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Proceedings of the Academy of Accounting and Financial Studies

Table of Contents

FAIR VALUES: A CONCEPTUAL REVIEW AND SYNTHESIS OF RECENT FINANCIAL ACCOUNTING STANDARDS ON FINANCIAL INSTRUMENTS

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ABSTRACT

This paper presents a conceptual framework useful for an integrated classroom discussion of accounting for financial instruments. We chart the special characteristics of these assets and liabilities as a basis for an analysis of the relevance of various attributes for financial reporting purposes. We also present a synthesis of existing FASB pronouncements on financial instruments. This integrated conceptual approach appears to be more effective than the fragmented treatments found in financial accounting texts.

INTRODUCTION

In quick succession, the Financial Accounting Standards Board (FASB) has issued several new accounting standards for financial instruments since 1990. These new standards constitute the results to date, of the FASB's ongoing efforts at improving financial reporting for this broad class of assets and liabilities, many of which have resulted from recent innovations in financial markets. Some of these standards attempt to improve financial reporting for financial instruments in general, while others constitute the FASB's response to the perceived urgent need for new standards in specific areas and therefore apply to limited classes of financial instruments. As a result of this two-pronged approach, a chronological reading of the standards does not easily provide a clear picture of the development of objectives, concepts and terminologies in this area. Also, most discussions of accounting standards for financial instruments, especially in textbooks, are fragmented treatments scattered over diverse topics. This, and the relatively large number of new pronouncements arriving over the last five years creates some confusion regarding the FASB's overall objectives in this area, and the unifying concepts and terminologies of these new standards. It is also difficult to obtain a clear understanding of the areas to which each standard applies and how the standards complement each other.

The objectives of this paper are: (1) to provide a conceptual framework for teaching the unique characteristics of financial instruments and the consequent financial reporting goals in this area, and, (2) to provide a synthesis of the requirements of the accounting standards that have been issued to date on financial instruments. Thus, this paper provides an integration of concepts with specific accounting requirements that can enhance student comprehension and provide educational keys for appreciating further pronouncements emerging from the FASB's financial instruments project.

The rest of this paper is organized as follows: In Section I, we define and provide a classification of financial instruments useful for teaching their relevant characteristics. We also discuss the appropriate objectives of financial reporting for financial instruments, given their special characteristics, and outline the FASB's current strategy for achieving better financial reporting for financial instruments. Section II examines the pervasive financial reporting concept common to all the relevant standards issued by the FASB. Lastly, in Section III, we integrate the FASB's accounting and disclosure requirements, to date, for financial instruments and provide concluding observations in Section IV.

OVERVIEW OF FINANCIAL INSTRUMENTS AND REPORTING OBJECTIVES
THE NATURE OF FINANCIAL INSTRUMENTS

The FASB defines a financial instrument as:

> "cash, evidence of an ownership interest in an entity or a contract that both: imposes on one entity a contractual obligation (1) to deliver cash or another financial instrument to a second entity or (2) to exchange financial instruments on potentially unfavorable terms with the second entity" (FASB, 1990 par. 6)

Exhibit 1 is a classroom aid we designed to demonstrate classified examples of financial instruments as defined above. With this chart students were able to recognize differences between groups that create various measurement problems. Panels A, B, and C show examples of contracts between entities that create various instruments according rights to cash or another financial instrument to one entity while simultaneously imposing obligations on the other entity to provide cash or deliver financial instruments at a future date.

Specifically, Panel A contains examples of financial instruments that assign rights and impose obligations involving definite, contractual future cash amounts. These are traditional monetary balance sheet items which can be subject to credit risk, market risk or both for the contract holder. The risk of accounting loss associated with these items, however, is usually limited to the contract face value as reported on the holder's balance sheet. Traditionally there have been inconsistencies in the accounting treatment for similar transactions, and the accounting literature has focused on the issue of the self-serving behavior of managers' discretionary information disclosure decisions (Healy, 1985; Dechow and Sloan, 1991 and Lewellen et al., 1996). these inconsistencies have been evident in the accounting treatment for financial instruments. These items have been reported on the balance sheet by the issuer and holder at face value, net realizable value, or amortized value, or as disclosures in the footnotes to the financial statements, with management discretion playing an important role in determining whether to recognize or to disclose these assets and liabilities. Fair value accounting or disclosures were not required for these instruments.

Panel B also shows examples of financial instruments that convey rights and impose obligations involving determinable contractual future cash amounts. However, the rights and obligations of these instruments are contingent on specific future events such as the default of a third-party on a loan made by the holder of the financial instrument. Both the holder and the issuer of such contingent rights to future cash face credit risk, and the highly probabilistic future cash consequences of these contracts have traditionally been recorded off-balance sheet in the form of note disclosures.

Many of the examples of financial instruments listed in Panel C are the result of fairly recent developments in financial markets. These instruments have been written and traded as the means by which firms sometimes alleviate the effects on their future cash flows of volatility in financial markets, including interest rate, foreign exchange rate and stock market volatilities. Some of these instruments are therefore acquired for the purpose of shielding future cash receipts or payments from underlying assets and liabilities against swings in the markets in which these financial instruments are traded. They are generally acquired in the hope that their values, in response to market changes, will cancel out unfavorable value movements affecting related assets or liabilities. These instruments are also sometimes written and held by entities as speculative investments.

The most notable characteristic of the diverse group of instruments in Panel C is that they derive their market value from changes in the value of an underlying financial asset such as the price of a stock, changes in a stock index, the exchange rate of a currency, or changes in interest rates. These are therefore derivative financial instruments. Derivative financial instruments usually take the form of options, futures, forward or swap contracts whose future cash consequences for the counterparties can be subject to credit risk, but are determined by broad economy and market factors and therefore also have significant market risk. These risks can result in accounting losses beyond any recognized balance sheet amounts for the issuer of the contract or for both counterparties in the case two-sided contracts such as futures and forwards as shown in Exhibit 1. Accounting for derivative financial instruments is an evolving area. Various approaches, such as cost, market value, and note disclosure have been used by entities in the past. The lack of uniformity in accounting and disclosure practices for derivatives has been one of the main motivations for the FASB's efforts with financial instruments.

Exhibit 1: Characteristics of Typical Financial Instruments as Defined in SFAS 105

Financial Instrument	Issuer's Obligation	Holder's Rights	Risks of Issuer	Risks of Holder
PANEL A: Financial Instruments with Definite Contractual and Determinable Cash Consequences				
Financial Instrument	Issuer's Obligation	Holder's Rights	Risks of Issuer	Risks of Holder
Cash Demand and Time Deposits	To deliver cash on demand or at specified date	To receive cash on demand or at specified date	____	Credit Risk
Trade Accounts Promissory Notes Loans Bonds Investments in Preferred stock (redeemable)	To deliver specified amounts of cash on specified dates or within specified periods	To receive specified amounts of cash on specific dates or within specified periods	____	Credit Risk Market Risk
PANEL B: Financial Instruments with Contractual Determinable, Contingent Cash Consequences				
Financial Guarantees Letters of Credit	To deliver cash if third-party defaults	To receive cash if third-party defaults	Credit Risk	_____
PANEL C: Financial Instruments With Contractual Derivative Cash Consequences				
Put options (eg. on stocks, interest rate contracts)	To receive a financial instrument or cash	To deliver a financial instrument or cash	Market risk Credit risk	Market risk Credit risk
Call options (eg. on stocks, foreign currency)	To deliver a financial instrument or cash.	To receive a financial instrument or cash	Market risk Credit risk	Market risk Credit risk
Financial Futures Contracts	Two-sided contract to deliver or receive a financial instrument at a price to yield a predetermined rate of return.		Market risk to both counterparties.	
Forward Contracts (eg. on Foreign Currency)	Two-sided contract to exchange a specified amount of a financial commodity (such as a foreign currency) at a predetermined rate of exchange on a specified future date.		Market risk to both counterparties.	
Interest Rate Swaps	Two-sided contract to exchange cash interest on a notional amount of debt instruments with different contractual interest structures (eg. fixed versus variable)		Market risk to both counterparties.	
PANEL D: Financial Instruments with Non-Contractual Cash Consequences				
Investments in Common and Non-cumulative preferred stock	Issuer's obligation is to pay out dividends when declared and distribute residual value when entity is liquidated.	Holder's right is to receive appropriate share of dividend and residual value of entity.	Market risk	

Panel D of Exhibit 1 shows examples of financial instruments that represent equity interests in another entity. These instruments typically do not embody any contractual rights to determinable future cash flows. Instead they give the holders the right to pro-rata shares in dividends if declared, and in the residual net assets of the entity issuing the financial instrument. Holders of these instruments typically face market risk relating to the price of the instrument. Traditionally these instruments have been accounted for at cost or the lower of cost or market value.

FINANCIAL REPORTING OBJECTIVES

A major objective of financial reporting is to select, measure and report appropriate attributes of financial statement elements useful for assessing the future cash consequences of an entity's financing and investment decisions. Possible attributes include cost, book values, net realizable values and estimates of fair value. In deciding which attribute is most relevant for assessing future cash flows, at least two critical differences between financial instruments and other assets and liabilities are notable. First, financial instruments as defined, and as shown in Exhibit 1, include many items that can result in future accounting losses beyond amounts reportable on the balance sheet using traditional rules of accounting measurement. For example, the issuer of a put option on a stock can sustain losses beyond any related balance sheet amounts initially recorded in connection with the transaction, and the counterparties to an interest rate swap can sustain accounting losses beyond the recorded cost of the swap.

The other critical difference is that the future cash consequences of financial instruments are always directly realized via transactions in organized securities markets (if traded) or through settlement at predetermined amounts with contract counterparties. Financial instruments are, in fact, acquired by entities for the purpose of obtaining this direct future cash flow. This is in contrast to balance sheet items such as property, plant and equipment or warranty liabilities which are acquired for their usefulness in producing the goods and services that make up the business of the entity and whose future cash consequences are therefore usually realized through the filter of operations.

These two differences seem to suggest that the relevant attributes of financial instruments for financial reporting purposes should be those attributes that provide information most relevant to estimating the future direct cash flow consequences of the instrument from sale or settlement and the assessment of the amounts and likelihood of accounting losses from such sale and settlement. Current fair value information and the credit and market risks associated with a particular instrument appears to provide incremental value relevant information, over and above historical variables (Barth, 1994; Eccher et al., 1996).

The issues raised above appear to have impacted the FASB's efforts at prescribing accounting standards for financial instruments. The concepts of fair value, credit risk and market risk dominate the recent FASB standards. The FASB appears to have accepted the inadequacy or irrelevance in many cases of the book values of financial instruments and has selected fair value as the pervasive disclosure, and in some cases, measurement or valuation basis for financial instruments. The overall strategy adopted by the FASB appears to be based on the premise that fair value disclosures, along with entity-specific information useful for measuring factors such as credit and market risk in relation to these instruments, is the best approach, for now, for dealing with the quickly evolving areas of financial innovation. The concept of fair value is the dominant reporting issue with respect to financial instruments. It is also not as easily defined as are the concepts of credit and market risk. We therefore discuss fair value in some detail in the next section. Credit and market risk are discussed in Section III, where we present an integration of accounting standards on financial instruments.

THE CONCEPT OF FAIR VALUE

The FASB defines the fair value of a financial instrument as "the amount at which the instrument could be exchanged in a current transaction, between willing parties, other then in a forced or liquidation sale" (FASB, 1991 par 5). It is useful to interpret this definition within the context of the objectives of financial reporting as discussed above. It is not the objective of financial reporting to provide current liquidation valuation for either an entity, assumed to be a going concern, or for its individual assets and liabilities. The objective is to provide information useful in assessing the future cash consequences, of the entity's operational and financing strategies and decisions. From this perspective, a more general concept of fair value may be more appropriate for clarifying the purposes of fair valuation and affords a means of evaluating procedures for estimating it.

True fair value can be conceptualized as the actual net cash received or paid by an entity in an arms-length transaction, on a specific date, in which the entity sells off or settles a financial instrument. Thus, the fair value of a financial instrument may be viewed, at any point in time, as a theoretical, unknown amount, in the absence of an arms-length transaction. This unknown, pre-transaction amount, can be expressed conceptually in the familiar present-value model as follows, assuming a world of complete certainty:

$$FV_i = \sum^{n}_{i=0} CF_i \; / \; C_i \qquad \text{(Model 1)}$$

where

FV_i = the fair value of the financial instrument at time i,

CF_i = the certain net cash to be received or paid in the future sale or settlement of the financial instrument in period i, and

C_i = the true cost of capital to the firm in period i.

The certain amount FV_i from Model 1, is equivalent to the present value of what is eventually realized in an arms-length transaction involving the financial instrument, and one must conclude that the provision of relevant information for assessing this value constitutes the primary financial reporting objective for financial instruments. In the real world however, there are uncertainties about the amounts and timing of the cash consequences, CF_i, as well as the true cost of capital, C_i, that cannot be precisely measured. Therefore, outside of a theoretical model, true fair value has to be estimated for each moment until an actual transaction date, and the financial reporting problem, as stated previously, is to select an attribute of the asset or liability most useful for assessing it.

In this light, FASB's definition of fair value must be interpreted as the selection of a particular estimator of true fair value out of many possible estimators (such as face value, amortized value, etc.) The definition, however, emphasizes the perceived advantages of using current market-determined estimates such as current selling prices. Although rarely accurate as predictors of CF_i, current price quotations from organized markets embody the market's consensus on the uncertain variables outlined in Model 1, which are very relevant to the assessment of future cash consequences, by providing timely indicators of future value movements as the economic environment changes. Also, because such numbers are independently determined, they eliminate the need for subjective determinations of balance sheet values that undermine reliability and comparability. Market-based estimators of fair value therefore also provide discipline in financial reporting.

These information characteristics, relevance (predictive value), reliability (verifiability), and comparability appear to be the criteria used by the FASB to rank order its list of acceptable fair value estimators, which are summarized below. The following fair value estimators are permitted by all the standards on financial instruments discussed in this paper. They are briefly discussed in the order of preference, indicated by the FASB in SFAS 107. This is followed by comments on the feasibility of fair value estimate for various classes of financial instruments.

FAIR VALUE ESTIMATES BASED ON MARKET QUOTATIONS

Some financial instruments are regularly traded on organized auction or over-the-counter markets. Quoted market prices for these instruments are therefore usually available on a daily basis in the form of daily closing, dealers bid and ask or dealer mid-point prices. These market prices are the most preferred estimates of fair value for financial instruments because they represent the unbiased market consensus, at any point in time, about all the variables outlined in Model 1 for a unit of a financial instrument. Also, the resulting reported estimates of fair value from the quoted prices are verifiable.

FAIR VALUE ESTIMATES BASED ON RECORDED AMOUNTS

The degree of uncertainty surrounding the cash flows from a future sale or settlement of a financial instrument is directly related to the expected length of time to a planned transaction date. As the time horizon shortens, these uncertainties diminish or become more clearly measurable. Thus, for certain financial instruments originally recorded at their future contractual settlement amounts (such as notes payable/receivable), fair value can be approximated by

recorded face amount, net realizable value or amortized value, as they approach maturity. These approximations are especially justified during stable economic conditions when market and credit risks are immaterial.

FAIR VALUE ESTIMATES BASED ON VARIOUS VALUATION MODELS

For customized financial instruments that are not publicly traded, fair values may be estimated from finance models such as the Black and Scholes option pricing model. They may also be estimated by feeding publicly available measures such as interest rates in present value models such as Model 1, when the amounts and timing of contractual cash flows involved in the instrument are readily available. In the absence of in-house modeling capabilities, such model-based estimates may be obtained in the form of appraisal values from pricing specialists such as firms offering loan pricing services.

FEASIBILITY OF FAIR VALUE ESTIMATION PROCEDURES FOR VARIOUS FINANCIAL INSTRUMENTS

The availability of relevant information for estimating the future cash consequences of financial instruments varies between instruments and the entities that report them. As a result, a variety of fair value estimators with different degrees of predictive ability and verifiability may be feasible for different situations. We find that Exhibit 2 is a useful framework for explaining the practicality of the fair value approximations discussed above. his framework is also helps students clarify the differences between financial instruments and other balance sheet items discussed earlier.

Exhibit 2
A Framework for Determining the Practicality of Various Fair Value Estimates for Groups of Financial Instruments

	Future Amounts of Benefits or obligations measurable in Fixed Contractual Dollars	Future Amounts of Benefits or obligations not Measurable in fixed Contract Dollars.
Benefits and obligations are Financial (Direct Cash Consequences)	(A) Cash Accounts Receivable/Payable Notes Receivable/Payable Bonds Payable at Maturity Loans Receivable/Payable Investments in Debt Securities Held to Maturity.	(B) Investments in Equity Securities. Investments in Debt Securities Not Held to Maturity. Derivatives - Interest rate options and forward contracts. Interest Rate Caps and Floors Interest Rate Swaps.
Benefits and obligations are operational (Eventual Cash consequences are for sale of goods and services.	(C) Prepaid Expenses Advances to supplies Deferred Revenues Warranty obligations Commodity Futures.	(D) Inventories Property, Plant and Equipment Intangibles.

The framework distinguishes between assets and liabilities whose future benefits or obligations are fixed contractually in dollar amounts, and those whose benefits or obligations are not. It also distinguishes between financial and operational items. Financial and operational items differ in that the latter are held for use in operations, while the former are held for their direct cash flow consequences. Financial items, including all liabilities, are acquired or assumed by an entity in order to provide liquid resources as needed by the entity. Because financial items are not directly related to operational activities, they tend to be generic bundles of rights and obligations that can be traded as homogeneous units in organized markets. Such markets do not exist actively for most operational items that are designed for a specific entity or operation.

Using Exhibit 2, items in Box A represent financial assets and liabilities whose future cash flows are fixed in terms of contractual dollars. Box B groups financial items whose future cash flows cannot be determined in contractual dollars. Box C contains operational items whose future benefits are not determinable in contractual dollar amounts. Lastly, Box D describes operational items that can be measured in contractual dollar amounts. Items in Boxes A and B encompasses all financial instruments, which tend to be securitized and traded in active auction and over-the-counter markets. Potentially therefore, fair value estimates based on market quotations are feasible for most of these assets and liabilities. In the absence of evident market prices, however, the distinction between Boxes A and B become meaningful. Because the items in Box A can be measured in terms of future contractual cash amounts, their values can be conveniently approximated by various present value models using prevailing market indicators such as discount rates, maturity dates and risk ratings for similar instruments. In addition fair values for items in Box A with relatively short maturities can easily be approximated by face value, amortized value or net realizable value.

The fair values of items in Box B are not so easily approximated in the absence of market price quotations. This is due to the fact that these instruments are not denominated in contractually determined future cash payments. Estimating fair values in the absence of market quotations requires complicated models such as Black and Scholes.

Items in Boxes C and D are not financial instruments and are presented in Exhibit 2 as contrasts that justify different financial reporting standards. Operational assets and liabilities do not embody fixed contractual future cash flows and are not traded in homogeneous units on active markets. Fair values are therefore difficult to estimate for these items without introducing much subjectivity into the process.

SPECIFIC FAIR VALUE ACCOUNTING AND DISCLOSURES REQUIREMENTS FOR FINANCIAL INSTRUMENTS - AN INTEGRATION.

The perceived need for new financial reporting standards on financial instruments has been fueled by the creation in recent years of new, innovative financial contracts to deal with deregulation, new tax laws and market volatility. Because of the need to develop broad interim strategies as a means of dealing with all new financial instruments while resolving old problems in this area, the chronology of these pronouncements does not provide a picture of logical development in this area. In this paper, therefore, we show how a presentation based on scope rather than chronology can clarify the requirements of standards in this area and show relevant interrelationships.

The provisions of four major standards, SFASs 107, 105, 115, and 119 are summarized incrementally from the general to the more specific in scope in Exhibit 3. In addition to disclosures of estimated fair values, these standards require disclosures about credit and market risk. The FASB identifies these as the primary components of the risk of accounting loss. It defines credit risk as "the possibility that a loss may occur from the failure of another party to perform according to the terms of a contract" and market risk as "the possibility that future changes in market prices may make a financial instrument less valuable or more erroneous"(FASB, 1990 par. 7). In general any information useful in assessing the amounts that can be lost through the default of contract counterparties or unfavorable movements in general economic conditions such as the level of interest rates are required to be disclosed. Furthermore, information about special circumstance that would intensify a mitigate these risks, such as an unusual concentration of contract counterparties in one industry or special policies of requiring collateral or other security arrangements to hedge the credit or market risk should be disclosed.

Statement of Financial Accounting Standard (SFAS) No. 107 - *Disclosures About Fair Value of Financial Instruments*, has the broadest applicability of all standards on financial instruments. It covers all financial instruments, whether assets or liabilities, recognized or unrecognized, with a few exclusions, notably, pension obligations, lease contracts, insurance contracts and certain equity method investments. Thus, the standard covers all the illustrative classes of financial instruments in Exhibits 1 and 3.

SFAS 107 requires all entities, financial and otherwise, to disclose, either in the body of the financial statements or in related notes, the estimated fair values of all financial instruments, recognized or unrecognized, for which it is practical to provide such an estimate. For all cases, to provide information useful in evaluating a particular entity's investment strategies, such disclosures must distinguish between financial instruments held or issued for trading purposes and those held for other purposes, such as hedging. Also, derivative and non-derivative instruments must be distinguished. In addition, SFAS 107 requires explanations of the procedures used in arriving at such estimates and information relevant to assessing instruments for which the entity is unable to provide fair value estimates.

