definitions:
A_{it} = total accruals in year t / total assets it
= [- DEP_{it} + (AR_{it} - AR_{it-1}) + (INV_{it} - INV_{it-1}) - (AP_{it} - AP_{it-1}) - (TP_{it} - TP_{it-1}) - DT_{it}] / TA_{it}
where:
DEP_{it} = depreciation expense and the depletion charge for firm i in year t,
AR_{it} = accounts receivable balance for firm i, at the end of year t,
INV_{it} = inventory balance for firm i, at the end of year t,
AP_{it} = accounts payable for firm i, at the end of year t,
TP_{it} = taxes payable balance for firm i, at the end of year t,
DT_{it} = deferred tax expense for firm i at the end of year t, and
TA_{it} = total asset balance for firm i at the end of year t.
CHASALES = (net sales$_{it}$ - net sales$_{it-1}$)/ TA_{it},
FIXASSETS= fixed assets$_{it}$ / TA_{it},
IOS_1= 1 if growth opportunities are high: 0 if they are low.
[(assets - total common equity) + (shares outstanding * share closing price)] / assets

Table 5: Results of Regression Estimation - Model 2 with IOS$_2$
(Market-to-Book Equity)
$A_{it} = b_0 + b_1 \text{CHASALES}_{it} + b_2 \text{FIXASSETS}_{it} + b_3 \text{IOS}_2 + b_4 \text{TA}_{it} + b_5 \text{YR}_t \ldots + b_{13} \text{YR}_t + e_{it}$

Independent Variables	Expected Sign	Coefficient	Standard Error	t Value	Pr > | t |
Intercept		0.00694	0.00443	1.57	<0.1171
CHASALES	+	0.06828	0.00756	9.03	<0.0001
FIXASSETS	-	-0.07933	0.00627	-12.64	<0.0001
IOS$_2$	-	0.00295	0.00226	1.3	<0.1924
TA	-	-4.50E-09	5.64E-09	-0.8	<0.4251
YR91		-0.00601	0.00493	-1.22	<0.2235
YR92		-0.02038	0.00466	-4.37	<0.0001
YR93		-0.01603	0.00464	-3.45	<0.0006
YR94		-0.01798	0.00474	-3.79	<0.0002
YR95		-0.00421	0.00457	-0.92	<0.3573
YR96		-0.01458	0.00465	-3.13	<0.0017
YR97		-0.01366	0.00464	-2.94	<0.0033
YR98		-0.02394	0.00474	-5.05	<0.0001

n = 3,407
R^2 = 0.1130
Adjusted R^2 = 0.1098
F Value = 36.01
Probability <0.0001
Variable definitions:
A_{it} = total accruals in year t / total assets it
= [- DEP_{it} + (AR_{it} - AR_{it-1}) + (INV_{it} - INV_{it-1}) - (AP_{it} - AP_{it-1}) - (TP_{it} - TP_{it-1}) - DT_{it}] / TA_{it}
where:
DEP_{it} = depreciation expense and the depletion charge for firm i in year t,
AR_{it} = accounts receivable balance for firm i, at the end of year t,
INV_{it} = inventory balance for firm i, at the end of year t,
AP_{it} = accounts payable for firm i, at the end of year t,
TP_{it} = taxes payable balance for firm i, at the end of year t,
DT_{it} = deferred tax expense for firm i at the end of year t, and
TA_{it} = total asset balance for firm i at the end of year t.
CHASALES = (net sales$_{it}$ - net sales$_{it-1}$)/ TA_{it},
FIXASSETS= fixed assets$_{it}$ / TA_{it},
IOS$_2$= 1 if growth opportunities are high: 0 if they are low.
(shares outstanding * share closing price)] / total common equity

Table 6: Results of Regression Estimation - Model 2 with IOS$_3$
(Earnings / Price Ratio)
$A_{it} = b_0 + b_1 \text{CHASALES}_{it} + b_2 \text{FIXASSETS}_{it} + b_3 \text{IOS}_3 + b_4 \text{TA}_{it} + b_5 \text{YR}_t \ldots + b_{13} \text{YR}_t + e_{it}$