Exhibit 3. Incremental Disclosure Requirements under SFAS 107, 105, 119, and 115

Cash Accounts Receivable/Payable Notes Receivable/Payable Loans Receivable/Payable Bonds Payable	SFAS 107 Disclosures Fair values of all financial instruments, recognized and unrecognized if feasible Procedures for determining such fair values Reasons for entity's inability to provide fair values Variables useful for imputing fair values if not provided
Written loan Commitments Receivables Sold with Recourse Issued Financial Guarantees Issued letters of Credit	SFAS 105: Additional Disclosures Amounts, nature and terms of such instruments Amounts of possible losses from exposure to market and credit risk Amounts of possible losses from concentrations of credit risk Any collateral/security arrangements
Written Put and Call Options on Interest Rate and Foreign Currency Contracts Issued Interest Rate Caps and Floors Interest Rate Swaps Currency Swaps Financial Futures Contracts Forward Contracts	SFAS 119: Additional Disclosures Amounts, nature and terms of derivative financial instruments Derivatives held for trading versus other purposes A discussion of any relevant credit and market risks faced
Put and Call Options Held on Interest Rate and Foreign Currency Contracts Fixed and Variable Rate Loan Commitments Held Interest Rate Caps and Floors Held Financial Guarantees Held	
Investments in debt securities Investments in certain equity securities	SFAS 115 Additional Disclosures Additional Accounting Issues: Fair value accounting for debt and equity securities held as investment for trading and available for-sale purposes Recognition in the income statement of unrecognized gains and Losses

This breadth of applicability of this standard clearly emphasizes the FASB's belief that estimated fair value is the most relevant attribute for assessing the future cash consequence of financial instruments. Recent empirical research on the stock market effects of fair value estimates for bank investment securities has provided mixed results. For example, Nelson (1994) reports that SFAS 107 fair value estimates exhibit no significant ability to explain stock market values, while Beatty et al. (1996) and Cornett et al. (1996) find that bank share prices were negatively affected by the adoption of SFAS 115 and SFAS 105 and 107 respectively. Other studies however, provide evidence that fair value estimates of financial instruments have incremental explanatory power over and above historical cost measures (Barth 1994; Barth et al. 1995; Ahmed and Takeda 1995; Eccher et al. 1996).

As shown in Exhibit 2, SFAS 105 - *Disclosure of Information About Financial Instruments with Off-Balance Sheet Risk*, addresses a major subset of the financial instruments covered under SFAS 107. This standard resulted from

the perceived urgent need to address the many emerging contracts that expose an entity to the risk of accounting loss beyond amounts formally recognized in the statement of financial position. These contracts embody contingent contractual rights and obligations that are usually associated with the issuance of derivative instruments such as interest rate swaps and forward interest rate agreements which may create an obligation to pay cash to a counterparty in the future as interest rates change. Also included are written loan commitments and commercial letters of credit. The contingent or derivative future cash payments in these contracts create possible accounting losses that may exceed any underlying book values formally reported in the balance sheet.

SFAS 105 requires, in addition to any fair value disclosures, the disclosure of the amounts and terms of any such instruments with off-balance sheet exposure to the risk of accounting loss. In addition, it requires disclosure of the amounts of such possible losses from exposure to market risk (such as interest rate changes), credit risk (such as failure of a counterparty to honor contractual obligations), and concentrations of such credit risk (such as one entity having interest rate swap agreements with a single counterparty or several counterparts from the same industry). Also, to provide a means of further assessing such risks, SFAS 105 requires disclosure of any collateral or security arrangements made to counter or moderate such risks. These disclosures are required to distinguish between financial statements held for trading purposes and those held for other purposes.

SFAS 119, *Disclosures About Derivative Financial Instruments*. requires additional disclosures beyond SFAS 107 requirements for derivative financial instruments not covered by SFAS 105. As shown in figures 1 and 3, the FASB's definition of derivative financial instruments includes futures, forwards, swaps, and option contracts and other financial instruments with similar characteristics, such as interest rates caps and floors and fixed-rate loan commitments. As shown in Exhibit 3, however, SFAS 119 primarily covers entities that are holders rather than issuers of these contracts, since such holders face no off-balance sheet risk of accounting loss beyond their recorded balance sheet values. Holders of these contracts are provided with benefits of favorable price movements in the price of the underlying asset or index, without exposure to losses from unfavorable price movements. Therefore, unlike the writers of these contracts, holders of derivatives are generally not covered by the provisions of SFAS 105.

In addition to the fair value disclosures of SFAS 107, SFAS 119 requires entities holding these derivative financial instruments to disclose contract or face amounts in involved, the nature and terms of the contracts and a discussion of any relevant credit and market risks faced. Also, these disclosures must distinguish between derivatives held for trading purposes and those held for other reasons such as hedging. SFAS 119 therefore is an extension of disclosure requirements of SFAS 105 to cover all derivatives, not merely those that have off-balance sheet risk of accounting loss.

SFAS 115, *Accounting for Certain Investments in Debt and Equity Securities*, replaces SFAS 12, and is at least as much a response to recent developments, especially in the banking industry, as it is a logical progression of the financial instruments project. It replaces the cost and lower of cost or market approaches to accounting for certain investments in debt and equity financial instruments, with fair valuation as a response to the general charge that the former valuations, in conjunction within the practice of gains trading, allow firms to hide losses in their investment portfolios. The standard requires accounting procedures beyond those in SFAS 107 for a subset of financial instruments defined as certain "investments in debt and equity securities" (FASB, 1993 par. 1).

This is the only standard on financial instruments that requires measurement at fair value rather than the mere disclosure of such fair values. Thus SFAS 115 potentially affects balance sheet as well as income statement numbers as a result of changes in the fair values of these investments prior to their sale. The standards requires measurement at fair value on each reporting date for all investments in debt securities as well as investments in equity securities that do not qualify for equity-method accounting.

The specific additional requirements beyond disclosures under SFAS 107 include classifying all debt securities into those possible portfolios - those held for trading purposes, those held as available for sale securities, and those to be held to maturity. Investments in equity securities such as common stock, preferred stock, and any associated options and future contracts are to be classified into trading or available for sale portfolios. In the balance sheet all trading and available for sale securities are reported at fair value with unrealized gains and losses reported in the associated income statement for trading securities, and as adjustments to stockholders' equity for available for sale securities. Held to maturity investments in debt securities are reported at amortized cost, with fair value disclosures as mandated by SFAS 107.

CONCLUDING REMARKS

Our discussion of reporting concepts and the specific accounting standards for financial instruments demonstrates the superiority as well as the FASB's preference for fair values as the basis for reporting on financial instruments. We also show that at this time the specific reporting standards are not uniform for all financial instruments as defined by the FASB. One cause of this lack of uniformity is the tension between recognition versus disclosure as the means by which fair value information is reported in financial statements.

Currently, fair value information is required in the form of disclosures for most classes of financial instruments listed in Exhibit 1. Recognition of fair value information in the statement of financial position is required under SFAS 115 for investments in the equity and debt instruments of other entities. But even here, there is no requirement that the issuers of debt instruments recognize fair values in financial statements, leading to an asymmetrical treatment that is difficult to justify.

We know of no compelling theoretical or practical defense for the disparate treatment of investment portfolios versus other financial instruments whose fair values can be estimated. Even for the most complex derivatives, fair value information can be used to recognize assets and liabilities beyond the initial costs incurred to purchase the securities. For example, with respect to either options or swaps, current market information about the price of the underlying security can be used to recognize an asset in the balance sheet with a related gain recognition in the income statement, when the derivative is in a gain position. Similarly, for instruments in a loss position, a liability and an associated loss can be recognized by reference to the cash payments that would be required to settle the position. Conceptually, these fair value recognition procedures would be no different from those required under SFAS 115. In conclusion, requiring the recognition of fair values for all financial instruments would simplify financial reporting in this area to a considerable degree, reduce the frequency of "off-balance-sheet" reporting for financial instruments, and make financial statements more comparable and relevant. The current FASB exposure draft "Accounting for derivatives and similar financial instruments and for hedging activities" (FASB, 1996) will hopefully move financial reporting in this direction.

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SELECTING AMONG PROSPECTIVE EMPLOYERS: FACTORS ACCOUNTING STUDENTS CONSIDER IMPORTANT

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ABSTRACT

Past research has revealed a number of determinants of selection decisions for college students. However, few studies have examined those factors students use in differentiating among prospective employers and to date no studies have examined Accounting student preferences. This study reports accounting students' ratings of 23 factors potentially present in workplaces. The most and least important factors are discussed. Additionally, implications for organizational recruiting practices are presented.

INTRODUCTION

Past research has revealed a number of determinants of selection decisions for college students. For example, studies have found that applicants with high GPAs and academic status receive more favorable selection decisions than those with low GPAs and academic status (e.g., Campion, 1978; Oliphant and Alexander, 1982; Werbel, Phillips, and Carney, 1989). Student participation in extracurricular activities has also been shown to be a determinant of student selection (Campion, 1978; Werbel et al., 1989).

Research in this area has focused on variables that evaluators use to differentiate among student applicants. Yet applicants in turn conduct evaluations of organizations. Therefore the dearth of research examining factors that students use to help them select among prospective employers is surprising. Knowing these factors, organizations can examine their workplace policies and determine needed changes. This in turn may allow them to posture themselves more favorably for attracting and keeping qualified personnel. Also, employees would likely be more satisfied with their jobs if employers provided them with things they value. This greater job satisfaction could benefit organizations through greater work productivity (e.g., Iaffaldano & Muchinsky, 1985) and lower employee absenteeism (e.g., Scott & Taylor, 1985) and turnover (e.g., Porter & Steers, 1973). Given these potential benefits, there appears to be a real need to uncover factors that student applicants most want in a potential employer and employment relationship.

Previous studies (Phillips & Phillips, 1997; Phillips, Phillips, & Cappel, 1994) have examined job preferences of Management majors and M.B.A. students. However no research to date has investigated Accounting students' preferences. Given the large number of Accounting students and the increasing demand for students with such degrees, the present study was designed to help discover their preferences.

SUBJECTS AND PROCEDURES

Participants in this study were 114 male and female students enrolled in undergraduate Business classes at a regional university in the southern United States. Only junior- and senior-level Accounting students took part in the study. Participation was voluntary.

Students were presented 23 factors potentially present in workplaces. For each item, they indicated on a 7-point Likert scale (1 = not at all important; 7 = very important) how important that item was to them personally in selecting a company for which to work. Means were computed for each of the 23 items.

RESULTS AND DISCUSSION

Results indicated that the following items (in order beginning with the highest-rated) were most important in helping students differentiate among prospective employers: opportunity for advancement, job security, good training program, good retirement plan, good health insurance, and good pay.

Opportunity for advancement was the single most important factor to students. This indicates that today's college students are thinking beyond money when choosing an employer. They are thinking about the future and how a particular job/employer can help contribute to that future. Recruiters need to communicate to students specific opportunities for advancement within their organizations. This can be best accomplished during an employment interview. Here students may ask specific questions they have about such opportunities.

Job security was also very important to students in helping them decide among prospective employers. This finding indicates that students want stable and predictable employment. Again, interestingly, this factor was rated more highly than money. Recruiters for organizations valuing job security should thus emphasize its importance during the interview process.

Another factor deemed important was a good training program. Students seemed to recognize the importance of a good training program to their job and career development. Recruiters can positively differentiate organizational training programs by providing details such as length and type of training provided. Further, given the importance of opportunity for advancement, they should elaborate on exactly how these programs prepare and develop employees.

A fourth factor students considered very important was a good retirement plan. Again, they seem to be looking more to the future. This seems to counter some beliefs that they are only interested in the short term. In many interviews, recruiters are not specific enough about their companies' retirement plans. Although most people do not remain with their initial employers until retirement, our results indicate that students want specific information about organizational policy in this area.

Good health insurance was also considered important. Students are apparently aware of escalating health-care costs. They want good quality health care at reasonable costs. Recruiters should emphasize positive aspects of their health-care plans, again being as specific as possible. A brochure listing rates and coverages would probably be helpful.

A sixth factor students deemed important was good pay. Interestingly, five other factors were rated more important than money. While good pay is important to students, opportunity for advancement, job security, a good training program, a good retirement plan, and good health insurance appear to be more important. This should be good news for those companies unable to offer financially competitive salaries. Since students' perceptions of good pay will naturally vary, recruiters should obtain applicants' salary histories and ask about their salary expectations. Recruiters can thus learn whether or not the organization can offer an acceptable salary.

The least important factors (in order beginning with the lowest-rated) were: health/work-out facilities, day care provided, amount of travel required, availability of a stock option/ownership program, spouse's likelihood of finding a job in or near city where student will be working, and flexible work schedules. Health/work-out facilities and day care provided were rated as the two least important factors. These aspects were not unimportant to students; rather they were relatively less important than others in helping them differentiate among prospective employers. Organizations, especially those that are financially limited, should take note of this finding. Students apparently feel that if other factors are met or addressed by organizations, then they can arrange day care and pay for health/work-out facilities themselves. Alternate explanations are that many students may not yet have children, making day care less important, or that students may want to keep day care and health club membership separate from their work environment.

Amount of travel required was also not as important to students. If students can obtain desirable jobs, they seem to be willing to travel as much as necessary. This should come as very good news to organizations with jobs which require substantial travel. This may, however, reflect the fact that many students are single or married but childless. Thus, it is still probably best to ask applicants about their travel preferences. If an organization needs employees who can travel, it is better to know at the outset about applicant travel constraints.

A fourth factor among those least important was availability of a stock option/ownership program. Other factors appear to be far more important in helping students differentiate among prospective employers. Again,

organizations should continue to provide information on available programs as it may help highly-qualified applicants select from multiple offers.

Additionally, spouse's likelihood of finding a job in or near the city where the student will be working was deemed less significant by students. This finding is not surprising since the majority of students were not married. This factor will most likely increase in importance as students marry and have families.

A sixth factor students viewed as less important in helping them differentiate among prospective employers was flexible work schedules. Students appear willing to work in jobs which have rigid, inflexible work schedules as long as they obtain good jobs. As mentioned above, this may reflect many students' lack of family responsibilities. Flexible work schedules are likely more important to employees with such responsibilities. Recruiters should continue to provide information to applicants about available flexible work schedules since students may consider this information when faced with multiple offers.

CONCLUSION

In conclusion, organizations should realize that certain factors are more important than others in helping Accounting students differentiate among prospective employers. Specifically, opportunity for advancement, job security, good training program, good retirement plan, good health insurance, and good pay appear to be most important. Organizations should work toward providing these since they will help in attracting high-quality applicants. If accounting applicants have multiple job offers, they will likely select the company that provides the most valued factors. Also, once hired, applicants working for companies that provide these more valued factors should be more satisfied.

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EFFECTIVENESS OF CORPORATE GOVERNANCE FOLLOWING WEALTH-REDUCING TAKEOVERS

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ABSTRACT

Given the evidence that managers may make ill-advised acquisitions for self-serving purposes, we investigate in this study whether there is a significant top management turnover following such acquisitions, indicating the existence of an effective, ex-post corporate governance mechanism. We do not observe a significant management turnover following wealth-reducing takeovers; nor do we observe a positive market reaction to the news of management turnover. One explanation of the above findings is that these managers are so well-entrenched that they weaken the effectiveness the corporate governance mechanism.

INTRODUCTION

Diffuse stock ownership of public companies may lead to managerial entrenchment. In the absence of a monitoring blockholder, the board of directors may end up as a rubber stamp in the hands of entrenched managers, providing the latter with opportunities to employ corporate resources for personal benefits, both pecuniary and non-pecuniary. Managers of public companies have been reported to make acquisitions for personal job security (Amihud and Lev, 1981), for enhancements of their reputations (Morck, Shleifer and Vishny, 1990), and for maintaining control over free cash flows (Jensen, 1988).

However, an interesting question arises as to whether the board, after having allowed the managers to make unwise acquisitions, acts more responsibly *ex-post*. Shareholder pressure coupled with adverse press coverage are very likely to spur the board into action. Evidence from unsuccessful takeover bids indicates that the target board does gear into action *ex-post* by firing managers responsible for defeating the lucrative bids for their firms (Duggal and Cudd, 1993). This study has two objectives: 1) to determine if the acquiring board fires top managers responsible for making wealth-reducing acquisitions; 2) to determine if the management turnover announcement following a wealth-reducing (wealth-enhancing) acquisition elicits a positive response from the market acquisitions.

SAMPLE AND METHODOLOGY

First, using COPMUSTAT, we identify the firms that were deleted from this data base due to mergers or acquisitions during the 1985-1990 period. Later, using *The Wall Street Journal Index*, we identify the acquiring firms and the acquisition announcement dates. Finally, using standard event study methodology, we estimate the abnormal returns to the acquiring firms for 11-day [-5, +5] announcement period. Lack of coverage by *The Wall Street Journal* and/or missing stock price data on CRSP tapes reduce the usable sample to 136 firms for event study.

To enhance the significance of our tests, we discard from our sample all those firms whose abnormal gains or abnormal losses are not significantly different from zero at the 10% confidence level. Only 25 of the 136 acquiring firms have significant abnormal returns -- 11 observations with positive and 14 with negative returns. We use these twenty-five observations for subsequent tests.

We define a management turnover as one involving a change in the position of chief executive officer (CEO), president or chairman of the board in the three-year period following the acquisition announcement. Firms do not always reveal the reasons behind their managers' departures (see Duggal and Cudd, 1993); therefore, we classify all turnovers as forced departures initiated by the board unless the news items in *The Wall Street Journal* clearly indicate the departures as retirements at age 65. We compare the frequency of management turnover in the two groups of wealth-enhancing and wealth-reducing takeovers to determine whether there is a greater frequency of such turnovers

in the latter group. Finally, using standard event methodology, we also test the market reaction of the turnover news to see whether the market responds positively to the turnovers associated with wealth-reducing takeovers.

FINDINGS

Table 1 contains the management turnover frequencies of the two groups of acquirers, wealth-enhancing and wealth-reducing. There were six incidents of top management turnover in the three-year post-acquisition period for the wealth-reducing acquirers versus only three for the wealth-enhancing acquirers. However, the Chi-square of 0.621 for the difference in the turnovers for the two groups is not significant; therefore the null hypothesis of no difference in the two groups cannot be rejected. Furthermore, an equal number of firms (eight) in the two groups reported no management turnover.

Table 1
Top Management Turnover

Frequencies of			
	Turnover	No Turnover	Total
Wealth-Reducing Acquisitions	6	8	14
Wealth-Enhancing Acquisitions	3	8	11
Chi-Square= 0.621			

Next we observe the market reaction to the turnover announcement to determine if the top management turnover following wealth-reducing acquisitions is greeted positively by the market. Table 2 contains the seven-day [-3, +3] abnormal returns to the management turnover announcement. Day 0 is the day of publication of the turnover announcement in *The Wall Street Journal*. We observe that the market response is insignificant for all days in the seven-day interval surrounding the turnover announcement.

Table 2
Average Abnormal Returns to Management Turnover Announcement
Following Wealth-Reducing Acquisitions

Day	Average Abnormal Return (%)	t-Statistic	Positive:	Negative
-3	0.51	0.7	4:2	
-2	1.17	1.6	5:1	
-1	0.24	0.3	3:3	
0	0.45	0.6	5:1	
+1	0.21	0.3	4:2	
+2	-0.17	-0.2	2:4	
+3	0.4	0.6	4:2	

The above results suggest that these managers may be so well-entrenched that the corporate governance mechanism fails to rein in the managers both *ex-ante* and *ex-post.* But why doesn't the market respond positively when these managers quit the firms? One explanation may be that the market anticipated such turnovers before these actually occurred; thus the turnover news did not cause any reaction.

An alternative explanation of the above findings is that although the market considered the acquisitions as wealth-reducing, it was willing to regard these acquisitions as decision errors rather a deliberate attempt on the part

of the managers to gain at their stockholders' expense. An absence of market reaction to the management turnover announcement supports this view.

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REVERSE THE MOMENTUM: DOES THE STOCK MARKET OVERREACT TO NEW INFORMATION?

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ABSTRACT

There has been much recent discussion of the concept of momentum investing. Though definitions may vary somewhat, a rising volume of trading in one sector, say technology, and a decline in another, like oil, might be described as a shift in momentum. Any substantial, and especially sudden, shift in investment preferences is likely to result in higher prices in the stocks of that sector. As a measure of market sentiment in the short term the stocks with the largest percentage weekly gains and losses could be viewed as an extreme reflection of investor's short term preferences and a reaction to information about the relative momentum related merits of different types of stocks. This study examines the largest weekly percentage changes in stock prices and then compares their price, and return movements four weeks after they make the winners and losers list to see if these stocks outperform or underperform the general market.[1] Weekly price changes are measured to capture any large movements in price regardless of when in the given week they occur. These stocks are evaluated four weeks later under the efficient market assumption that whatever caused the large weekly change has been fully discounted in the stock's price. If subsequent movement in the next four weeks are in the same direction those changes may be related to momentum. A reversal in direction over the next four weeks would suggest that the market overreacted to the initial news. Whether or not the move in either direction is considered important is also related to whether the stock has simply moved with the general market or not.

LITERATURE SEARCH

There have been a number of studies, using somewhat different methods and holding periods, that have attempted to answer the question of whether stock prices overreact to (new) information. For example DeBondt and Thaler (1985, 1987) found that buying past losers and selling past winners resulted in above average returns. Their historical holding periods were 3 to 5 years for stocks that performed poorly in the previous 3 to 5 year period. For shorter time periods stocks that performed well or poorly in the previous week or month subsequently generated significant abnormal returns in studies by Jagadeesh (1990) and Lehmann (1990). De Long, et al. (1990) also postulate a model that suggests that the market is likely to overreact to news.

Success of the opposite trading strategy emphasizing relative strength, continuation of a trend not a reversal, was documented by studies by Grinblatt and Titman (1989, 1991) that showed mutual funds tend to buy stocks that increased in price over the previous quarter. More recently Grinblatt et, al. (1995) found that 71% of their sample of 155 mutual funds from 1975-1984 were "momentum investors" that bought stocks that were past winners. They also found, however, that most did not systematically sell past losers.[2] The predictive power of Value Line rankings, which rely largely on historical based relative strength as suggested by Bernard (1984), was shown in studies by Copeland and Mayers (1982) and Stickel (1985) to also bolster the case for buying previous winners. Further evidence that supports continuation rather than reversal of past price performance is found in Jagadeesh and Titman (1993). Specifically, their paper tested relative strength trading strategies which resulted in significant profits over 3 to 12 month periods for NYSE and AMEX stocks from 1965 to 1989. They selected stocks based on their returns for 1-4 quarters and then studied the subsequent returns for the following 1-4 quarters.[3] However, they skipped a week between the two periods.

This study examines the potential short term profitability of buying or selling the weekly list of the largest percentage NYSE & NASDAQ winners and losers in Barron's and then analyzing their return performance over the next four weeks.

METHODOLOGY

This study examines the largest eleven weekly percentage New York Stock Exchange and NASDAQ common stock winners and losers listed in Barron's on the first Monday of each month over a one year period, March 1996 through March 1997.[4]

The subsequent gains or losses a month later [5] for each of these stocks is then measured. At the same time a new top eleven winners and losers are identified and subsequently evaluated a month later. The fundamental question posed is:

If the market overreacts, or properly reacts, to good and bad news then approximately a month later does the performance of the previous top or bottom eleven stocks significantly outperform or underperform the market as measured by the S&P 500 over the same period? If extreme monthly changes in stock prices are a good predictor of future performance then the bottom eleven losers should subsequently underperform the market. Likewise the top eleven winners should outperform the market.

If the market correctly and completely absorbs important information then these thirteen four week samples of eleven stocks should not subsequently perform significantly different than the general market.[6] This approach could be considered a rather extreme and short term evaluation of the merits of momentum investing. One major aspect of the study is to conclude whether a large above average percentage move in a week is an indication that subsequent moves will be above average and in the same direction over the subsequent four week period.

Another premise to be tested is whether the market overreacts to relatively transient weekly information compared to a subsequent approximately one month long, period which investors could use to reconsider the wisdom of previous action. The average degree of volatility for the eleven largest percentage gainers and losers is also evaluated over the twelve monthly periods.[7] Also analyzed is how much on average, a stock had to move up or down to make the top and bottom eleven weekly list and how much this varies over time.[8]

SAMPLE

The sample consists of observations of the eleven largest weekly percentage gainers and losers on the NYSE and NASDAQ based on closing prices for the first week in the month listed in Barron's. The study begins with Monday, March 4, 1996 and ends with a final evaluation on April 7, 1997. Overall a total of 132 weekly winning and 132 weekly losing stocks are evaluated, two pairs of eleven at a time, at four week intervals. Subsequently their approximately one month return performance is analyzed to measure whether, adjusted for market movements, they tend to continue to move in the previous direction or reverse. These 13 winners and 13 losers portfolios, if the market is efficient, should tend to move in the same direction, and possibly the same magnitude, as the market when adjusted for risk.

RESULTS

The average weekly percentage change necessary to make the top eleven list of the NASDAQ (weekly) winners over the 12 month period was a change of 45.65%. (Table 1) For the NASDAQ losers the average weekly loss necessary to make the bottom eleven list over was 34.98%.

The corresponding average weekly percentage change for the NYSE winners was 25.70% For the NYSE losers it was 18.56%. (Table 2)

REVERSALS

Initial analysis suggests that the market tends to overreact on a weekly (or monthly) basis to good and bad news. Subsequent changes in the value of winners and losers observed a month later suggests that there is often an adjustment in the opposite direction i.e, a reversal, or in some cases at least a continuance, with the general market movements. This tends to occur when investors have about a month to reconsider the weekly information and make adjustments associated with the previous large percentage price move. On average for six out of 13, four week, return intervals the NYSE winners reversed their gains with losses. They continued gains in the other seven 4 week periods.

NYSE losers reversed direction in 8 of 13 four week periods following their large losses. The NASDAQ winners reversed direction in five out of 13 four week intervals. Losers on the NASDAQ reversed direction in 6 of the 13, four week, intervals.

AVERAGE RETURNS [9]

The average gain or loss for the four week period after the stock made the winners or losers list, over the 13 months, was 1.48% for the initial winners and 1.05% for the initial losers on the NYSE, vs 1.3 2 % for the S&P 500 (Table 3). The average gain or loss for the period ending four weeks after making the list, over the 13 months, was a loss (.03%) for the initial NASDAQ winners and a loss (.014%) for the losers in that market, vs 3.08% for the NASDAQ 100 Index. (Table 4)

In summary, despite many reversals, buying NYSE winners on average would have outperformed buying NYSE losers and also outperformed the S&P 500 for this period. Buying NASDAQ winners or losers would have resulted in virtually no average gain or loss but would have been substantially less profitable when compared with the overall NASDAQ 100 performance.

The return volatility of the NYSE winners as measured by standard deviation was significantly greater than that of the NYSE losers and that of the S&P 500. The return volatility of the losers on the NASDAQ was greater than but similar to the NASDAQ winners group volatility but significantly greater than for the NASDAQ 100. Thus, the realized returns on the very volatile NASDAQ stocks clearly were not commensurate with the risk.

CONCLUSIONS

These study results suggest that for the period studied buying winners on the NYSE would have resulted in above average profits, even after adjustments for risk. However, buying winners or losers on the NASDAQ over the same period would have yielded significantly below average results. The risk adjusted results are even worse.

Stocks appearing on the list of losers or winners more than once during the study period are listed in Table 5. It is of interest to note that all the stocks appeared at least twice as a winner or loser with a minority appearing as many as 3 times. Many stocks made both the winners and losers lists during the period.

POTENTIAL IMPACT OR INTEREST

The results of this study: (1) have implications for investment strategies related to stock groups that are currently in or out of favor (2) provide an indication of whether the stock market participants tend to react appropriately or possibly overreact to significant new information and (3) also has implications related to market efficiency. Based on this study a relative strength trading strategy tends to be preferable for the NYSE while neither relative strength or reversal based strategies appear to be promising for the more volatile NASDAQ stocks.

FUTURE RESEARCH

Data is currently being collected and tabulated for the 12 month period preceding this study and will be incorporated into the results in the near future.

ENDNOTES

1. My graduate assistant, Amisha Paitel, was extremely helpful in the collection and analysis of the data. Her efforts are gratefully acknowledged. I also thank Carol Schmidt, who typed the paper, and whose patience through many revisions is appreciated. All errors, of course, remain my responsibility.[9] In other words after a substantial weekly move do they continue to go up, or down, or do they reverse and move in the opposite direction. The top eleven largest percentage gainers each week is defined as the “winners” group and the top eleven largest percentage declines is defined as the “losers” group.

2. They also analyzed stock returns around earnings announcements and found that past winners generate consistently higher returns around their earnings announcements.

3. Thus, their results were based on testing 16 trading strategies. Also, Wilcox (1993) discusses the costs associated with short term trades for trend followers, momentum investors, and finds that the returns may be significantly lessened by direct costs and trade execution delays. See Hanley (1993) for a cogent critique of momentum investing.

4. To calculate 12 monthly returns a total of 13 months are needed to complete the evaluation.

5. Actually four weeks later using Barron's weekly list. Stocks that repeat in the lists over the period studied are also noted.

6. Other important information could, of course, be discovered during the four week interval.

7. Securities chosen in this way are likely to have high, above average, volatility. Therefore, return comparisons should be adjusted for risk. Volatility of the twelve groups of eleven stocks is evaluated for both winners and losers.

8. There will be an upward bias in favor of percentage gainers in any comparison against percentage losers because a stock can only fall 100% but can have percentage increases without limit. Thus, stocks that repeat on the list of winners and losers may be more likely winners than losers.

9. No dividends are included in return calculations and virtually none of the sample stocks paid dividends.

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THE INEQUITIES OF EQUITY ACCOUNTING

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ABSTRACT

Accounting literature is replete with discussions about the continuing dilemma of identifying the most relevant and reliable basis for valuation of assets in external financial reports. Some theorists continue to support historical cost while others are in favor of some form of market value. Advocates of market value accounting have been enthusiastic about the passage of SFAS # 115 which endorses the use of market value rather than cost for certain financial assets on the balance sheet.

Driven largely by the problems experienced by the S &L's and banks, the FASB sanctioned market valuation for investments in certain debt and equity instruments. SFAS # 115 excludes those investments in equity securities that are accounted for by the equity method of accounting as required by APB # 18. This leads one to ask logically , "If market valuation of small equity investments provides useful information, could not the same be said for changing to market valuation for larger more significant investments in equity instruments?"

The focus of this paper is on the conceptual merits of continuing to use the equity accounting method for investments where significant influence can be exerted over the investee. Arguments for using market value per SFAS # 115 for equity investments will be examined to see if they do not apply equally to those larger investments where significant influence is considered to be present. The supporting rationale used by the APB to defend the equity method for these larger investments will also be presented.

The paper presents theoretical issues involved in comparing the "fair value" and "equity" investment accounting methods. Following this presentation of theoretical arguments, the paper concludes with a description of a regression model that has been designed to gather empirical evidence to support the change to market valuation for all equity securities.

There seems to be a continuing interest in what the valuation basis should be in financial statements prepared for investors in accordance with GAAP. The final paper should help clarify the reasons for changing to market value on a limited scale. For example, there are those who favor market valuation for nonfinancial assets such as merchandise inventory and plant assets. While the paper will not support extending market valuation comprehensively to all assets, a good case will be made for including one more.

THE EFFECT OF THE 150-HOUR RULE ON VOLUNTARY TURNOVER IN PUBLIC ACCOUNTING FIRMS

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ABSTRACT

Certification requirements for public accountants have changed in recent years as a result of the American Institute of Certified Public Accountants' (AICPA) endorsement of an education requirement that consists of 150 semester hours. Some jurisdictions continue to debate related issues such as the amount and type of experience required to become certified.

The AICPA anticipated that one benefit of the 150-hour rule would be a reduction in voluntary employee turnover in public accounting firms. Prior research indicates that the completion of certification experience requirements affects the timing of turnover in public accounting because individuals refrain from resigning until they have met the experience requirement. This study utilizes event history analysis to compare voluntary turnover by CPA-firm staff in Florida, a state which has implemented the 150-hour rule with no experience requirement, to Georgia, which has not yet implemented the 150-hour education requirement.

While benefits may accrue from the 150-hour education requirement, reduced employee turnover does not appear to be one of them. The timing of employee turnover does appear to be affected by the experience requirement of the jurisdiction. The results of this study may have implications for the public accounting profession as a whole in evaluating the impact of the changes in the certification requirements on the profession, and for public accounting firms in particular in planning for their human resource needs.

INTRODUCTION

Over the past twenty-five years, practitioners and academics in the accounting profession have asserted the need for post- baccalaureate education for accountants. The American Institute of Certified Public Accountants' (AICPA) interest in changing the education requirements began over two decades ago (AICPA, 1990) and culminated in a by-law change in 1988 requiring 150 hours of education for institute membership. Thirty-nine jurisdictions have now adopted the "150 Hour Rule" with implementation dates through the year 2001. Fewer jurisdictions have made changes to the amount and type of experience required for certification, however, the debate regarding the experience requirement continues.

The stated intent of the AICPA's recommendation is to improve the quality of service provided by public accountants to society. Other arguments for post-baccalaureate education include the need for increased competency of CPAs and the public's confidence in them. The Commission on Professional Accounting Education (CPAE) issued a report in 1983 stating that post-baccalaureate education would "attract higher caliber students ... enhance their professional awareness and contribute to their commitment to the profession" with results including improvement in client service, staff retention and staff advancement (CPAE, p. 25). If this is the case, these regulatory changes may impact the management of public accounting firms as business enterprises. Robson, Barefield, and Smith (1992) indicate that the experience requirement impacts the timing of voluntary employment turnover in public accounting firms. It is possible that lengthening the education requirement will also impact turnover. If so, both the experience and education requirement will impact firms' hiring, training, and retention costs.

The purpose of this study is to provide empirical evidence of whether post-baccalaureate education impacts voluntary employment turnover in public accounting. The approach will be to compare turnover patterns in Florida, a large state that adopted a 150 hour education requirement with a zero experience requirement in 1984, to turnover patterns in Georgia, a state that until recently had the "old" policy calling for a baccalaureate degree and two years of public accounting experience. Voluntary turnover is also compared for staff with and without master's degrees.

HISTORY OF THE 150 RULE AND SUBSEQUENT STUDIES

The AICPA's interest in changing the current education and experience requirements began over two decades ago (AICPA, 1990). In 1967, the AICPA's Committee on Education and Experience Requirements for CPAs (the Beamer Committee) ascertained that the accounting curricula for CPAs needed more specific guidance. The committee formulated ten statements of education policy (including statements calling for at least five years of education and no qualifying experience). These ten statements were adopted by the AICPA in 1969.

Adoption of the 150-hour rule by most jurisdictions came only after the AICPA membership voted in 1988 to make the 150-hour education requirement part of the AICPA bylaws. Until 1987, only three states (Hawaii, Florida, and Utah) had adopted the 150-hour education requirement.

Initial arguments for imposing a post-baccalaureate education requirement included one that turnover would be reduced overall. In the Commission on Professional Accounting Education's report (p. 25), in a section entitled "Reduced Personnel Turnover", the Committee said:

> "Persons entering the profession with post-baccalaureate education will be better qualified in several important respects to more quickly grasp the complexities of the business environment, to offer improved services to the public, and, consequently, to be successful practitioners. Therefore, a larger percentage of those who have post-baccalaureate are] likely to be retained by firms than has been the case with persons having only an undergraduate education."

In the same section of the report, the Commission said (p. 25):

> "On the other hand, it can be argued that, because they are more competent, persons with post-baccalaureate education will have more options for alternative employment and therefore will voluntarily leave public accounting at a higher rate than bachelor's degree holders."

The CPAE provided anecdotal evidence from public accounting firms supporting both sides of the turnover argument.

Researchers have supported the CPAE's argument that post-baccalaureate education results in better qualified, more committed employees. Ellyson (1983) hypothesized that post-baccalaureate education would result in an increase in commitment of those entering the profession. Anderson (1988) repeated the CPAE's argument that improved retention could result from post-baccalaureate education due to an increased commitment as students made a greater investment in their professional education. In addition, it has been argued that stature is gained through graduate education (Holder, Larsen, and Williams, 1985), and such stature results (supposedly) in higher calibre students entering the profession (Ellyson, 1983). Siegel (1987) provided some evidence that individuals with post-baccalaureate education had much higher retention rates than individuals without advanced degrees. Deppe, Smith, and Stice (1992), however, found that the average duration of employment was no different for individuals with bachelor's degrees versus those with master's degrees.

SAMPLE SELECTION AND METHODOLOGY

Data were obtained from personnel records for staff accountants employed in four offices of two big-six accounting firms. Three of the four offices represented one CPA firm and the fourth represented the second CPA firm. The data were collected for the period 1984-1988 which came after the 1983 effective date of Florida's 150-Hour Rule and allowed for employees hired in 1988 to have up to three years tenure at the time of data collection. Of the 648 new-hires between 1984 and 1988, 216 were eliminated from the sample due to missing data or due to employee having had prior public-accounting experience. Only employees who voluntarily left the firms were included in the sample.

Table 1 summarizes the sample used to analyze turnover patterns. The table shows the number of new-hires by year of hire, type of degree, gender, and department (audit or tax) for both Georgia and Florida.

Table 1
Sample Selection & Breakdown by State, Department & Gender

New-Hires 1984-88	648
Previous Experience	(106)
Missing Data	(110)
Final Sample Size	432

Year of Hire	**Georgia**			**Florida**		
	Bachelor's	Master's	**% with Master's**	Bachelor's	Master's	**% with Master's**
1984	26	16	**38**	18	11	**38**
1985	33	12	**27**	21	13	**38**
1986	25	16	**39**	45	8	**15**
1987	41	10	**20**	26	13	**33**
1988	43	12	**22**	32	11	**26**
Total	168	66	**28**	142	56	**28**
Male	75	45	**38**	74	34	**31**
Female	93	21	**18**	68	22	**24**
Audit	151	32	**17**	112	30	**21**
Tax	17	34	**67**	30	26	**46**

We include as a Master's degree, 11 observations of additional degrees beyond a Bachelor's other than a Master's.

For the five year period, there is no significant difference in the proportion of new-hires between Georgia and Florida. The proportion of males, females, and audit staff obtaining Master's degrees is not significantly different between Georgia and Florida, but the proportion of tax new-hires with a Master's degree in Georgia is significantly greater in Georgia than in Florida ($x^2 = 4.44$, $p<.035$).

Interestingly, the Florida offices hired bachelor degree students in the same proportion as the Georgia offices. This is surprising given that the employees needed the additional hours of education for AICPA membership. Informal discussions with CPA firm management indicated that many of the employees hired subsequent to Florida's education requirement change completed the additional hours on a part-time basis after beginning employment.

METHODOLOGY

The methodology used in this study is called event history analysis (see Allison, 1984 or Tuma and Hannan, 1978). Event history analysis (also referred to as survival analysis) is useful when the phenomenon of interest is a qualitative event happening to a sample member. In this study, the event of interest is voluntary employment termination. Event history analysis has gained popularity in recent years in turnover research due to its ability to deal with both the occurrence and timing of turnover. In addition, event history analysis has an advantage over traditional statistical methods in its ability to accommodate "censored data." Censored data are those cases in which the subject is employed at the end of the observation window. Traditional statistical techniques used in turnover research would treat these observations as missing or equal to the longest observed time which could lead to inappropriate assumptions or a loss of information.

The two basic functions utilized in event history analysis are the hazard rate, denoted by h_t , and the survival function, denoted by S_t (Lee, 1980). The hazard rate is the conditional probability (or rate) of an event occurring during a given time interval (t, t+1) given that the event has not occurred prior to time t (Hutchinson, 1988). The survival function is a cumulative function that characterizes the probability that a subject "survives" to time t. In this study, the survival function denotes those subjects who do not voluntarily leave the firms.

Event history analysis focuses on duration, therefore the sample data were input in units of time. Each staff member's employment data were recorded in six month intervals from the point of hire until they voluntarily terminated, or until the time of observation if still employed.

RESULTS

Survival functions, S_t, and hazard rates, h_t , are shown partitioned by state in Table 2. One can observe in Table 2 that 176 subjects survived until their sixth interval of employment at which point 23 voluntarily exited the firm (h_t=.1460). The estimated probability of a subject surviving until the end of the sixth interval (i.e., not voluntarily terminating) is .7159. The probabilities are not the result of a straight frequency count, but rather the result of the estimations of the functions given below Table 2.

Table 2: Georgia and Florida New-Hires

Period (half-years) (1)	Number Entering (2)	Censored (3)	Number Exiting (4)	Hazard Rate[a] h(t) (5)	Survival Function[a] S(t) @ end of period t. (6)	
1	233	0	0	0	1	
2	233	1	13	.0575	.9441	
3	219	3	7	.0327	.9137	G
4	209	4	12	.0597	.8607	E
5	193	10	7	.0379	.8287	O
6	176	14	23	.1460	.7159	R
7	139	14	18	.1463	.6183	G
8	107	1	3	.0286	.6009	I
9	103	5	7	.0722	.5590	A
10	91	5	4	.0462	.5337	
11	82	82	0	0	.5337	
1	198	0	0	0	1	
2	198	1	7	.0361	.9646	
3	190	2	14	.0769	.8931	F
4	174	8	20	.1250	.7880	L
5	146	13	18	.1379	.6864	O
6	115	12	21	.2132	.5541	R
7	82	12	7	.0966	.5031	I
8	63	9	4	.0708	.4687	D
9	50	6	3	.0659	.4388	A
10	41	7	5	.1429	.3803	
11	29	27	2	.1379	.3312	

Tests For Homogeneity Across Survival Distributions: 1 df

Log-Rank	7.6666; probability = .00563
Generalized Wilcoxon	9.9842; probability = .00158

[a] Let n_j = the number of observations and r_j = the risk set = n_j - C_j / 2 where C_j is the number of censored observations. Let m_j be the number exiting and q_j the proportion (m_j / r_j). The proportion surviving (S_t) is $(1-q_{j-1})S_{t-1}$. The hazard rate, h_t = $2q_j$ / ($w(2-q_j)$) where *w* is the interval width.

Column six of Table 2 indicates that the survival rate in Georgia (53.37%) is greater than in Florida (38.03%) after 10 periods (five years). The Generalized Wilcoxen and Log-Rank homogeneity tests allow us to reject the proposal that the differences are due to chance.

The hazard rate shown in column five of Table 2 indicates the effect the experience requirement has on the timing of voluntary turnover in the two states. Voluntary turnover is more likely in intervals six and seven (the third year) in Georgia, whereas in Florida the rates are higher in periods four , five, and six (1.5 to 2.5 years). Since Florida has no experience requirement and Georgia has a two-year experience requirement, these results imply that an experience requirement effect exists. It appears that subjects in Georgia delay termination until the experience has been met. Similar support was found by Robson, et. al. (1992) in a comparison of one- and two-year experience requirement jurisdictions.

Table 3 presents hazard and survival rates for the subjects partitioned by the type of degree held. We are unable to reject the hypothesis that there is no difference in voluntary turnover patterns between subjects with a Master's degree at the time of hire and subjects with Bachelor's degrees. Generalized Wilcoxon and Log-Rank tests (reported below Table 3) indicate that the two survival distributions do not differ statistically from each other.

Table 3: New-Hires With A Master's and A Bachelor's Degree

Period (half-years) (1)	Number Entering (2)	Censored (3)	Number Exiting (4)	Hazard Rate[a] h(t) (5)	Survival Function[a] S(t) @ end of period t. (6)	
1	122	0	0	0	1	
2	122	0	4	.0333	.9672	
3	118	1	7	.0614	.9096	M
4	110	2	8	.0762	.8428	A
5	100	4	6	.0632	.7912	S
6	90	10	12	.1519	.6795	T
7	68	7	8	.1322	.5952	E
8	53	1	3	.0588	.5612	R
9	49	3	3	.0652	.5258	S
10	43	6	5	.1333	.4601	
11	32	32	0	0	.4601	
1	309	0	0	0	1	
2	309	2	16	.0533	.9481	
3	291	4	14	.0496	.9021	B
4	273	10	24	.0938	.8213	A
5	239	19	19	.0864	.7533	C
6	201	16	32	.1808	.6284	H
7	153	19	17	.1259	.5540	E
8	117	9	4	.0362	.5343	L
9	104	8	7	.0725	.4969	O
10	89	6	4	.0476	.4738	R
11	79	77	2	.0506	.4504	S

Tests For Homogeneity Across Survival Distributions: 1 df

Log-Rank	.1646; probability = .68496
Generalized Wilcoxon	.45987; probability = .49768

[a] Let n_j = the number of observations and r_j = the risk set = $n_j - C_j / 2$ where C_j is the number of censored observations. Let m_j be the number exiting and q_j the proportion (m_j / r_j). The proportion surviving (S_t) is $(1-q_{j-1})S_{t-1}$. The hazard rate, $h_t = 2q_j / (w(2-q_j))$ where *w* is the interval width.