Independent Variables	Expected Sign	Coefficient	Standard Error	t Value	Pr > | t |
Intercept		0.0048	0.00566	0.85	<0.3963
CHASALES	+	0.06027	0.00754	7.99	<0.0001
FIXASSETS	-	-0.0816	0.00645	-12.66	<0.0001
IOS$_3$	-	0.01114	0.00202	5.51	<0.0001
TA	-	7.01E-09	6.01E-09	1.17	<0.2437
YR91		-0.00989	0.00664	-1.49	<0.1365
YR92		-0.01864	0.00618	-3.02	<0.0026
YR93		-0.01955	0.00608	-3.22	<0.0013
YR94		-0.0219	0.00606	-3.61	<0.0003
YR95		-0.00441	0.00612	-0.72	<0.4710
YR96		-0.01631	0.00604	-2.7	<0.0070
YR97		-0.02084	0.006	-3.47	<0.0005
YR98		-0.02962	0.00605	-4.9	<0.0001

n = 3,407
R^2 = 0.1139
Adjusted R^2 = 0.1108
F Value = 36.35
Probability <0.0001
Variable definitions:
A_{it} = total accruals in year t / total assets it
= $[- \text{DEP}_{it} + (\text{AR}_{it} - \text{AR}_{it-1}) + (\text{INV}_{it} - \text{INV}_{it-1}) - (\text{AP}_{it} - \text{AP}_{it-1}) - (\text{TP}_{it} - \text{TP}_{it-1}) - \text{DT}_{it}] / \text{TA}_{it}$
where:
DEP_{it} = depreciation expense and the depletion charge for firm i in year t,
AR_{it} = accounts receivable balance for firm i, at the end of year t,
INV_{it} = inventory balance for firm i, at the end of year t,
AP_{it} = accounts payable for firm i, at the end of year t,
TP_{it} = taxes payable balance for firm i, at the end of year t,
DT_{it} = deferred tax expense for firm i at the end of year t, and
TA_{it} = total asset balance for firm i at the end of year t.
CHASALES = (net sales$_{it}$ - net sales$_{it-1}$)/ TA_{it},
FIXASSETS= fixed assets$_{it}$ / TA_{it},
IOS$_3$= 1 if growth opportunities are high: 0 if they are low.
Primary EPS before extraordinary items / share closing price

Table 6 presents the results with IOS3 utilizing the earnings/price (EP) ratio as a proxy. IOS3 is significant at the 0.01 level with a two-tailed test and its sign is positive. This result is contrary to findings using U.S. data. The other variables are significant and their signs are as expected. One reason for our unexpected result may be that the earnings/price ratio approach is only valid when net income is not negative. The 1990s' economic recession in Japan, when many companies reported negative income, may explain the unexpected regression result on IOS3. Our samples show that the E/P (IOS3) had the highest ratio of revenues to assets, followed by MV (IOS2) and then MASS (IOS1). However, E/P (IOS3) had the lowest ratio of net profits to revenues (assets), followed by MV (IOS2), and then MASS (IOS1). Kallapur and Trembley (1999) had similar results. They indicated a possible explanation for this result, "[A]lthough growth firms have fewer assets-in-place relative to firm values, those assets-in-place produce a higher income stream than those of non-growth firms: these two offsetting effects equalize the mean E/P ratios for growth firms and non-growth firms." In addition, total assets is not significant, therefore the sign is not reliable. Consistent with previous test results, year-specific accruals are generally significant.

SUMMARY AND CONCLUSIONS

This study examined whether managers of Japanese companies respond to the political costs associated with high level of growth opportunities by adjusting their discretionary accruals. The discretionary accruals of Japanese companies were examined over the 1990 to 1998 period, using the residuals of a fixed effects covariance model that regressed total accruals on the change in sales, the fixed assets balance, and a year dummy variable. We then examined the relation between accruals and high growth opportunity firms using three different proxies to define high growth opportunity firms. These results were mixed based on the IOS definition.

The mixed results may be interpreted in a number of ways. These findings are consistent with the mixed results in the limited number of international studies of IOS. These international studies used traditional proxies for IOS, similar to those used in this study. Cahan and Hossain (1996) found support for their hypotheses only among a sample of lower growth opportunity firms in a Malaysian context. Jones and Sharma (2001) failed to find the hypothesized relationship between IOS and low growth opportunity firms, but found those relationships in high growth firms in an Australian context. The mixed results may be related to how high growth opportunity firms are identified. They may also imply that there is not a set relation between common IOS measures and discretionary accruals in the Japanese economy.[7] All of the measures that we used to proxy for growth opportunity, as well as to measure discretionary accruals, are based on accounting measures. We suspect that our results may be driven by the differences in accounting rules between the United States and Japan. As noted previously, Ide (1996) found that Japanese managers tend to make income decreasing accruals. Leuz et al. (2001) analyzed earnings management across 31 countries over the 1990 to 1999 period. They developed two measures of earnings smoothing, as well as two

measures of earnings discretion. Both of their income smoothing measures indicated more smoothing in Japan than in the U.S. Similarly, both of their earnings discretion measures indicate greater discretion in earnings in Japan than in the U.S.