CONCLUSIONS

The comparison of turnover patterns across jurisdictions clearly does not support the view that post-baccalaureate education, along with dropping the experience requirement will improve employee retention. The observation was, in fact, the opposite. The results are consistent with prior research (Robson, et. al., 1992) indicating that employees tend to delay quitting until they have completed the experience requirement. Absent an experience requirement, subjects in Florida tend to quit earlier than those in Georgia. Even though one might expect retention rates to equalize after 3 or 4 years, this was not the case given that survival rates were consistently lower in Florida after the second year.

Attributing cause to behavior is difficult in turnover research due to the complexity of the phenomenon. The ability to generalize our results is limited due to the restricted sample. In addition, factors which may be office-specific that may affect turnover are excluded and could produce a biased sample. In addition, we use retention on the first job as an indicator of the subject's commitment to the profession. Employees who voluntarily terminate may be committed to the profession yet choose to practice in a different firm. Our initial sample, however, included only 16% of subjects with previous public accounting experience. This suggests that most voluntary terminations are associated with departure from public accounting. It seems reasonable to assume that tenure on the first job is an important indicator of commitment to the public accounting profession.

An additional limitation of the study is that the quality of the post-baccalaureate education received was not addressed. Many schools focus on degree programs for the additional education requirement as opposed to a patchwork of courses taken to meet the requirement. This is an important issue if competence and commitment are the result of the type of post-baccalaureate education obtained.

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A CONTINGENCY THEORY FOR ORGANIZATIONAL TRANSFER PRICING

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ABSTRACT

Transfers are the movement ("sale") of goods or services between organizational units. Due to mergers, acquisitions, and new technologies, many organizations are multinational with units being semi-independent profit centers. These profit centers have the option of buying and selling between each other ("transferring") or with non-related firms. Management accounting theory posits two normative goals for the transfer pricing information system in support of this decision:

I 0 Profit centers should transfer when it increases the overall profits of the company.
I 1 The accounting system should support managerial decision-making by providing the relevant information to identify when transfers are profitable.

INTRODUCTION

Two theories dominate our literature. Economic theory proposes the optimal transfer price is the market price. Behavioral theory proposes the optimal transfer price is the opportunity cost of the selling unit. However, empirical research has shown that neither theory provides workable models for pedagogy or practice satisfying the two normative goals. Both theories fail because of an inappropriate paradigm: sales price (in this situation, transfer price) should drive the sales (transfer) decision. The search for a unique transfer price that signals when a transfer should happen cannot succeed because a transfer is not a sale between two independent parties. Rather, it involves three related parties: the buyer, seller, and their owner (e.g., two divisions within a company).

Based on the three-related-party paradigm, a new theory is developed hypothesizing:

1. A transfer's differential profit is created by the opportunity costs of the two divisions.
2. The transfer price should not influence the decision to transfer because it is irrelevant to the transfer's differential profitability.
3. The transfer price is only a profit-sharing mechanism between the divisions.

A mathematical model of the three-party paradigm supports these hypotheses. While it is not presented at this conference, it is translated into a simple graphical model of the relevant financial information, facilitating practitioner and student understanding and usability, and satisfying the two normative goals listed above.

Empirical research has shown that managers have abandoned the normative goals in favor of practical goals (simplicity, transfer price understandability, and system cost minimization). The graphic model from this theory achieves both the normative and practical goals cited above. It can be simply adapted to provide the relevant information for transfer decisions in different market environments. This model also aids management in the choice of a specific transfer price for these different environments. Thus, the model provides the relevant information needed contingent upon the environment variables managers face in the transfer decision. By using this model, all firms engaged in transfers between profit centers can benefit through a reduction in bad decisions (lost profits), and the time and aggravation involved in transfer price negotiations.

In management accounting theory, pedagogy, and practice, the existence of a transfer pricing problem is well documented (Solomons, 1965; Abdel-khalik and Lusk, 1974; Umapathy, 1978; Benke and Edwards, 1980; Kaplan, 1982; Grabski, 1985; and Borkowski, 1990). Using a relevant costs perspective, pedagogical problems are identified and linked to their antecedents (theory) and consequences (practice). This approach also provides a means to link

accounting information with managerial decision-making processes and profitability analysis. It is demonstrated that this problem results from a misapplication of microeconomic theory, and subsequent incomplete behavioral theory development. The theoretic problems lead to inconsistent and (often) confusing pedagogical presentations, suboptimal transfer decisions in practice, and contribute to the lack of expert systems development in this area of management accounting. To solve these problems, a systematic view of the decision process is needed which recognizes the three organizational processes (systems) involved in the transfer decision.

This paper is organized as follows. First, problems with traditional theoretic approaches are linked to problems in pedagogy and practice. Next examined is the role of the management accounting system (MAS) as a subsystem of the organizational processes which must be integrated to solve the transfer problem. The relevant information needed, and a format for displaying it from the MAS, is then presented. Using this framework, problems from focusing on microeconomic-based and behavioral-based theories are addressed, and their pedagogical implications discussed. Finally, areas for future research are presented.

PROBLEM STATEMENT AND LITERATURE REVIEW

Normative research typically has focused on the identification of a specific transfer price which can signal when a transfer should take place. From an economic perspective, one expects that price is an important driver in any sale decision, even an internal one. Thus, economic theory became one basis for normative model building. The focus on a transfer price was justified in that: (a) it affects each division's ROI (performance evaluation) because (b) the price determines the level of activity within divisions and, therefore, (c) total firm profit (Hirshleifer, 1956).

However, as will be shown here, *the economic paradigm that price should drive the sale decision is not applicable to the transfer decision*. While a transfer price will determine divisional profit and ROI, it cannot affect firm-wide profit (in the absence of differential taxes and/or tariffs), and it should not influence production volume decisions. This is a normative statement demonstrated in Appendix A (discussed later). Granted, managers *using* a transfer price as the basis for making the transfer decision, can make bad decisions which reduce corporate profits. The point is that because the transfer price is irrelevant to firm-wide profit, it should not be used by the managers in making a transfer decision.

Economic theory also argues that market price is the optimal transfer price. In a perfect market, only one market price exists. In reality, though, the market price obtainable by the transferring (selling) division may be different from the market price the buying (receiving) division can obtain. A transfer's effect on overall firm profits is contingent on a number of variables, including both of these market prices. It is also contingent on the selling division's environment. Two environments are envisioned: supply is greater than demand, and demand is greater than supply. As will be shown later, the selling division's market price is only relevant in one environment. After identification of the relevant variables in a transfer decision, and development of a model for their analysis, microeconomic theory will be revisited in more detail.

The second major theory basis, behavioral, still maintains a focus on price and profit. For example, Dean (1955) argued that the best method of divisional performance evaluation should be based on profit, and negotiation optimizes firm-wide profit. Ghosh (1994), based on a laboratory study, reports negotiation produces higher overall firm profits and lower conflict than when divisional managers submit information to corporate for a decision.

Rather than imposing a market price-based transfer price by corporate headquarters, negotiation has grown in popularity (Price Waterhouse, 1984). If market price is not imposed, what role should it play in negotiation? Luft and Libby (1997) discovered that if market price is used in negotiation, the process becomes more difficult. In their study, managers were more concerned with fairness (equal profit sharing). This ex-ante role for market price decreased in importance when it was perceived to produce unequal profit sharing. As profit sharing became more unfair based on market values, the market price estimation process also became less reliable (greater variance). An interesting extension of this study would be to investigate whether using market price in arbitration (an ex-post role) will also produce the same behavioral results.

The behavioral school supports an opportunity cost-based transfer price. This is very interesting in that the economist argues that market price is the opportunity cost to the buying division. Behavioral theory, though, focuses on the opportunity cost of the selling division (Benke and Edwards, 1980). Both theories fail to provide the transfer price that will lead to an optimal transfer decision. Neither theory considers the opportunities and motivations of both

profit center managers. Nor do they focus on the transfer decision from the overall firm's perspective. Thus, it is not surprising that the first normative goal for a transfer pricing system has yet to be realized.

Research from both theories lead to the same conclusion: no one method works in all situations. Traditional theory approaches have not provided methods that result in "real world" decisional optimality. In practice, firms too often use non-optimal (inappropriate) accounting information in making transfer decisions between profit centers. Kaplan (1982), in reviewing Umapathy's (1978) study, notes that 42% of the companies reporting transfers between profit centers used methods and accounting information having no theoretical justification. Thus, we see a proliferation of methods in practice. In Grabski's (1985) review of actual transfer pricing practices, 30% of the firms used a market price-based approach, 20% negotiation, and the remainder used full cost-based transfer prices. Less than 5% used variable cost, and none used marginal or opportunity costs. In Borkowski's (1990) survey, 42% of her firms used an actual cost from the accounting system, 33% used a market price, 23% negotiated, and 2% used standard variable cost.

Borkowski summarized and continued empirical research on factors which might explain this. However, most of this line of research is only descriptive, without inducing explanatory (causal) models that can guide practice. Eccles (1985) did posit a two factor model based on organizational design and administrative policies. The normative model developed here is congruent with his. Divisions are assumed to be real profit centers (a vertical integration factor), and the transfer price is used in rewards (an administrative factor).

Critical applied research questions remain. Are transfer pricing policies contingent on Eccles' two factors of organizational design and administrative policies? If firms have predecided to transfer, are the divisions real or pseudo profit centers? Are reward systems, performance evaluation, and the corresponding role of the MAS different with real versus pseudo profit centers? In Borkowski's study, it is not clear whether the transfer decision had been made or was at the choice of the managers. Nor do we know whether the transfer price drove the transfer decision, or was used in the reward system. Why are current normative models not used in practice? (Is it model irrelevance, lack of proper education, or something else?) If a general normative model can be developed, will firms change their decision-making processes? As a prelude to investigating these issues, what is the knowledge base of these managers?

On the pedagogical level, Shank and Govindarajan (1988) believe that the use of inappropriate accounting information is not primarily due to the irrelevance of what we teach students. Rather, they argue students are taught the correct techniques, and, after becoming real managers, they have failed to properly use them in practice. Grabski (1985) believes the diversity in practice may result from the number of different methods argued as theoretically correct. When managers have to make transfer pricing decisions, confusion and non-optimality may result from the diversity of recommended approaches coupled with the universally pervasive conclusion that no best method exists.

Perhaps students have failed to well-enough learn the correct techniques, and when each is appropriate to use. What students need, Shank and Govindarajan suggest, is not an "overhaul" of our methods, but a better understanding. The problems of inappropriate methods and inadequate learning may explain Grabski's belief that managers have changed the normative objectives of a transfer pricing system to simplicity, understandability, and cost minimization. Until curriculums can expand the number of courses and credit hours devoted to management accounting, our challenge will continue to center around the search for better ways to present the limited amount of material that can be covered in existing courses.

Management accounting is not primarily concerned with how to account for financial events. This subject concerns how to use accounting information to make better organizational decisions. Students seem to have a hard time remembering this as they become immersed in specific calculations. Fundamentally, our teaching objectives should be to identify which decisions are needed given various hierarchical responsibilities, what information is relevant, and how to use that information. We are not just (or even primarily) teaching future accountants how to create this information, we're teaching future (and current) business managers how to use it.

The topic of transfer pricing is just one area where problems arise from inadequate precision, clarity and integration in teaching how to identify and use the relevant accounting information. This topic is often covered within text chapters dealing with investment center manager decisions. For example, Garrison and Noreen (1994) and Helmkamp (1987) discuss transfer prices from the perspective of effects on investment center managers' performance evaluation (ROI and Residual Income). Their discussions are placed in a chapter covering responsibility accounting systems following the presentation of ROI and RI. Norgaard (1985), and Horngren, Sundem, and Stratton (1996), use a similar organization, but with ROI and RI following transfer pricing. Anthony, et al., (1985) also present their discussion in such a chapter, but recognize that it is fundamentally a profit center manager's decision.

Isolating the transfer decision from other "relevant costs" topics may be pedagogically dysfunctional. The major problems that result concern the absence of a clear emphasis on the identification of all relevant parties in the decision, their motivations (and opportunity costs), the accounting information needed to promote rationality, and how to use it.

Problems in theory and education have also inhibited the development of expert systems (ES) for the transfer decision, exacerbating the problems in practice above. Most ES applications in accounting have been in the auditing domain (O'Leary and Watkins, 1989; Brown, 1989). Using Brown's article, Thomas and Bertram (1990) were able to subjectively classify only 38 papers (less than 8%) as being applications in management accounting. No applications were found for the transfer pricing problem, though.

While a number of reasons may explain this (e.g., availability of external funding sources for financial accounting/auditing), Thomas and Bertram believed the lack of ES development for transfer pricing decisions may be due to theorist and practitioner confusion when attempting to model the decision process. This confusion, in turn, may be due to a fundamental misunderstanding of the process, and the role of the MAS in it.

THE ROLE OF THE ACCOUNTING SYSTEM

The transfer pricing problem, as defined in the accounting literature, only exists when the buying and selling division managers have the responsibility to make the transfer decision. In many vertically integrated organizations, the selling division has been created (acquired) primarily to provide an intermediate (transferred) product to the buying division for use as a component part in its (final) product (F). Sales of the intermediate product (I) by the selling division in external markets, when allowed by the corporation, and when such markets exist, is a secondary objective. In these situations, the *selling division is primarily a cost center* because the organization has already made the transfer decision. The manager is responsible for providing the needed quantity of I to the buying division, and controlling the costs of producing I. A MAS which uses *standard absorptive manufacturing cost* to record transfers, and reports cost variances to the managers, provides the information needed to properly motivate and reward them (Kaplan, 1982). Kaplan, et al., (1997) present how Teva Pharmaceutical Industries, Ltd. has adapted activity-based costing to this environment. The ABC-based transfer price, though, is still a standard absorptive manufacturing cost.

If both divisions are primarily profit centers, the corporation has determined that it should be in both external product markets (F and I) ex-ante to the transfer decision. Solving its organizational design problem, the corporation also may decentralize the two profit centers, giving each divisional manager the power to decide who his/her customers will be. *Three organizational "processes" are involved in the transfer decision*. First is the *decision-making process of the two profit center managers* transferring and receiving the product. Second, *the reward system* needs to be considered, as it should motivate the managers to make goal congruent decisions. Third, the *MAS* should provide relevant information to managers for their joint decision (the planning role of the MAS). It should also provide information for the reward system (performance evaluation role).

This more systematic perspective recognizes that the MAS is a formal organizational system created to "overlay" the functional systems. The linkages between the MAS and (a) the decision-making process of the managers, and (b) the evaluation and rewards systems, are summarized in Figure 1.

The MAS purpose is to facilitate (through relevant information provision) communication and coordination necessary for corporate profit maximization. In planning decisions, the MAS should signal (feedforward) opportunity costs/benefits of various actions available to the profit center managers. In its performance evaluation role, the MAS should provide information (feedback) that measures the contribution of each responsibility center manager to the overall firm (i.e., the controllable segment margin and variances of each profit center).

Simply stated, the transfer pricing problem becomes one of providing the relevant information allowing the two managers to know when to transfer (i.e., when it results in differential profits to the overall organization). Specifically, *the MAS problem is, first, to provide information needed to identify the opportunity cost/benefit of transferring* I to the buying division for use in F (Watson & Baumler's, 1968, "integrating role"). *Second, for performance evaluation (their "differentiating role"), it should identify whether the managers made the correct decision, and whether the opportunity benefit was realized* (Kaplan, 1982). To focus on the accounting problems, it is assumed that there are no differential benefits from transferring with respect to I quality, availability, timely delivery, and the like. In this paper, model development will focus on the integrating role.

FIGURE 1
MANAGERIAL MOTIVATION, PERFORMANCE EVALUATION,AND THE ROLE OF THE MAS

Motivation to make goal congruent decisions	MAS	Organizational evaluation and reward systems
In general:		
Managerial decision	Planning	Evaluation
MAS role	Feedforward	Feedback
Information needed	Relevant, budgeted	Segmented income statements and profit variances
For the transfer decision:		
Managerial decision	Transfer?	Share rewards? Did they transfer?
MAS role	Integrating	Differentiating
Information needed	Relevant opportunity costs	Segmented income statements and profit variances

Kaplan (1982) presents four conditions which must exist for a negotiated transfer pricing process to be successful: (a) some form of outside market must exist for the product being transferred, (b) all parties to the decision must share all relevant information, (c) both managers have the authority to make the decision, and are responsible for it, and (d) top management provides support and involvement (when necessary) that motivates the managers to make the decision themselves. Norgaard (1985) believes these conditions create four criteria for evaluating the effectiveness of the supporting MAS: (1) the MAS must provide incentives to the managers to act efficiently, (2) it must motivate the managers to make the decision themselves, (3) it can alert upper management of "bad" decisions, and (4) the MAS provides information that motivates managers to make decisions maximizing overall corporate profits. Kaplan sees this last criterion as the most important concept in the process; providing information that allows managers to determine the opportunity cost of the transfer to the organization.

Because a joint decision between the two managers is required for a transfer, a related joint reward system problem is to provide rewards sufficient to motivate managers to make optimal decisions. Thus, the MAS should be viewed as the mechanism which links these two processes. If the MAS is designed to provide the information needed on both ends of this linkage (the managers' decision process and the reward system), then managers should make goal congruent decisions. *If the reward system is not congruent with the organization's goals, or the MAS does not provide the relevant information needed on both ends, then this motivation can break-down.*

IDENTIFYING THE RELEVANT ACCOUNTING INFORMATION

From the managers' perspective, the transfer pricing problem can be viewed as a two-stage decision process:

1. Should a transfer take place?
2. How should its profits be shared between us?

The preponderance of theoretic accounting literature has attempted to determine a correct transfer price that satisfies both roles (the "optimal transfer price" solving both stages in the process). The focus has not been on MAS design, but rather on the specification of a transfer price to use as a rule by these managers. The (at least implicit) assumption underlying traditional theory-based development is that an optimal transfer price exists which can signal when a transfer should take place. Applied and educational research, however, has not been able to identify this unique price. As will be shown next, no unique price exists, nor can it. The transfer price is only a profit-sharing mechanism between the two divisions. These two statements will be demonstrated graphically (in a simple matrix). To facilitate the discussion of traditional theory problems, the relevant information is next identified (Tables 1 and 2).

TABLE 1
BACKGROUND INFORMATION FOR THE TRANSFER PRICING EXAMPLE

S u p p l y i n g	•	Makes and sells widgets.
(selling)	•	Widgets are sold for $12.00 each.
division:	•	The incremental cost to make and sell one more widget is $9.00.
	•	$3.00 of the normal incremental cost can be saved if a widget is transferred.
Receiving	•	Makes and sells dodads.
(buying)	•	A component part of a dodad is a widget.
division:	•	Widgets are currently purchased from an outside supplier at a cost of $10.00 each.

The relevant costs needed to make the transfer decision and determine a transfer price are contingent upon a number of organizational/environmental variables:

- Whether the selling division has surplus capacity available to provide the quantity of I (widgets) needed by the buying division for production of F (dodads).
- Whether batch-level costs are required.
- Whether a competing market price exists for the transferred product.

In this presentation summary, only the first contingency will be presented using the graphic model developed. Below, it will be applied to the situation in which the selling division has sufficient surplus capacity for the transfer quantity. Also considered is the situation in which no surplus capacity exists for the production of transferred widgets. Time permitting, the other situations will be presented using a modified format to present the relevant information contingent upon each unique situation.

First, consider when the selling division has sufficient surplus capacity for the transfer. *Ceteris paribus, the buying division manager's decision rule is to buy internally if the transfer price is less than or equal to the widget's current external purchase cost (EPC) of $10.00. Thus, this is a "ceiling" for the transfer price.* The buying division manager uses a market price-based rule as proposed in economic theory. Differing from economic theory, though, it is not assumed that EPC must equal the current sales price of a widget by the selling division.

If there is enough surplus capacity for the transfer, *the selling division manager will need a transfer price high enough to at least cover his/her incremental (unit-level, variable) costs of the*

internal sale (IVC), which are $6.00. Thus, the selling division manager has a minimum acceptable price (a "floor"). The floor is this manager's opportunity cost, consistent with behavioral theory. This information is displayed in the middle column of Table 2.

The corporation views this as a simple make-or-buy decision. Make the widget in the selling division versus buy the widget from an outside source. Transferring (make versus buy) will yield a differential profit of $4.00 per widget as shown in Table 2. If 100 widgets are transferred, then the corporation realizes a $400 increase in pre-tax operating income. *The only two relevant "accounting numbers" are the external purchase cost (the ceiling) and the variable cost to provide a widget (the floor). The differential corporate profit (per widget) is the difference between the ceiling and the floor. Note that no transfer price is needed to determine whether a transfer should happen. The transfer price is irrelevant to the stage 1 decision ("Should we transfer?") as it does not affect differential corporate profitability.* In other words, the transfer's profit is independent of the transfer price and, therefore, should not drive the decision to transfer.

TABLE 2
RELEVANT INFORMATION FOR THE TRANSFER PRICING DECISION

Range of mutually acceptable transfer prices:	Transferred widgets come from the supplying division's surplus capacity	Transferred widgets are taken from normal retail sales of the supplying division
Ceiling (set by the receiving division)	EPC (External purchase cost) $10.00	EPC (External purchase cost) $10.00
Floor (set by the supplying division)	IVC (Internal variable cost) $6.00	ESP (External sales price) - VCS (Variable costs saved by transferring) $9.00
Differential corporate profit	Ceiling - Floor +$4.00	Ceiling - Floor +$1.00

In multinational transfers, a transfer price may be required by governmental regulatory agencies for tax/tariff calculations, and this may create a differential tax effect for the selling division vis-à-vis normal external sales. In these cases, the differential tax effect can be included in the internal variable cost (similar to a differential shipping cost) of the selling division. Relate this to the depreciable asset acquisition decision. The choice of tax depreciation methods affects tax liability. Analogously, the choice of a tax transfer price affects tax liability. Even though, in both decisions, the tax consequences of these choices are relevant, they are not the only relevant information needed. The choice of tax depreciation method and tax transfer price should (can) not drive the decisions to invest or transfer. The point here is that any specific transfer price cannot drive the decision to transfer. Of interest to international and tax accountants, though, is the potential for this mode of MAS presentation in facilitating BALRM-based transfer price calculations, and ADR's under Section 482.

If a stage 2 ("How should we share the transfer's profits?") decision needs to be made by the managers, there exists a "range of mutually acceptable transfer prices" to them, rather than only one "optimal" transfer price, whenever a transfer creates differential profits for the overall corporation. Both managers could agree to any transfer price between $6.00 and $10.00 (including the endpoints). By presenting the relevant accounting information in this format,

the two managers know if they should transfer, and that attempting to negotiate a transfer price outside this range is a waste of time, as the transfer price is just a profit-sharing rule between them.

If the floor is greater than the ceiling, there will be a negative differential profit from the transfer (an opportunity cost to the corporation if the transfer takes place). Therefore, the corporation does not want the transfer. Congruently, there is no range of acceptable transfer prices (there will be no transfer price agreeable to both managers), and the managers will not want to transfer, either.

Consider the next contingency: the selling division is producing at maximum capacity for external sales. In this situation, the floor changes. Since $3.00 of normal variable costs can be saved (VCS) by selling internally, this savings can be "passed-along" to the buying division, through reducing the transfer price from the current external sales price (ESP) of $12.00 to $9.00. At this transfer price, the marginal income will equal the current marginal income received on these same widgets sold externally. This new floor opportunity cost is displayed in the right column of Table 2.

The ceiling remains the same as in the surplus capacity situation. The buying manager still will not pay more than EPC. The corporation views this as a "sell-or-process further" decision. The widget can be sold now generating a marginal income of $3.00, or it can be processed further saving the corporation $4.00 in acquiring each widget, netting a $1.00 per widget savings. If 50 widgets are transferred, the corporation realizes a $50.00 profit increase.

IMPLICATIONS FOR TRADITIONAL THEORIES

Microeconomic analysis, when applied to the transfer pricing problem, traditionally has begun with the assumption that there is an external perfectly competitive market for a product. In this market, a total optimal market demand (Q*) at an optimal (external) sales price (P*) exists. For all firms selling in this market, on average, marginal cost (MC*) equals marginal revenue (MR*), which also equals P* at Q*.

Microeconomic analysis, when applied to business applications, addresses the problem of whether a particular firm should enter this market. A firm can temporarily capture arbitrage profits if its marginal product cost (MC) is less that MC*. Firms that can operate at less than MC* will continue to enter this market until arbitrage profits are driven-out.

Consider the situation faced by a firm that produces and sells two products, F (a final product such as a dodad) and I (an intermediate product such as a widget). The focus of microeconomic theory applications has been on the decision to sell F by the buying division. This decision is based on the marginal cost of F, which requires the use of the marginal costs of each input (including I). Because the marginal cost of I is needed for this decision, one group of theorists has argued that it also should be used as the transfer price (Solomons, 1965; Abdel-khalik and Lusk, 1974). In a perfectly competitive market for I, its marginal cost equals its external sales price (ESP), and equals the cost to the buying division of acquiring I from an external supplier (EPC). Thus, these theorists have concluded that the correct transfer price should be ESP (a "ceiling price rule" per Table 2).

While economic models have been criticized for ignoring environmental, informational, and behavioral factors (Harris, et al., 1982; Kanodia, 1979), more fundamentally their applicability should be questioned. In contrast to the market entry problem, if both divisions are real profits centers, the corporation has determined that it should be in both product markets ex-ante to the transfer decision. Demand and market price(s) are known ex-ante because the organization designed the divisions large enough for Q^*_F and Q^*_I, based on knowledge of P^*_F and P^*_I. Thus, the application of microeconomic analysis has not provided a solution because it addresses a different problem. Relying upon microeconomic theory, academicians have failed to properly specify the transfer pricing problem as it applies to real profit centers (Hansen and Kimbrell, 1987; Watson and Baumler, 1968; Menge, 1961). The result is a failure to realize that, contrary to classic economic situations, the transfer price should not drive this type of sale decision.

Further, situations in which EPC = ESP are highly restrictive and do not generally represent the reality faced by the corporation in making transfer decisions between profit centers. If EPC = ESP (and VCS = 0), there is no differential profit from transferring, and the decision will depend upon other factors. If a VCS exists, then ESP is not the correct signal. Confoundingly, when surplus capacity exists in the selling division, then ESP is not even relevant.

Imposing a particular transfer price does not promote managerial identification and measurement of the opportunity cost/benefit, and can create motivational and performance evaluation problems (Abdel-khalik and Lusk, 1974). Designing a MAS which requires the use of market-based transfer prices, then, can be inconsistent with the

organizational design (Watson and Baumler, 1968). The transfer pricing problem is to create a MAS that supports the organization's structure, identifies the opportunity benefit from transferring, and allows proper performance evaluation of the managers involved.

If the organization is designed such that both divisions are primarily profit centers selling in external markets, then linear programming approaches modeling the selling division as if it is primarily a cost center, but using shadow prices which effectively place all profit in the selling divisions, also are inconsistent with the organizational design and its goals (Hansen and Kimbrell, 1987). Imposition of a transfer price by corporate headquarters presents yet another inconsistency (Merville and Petty, 1978; Hass, 1968; Baumol and Fabian, 1964). The potentially inappropriate application of these models to the transfer pricing problem has furthered the consensus that the MAS objectives cannot be achieved by using their solutions.

A second group of theorists, approaching the problem behaviorally, have argued that setting the transfer price at I's ESP does not correctly measure the opportunity cost of the selling division providing I to the buying division (Benke and Edwards, 1980; Onsi, 1970). Thus, these behavioral theorists recommend setting the transfer price equal to IVC plus any marginal income lost from transferring I to the buying division (a "floor price rule" from Table 2).

Since the volume of widgets needed for dodad production is known, rather than solving for this volume (the economic problem), or calculating the opportunity cost to the selling division manager (the behavioral problem), the primary role for the MAS in the first stage is to signal when an opportunity benefit exists from a transfer. This is the integrating role of the transfer pricing system (Watson and Baumler, 1968), as shown in Figure 1. Instead of providing point estimates representing "the correct transfer price," they argue that the MAS, in this role, should serve as a guide for decision-makers which bounds the solution area (i.e., identifies the range of mutually acceptable transfer prices in Table 2). *Thus, the focus of MAS design for the stage 1 decision should be on the reporting of the relevant costs, instead of on the specification of a transfer price.* Then Bailey and Boe's (1976) criticism of behavioral models for assuming goal congruent behaviors by the managers may not be a criticism. Proper information provision may, contrarily, provide a greater opportunity for realization of this normative goal.

The relevant costs approach presented here assumes that the corporation has designed the divisions as profit centers, hiring and training managers to make rational decisions. Given the correct goal set, rational decisions increase corporate profitability. The managers should act rationally if: (1) the MAS provides information needed to identify the opportunity benefit of transferring, (2) the MAS provides information needed to evaluate their performance, and (3) their performance evaluations lead to acceptable rewards.

Because this is a joint decision-making situation, the corporation "defines" rational behavior to include cooperative, coordinated decisions. In better understanding this process, and in MAS theory development, one appropriate model is cooperative game theory (normatively, it is inconsistent with the process being modeled to assume managers behave as if they are in a noncooperative game).

Using cooperative game theory to model the motivations of the managers, Hansen and Kimbrell (1987) have shown that the relevant information needed (Table 2) will exist, and if the managers are at least weakly rational, they will share this information, negotiate a transfer price and transfer when appropriate. It is interesting to note that negotiation is needed even in a perfectly competitive widget market as the selling division can be operating with surplus capacity or at maximum capacity, and a variable cost savings can exist for a transfer (Solomons, 1965). When widget market imperfections exist, differential profit calculations and negotiation are still needed because external purchase cost may not equal the external sales price charged by the selling division, or an external purchase cost may not exist. In each of these situations, if transferring increases corporate profits, then a "negotiation set" exists for the transfer price (the Hansen and Kimbrell equivalent to the range of mutually acceptable transfer prices in Table 2).

PEDAGOGICAL IMPLICATIONS

Discussions about using various transfer prices dominate most texts (similar to the analytic literature emphasis), while the direct calculation of the transfer's profitability receives little attention. When covered, analyses are limited to only certain situations (when there is no EPC, only when there is surplus capacity in the selling division, when EPC = ESP and VCS = 0, etc.). Some texts do not cover the profitability calculation at all. In setting the transfer price, no text recognizes that if a transfer creates differential profits, then a range of acceptable prices to both managers will exist in all situations.

Many discussions suggest the use of a ceiling price. Those texts which restrict analysis only to situations where EPC = ESP, fail to recognize EPC as the ceiling. Rather, the ceiling is misspecified as ESP. Common caveats are also necessary, such as the Anthony, et al., (1985) statement that when selling division surplus capacity exists, the transfer price can be reduced through negotiation. From the Surplus Capacity column of Table 2, this reduction cannot result in a transfer price less than the floor. The limit of this reduction is not obvious from those texts' discussions. Further, note that reductions can be negotiated even when there is no surplus capacity.

Recommending the ceiling creates three learning problems for students. First, focusing on the ceiling restricts students' abilities to recognize the motivations and opportunity costs of the selling division manager. Second, without explicit recognition of the floor, students can have great difficulty in calculating the profitability of the transfer. Finally, great care must be taken not to imply to students that there is an ideal (only one correct) transfer price. If a text's presentation is not complete, providing a clear method to measure profitability, students can become frustrated when doing homework assignments, inhibiting their ability to learn how to recognize and apply in these situations the fundamental management accounting principles and techniques which they have already learned about related profit center decisions and relevant costs.

Garrison and Noreen (1994) recommend the floor claiming that the transfer price resulting from this formula leads to the correct decision. Their examples and conclusion become a little "fuzzy" though, as they state that under certain conditions the transfer price can be higher than the floor. For example, they argue that when surplus capacity exists, if the transfer price is set greater than IVC (the floor), all parties benefit from the transfer. This is not true if the floor is greater than the ceiling. Nor is it true if the transfer price is set at or above the ceiling. They also state that when the selling division is producing at maximum capacity, unless the transfer price is set greater than or equal to the formula's price, then no transfer should happen. Contrarily, a transfer should occur whenever the ceiling is greater than the floor, regardless of the value of the transfer price.

In their examples, however, it is not the formula price that leads to the correct decision. Rather, the correct decision results only through the explicit comparison of this floor against the ceiling price. They do recognize a range, but only in the surplus capacity situation. From Table 2, it is obvious that a range can also exist in the maximum capacity situation as well.

Reliance on a formula which only calculates the floor leads to the same problems from relying only on the ceiling. Students focus on only one party to the decision, inhibiting proper consideration of the other parties. There is at least the implication that this is the correct transfer price. The calculation of corporate profitability is not obvious. Finally, as with the ceiling rule, the formula cannot be used in all situations.

Examples of student confusion can be seen from the recommendations of authors using either approach. Horngren, et al., (1996) do not use the formula approach, recommending ESP (when one exists) to minimize dysfunctional behavior. However, they state that ESP leads to the correct decision only when there is no surplus capacity. When surplus capacity exists, they recommend use of the floor. From Table 2, it should be realized that neither price can be relied upon individually to lead to the correct decision. Reliance on either price can lead to an incorrect decision unless an explicit comparison between them is correctly made by students. Regardless of selling division available capacity, when the ceiling is greater than the floor, the transfer creates differential profits for the corporation. Any transfer price can be set, whether it is within the range or not. When the ceiling is less than the floor no transfer should take place.

THE DESIRABILITY OF NEGOTIATION

Portraying the transfer decision as a two stage process, the transfer price should be irrelevant to the managers when making their joint decision to transfer. Negotiating a transfer price, as a requirement for the decision to transfer, is incongruent with the firm's goal of transferring when corporate profitability can be increased (because they may choose not to transfer due to an inability to agree on a price). Requiring negotiation can only be justified by the belief that the marginal utility of other organizational goals (e.g., developing managerial negotiation skills) is greater than the expected marginal utility from the differential profit possibly lost.

This raises an interesting question: should our research and teaching move away from attempts to prescribe an optimal transfer price, and toward a more holistic/systematic paradigm which considers the MAS - performance evaluation - reward - motivation processes involved? This appears to be a fertile area for joint research with

organizational behaviorists and personnel management specialists. This will be the next stage in this long-term research project. It is envisioned that the optimal transfer pricing system is contingent on organizational design and reward system choices. This is an addition to the environmental contingencies addressed here.

Rather than attempting to prescribe optimal reward systems at this stage, can a relevant costs approach mitigate problems associated with negotiation? For example, Kaplan (1982) argues that there are many limitations in allowing managers to negotiate transfer prices. First, the process is time consuming for the managers. However, if management accountants provide the relevant information (i.e., in a Table 2 format) this need not be so. When a range of acceptable transfer prices exist, managers know that the transfer creates an opportunity benefit to the corporation. Negotiation is limited to how they want to share this corporate profit effect, and the process becomes more efficient as they know to restrict their negotiations to transfer prices between the ceiling and floor.

A second limitation is that divisional profits become sensitive to the negotiating skills of the managers. But this is not a unique result from transfer pricing decisions. In many actual situations, profits are in part determined by the negotiating skills of profit center managers, regardless of whether they come from internal or external sales price decisions. If internal sales create a different level of divisional profits than from normal external sales, then the selling division's income statement should be segmented into external versus internal sales. Presenting the relevant information needed for the stage 1 decision (Table 2) allows the managers to easily see the optimal decision (transfer or don't transfer), and segmenting can allow upper management to properly evaluate their performance. If any directly identifiable increase in asset investment is required by selling internally, separate ROI's can also be calculated for internal versus external sales. Again, this appears to be an area for continuing research.

The other limitations discussed by Kaplan concern the conflicts that can arise between managers when they attempt to obtain a transfer price outside the range, or at the endpoints of the range. This can result in suboptimal decisions, requiring upper management intervention to mediate disputes and assure globally optimal decisions (to the extent upper management wants to restrict decentralized decision-making in these circumstances). However, Hansen and Kimbrell (1987) have analytically shown that if managers are rational and have the relevant information, then optimal decisions will result without corporate intervention. This is consistent with the general academic belief that if a proper model is implemented, conflicts will not exist (Abdel-khalik and Lusk, 1974). Grabski (1985) provides some empirical support, reporting reduced conflicts between managers during negotiations when they knew that corporate profitability would increase from a transfer. An MAS which reports the information displayed in Table 2, may be viewed by the managers are more "fair and neutral" (Emmanuel and Gee, 1982), further reducing conflicts and intervention.

Kaplan's limitations may be a product of traditional MAS designs, our inability to identify what information managers need, and to provide them with that information in the most efficient way possible. In other words, management accountants may be as much to "blame" as the managers, at least to the extent we create theories and methods leading them to maximize individual profits even at the expense of the overall organization.

Creating the information needed requires that managers provide accurate information. The accountant can assume one of two roles in the stage 1 process: as auditors of the information provided by the parties involved (Owens, 1982), or conversely, as providers of that information. Neither role is new nor unusual to the management accountant.

The question of asymmetric information often is raised by agency theorists when considering multi-divisional decision contexts (see Antle, 1989). This issue, though, has been resolved by the Institute of Management Accountants in SMA1C, "Standards of Ethical Conduct for Management Accountants." Creating and/or using asymmetric information is clearly unethical, and violates the competence, integrity, and objectivity sections of the code.

SUMMARY

This paper has attempted to accomplish two objectives. First, problems from traditional transfer pricing theories were reviewed and linked to pedagogical and practice problems. The transfer pricing problem was portrayed as a two-stage decision process. In the first stage, management needs to know whether a transfer creates differential profits for the overall organization, and therefore, should occur. If a transfer is profitable, the second stage involves how the profit center managers should share the profits through setting a transfer price.

Two basic theoretic approaches were identified. It was argued that neither theory (microeconomics-based, behaviorally-based) provides a clear, simple method for the calculation of the transfer's differential profitability (for

stage 1). Nor does either theory provide a mutually acceptable transfer price for stage 2. Pedagogical reliance on either theory results in sub-optimal learning which, in turn, has inhibited expert system development and led to dysfunctional decisions in practice.

The second objective was to present an alternative approach linking the role of the transfer price and MAS to transfer planning decisions. This approach identifies the relevant information needed for deciding to transfer (stage 1), and develops the range of mutually acceptable transfer prices to both parties for the transfer price-setting process (stage 2). A simple method for formatting the information was presented to facilitate pedagogical presentation and expert system development. This format can be easily modified for the different contingent environments the managers may face. It was also recognized that the MAS output needed for the two decision is are not independent. When negotiation is required, the stage 2 process can become more effective and efficient through proper reporting of the stage 1 information, mitigating the problems often cited in the accounting literature and texts.

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SITUATIONS IMPLYING OPINION SHOPPING: PERCEPTIONS AND IMPLICATIONS

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ABSTRACT

Opinion shopping may affect the credibility of the accounting profession and result in financial and reputation losses for the practicing accountant. Knowledge of situations implying possible opinion shopping can therefore help the accounting profession modify the disclosure rules on auditor-client relationships and help the practicing accountant avoid potential losses.

This study shows that auditor change preceded by going-concern, subject-to or disclaimer opinions, and operating or financial difficulty (whether or not accompanied by change of auditor) portend possible opinion shopping. The practicing accountant must therefore take extra precautions in accepting clients that have received other than an unqualified opinion or that are experiencing financial difficulties. Also, two modifications of the existing disclosure requirements may bolster the credibility of the accounting profession. One is to require additional disclosure when an auditor is replaced after issuing a qualified or disclaimer opinion. The other is to expand the disclosure requirements to include situations where a company is facing deteriorating financial condition.

AN EMPIRICAL INVESTIGATION OF FACTORS CONTRIBUTING TO BUDGETARY SLACK

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ABSTRACT

Although research studies on budget slack have identified the technical existence of budget slack, they lack explanatory detail about the manner in which budget slack takes place within the particular organizational context. The focus of research reported in this paper is to identify and empirically investigate the sources that create budget slack. A questionnaire was developed and used to obtain departmental mangers' perception on budget slack. A total of 307 questionnaires were sent to department managers in theory companies out of which 168 questionnaires were returned giving a response rate of 55 percent. The model was estimate using the ordinary least squares method. Two versions of the model were tested on in the linear form and the other using the nonlinear form. the rationale for using the quadratic form was that the theory indicated that the budget participation variable appears to have a nonlinear relationship with the dependent variable. The results of both versions of the regression model used in this paper indicates that modern corporations provide enough scope and opportunity for management to inject and maintain significant budget slack for their own advantage. The regression results specifically indicate that budget slack increase with budget participation, the degree of decentralization, and the linkage of budgets to company reward system.

INTRODUCTION

The factors that contribute to budget slack at the firm level have been the subject of considerable research interest in the past. Recently, Murray (1990); Kirby et. al. (1991); Leung and Dunk (1992); Kren (1993); and Dunk (1993) have revived research interest in this topic.

Discussion of budget slack appeared in the accounting literature following Barnard's (1938) introduction of the concept of organizational slack. Simon (1957) and March and Simon (1958) used the term "slack" to describe an organizational situation when payments made to employees exceed the amount necessary to retain them as willing contributors to the organization. The work on budget slack was extended by Cyert and March (1963); Williamson (1964); Leibenstein (1966); Schiff and Lewin (1968); Onsi (1975); and Neuman (1975), among others. These early works primarily investigated the extent and sources of budget slack.

Williamson (1964) found a high correlation between the existence of slack and efforts to reduce cost. Although Williamson's data supported the existence of slack, he did not specifically relate it to the annual budgeting process. Schiff and Lewin (1968) concluded that slack accounted for as much as 20-25 percent of a firm's budgeted operating expenses. Onsi's (1975) research indicated that 80 percent of the managers of large corporations bargained for slack in the budgeting process. Onsi also shoed that slack existed in both good and bad economic conditions. He found that managers were more included to protect themselves by increasing the amount of slack during adverse economic conditions. He confirmed the earlier finding by Cyert and March (1963) that managers were more inclined to protect themselves by building slack during good economic times and using slack during adverse economic conditions.

Leibenstein (1966) observed that many firms were unable to maximize profits or minimize costs because they experienced a significant difference between actual and minimum costs. Consequently, these firms were forced to settle for sub-optimal performance. Leibenstein, therefore, equated budget slack with inefficiency in resource utilization.

Although these studies identified the technical existence of budget slack, they lacked explanatory detail about the manner in which budget slack takes place within the particular organizational context. Furthermore, a shortcoming

of previous budget slack research is its inability to measure the amount of budget slack. The focus of this research is to identify and empirically investigate the perceived sources that lead to creation of budget slack.

SOURCES OF BUDGET SLACK

Schiff and Lewin (1968) determined that budget slack is created as a result of management's conscious and intentional behavior through the budgetary process. The study identified five specific means of creating budget slack: underestimation of revenues; inclusion of discretionary increases in the number of staff personnel; establishment of sales budgets with limits on funds to be spent; and inclusion of special discretionary projects.

Budget slack can be influenced by economic conditions. Managers rationalize the creation of budget slack because of the perception that they will derive some organizational or personal benefit. At the organizational level, the benefit means the creation of a buffer that would assist the firm in adjusting to changing economic conditions without experiencing major re-deployment of resources (Williamson, 1964). Cyert and March (1963) found that organizational slack increased during prosperous economic times because individual and subgroup objectives created a demand for excess resources within the organization. The study illustrates this point by suggesting that during periods of business expansion, managers are offered excessive compensation, thereby building budget slack. During bad economic times the budget slack is absorbed. This discussion leads to the notion that good economic conditions will lead to the creation of budget slack.