Additionally, there is no guarantee that the three proxies that we used properly reflect IOS. These proxies for IOS, as well as others, were developed in a U.S. context. Studies have not been conducted in the Japanese economy to determine which measures of the investment opportunity set correlate best with future growth. Accordingly, we do not know if the measures that we used accurately identified high growth opportunity firms.

Finally, the mixed results may be an artifact of the time period examined. During that time, the Japanese economy was in a severe recession and its stock market was in a severe downturn. Each of the proxies that we used to measure IOS was based on share prices which were depressed, and subjected to bear market psychology.[8] In addition, managers were liquidating assets in order to recognize the increase in value of assets that had occurred in previous years to partially offset the lower operating earnings that occurred in that period. Each of these actions could have adversely affected our results. Further research should expand the time period of investigation so that these possibilities could be examined.

Further research is needed in several other areas. First, various IOS proxies need to be examined to determine their relation with actual future growth of the firm. That would identify which if any of the measures are useful in a Japanese context. After that is accomplished, the relationship between Japanese IOS and corporate policies needs to be examined. This might include capital structure and dividend policy. Additional research should examine the relationship between IOS and the degree of influence of the main bank, the amount of external stockholdings, and the existence on management bonus and stock option plans.

REFERENCES

AlNaijar, F. & A. Riahi-Belkaoui (2001). Growth opportunities and earnings management. Managerial Finance, 27(12), 72-84.

Beneish, M. (2001). Earnings management: A perspective. Managerial Finance, 27(12), 3-18.

Cahan, S. (1992). The effect of antitrust investigations on discretionary accruals: A refined test of the political-cost hypothesis. The Accounting Review, 67(January), 77-95.

Cahan, S. & M. Hossain (1996). The investment opportunity set and disclosure policy choice: Some Malaysian evidence. Asia Pacific Journal of Management, 13(1), 65-84.

Christie, A. (1989). Equity risk, the opportunity set, production costs and debt. Working paper, University of Rochester, Rochester, NY.

Christie, A. (1990). Aggression of test statistics: An evaluation of the evidence on contracting and size hypotheses. Journal of Accounting and Economics, 12(January), 15-36.

Chung, K. & C. Charoenwong (1991). Investment options, assets-in-place, and the risk of stocks. Financial Management, 20(3), 21-33.

Collins, D. W. & S. P. Kothari (1989). An analysis of inter-temporal and cross-sectional determinants of earnings response coefficients. Journal of Accounting and Economics, 11(2/3), 143-181.

Darrough, M. N., H. Pourjalali & S. Saudagaran (1998). Earnings management in Japanese companies. The International Journal of Accounting, 33(3), 313-334.

Fama, E. F. & K. R. French (1998). Value versus growth: The international evidence. The Journal of Finance, 53(6), 1975-1999.

Gaver, J. J. & K. M. Gaver (1993). Additional evidence in the association between the investment opportunity set and corporate financing, dividend, and compensation policies. Journal of Accounting and Economics, 16(1/2/3), 125-140.

Hermann, D. & T. Inoue (1996). Income smoothing and incentives by operating condition: An empirical test using depreciation changes in Japan. Journal of International Accounting, Auditing and Taxation, 5(2), 161-177.

Ide, M. (1996). Corporate profitability and stock valuation in Japan. Financial Analysts Journal, March/April 1996, 40-55.

Iqbal, M. (2002). International accounting a global perspective Second Edition). Cincinnati, OH: Southwestern, 196.

Japan Company Handbook, First Section, Spring 1990-1998, Tokyo, Japan: Toyo Keizai, Inc.

Jinnai, Y. (1990). The function of accounting: A Japanese perspective. Accounting, Auditing, & Accountability Journal, 3(2), 8-23.

Jones, J. (1991). Earnings management during import relief investigations. Journal of Accounting Research, 29(Autumn), 193-228.

Jones, S. & R. Sharma (2001). The association between the investment opportunity set and corporate financing and dividend decisions: Some Australian evidence. Managerial Finance, 27(3), 48-64.

Kallapur, S. & M. A. Trombley (1999). The association between investment opportunity set and realized growth. Journal of Business, Financial, and Accounting, 96(3), 505-519.