The structure of the organization is another source of budget slack. Studies by Schiff and Lewin (1968, 1970) found that a firm's degree of decentralization is related to the existence of budget slack. The earlier study found that the type of control system is a significant factor in determining the extent of budget slack. Firms decentralize decision making in order to improve the decision making process, to enhance the evaluation of decisions, and to tighten control over costs. The main feature of a decentralized control system is the establishment of control centers at division and subdivision levels. In a decentralized environment, budgets are viewed as tools for delegating authority. Schiff and Lewin [1970] reported that in decentralized companies, managers' propensity to inject slack was influenced by their perception of top management's ability to control budget slack. Managers in decentralized environments tended to accumulate budget slack by such practices as underestimating gross revenues and including discretionary increases in expenditures. They noted this by pointing out that decentralized divisions are more remote from corporate headquarters and, therefore, top management is less aware of the extent of accumulated budget slack.

Hall (1972) concluded that distribution of resources within an organization, including budgetary items, was significantly affected by the system of delegating authority. In addition, Pfeffer and Salancik (1978) found that once an organizational unit obtained delegated power, it tried very hard to maintain that power since more powerful units often receive more resources. Therefore, the amount of budget slack is likely to be related to the degree of centralization in the organization.

There are wide differences among firms in the degree and form of management participation in the budgetary process. The expectation of being able to inject budgetary slack tends to increase if managers perceive that they can participate in the formulation of the budget. Caplan (1971) argued that participation of managers in the budgetary process plays a crucial role in the creation of budget slack. Studies by Ronen and Livingstone (1975); Kenis (1979); Merchant (1981); Antle and Eppen (1985); Brownell and McInnes (1986); and Murray (1990) supported the relationship between participation and budget slack. Onsi (1975) indicates that the greater the degree of participation of managers in the budgetary process the greater the opportunity for managers to influence resource allocation thereby creating budget slack. More recently, Kirby et. al. (1991); Leung and Dunk (1992); Dunk (1993); and Kren (1993) have also identified participation and control systems as factors contributing to budget slack.

Swieringa and Moncur (1972) suggested that companies vary in the degree and form of management participation allowed in the budgetary process. At high levels of participation, companies might employ such participatory methods as group decision making and the sharing of budget responsibility. Studies by Benke and O'Keefe [1980] and Swieringa and Moncur (1972) determined that highly participative budgetary systems provided opportunities for the injection of budget slack.

Caplan (1971) studied organizations which were at the low end of the participative budgeting scale. He commented that such organizations may simply be involved in pseudo participation by subordinates in the budgetary process. Managers were expected to support the budget proposed by top management. In such cases, subordinates

might feet that they had to build budget slack to protect themselves. Dunk (1993) argued that there is a relationship between budget participation and slack. This relationship, however, is contingent upon the levels of budget emphasis and information asymmetry. It thus appears that the existence of budget slack may be influenced by the relative extremity of the degree of budget participation. Therefore, the budget slack variable may be related to degree of participation in a U-shape form.

Researchers have identified budget pressure as another significant factor contributing to the development of budget slack (Schuler 1980; Irvin 1979; Swieringa 1975; French and Caplan 1972; and Erikson et. al. 1972). The budgetary process requires commitment on the part of the individuals involved. The prospect of not achieving budgetary goals could be a source of pressure on the individual. This pressure creates tension as the individual attempts to overcome the pressure through creation of budge slack (Caldwell and O'Reilly, 1982). Earlier, Kenis (1979) had shown that managers who were held responsible for attainable goals did not feel pressured and were not inclined to create budget slack. Thus, it seems likely that the tendency to create budget slack increases with budget pressure.

The linkage of rewards to budgetary performance is also possible source of budgetary slack. Several studies have documented that anticipated rewards help motivate performance by the employee. The ability of a monetary reward system to motivate employees depends on whether the employee regards the system as having valence and whether they believe that higher performance leads to attainment of rewards (Vroom, 1964). Thus, the major determinate of how compensation influences motivation to perform depends upon the perceived relationship of performance and pay (Lawler, 1971). Generally, the stronger the linkage between reward and performance, the higher the motivation (Heneman et al., 1980). Lawler (1971) suggested that a necessary condition for pay to motivate performance was the belief on the part of the employee that good performance would lead to higher pay.

Reinforcement theory extends the explanation of performance behavior as being conditioned by rewards. Studies by Skinner (1969); Miller (1975); and Tarpy (1974) concluded that the use of stimuli (financial rewards) motivates the employee to perform the desired behavior. Similarly, Locke's (1968) theory of motivation underscores the importance of rewards as a major factor in the level of performance that workers aspire and achieve. The role of reward structure as a reinforcer in the relationship between budgetary participation and performance was also studied by Cherington and Cherington (1973). They reasoned that a reward structure which was based on budget achievement would represent appropriate reinforcement for the participants in the budgetary process. Based on the foregoing analysis, the argument can be made that when budget performance is lined to a company's reward system, managers are motivated to inject budget slack.

METHODOLOGY

The analytical model used in this study was based on the variable specification developed in the previous section. The theoretical model proposed to explain the sources of budget slack can be written as:

BS = f(BPAR, CEN, BP, BLRS, EC)

where

BS	= indicator of budget slack;
BPAR	= degree of budgetary participation;
CEN	= degree of centralization;
BP	= degree of budget press;
BLRS	= linkage of the reward system to budgets, and
EC	= state of economic conditions.

RESEARCH HYPOTHESES

H_{1a}: There is a positive and nonlinear relationship between budgetary slack and the degree of budgetary participation.

H_{2a}: There is an inverse relationship between budgetary slack and the degree of centralization.

H_{3a}: There is a positive relationship between budgetary slack and the degree of budget pressure.

H_{4a}: There is a positive relationship between budgetary slack and the linkage of the reward system to budgets.

$H5_{1a}$: There is a positive relationship between budgetary slack and the state of economic condition.

DATA COLLECTION

In order to sample a representative variety of organizational environments, field research methodology was used. As Ferriera and Merchant (1992) pointed out, the term field research has varying usage in the accounting literature. Burgstahler and Sundem (1989) and Kim (1988) define fields studies to include all research that utilizes investigator involvement with subjects and observation of real work tasks. Innes and Mitchell (1990) indicate that field studies are helpful in developing a framework for the analysis of how numerous factors combine and interact to provide a *real world setting*. Kaplan (1986) suggests that field studies are practical means to ascertain how management accounting changes. Similarly, Cooper (1983) argues that the field study approach provides a better understanding of the nature of current accounting than other research approaches. Another advantage of using field study methodology is that it is easily adaptable to exploratory studies where research seeks to determine whether a number of variables in a social structure are related) Kerlinger, 1973).

Hopwood (1983) recommends studying management accounting at a micro level within the context in which it takes place. The use of field studies can improve the awareness of the forces that impact upon the accounting process and changes. Furthermore, the field study approach has been advocated as a first step in investigating new problems and research areas in management accounting and control (Roberts & Scapens 1985; Tomkins & Groves, 1983].

A questionnaire was used to obtain departmental managers' perception in thirty companies in a major metropolitan area (see Appendix A for a summary of the companies selected for this study). A total of 307 questionnaires were sent to department managers in these companies out of which 168 questionnaires were returned giving a response rate of 55 percent.

The questionnaires contained questions on the managers' perception of the following five factors:

1. Participation in the budget process.
2. The extent to which the company was decentralized.
3. The degree of perceived budget pressure on the department manager.
4. The degree to which the managers believe the budget is linked to the company reward system.
5. The manager's perception of the magnitude of slack which exists in the company's budget.

The research instrument used is shown in Appendix B and details of data construction are discussed in Appendix C. The variable constructs and measuring scales were developed from previous studies as presented in Table 1. The department managers were asked to respond to these questions on a seven-point scoring scale with 1 representing "strongly disagree" and 7 representing "strongly agree".

Table 1
Budget Slack Factor Measures

Construct			Measuring Scale
(1)	Budget participation	(1)	Budget participation questionnaire developed by Swieringa and Moncur [1972].
(2)	Decentralization of the organization	(2)	Organizational structure questionnaire based on Inkson et. al. [1970].
(3)	Budget link to reward system	(3)	Scale adapted from Hackman and Porter [1968].
(4)	Budget slack	(4)	Questionnaire adapted from Onsi [1975].
(5)	Budget Pressure	(5)	Questionnaire adapted from Irvine [1979].

Prior to finalizing the questionnaire, a pilot study was conducted to validate the research instrument. A panel of managers who had previous budgeting experience tested the questionnaire to determine if all questions were easily understood and if the wording and the format could be improved. These procedures yielded only minor modifications.

The economic climate was measured by the average percentage change in the firm's average gross sales revenues over a five-year time period. If the average percentage change in sales was increasing, it was presumed that the economic climate was favorable. If average percentage change was declining, the economic climate of the firm was assumed to be unfavorable.

EMPIRICAL RESULTS

The model was estimated using the ordinary least squares method. Two versions of the model were tested, one in the linear form and the other using the nonlinear form. The rationale for using the quadratic form was based on the conclusions drawn from prior literature which indicated that the BPAR variable might have a positive and nonlinear relationship with the dependent variable. Before estimating the equations, tests were performed to determine if there was any relationship among the independent variables. No serious problems [multicollinearity and hetroskedasticity] were found.

Table 2
Ordinary Least Squares Regression Test
(Linear Version)

BS	Constant	BPAR	CEN	BP	BLRS	EC
	9.26c	0.14	-0.40c	0.21	0.21b	-0.10b
t-value	(1.41)	(1.14)	(-1.66)	(1.01)	(1.83)	(-2.01)

R2=0.37; Adjusted R2=0.24; Standard Error of Estimate=2.53; F-Value = 2.79b

a" indicates significance at 1%, "b" indicates significance at 5%, and "c" indicates significance at 10%; one tailed tests

The results of the regression models are shown in Table 2. The linear version of the ordinary least square regression shows a R^2 of 0.37 and an adjusted R^2 of 0.24. It needs to be pointed out that R^2 values of this magnitude are quite common in regression of cross-sectional data. The overall significance of the regression can be judged by the F-value which is significant at the 0.05 level.

The signs of standardized coefficient estimates of the first four variables (BPAR, CEN, BP, BLRS) were consistent with the research hypotheses. EC, however, appeared with an unexpected negative sign. The related t-statistics indicate that BLRS and EC are significant at the .05 level; CEN is significant at the .10 level; and BPAR and BP are not significant. The results relating to the budget participation variable are consistent with the finding by Dunk (1993).

The nonlinear version performed better than the linear version. The R^2 was 0.44 and adjusted R^2 was 0.29 both of which were higher than the corresponding values for the linear model. Similarly, the F-value of 2.98 for the nonlinear model exceeded the F-value of the linear model. In the nonlinear version the BPAR variable and its squared term are significant at the 0.05 level. Furthermore, the squared term appears with a negative sign which indicates that the budget slack (BS) variable is related to the budget participation up to a certain level and then declines. The threshold level is calculated at BPAR measuring 49.24. The BPAR variable has a mean value of 48.00 with a maximum value of 56.30, a minimum value of 37.50 and a standard deviation of 4.31. Since the threshold value is close to the mean value, it can be inferred that the level of budget slack is smaller both below and above the mean level of the management participation in the budget process.

The degree of centralization variable (CEN) has a significant negative effect on budget slack. The partial regression coefficient is negative and significant at the .01 level. Thus, it can be concluded that decentralization

increases budget slack. The budget pressure variable (BP) appears in both equations with the expected positive sign but is not significant in either equation.

The variable representing budget link to the company reward system (BLRS) appears with the expected positive sign and is significant at the 0.05 level in both versions. Therefore, budget slack tends to increase if budget performance is tied to the management rewards. The variable representing economic conditions (EC) is significant at the 0.05 level and appears with an unexpected negative in this version as well. These unexpected results may be due to the fact that data on this variable was gathered from a source different from other variables.

The negative sign of the economic condition variable is counter-intuitive. A possible explanation may be that the observations were made at a time when the local economy was in a recession. Managers in many firms were perhaps expecting future budget cuts. This could have affected responses regarding budget slack. Since perceptions are primarily focused on the current time period, the objective economic data from prior periods could show results that are quite different from those obtained from a questionnaire.

CONCLUSION

The results of the regression model indicate that corporations provide enough scope and opportunity for management to inject and maintain significant budget slack for their own advantage. The regression results also indicate that budget slack increases with budget participation, the degree of decentralization, and the linkage of budgets to company reward system.

This model has important implications for controlling budget slack in the organization. Upon determination of a particular factor that relates to budget slack, management can improve efficiency in the budgeting process by focusing on that particular factor and initiating procedures which would control slack in the area. Furthermore, several areas for future research can be suggested as a follow-up of this study.

First of all, further replications of this research will be needed to confirm the findings reported in the study. There is a need for identifying and incorporating additional explanatory variables [such as company size] in the model thereby increasing the R^2 values of the model. A longitudinal study of selected firms to monitor the creation of budget slack over a complete economic cycle might be helpful in observing and understanding the effects of economic conditions on budgetary behavior.

Of the thirty firms included in the sample, twelve firms were involved in the extractive industries which may have introduced some industry effect. Future research is needed to explore alternative ways of measuring budget slack through objective means such as financial statement data. Another area of future research is to compare and identify the difference between the factors contributing to budgetary slack in (I) high-slack and low-slack companies, (ii) domestically-owned and foreign-owned companies, and not-for-profit enterprises and business enterprises. This line of research can also be extended to studying the creation of budgetary slack in industries classified by type of industry, products sold, markets served etc. In light of the ongoing changes in the world economy, it may also be useful to examine budget behavior across cultural lines. Future research could expand the distribution of firms in the sample to allow inter-industry comparisons.

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Appendix A

Summary of Types of Companies
Selected for the Study

Company	Type of Company
1	Petroleum Producer
2	Natural Gas Supplier
3	Oil and Gas Producer
4	Oil Field Products and Services
5	Insurance and Financial Services
6	Financial Services
7	Construction
8	Oil Producer
9	Financial Services
10	Geological Services
11	Equipment Manufacturer
12	Wholesale of Paper Products
13	Oil and Gas Exploration
14	Food Supplier
15	Chemical Production
16	Energy Producer
17	Real Estate and Financial Services
18	Offshore Oil Related Services
19	Transportation
20	Oil and Gas Producer
21	Transportation
22	Communications
23	Oil Producer
24	Insurance
25	Computer and Office Equipment
26	Advertising
27	Financial Services
28	Oil Exploration
29	Energy Services
30	Pharmaceutical Products

Appendix B

Research Instrument
Questionnaire for Employees with Budget Responsibilities

1.	How long have you worked in the budget preparation process?		
		_____Years	
		_____Months	
2.	Sex:	Female _____	
		Male _____	
3.	Education:	High School graduate	_____
		Undergraduate degree	_____
		Some graduate world	_____
		Master's level degree or above	_____
4.	Age:	_____Years	

Group A

How much do you agree with each of the following statements? Use the following scale to mark your answers.

Strongly agree	7
Moderately agree	6
Slightly agree	5
Neither agree nor disagree	4
Slightly disagree	3
Moderately disagree	2
Strongly disagree	1

____ 1. I work with my superior in prepaying the budget for mg unit.
____ 2. I work with my subordinates in prepaying the budget for my unit.
____ 3. I work with other unit heads in preparing the budget for my unit.
____ 4. I work with financial staff in preparing the budget for my unit.
____ 5. I am consulted about special factors I would like to have include in the budget beginning prepared.
____ 6. New budgets include changes I have suggested
____ 7. The budget is not finalized until I am satisfied with it.
____ 8. I ask assistance from staff departments concerned with budgeting.
____ 9. Preparing the budget for my unit requires my attention to a great number of details.
____ 10. My immediate superior has talked to me about budget variances in the department.
____ 11. When my department has not been preforming as budgeted, my superior has visited my department.
____ 12. Direct action to correct budget variances in my department has been taken by people other than me or my superior.
____ 13. Managers at levels above my position have acted on budgets matters in my department.
____ 14. Subordinates in my department have complained to me about unreasonable or unattainable production schedules (based on budget requirements).
____ 15. My superior has been upset about budget variances in my departments.

How much do you agree with each of the following statements?

____ 16. My superior has been dissatisfied with my explanation of budget variances.
____ 17. Budget matter have been mentioned in informal conversations with fellow supervisors.
____ 18. Budget matter have been mentioned in informal conversations with superior.
____ 19. My superior has mentioned budgets while talking to me about my efficiency as a manager.
____ 20. Budget matters have been mentioned in informal conversations with advisory people not concerned with budgeting.
____ 21. Management people other than accounting and budgeting personnel have visited my department to investigate budget variances.
____ 22. Instructions and/or methods of correcting budget variances have been contained in budget reports.
____ 23. Budget people have visited my department to investigate budget variances.
____ 24. Personnel from budget office have attempted to direct activities in my department.
____ 25. I have gotten extremely upset about budget variances in my department.

Group B

How much do you agree with each of the following statements?

If a person diligently attempts to attain his/her budget:

____ 1. He/she is more likely to fee a sense of completion and accomplishment.
____ 2. He/she is more likely to receive thanks and gratitude from his/her superiors.
____ 3. He/she is more likely to gain admiration and respect from fellow workers.
____ 4. His/her superior will expect it from him/her all the time.
____ 5. His/her budget performance will be an important factor in advancing his/her career.
____ 6. His/her supervisor is likely to scrutinize his spending less frequently.
____ 7. He/she is likely to receive a promotion more quickly.
____ 8. He/she is will simply receive a tighter budget in the future.
____ 9. He/she is likely to get a raise more quickly.
____ 10. He/she will set too high a standard for other department managers.

Group C

How much do you agree with each of the following statements?

____ 1. Managers in most companies tend to submit budget which can be safely attained
____ 2. Slack in the budget is good so that things can be done that cannot be officially approved.
____ 3. When economic times are good, managers tend to submit budgets which increase the number of unnecessary items.
____ 4. Department managers tend to influence their evaluations by adjusting amounts submitted in the budget.
____ 5. When budget conditions are tight, managers generally still attempt to attain unnecessary amounts in their budgets.

Group D

Indicate whether the following decisions are made by your department or at a higher level in the organization. You may use the abbreviation MD for "my department" and HL for "higher level".

____ 1. Appointments and dismissals in my department.
____ 2. Promotion of supervisory staff in my department.
____ 3. Salaries of supervisory staff in my department.
____ 4. Decisions to spend unbudgeted or unallocated money on operating expense items.
____ 5. Decisions to spend unbudgeted or unallocated money on capital items.
____ 6. Decisions regarding travel and entertainment expenditures.
____ 7. Decisions regarding the type and brand of equipment to purchase.
____ 8. Establishment of buying procedures.
____ 9. Decisions regarding legal and professional fees.
____ 10. Decisions regarding advertising expenses.

Group E

In your opinion during times of economic adversity, which of the following types of expenses are lolled to be cut first? (CBI one)

a) Legal and professional fees
b) Salaries
c) Travel and entertainment expense
d) Advertising expense
e) Other (please specify) _____

What type of expenditures do you feel are most easily reduced in the budget process?

_____

What percentage of unnecessary amounts budgeted do you feel could be eliminated from the average budget?

_____%

Appendix C

Data Construction

The study uses firm-specific micro data for thirty major corporations in a large metropolitan area. The companies were chosen from a wide variety of industries. The data were collected through an extensive questionnaire survey. In the survey, participants were instructed not to sign the questionnaire and verse assured that their identities shall remain undisclosed.

Ten questionnaires were mailed to each of the thirty selected companies with the objective of obtaining more than one departmental manager's perception on the relevant issues. The minimum number of responses from a company was two and the maximum number was 14. Two companies returned more than ten questionnaires (13 by one company and 14 by another). These companies apparently reproduced and distributed questionnaires in addition to the ten which were mailed to them.

An indicator of budget slack was obtained from the responses on ten questions reloading to budget slack. In a seven point scale for each question, a higher score indicated a greater degree of budget slack. For each of the thirty companies, the scaled responses to the ten questions in the questionnaire on budget slack were summed over all responses obtained from the company to obtain a company specific total score. Next the company specific total was divided by the number of questionnaires returned by that company. Thus each company bad an average score of the variable BS.

Similar company specific scoring method were to construct the variables BPAR, CEN, BP, and BLRS. The sources from which question pertaining to each variable were adopted have already been identified in Table 1. More information on the details of data, construction of variables, reliability tests for the data and other methodological issues can be obtained from the authors.

ADJUSTMENT OF MODIFIED INTERNAL RATE OF RETURN FOR SCALE AND TIME SPAN DIFFERENCES

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ABSTRACT

The use of the Internal Rate of Return (IRR) method of capital budgeting is popular as many managers prefer a rate of return method as a decision-making criterion for capital budgeting. However, the Net Present Value (NPV) method is preferred by academics since the rankings of mutually exclusive projects by IRR may not always select the project which will maximize the value of the firm, due to an implied reinvestment rate assumption by IRR. In response to this weakness, the Modified Internal Rate of Return (MIRR) was developed. However, MIRR may also lead to erroneous rankings when projects require different initial outflows to start the project, the scale problem, or the projects have different lives, the time span problem. This paper demonstrates how MIRR can be adjusted to give rankings that are consistent with NPV for projects in the same risk class, even with scale differences and for some types of time span differences. A secondary contribution is a simplified method of computing MIRR with examples to show the consistency with the NPV and with the goal of maximizing the value of the firm to its shareholders.

INTRODUCTION

While rates of return methods, in general, and the Internal Rate of Return (IRR) method in particular, have been found to be favored by a majority of companies (Gitman & Forrester, 1997), it has also been shown that the IRR method can lead to erroneous rankings of mutually exclusive projects when compared to the Net Present Value (NPV) method of capital budgeting (Fisher, 1930). The differences in rankings may be caused by the implied reinvestment rate assumption of the IRR method (Fisher, 1930), or by differences in the size of the projects, the *scale problem*, or in the life of the projects, the *time span problem*. Differences in the risk classes of the projects and capital rationing can also cause ranking differences. This paper will assume that all projects are in the same risk class as the firm and that capital rationing does not exist. The Modified Internal Rate of Return (MIRR) method of capital budgeting, or similarly the Financial Management Rate of Return method (Findlay & Messner, 1973), was developed to overcome the problem of the implied reinvestment rate assumption (Bierman & Smidt, 1984, Hirshleifer, 1970, Solomon, 1956). However, when scale or time span differences exist, the MIRR method may still give rankings of mutually exclusive projects that are different than NPV (Brigham & Gapenski, 1988). This paper presents an adjustment to the MIRR method that will give rankings that are consistent with NPV for scale differences and for non-repeatable projects, for time span differences. In addition, a simplified method of calculating MIRR is developed.

MODIFIED INTERNAL RATE OF RETURN

This paper assumes that an initial outflow is followed by a series of inflows. The method of calculating MIRR presented here can be used when there are future outflows by either discounting the outflows back to the present, at the cost of capital, and including them as part of the initial outflow or by letting future inflows offset the future outflows. As long as the largest initial outflow is used in the calculation of the MIRR's for all projects, the ranking between MIRR and NPV will remain consistent.

The MIRR is computed in two steps by first compounding the future cash flows of a project to the end of the project at an explicitly assumed reinvestment rate "k" to get a Terminal Value of the Future Cash Flows (TVFCF).

For firms which are not subject to capital rationing the reinvestment rate should be the cost of capital which represents the rate of return generally available for projects of equivalent risk (Dudley, 1972, Meyer, 1979, Nicol, 1981). The essence of the project is then represented in the Initial Outflow (IO) and the Terminal Value. Then the MIRR, the implied rate of return which equates these two values over time, is calculated. For "N" periods:

$$TVFCF = \sum_{t=1}^{N} CF_t \ (1 + k)^{N - t}$$

$$TVFCF = IO \ (1 + MIRR)^N \quad thus$$

$$MIRR = \left(\frac{TVCFF}{IO} \right)^{1/N} - 1 \qquad (Equation \ \#1)$$

As presently used, MIRR, like other rates of return, is subject to problems. Rate of return is per dollar invested and per year. A small project with a high rate of return may contribute less to the wealth of the firm than a large project with a lower rate of return. A project which will last many years may be superior to a shorter duration project with a higher rate of return. As will be discussed below, a critical factor in the analysis of projects with different lives will be whether a project can be repeated in the future and if so, on what terms. Additional problems exist if the projects are in different risk classes and therefore have different costs of capital or if the discount rate is not constant over time.

SCALE DIFFERENCES

Exhibit 1 presents an example of the ranking conflict between NPV and IRR for two mutually exclusive projects because of scale differences. Ranking is important for mutually exclusive projects to determine which otherwise acceptable project should be chosen. Ranking may also be important if there is capital rationing. In all other cases, all acceptable projects should be selected. Although Project B is vastly superior to project L in terms of wealth maximization, it has a lower IRR.

Exhibit 1
Comparison of Projects with Different Initial Outflows
(Scale Differences)

	Project L	Project B
Initial Outflow	($100.00)	($1,000.00)
Period 1	40.00	350.00
Period 2	50.00	450.00
Period 3	60.00	550.00
Period 4	70.00	650.00
Cost of Capital	10.00%	10.00%
Net Present Value	70.58	547.26
(Ranking)	(2)	(1)
Internal Rate of Return	36.44%	30.72%
(Ranking)	(1)	(2)
(Rankings are reversed)		

MIRR, as conventionally computed, has the same problem. Exhibit 2 illustrates the conventional calculation of Terminal Value (TVFCF) for project L.

Exhibit 2
Calculation of Terminal Value for Project L

Initial Outflow	($100.00)				
Period 1	40.00	x	1.3310	=	53.24
Period 2	50.00	x	1.2100	=	60.50
Period 3	60.00	x	1.1000	=	66.00
Period 4	70.00	x	1.0000	=	70.00
Terminal Value					$249.74

$$MIRR_L = \left(\frac{249.74}{100.00} \right)^{1/4} - 1 = 0.2571$$

The Terminal Value may be calculated in a way which is often more convenient. This simplified computational formula will be shown to also facilitate adjustments for differences in the size or temporal span of projects. The mathematics of time value of money imply that the Terminal Value is equal to the present value of the future cash flows compounded, at the cost of capital, to the terminal period. Reinvestment rates other than the cost of capital can be used to calculate the terminal value. However, if funds cannot be reinvested at the cost of capital, then the use of NPV may not be appropriate and the ranking between MIRR and NPV may not be consistent. Letting k be the reinvestment rate:

$$TVFCF = PVFCF\ (1+k)^N, \quad and$$

$$NPV = PVFCF - IO, \quad thus$$

$$PVFCF = (IO + NPV), \quad thus$$

$$TVFCF = (IO+NPV)\ (1+k)^N \qquad (equation\ \#2)$$

$$Substituting\ \#2\ into\ \#1$$

$$MIRR = \left(\frac{(IO+NPV)\ (1+k)^N}{IO} \right)^{1/N} - 1 \qquad (equation\ \#3)$$

$$MIRR_L = \left(\frac{(100+70.58)\ (1+0.1)^4}{100} \right)^{1/4} - 1 = 0.2571$$

A similar calculation for Project B results in a $MIRR_B$ of 0.2268 which is less than the $MIRR_L$ (= 0.2571). Note that this conventional calculation of MIRR, unadjusted for size differences, gives a ranking that is inconsistent with NPV.

The solution to the ranking problem lies in the insight that the acceptance of the smaller project L also implies the acceptance of a shadow investment, equal to the difference in size between the smaller and larger projects, which earns the cost of capital. In this case, to accept project L (an investment of $100) is to reject B (an investment of $1,000). Having assumed a non-capital rationing situation, the firm should be accepting all non-mutually exclusive investments with a positive NPV. Thus, marginal project would earn the cost of capital. Since rates of return are per dollar and per year, they are only comparable for projects of the same size and the same time span. The MIRRs for L and B may be made comparable by assuming that taking the smaller project (L) also implies accepting a shadow investment which earns the cost of capital (has a zero NPV) with an initial outflow equal to the difference between the two projects.

Exhibit #3
Inclusion of a Shadow Investment
to Adjust for Scale Differences

	Project L	Shadow Investment	Combined L + Shadow	Project B
Initial Outflow	$100.00	$900.00	$1,000.00	$1,000.00
Period 1	40.00	283.92	323.92	350.00
Period 2	50.00	283.92	333.92	450.00
Period 3	60.00	283.92	343.92	550.00
Period 4	70.00	283.92	353.92	650.00
Cost of Capital	10.0%	10.0%	10.0%	10.0%
NPV	70.58	0.00	70.58	547.26
(Ranking)			(2)	(1)
IRR	36.44%	10.00%	13.17%	30.72%
(Ranking)			(2)	(1)
MIRR	25.71%	10.00%	11.89%	22.68%
(Ranking)			(2)	(1)

The appropriate comparison is between the MIRR of B and the MIRR of L plus the implied shadow investment. Other authors (Sweeney & Mantripragada, 1987) have suggested paired comparisons analogous to Fisher's Defender/Challenger approach to reconciling IRR with NPV. This is clearly a more complex process, particularly if numerous alternatives are under consideration. Exhibit 3 shows that in this example, the adjusted MIRR ranks consistently with NPV. (Appendix 1 has a general proof for the consistency) In practice, it is not necessary to estimate and include the shadow as in Exhibit 3. The shadow will always have a zero NPV. Using Equation #3, the calculation of MIRR for the smaller project would simply require the replacement of the initial outflow (IO) of the smaller project with the IO of the larger project in both the numerator and denominator. In fact, any number of mutually exclusive alternatives may be compared by simply assigning to each the same initial outflow as the largest of them.

$$MIRR_L = \left(\frac{(NPV_L + IO_B)(1 + k)^N}{IO_B} \right)^{1/N} - 1$$

$$MIRR_L = \left(\frac{(70.58 + 1{,}000.00)(1.10)^4}{1{,}000} \right)^{1/4} - 1$$

$$MIRR_L = 11.89\%$$

DIFFERENCES IN TIME SPANS

The adjustment for time span differences depends on the repeatability of the projects. For projects that can be repeated in the future, either a replacement chain to a common ending point or truncation of the longer project is necessary for a proper calculation of both NPV and MIRR.

However, for non-repeatable projects, Equation #3 may be used by using the life of the longest project for N in the calculation of MIRR for shorter-lived rival projects. The proof of this assertion is directly analogous to that present in Appendix 1 for scale differences.

Exhibit 4
Adjustment of MIRR for Time Span Differences

	Project P	Project Q
Initial Outflow	($1,000.00)	($1,000.00)
Period 1	300.00	500.00
Period 2	350.00	600.00
Period 3	400.00	700.00
Period 4	450.00	-
Period 5	500.00	-
Period 6	550.00	-
Cost of Capital	10.00%	10.00%
NPV	790.79	476.33
(Ranking)	(1)	(2)
IRR	31.09%	33.87%
(Ranking)	(2)	(1)
MIRR's		
With Actual Life	21.22%	25.25%
(Ranking)	(2)	(1)
With Adjusted Life	21.22%	17.38%
(Ranking)	(1)	(2)
(Agrees with NPV)		

Exhibit 4 compares two non-repeatable, mutually exclusive projects, P and Q. It shows that the shorter project Q has a lower NPV but both a higher IRR and conventional MIRR than the longer project P. The adjusted life MIRR for project Q is calculated using Equation #3, with NPV equal to $476.33, IO equal to $1,000, and N equal to six, and

gives a ranking that is consistent with that of NPV. In effect, using a six year life for project Q assumes that the terminal value at the end of period three is compounded at the reinvestment rate (k) to the end of period six.

BOTH SCALE AND TIME SPAN DIFFERENCES

The analysis of two or more mutually exclusive, non-repeatable projects with both scale and time span differences may be easily accomplished by using the largest initial outflow and the largest number of periods in Equation #3 for the computation of MIRR for each project. This means that IO, k and N will be the same for all alternative projects. The NPV in Equation #3 will be the actual NPV for each project.

Exhibit 5 illustrates three mutually exclusive, non-repeatable projects with different initial outflows and time spans. Note that based on NPV, the rankings are Z, Y, and then X. However, based on IRR and the unadjusted MIRR, the rankings are Y, X, and then Z. Using Equation #3 and adjusting for scale and time span differences, the adjusted MIRR is consistent with NPV.

Exhibit 5
Adjustment of MIRR for Scale and Time Span Differences

	Project X	Project Y	Project Z
Initial Outflow	($500.00)	($1,000.00)	($2,000.00)
Period 1	150.00	500.00	750.00
Period 2	150.00	500.00	750.00
Period 3	150.00	500.00	750.00
Period 4	150.00	-	750.00
Period 5	150.00	-	-
Period 6	150.00	-	-
Cost of Capital	10.00%	10.00%	10.00%
NPV	$153.29	$243.43	$377.40
(Ranking)	(3)	(2)	(1)
IRR	19.91%	23.38%	18.45%
(Ranking)	(2)	(1)	(3)
Unadjusted MIRR:			
Initial Outflow	$500.00	$1,000.00	$2,000.00
Number of Periods	6	3	4
Unadjusted MIRR	15.01%	18.29%	14.86%
(Ranking)	(2)	(1)	(3)
MIRR adjusted for scale and time differences:			
Initial Outflow	$2,000.00	$2,000.00	$2,000.00
Number of Periods	6	6	6
Adjusted MIRR	11.36%	12.13%	13.22%
(Ranking)	(3)	(2)	(1)
(Agrees with NPV Rankings)			

CONCLUSION

This paper has shown how to calculate a rate of return measure that will give rankings that are consistent with NPV for mutually exclusive projects, even if the projects are of different sizes and in some cases, different lives. Since

managers tend to rely on rate of return calculations in capital budgeting, the consistency with NPV is an important contribution. An additional contribution is the simplified calculation formula for MIRR as presented in Equation #3.

APPENDIX 1

For the proof that the shadow investment will give consistent rankings between NPV and MIRR, assume that $NPV_A > NPV_B$ and $IO_A > IO_B$. Note that if $IO_B > IO_A$ then use IO_B in place of IO_A in the proof below.

$$NPV_A > NPV_B$$
$$NPV_A + IO_A > NPV_B + IO_A = (NPV_B + IO_B) + (IO_A - IO_B)$$
$$(NPV_A + IO_A)\ (1 + K)^N > ((NPV_B + IO_B) + (IO_A - IO_B))\ (1 + K)^N$$
$$TVFCF_A > TVFCF_B + (IO_A - IO_B)\ (1 + K)^N$$

The left hand side is equal to the Terminal Value of the Future Flows ($TVFCF_A$) for project A. The right hand side (RHS) is equal to the Terminal Value of the Future Cash Flows for project B plus the Terminal Value of the shadow investment that has an initial outflow equal to difference between the initial outflows of projects A and B. Call the RHS the Modified Terminal Value of project B (MTV_B). Using the terminal values and equation #1:

$$MIRR_A = \left(\frac{TVFCF_A}{IO_A}\right)^{1/N} - 1 > \left(\frac{MTV_B}{IO_A}\right)^{1/N} - 1 = *MIRR_B$$

where $*MIRR_B$ is the Modified Internal Rate of Return for project B, adjusted for the difference in the size of the initial outflows of the two projects. Note that the inequality is preserved and thus the MIRR methodology, when adjusted for differences in the initial outflow, will always agree with the NPV method.

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THE SEARCH FOR FRAUD IN AUDITING: AN HISTORICAL REVIEW

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ABSTRACT

In February 1997, the Auditing Standards Board of the American Institute of Certified Public Accountants (AICPA) issued Statement on Auditing Standards (SAS) No. 82, Consideration of Fraud in a Financial Statement Audit. This SAS is proclaimed to be the "new" statement on fraud. However, a review of literature shows that the "fraud" issue has been addressed in some form for many decades. This paper presents a review of the development of auditing standards and a comparison of those standards that directly address fraud issues.

THE DEVELOPMENT OF AUDITING STANDARDS IN THE UNITED STATES

Following the Civil War in the United States, accounting services were expanded as a result of industrialism and the providers of business capital became concerned with measuring the results of operations of major corporate enterprises. At this time, auditing services and the wording of audit reports varied significantly. Yet, the first major American publication aimed at practitioners, Broker and Chapman's (the first and second CPAs in the United States) *American Accountants Manual*, was not published until 1897. This was followed by Montgomery's authorized edition of Dicksee's *Auditing* in 1905 and his classic work, in 1912, *Auditing Theory and Practice*.

> The 1912 edition signaled a departure from earlier emphasis of auditors on the detection of fraud and errors to the modern focus on the "financial condition and earnings of an enterprise. . ." (Mednick & Previts, 1987, p. 149).

Nothing resembling "authoritative standards" was published, however, until *Uniform Accounts*, later retitled *Approved Methods for Balance Sheet Accounts,* was published by the Federal Reserve in 1917. The American Institute of Accountants responded with *Verification of Financial Statements* in 1929, followed by *Audits of Corporate Accounts* in 1934 and, a third revision, *Examination of Financial Statements of Independent Public Accountants* in 1936. The 1936 revision suggested that the observations of inventories and the confirmation of accounts receivable would be desirable in many cases but would not be required. Three years later, the McKesson & Robbins case "showed that these two non-required audit procedures had contributed to a cover-up of gigantic fraud that had been going on for years" (Davidson & Anderson, 1987, p. 124).

According to Barr and Galpeer (1987), the lead editorial in the February 1939 issue of the *Journal of Accountancy* stated:

> "Like a torrent of cold water the wave of publicity raised by the McKesson & Robbins case has shocked the accountancy profession into breathlessness. Accustomed to relative obscurity in the public prints, accountants have been startled to find their procedures, their principles, and their professional standards the subject of sensational and generally unsympathetic headlines" (p. 160).

Barr and Galpeer further asserted that,

> This was the first time accounting practices were subject to significant public and governmental disclosure, comment, criticism and judgment. From that point on, the profession could no longer enjoy a secluded and unquestioned position in business and government (p. 160).

McKesson and Robbins' "certified" financial statements at the end of 1937 reported $87 million of total assets, of which $19 million ($10 million of inventory and $9 million of receivables) were totally fictitious (Davidson & Anderson, 1987). Although the SEC declared that the auditors, Price Waterhouse and Company, had ". . . failed to employ that degree of vigilance, inquisitiveness, and analysis . . ." that was required in its audit of McKesson & Robbins' inventories and accounts receivable, the firm held that it had proceeded correctly under the "prevailing system of accounting" (Barmash, 1972, p. 54).

The AICPA responded to the scandal with the Committee on Auditing Procedures (CAuP) in 1939. The Committee issued its report, *Tentative Statement of Auditing Standards, Their Generally Accepted Significance and Scope*, listing nine standards, in 1947. The committee issued 32 Statements on Auditing Procedures (SAPs) before 1963 when it issued SAP No. 33, a codification of the first 32 SAPs, entitled *Auditing Standards and Procedures*. An additional 21 SAPs were issued before it was replaced by the Auditing Standards Executive Committee (AudSEC) in 1972 (Davidson & Anderson, 1987).

SAP NO. 1 AND SAP NO. 30

The Committee's issuance of SAP no. 1, *Extensions of Auditing Procedures,* attempted to renounce the profession's earlier purpose to detect fraud. It contained the following statement:

> The ordinary examination incident to the issuance of financial statements accompanied by a report and opinion of an independent certified public accountant is not designed to discover all defalcations, because that is not its primary objective, although discovery of defalcation frequently results . . . To exhaust the possibility of exposure of all cases of dishonesty or fraud, the independent auditor would have to examine in detail all transactions. This would entail a prohibitive cost to the great majority of business enterprises-a cost which would pass all bounds of reasonable expectation of benefit or safeguard therefrom, and place an undue burden on industry. (Albrecht & Willingham, 1993, pp. 104-105)

In 1960, bending to mounting pressure to respond to users' concerns, the committee issued SAP no. 30, *Responsibilities and Functions of the Independent Auditor in the Examination of Financial Statements.* As the following statement from SAP no. 30 indicates, it was worded so negatively that auditors felt little obligation to test for fraud.

> The ordinary examination incident to the expression of an opinion on financial statements is not primarily or specifically designed, and cannot be relied upon, to disclose defalcations and other similar irregularities, although their discovery may result. Similarly, although the discovery of deliberate misrepresentations by management is usually more closely associated with the objective of the ordinary examination, such examination cannot be relied upon to assure its discovery (Albrecht & Willingham, 1993, pp. 105-106).

As a result, the public increasingly took the auditor to court for failing to detect fraud.

THE EXPECTATIONS GAP

Congressional inquiry, in the mid-1970s, prompted by audit failures and management fraud, led to ". . . the current self-regulatory complex: peer review, a special investigation committee, and a five-member Public Oversight Board (POB)" (Auditing the Auditors, 1987, p. 130). Many, however, perceived this self-regulation as ineffective. The SEC, in 1983, banned Fox & Company (the nation's twelfth-largest CPA firm) from taking on any new publicly

held clients until it ". . . cleaned up its procedures." Fox was accused by the Commission of ". . . violating auditing procedures in failing to detect fraud at three client companies: Saxon Industries, Flight Transportations, and Alpex Computer" (Can Fox Company Climb Out of the Doghouse?, 1983, p. 132). Interestingly, in a 1980 peer review, Price Waterhouse found Fox & Company's ". . . appropriately comprehensive system of quality control was 'being complied with'" (Auditing the Auditors, 1983, p. 130).

In response, the Institute formed the Commission on Auditors' Responsibilities, called the Cohen commission (so named for its chairman, a former SEC chairman, Manuel Cohen). The commission's purpose was to determine whether:

> A gap may exist between what the public expects and needs and what auditors can and should reasonably expect to accomplish. If such a gap does exist, it needs to be explored to determine how the disparity can be resolved (Davidson & Anderson, 1987, p. 126).

The Cohen Commission concluded in its 1977 report that an "expectations gap" did exist and it provided a list of recommended steps to remedy the situation. The public firmly believed an auditor *should* detect fraud. In fact, Opinion Research Corporation conducted a poll in 1974, which found that ". . . 66 percent of the investing public believe that the audit is conducted primarily to uncover fraud" (Albrecht & Willingham, 1993, p. 114). According to Giroux (1994), "Guaranteed error-free, fraud-free financial statements are not assured by the auditors, but expected by the public" (p. 94). Several minor recommendations of the Cohen Commission were followed and, in 1978, AudSEC was reduced in size and its name was changed to the Auditing Standards Board (ASB).

SAS NO. 16

SAS no. 16, *The Independent Auditor's Responsibility for the Detection of Errors or Irregularities*, was issued by the AudSEC in 1977 and contained the following statement:

> The independent auditor's objective in making an examination of financial statements in accordance with (GAAS) is to form an opinion on whether the financial statements present fairly financial position, results of operations, and changes in financial position in conformity with (GAAP) . . . . Consequently, under (GAAS), the independent auditor has the responsibility, within the inherent limitations of the auditing process . . . . to plan his examination to search for (material) errors and irregularities (Albrecht & Willingham, 1993, pp. 106-107).

Even though auditors were now required to search for fraud according to this standard, it still was not forceful enough to make an impact.

THE TREADWAY COMMISSION

By 1985, Congressional critics were once again questioning the "expectations gap." This came as a result of several publicized business failures, characterized by some as audit failures, and of an adverse report published by the Government Accounting Office (GAO). The Institute, as a result of both the Congressional inquiries and its own attempt to focus on closing the "gap," established, in cooperation with several other accounting and financial organizations, the National Commission on Fraudulent Financial Reporting, called the Treadway Commission for its chairman, former SEC commissioner, James Treadway (Davidson & Anderson, 1987).

The Treadway Commission was organized in 1985 to ". . . identify casual factors that can lead to fraudulent financial reporting and steps to reduce its incidence" (Report of the National Commission, 1987, p. 1). The Commission was a :

> . . . private-sector initiative, jointly sponsored and funded by the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA), the Financial

> Executives Institute (FEI), the Institute of Internal Auditors (IIA), and the National Association of Accountants (NAA) (Report of the National Commission, 1987, p. 1).