Kaplan, S. (1994). Top executive rewards and firm performance: A comparison of Japan and the United States. Journal of Political Economy, 102(June), 510-546.

Kaplan, S. & B. Minton (1994). Appointments of outsiders to Japanese boards: Determinants and implications for managers. Journal of Financial Economics, 225-258.

Kester, W. C. (1984). Today's options for tomorrow's growth. Harvard Business Review, 62(2) 153-160.

Kikuya, M. (2001). International harmonization of Japanese accounting standards. Accounting, Business & Financial History, 11(3), 349-368.

Kole, S. (1991). An investigation of the bundling of compensation plans. Working paper, Rochester, NY: University of Rochester.

Leuz, C., D. Nanda, & P. Wysocki (2003). Investor protection and earnings management: An international comparison. Journal of Financial Economics, 69(3), 505-527.

Mande, V., R. File, & W. Kwak (2000). Income smoothing and discretionary R & D expenditures of Japanese firms. Contemporary Accounting Research, 17(2), 263-302.

Mason, S. P. & R. C. Merton (1985). The role of contingent claims analysis in corporate finance. In E. I. Altman (Ed.), Recent Advances in Corporate Finance (pp. 7-45). Homewood: Irwin.

McKinnon, J. L. (1984). Application of Anglo-American principles of consolidation to corporate financial disclosure in Japan. Abacus, 20(1), 16-33.

Morck R. & M. Nakamura (1999). Banks and corporate control in Japan. The Journal of Finance, 54(1), 319-339.

Myers, S. C. (1977). Determinants of corporate borrowing. Journal of Financial Economics, 5(2), 147-175.

Oguri, T. & Y. Hara (1990). Critical examination of accounting regulation in Japan. Accounting, Auditing & Accountability Journal, 3(2), 37-51.

PACAP DATABASES (1999). Pacific-Basin Capital Markets (PACAP) Research Center, The University of Rhode Island.

Pochet, C. (2002). Institutional complementarities within corporate governance systems: A comparative study of bankruptcy rules. Journal of Management and Governance, 6, 343-381.

Prowse, S. D. (1992). The structure of corporate ownership in Japan. The Journal of Finance, 47(3), 1121-1140.

Rajan, R. G. & L. Zingales (1995). What do we know about capital structure? Some evidence from international data. The Journal of Finance, 50(5), 1421-1460.

Riahi-Belkaoui, A. & R. Picur (2001). Investment opportunity set dependence of dividend yield and price earnings ratio. Managerial Finance, 27(3), 65-71.

Skinner, D. J. (1993). Asset structure, financing policy, and accounting choice: Preliminary evidence. Journal of Accounting and Economics, 16(4), 407-445.

Smith, C. W. & R. L. Watts (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. Journal of Financial Economics, 32(3), 263-292.

Suzuki, S. & R. W. Wright (1985). Financial structure and bankruptcy risk in Japanese companies. Journal of International Business Studies, 16(1), 97-110.

Xu, P. (1997). Executive salaries as tournament prizes and executive bonuses as managerial incentives in Japan. Journal of the Japanese and International Economies, 11(3), 319-346.

ENDNOTES

1.   This is probably due to two factors. First, the A/V ratio is easy to compute. Second, among the common proxies for IOS, it has the highest correlation with future growth (Kallapur & Trombley,1999; Smith & Watts,1992).
2.   We also used TA $_{it-1}$ to scale the change in sales and fixed assets. The results are qualitatively similar to those presented in Tables 3 - 6, but are not presented here.
3.   We include a dummy variable for the year of analysis following prior studies by Jones and Sharma (2001), Kallapur and Trombley (1999), and Riahi-Belkaoui and Picur (2001), who found varying associations between different IOS proxies and growth over time.
4.   The full sample tests (not reported here) yielded qualitatively similar results.
5.   We tested the Durbin-Watson statistic (DW=1.97) for the Model 1 and error terms are independent. Therefore, our model is reliable.
6.   The tables and discussions regarding Model 2 present results using the winsorized data set. The results using the full data set (not reported here) are essentially the same.
7.   Both Kallupur and Trombley (1999) and Jones and Sharma (2001) have noted inconsistencies in the IOS literature. They have questioned the robustness of some of the proxies for growth opportunity.
8.   Riahi-Belkaoui and Picur (2001) found that high growth opportunity firms are "PE valued" while low growth opportunity firms are "dividend yield valued." The Japanese recession may have caused many of our sample firms to be dividend valued.

Allied Academies

invites you to check our website at

www.alliedacademies.org

for information concerning

conferences and submission instructions