In October 1987, the Commission issued its final *Report of the National Commission on Fraudulent Financial Reporting*. According to the report, the recommendations taken collectively are cost effective and despite limits on the ability to detect fraud can:

(1) Improve the financial reporting environment in the public company in several important respects and thus help to reduce fraudulent financial reporting;
(2) Improve auditing standards, the standards-setting process, and the system for ensuring audit quality, to detect fraudulent financial reporting earlier and perhaps thus deter it;
(3) Enhance the regulatory and law enforcement environment to strengthen deterrence;
(4) Enhance the education of future participants in the financial reporting process (The CPA Letter, 1987).

Following an overview of the financial reporting system, the Commission offered 49 recommendations which fell into four general categories: the public company, the independent public accountant, the SEC and others directly involved in the regulatory or legal environment, and education.

"The independent public accountant's role, while secondary to that of management and the board of directors, is crucial in detecting and deterring fraudulent reporting" (Fraud Committee Issues Final Report, 1987, p. 42). The Commission recommended changes in auditing standards, procedures that enhance audit quality, the independent auditor's communications about his role, and the process of setting auditing standards.

The report addressed numerous suggested changes in generally accepted auditing standards. Some of these suggestions were:

- The ASB should restate the independent accountant's responsibility for fraud detection.
- Auditing standards should require that analytical procedures be performed on all engagements and should provide improved guidance on the use of such procedures.
- The auditor's standard report should state that the audit provides reasonable but not absolute assurance that the financial statements are free from material misstatements as a result of fraud or error.
- The auditor's standard report should describe the extent to which the accountant has reviewed and evaluated the system of internal accounting control (Elliot and Jacobson, 1987, p. 20).

With regard to improved regulation of the accounting profession, the Commission concluded that additional regulation was not necessary, but two key elements should be added to the present system. First, all public accounting firms that audit public companies would have to belong to a professional organization that is approved by the SEC and has peer review and independent oversight functions. Second, the SEC should provide ". . . enforcement actions to impose meaningful sanctions when a firm fails to remedy deficiencies cited by a quality assurance program approved by the SEC" (Fraud Committee Issues, 1987, p. 44).

Following the release of the Treadway Commission's final report, J. Michael Cook, then AICPA board chairman, testified before the Oversight and Investigations Subcommittee of the House Energy and Commerce Committee saying:

> Today, I can report to you that we have taken meaningful actions in the continuing process of responding to the challenge of fraudulent financial reporting, and we will continue our efforts as new challenges arise (Collins, 1987, p. 84).

He further outlined the broad initiative taken by the profession to improve the financial reporting process and to detect and prevent fraud.

KPMG Peat Marwick surveyed the 2,000 largest companies in the United States concerning fraud and the Treadway Commission's final report. One respondent made the following comment:

> Unfortunately there is no one single simple action that can be taken to deter fraud or to discover that fraud has occurred. Pronouncements like those issued by the National Commission on Fraudulent Financial Reporting simply create more hoops to jump through without much real improvement in deterring or detecting fraud. (KPMG Peat Marwick, 1993, p. 14)

SAS NO. 53: CLOSING THE GAP

The Auditing Standards Board (ASB), in response to the "expectations gap," issued ten new exposure drafts in February 1987. Fourteen months later (April 1988), after reviewing nearly 1200 comment letters, they issued nine new Statements on Auditing Standards (Guy & Sullivan, 1988). These new standards were a direct result of the profession's desire and attempts to close the expectations gap. One of these was SAS no. 53, *The Auditor's Responsibility to Detect Errors and Irregularities.* SAS no. 53 stated that:

> The auditor should assess the risk that errors and irregularities may cause the financial statements to contain a material misstatement . . . . based on that assessment, the auditor should design the audit to provide reasonable assurance of detecting errors and irregularities that are material to the financial statements (SAS no. 53, paragraph 5).

As stated by Marc Levine and Adrian Fitzsimons, associate and assistant professors, respectively, of accounting and information systems at Queens College of the City University of New York and co-authors of *The Warren Gorham & Lamont Audit Manual* (1988 revision):

> The Auditing Standards Board has make a dramatic effort to improve auditing standards in light of the concerns, criticisms, and suggestions of users of financial statements and other interested regulatory authorities. In an attempt to close the "expectation gap" between the auditing profession and the public, the ASB has triggered a shock wave of change for auditors and users of financial statements (Levine and Fitzsimons, 1988, p. 96).

In the early 1990's, it became apparent that SAS no. 53 had little impact on the way audits were conducted, did not materially reduce liability lawsuits against auditors, and did not prevent the continued questioning of the value of audits. In addition, a survey conducted by the Institute of Management Accountants found that ". . . 87 percent of company managers who responded would consider committing financial statement fraud under certain circumstances" (Albrecht & Willingham, 1993, p. 121). One solution would be for the profession to once again accept responsibility to detect and report fraud.

The Public Oversight Board of the AICPA division for CPA firms SEC practice section issued a report titled *In the Public Interest* in March 1993. This report specifically recommended that auditors ". . . exercise the professional skepticism demanded by SAS no. 53" (Mancino, 1997, p. 32). The AICPA board of directors supported the POB recommendations and as a result the ASB created a fraud task force to develop a SAS aimed directly at financial statement fraud.

The business environment was producing extreme pressure for results and incentives to get those results, which made creating fraudulent financial statements seem attractive to CFOs, who may be ex-auditors with the skills and knowledge to fool the auditors (Demery, 1997).

SAS NO. 82

In February 1997, SAS no. 82, *Consideration of Fraud in a Financial Statement Audit* was issued by the ASB. It is effective for audits of financial statements for periods ending on or after December 15, 1997. For the first time, a SAS title included the word "fraud". Auditors had been using the word "irregularities" prior to this, even in court when the prosecuting attorney used the term fraud. Juries could find this confusing and wonder if the auditor was concealing something (Demery, 1997, p. 24).

SAS no. 82 does not increase the auditor's responsibility to detect fraud, but does clarify it with this statement placed in AU Section 110, *Responsibilities and Functions of the Independent Auditor:*

> The auditor has a responsibility to plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud. Because of the nature of audit evidence and the characteristics of fraud, the auditor is able to obtain reasonable, but not absolute, assurance that material misstatements are detected. The auditor has no responsibility to plan and perform the audit to obtain reasonable assurance that misstatements, whether caused by errors or fraud, that are not material to the financial statements are detected (Mancino, 1997, p. 32).

In addition, the SAS describes two types of misstatements or categories – "misstatements arising from fraudulent financial reporting" and "misstatements arising from misappropriation of assets" (SAS no. 82, paragraphs 5 and 6). SAS no. 82 requires:

> The auditor should specifically assess the risk of material misstatement of the financial statements due to fraud and should consider that assessment in designing the audit procedures to be performed. In making this assessment, the auditor should consider fraud risk factors that relate to both (a) misstatements arising from fraudulent financial reporting and (b) misstatements arising from misappropriation of assets in each of the related categories presented in paragraphs 16 and 18 (SAS no. 82, paragraph 12).

One very compelling reason for the auditor to consider each of the risk factor categories listed in paragraphs 16 and 18 is that those risk factors have frequently occurred in actual frauds (Mancino, 1997, p. 33).

Audit procedures that identify risk factors in an audit include: audit planning, study of internal control, knowledge of client, and management inquiry. In addition, the auditor must be alert to risk factors during the entire audit, not just the planning phase. Risk is not a rating; it is a process (Mancino, 1997).

Communication of fraud is the same under SAS no. 82 as it was in SAS no. 53. If senior management is involved in material fraud, it should be reported to the audit committee. If it is immaterial, it should be reported to a management level above the level of the perpetrator (Mancino, 1997).

It is important to understand that a financial statement audit is different from a fraud audit. The financial statement audit is conducted according to GAAS and results in an opinion on the fairness of the financial statements. In a fraud audit, a fraud has been discovered or alleged and the accountant gathers evidence in connection with legal proceedings. No opinion is given on financial statements as a whole and the engagement is a consulting service (Mancino, 1997). SAS no. 82 describes the auditor's documentation requirements for a financial statement audit as follows:

> In planning the audit, the auditor should document in the working papers evidence of the performance of the assessment of the risk of material misstatement due to fraud. Where risk factors are identified as being present, the documentation should include (a) those risk factors identified and (b) the auditor's response to those risk factors, individually or in combination. In addition, if during the performance of the audit fraud risk factors or other conditions are identified that cause the auditor to believe that an additional response is required, such risk factors or other conditions, and any further response that the auditor concluded was appropriate, also should be documented (SAS no. 82, paragraph 37).

The ASB will evaluate SAS no. 82 after it has been in effect for a reasonable period of time. This feedback is necessary to identify how well SAS no. 82 is achieving its objectives and to determine if additional steps need to be taken (Mancino, 1997).

Already critics say it does not go far enough. Public perception is that auditors *should* discover fraud. Some auditors feel they need more specifics on how or when to hunt for fraud. One inherent characteristic of financial

statement audits is that it is difficult to distinguish between fraud and errors. That is why SAS no. 82 only covers fraud. Error detection has been put into SAS no. 47, *Audit Risk and Materiality in Conducting an Audit* (Demery, 1997).

In assessing the impact of SAS no. 82, companies are worried about two areas – audit fees and their relationship with the external auditor. The general consensus is that the effect on audit fees should be minimal. The relationship with the external auditor may change because of the questions that must be asked about the risk of fraud and the changes in the management representation letter (Fleming, 1997, p. 35).

Proper training and new policies will need to be implemented by accounting firms to carry out this new standard. New policies might include:

> . . . templates of checklists based on the risk factors noted in SAS no. 82, training in forensic accounting, and the use of audit software that can help identify indicators of possible fraud. In many firms, one of the most effective policies is to educate junior auditors that they cannot overlook discrepancies, even if they appear to be minor (Demery, 1997, p. 26).

Joseph Wells, the chairman of the Association of Certified Fraud Examiners, feels auditors will fail in trying to detect fraud because many frauds are not on the books, which make it virtually impossible for the auditor to find. He feels that instead of proving a negative, the profession should assure something positive – ". . . attest to a company's compliance with criteria for fraud prevention" (Demery, 1997, p. 27).

CONCLUSION

Between the Civil War era and 1912, auditing services emphasized the detection of fraud and errors. From 1912 an on into the 1930s, before the McKesson & Robbins case came to light, the audit focus shifted away from fraud detection and toward financial condition and earnings.

The McKesson & Robbins fraud focused the public interest on auditing standards and procedures, which led to the formation of the Committee on Auditing Procedures (CAuP) in 1939. Some progress was made in defining the auditor's responsibility over the 33 years it issued Statements on Auditing Procedures (SAPs). SAP no. 1, *Extensions of Auditing Procedures*, attempted to renounce the profession's earlier purpose to detect fraud. Auditors were no longer assuming the responsibility of detecting fraud.

SAP no. 30, *Responsibilities and Functions of the Independent Auditor in the Examination of Financial Statements*, was issued in 1960 to acknowledge the auditor was only responsible for fraud that would normally be uncovered in an audit. Lawsuits against the auditors continued to increase despite SAP no. 30.

In the 1970s, the Cohen Commission reported an "expectations gap" did exist and made many recommendations for closing it. The Auditing Standards Executive Committee (AuSEC) was formed in 1972 and its name was changed to the Auditing Standards Board (ASB) in 1978. In 1977, SAS no. 16, *The Independent Auditor's Responsibility for the Detection of Errors and Irregularities*, was issued, requiring the auditor to search for fraud.

A decade later, following the Treadway Commission's attempt to make recommendations for closing the "expectations gap," SAS no. 53, *The Auditor's Responsibility to Detect Errors and Irregularities*, was issued in 1988. Auditors were now required to design the audit to provide reasonable assurance of detecting material fraud.

Finally, in 1997, SAS no. 82, *Consideration of Fraud in a Financial Statement Audit*, was issued. For the first time, "fraud" was included in the title of a SAS. SAS no. 82 clarifies the auditor's responsibility to plan and perform the audit to detect material fraud in the financial statements.

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TQM IN ACCOUNTING EDUCATION: SEVEN STEPS TO QUALITY

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ABSTRACT

In its search for quality, Northwest Missouri State University has adopted a curricula model that incorporates the concepts and Criteria of the Malcolm Baldridge National Quality Award into its strategic and operational planning process. The operational model consists of a seven-step program that encompasses the entire operating cycle from identifying the customers and stakeholders to assessment and the setting of new goals. Every area of the University is included in this model. This paper describes the quest for a "Culture of Quality" at Northwest Missouri State University and the seven-step process used to achieve this goal in the accounting curriculum.

DEVELOPMENT OF A "CULTURE OF QUALITY"

Northwest Missouri State University began its quest for a "Culture of Quality" in 1984, one year before the phrase "TQM" was coined. The process for managing quality began with a systematic search for enhancing administrative efficiency and was followed, in 1986, by a search for the best practices to improve undergraduate education. Faculty and students were asked to "submit ideas for creating a culture of quality on campus" while a masterplan steering committee searched for ideas in numerous contemporary books and articles (Hubbard & Gilmour, 1996, p. 10). National leaders in higher education were then asked to review the suggestions and to offer any of their own. This process resulted in a compilation of over 200 ideas, of which, 42 "best practices" were selected.

By 1989, most of the "best practices" had been implemented and new ideas were sought for renewing the "Culture of Quality Plan." After considering several plans, the Malcolm Baldridge Quality Award Criteria was introduced in the fall of 1991 because of its refined criteria for continuous quality improvement (Hubbard & Gilmour, 1996).

The Malcolm Baldridge National Quality Award, named for Malcolm Baldridge who served as Secretary of Commerce from 1981 to 1987, was established by Public Law 100-107 on August 20, 1987. The Findings and Purposes Section of Public Law 100-107 lists eight distinctive items, some of which are:

4. the concept of quality improvements is directly applicable to small companies as well as large, to service industries as well as manufacturing, and to the public sector as well as private enterprise.
5. in order to be successful, quality improvement programs must be management-led and customer-oriented, and this may require fundamental changes in the way companies and agencies do business.
8. a national quality award program of this kind in the United States would help improve quality and productivity by:
   - A. helping to stimulate American companies to improve the quality and productivity for the pride of recognition while obtaining a competitive edge through increased profits;
   - B. recognizing the achievements of those companies that improve the quality of their goods and services and providing an example to others;

C. establishing guidelines and criteria that can be used by business, industrial, governmental, and other organizations in evaluating their own quality improvement efforts; and

D. providing specific guidelines for other American organizations that wish to learn how to manage for high quality by making available detailed information on how winning organizations were able to change their cultures and achieve eminence (U.S. Department of Commerce, 1997).

Further, the Award Criteria, as shown in Table 1, is based upon a composite of 20 Examination Items in 7 categories (U.S. Department of Commerce, 1997).

TABLE 1
Malcolm Baldridge National Quality Award
1997 Criteria for Performance Excellence

1997 Categories		*Point Values*
1 Leadership		110
1.1 Leadership System	80	
1.2. Company Responsibility and Citizenship	30	
2 Strategic Planning		80
2.1 Strategy Development Process	40	
2.2 Company Strategy	40	
3 Customer and Market Focus		80
3.1 Customer and Market Knowledge	40	
3.2 Customer Satisfactions and Relationship Enhancement	40	
4 Information and Analysis		80
4.1 Selection and Use of Information and Data	25	
4.2 Selection and Use of Comparative Information and Data	15	
4.3 Analysis and Review of Company Performance	40	
5 Human Resource Development and Management		100
5.1 Work Systems	40	
5.2 Employee Education, Training, and Development	30	
5.3 Employee Well Being and Satisfaction	30	
6 Process Management		100
6.1 Management of Product and Services Processes	60	
6.2 Management of Support Processes	20	
6.3 Management of Supplier and Partnering Processes	20	
7 Business Results		450
7.1 Customer Satisfaction Results	130	
7.2 Financial and Market Results	130	
7.3 Human Resources Results	35	
7.4 Supplier and Partner Results	25	
7.5 Company-Specific Results	130	
Total Points		1000

Source: U. S. Department of Commerce, Malcolm Baldridge Quality Award 1997 Criteria for Performance Excellence, 1997, p. 2.

In accordance with the aforementioned seven criteria, a thirty-five member Culture of Quality Review Committee was appointed representing every major academic, student and support service on campus, the board, alumni, and local business. Further, seven subcommittees were formed to address each of the seven criteria.

> The membership of each subcommittee varied according to the number of Examination Items subsumed under that category. Thus, while the subcommittee on leadership had three members, the subcommittee on customer satisfaction had six, etcetera (Hubbard & Gilmour, 1996, p. 14).

On June 29, 1992, Missouri Governor John Ashcraft created the Missouri Quality Award by Executive Order 92-15. The Executive Order, which became effective July 1, 1992, states, in part:

> The Missouri Quality Award will be administered by the Excellence in Missouri Foundation, a privately funded, not-for-profit organization. It will be the goal of this organization and The Award Program to promote quality in business, education and government throughout Missouri.
>
> The Missouri Quality Award will be patterned after the Malcolm Baldridge National Quality Award and will recognize the achievements of those organizations which implement a total quality philosophy and improve the quality of their products and services, thereby providing an example for others to follow. It will lead to the continuous improvement of quality, customer satisfaction, and global competitiveness of Missouri organizations by educating Missourians about quality improvement, fostering the pursuit of quality in all aspects of Missouri life, and recognizing excellence in quality leadership (Excellence in Missouri Foundation, 1997, p. 64).

As noted above, The Missouri Quality Award is patterned after the Malcolm Baldridge National Quality Award. The award criteria for educational institutions, as shown in Table 2, closely resemble those of the Baldridge Award, given in Table 1.

An application was submitted for the Missouri Quality Award in 1994, the pilot test year for the education award, and the University was chosen for a site visit. Although no award was given to an educational institution that year, the University chose to continue using the Missouri Quality Award/Baldridge Criteria as a conceptual framework and for planning and evaluation (Hubbard & Gilmour, 1996). At this time, only one educational institution has earned the Award: the University of Missouri–Rolla in 1995 (Excellence in Missouri Foundation, 1997). However, Northwest will receive a site visit from the Missouri Quality Award Examiners this fall for the third time in four years (New Approach, 1997). These site visits, while difficult to obtain, reward the institution with an excellent feedback report to show where the university is particularly strong and areas for improvement within the overall organization.

In 1996, the University underwent a mission enhancement wherein it included a goal to: "Continue to apply quality concepts to all aspects of the University's operations, particularly as these concepts are reflected in the Malcolm Baldridge National Quality Award Criteria" (Northwest, 1996). In 1997, Northwest will use the Baldridge Criteria for its upcoming North Central Association accreditation review, thus becoming the first educational institution in the nation to use a comprehensive quality review as part of its accreditation process (New Approach, 1997).

NORTHWEST'S SEVEN-STEP PROCESS

One of the first tasks accomplished by the seven category chairs forming an executive committee for the Culture of Quality Steering Committee was "a reconceptualism of the University's planning paradigm" (Hubbard & Gilmour, 1996, p. 16). The most recent version of the resultant Strategic Quality Planning Process is shown in Figure 1. The figure shows the strategic planning process with the role of the departments depicted in the following Seven Step Process:

1. Define Key Quality Indicators (KQIs),
2. Validate the KQIs,
3. Establish goals,
4. Formulate an assessment strategy,

5. Develop baseline data and competitive comparisons,
6. Benchmark, and
7. Set stretch goals (new KQIs) (Northwest, 1997).

[Insert Figure 1 about here -- Not Available Contact Author for Copy]

TABLE 2
Missouri Quality Award Education Criteria Ø Item Listing

1997 Categories/Items	*Point Values*	
1 Leadership		110
1.1 Leadership System	80	
1.2 Public Responsibility and Citizenship	30	
2 Strategic Planning		110
2.1 Strategy Development Process	50	
2.2 Organizational Strategy	60	
3 Student and Stakeholder Focus		100
3.1 Student Knowledge and Stakeholder Relationship Enhancement	60	
3.2 Student and Stakeholder Satisfaction Determination	40	
4 Information and Analysis		80
4.1 Selection and Use of Information and Data	25	
4.2 Selection and Use of Comparative Information and Data	15	
4.3 Analysis and Review of School Performance	40	
5 Human Resource Development and Management		100
5.1 Work Systems	40	
5.2 Faculty and Staff Development	30	
5.3 Faculty and Staff Well-Being and Satisfaction	30	
6 Educational and Business Process Management		170
6.1 Education Design and Delivery	65	
6.2 Management of Educational Support Service Processes and Business Operations	45	
6.3 Enrollment Management	20	
6.4 Research, Scholarship, and Service	40	
7 School Performance Results		330
7.1 Student and Stakeholder Satisfaction Results and Comparison	90	
7.2 Student Performance Results	100	
7.3 School Education Climate Improvement Results	50	
7.4 School Business Performance Results	40	
7.5 Research, Scholarship, and Service Results	50	
Total Points		1000

Source: Excellence in Missouri Foundation, Missouri Quality Award 1997 Criteria for Performance Excellence and Application Forms, 1997, p. 16.

THE SEVEN-STEP PROCESS IN THE ACCOUNTING CURRICULUM

The Seven Step Process, as regarding the accounting program at Northwest, began with the division of the Department of Accounting Economics and Finance into two self-directed work teams. The accounting team, the Future of Accounting Task Force (FAT Force) was charged with developing the Seven Step Process for the accounting curriculum.

Step One: This step necessitated defining the Key Quality Indicators (KQIs) for the accounting program. According to Oehler and Knapp (1996), "a KQI can be defined as an essential attribute of a program which indicates quality as perceived by the customer." The FAT Force identified the accounting curriculum KQIs (1) first by reading contemporary literature regarding assessment, curriculum modifications, and the skills and capabilities desired by the employers of accounting graduates and, then (2) studying the Accounting Education Change Commission's position statements numbers one and two, and the Accounting Education Change Commission's Issues Statements number one, two, and four. FAT Force brainstorming sessions were then held to:

1. Identify customers: Customers were defined as students (current and alumni), stakeholders (professional programs, graduate schools, and employment organizations), and other departments within the University that require accounting courses as part of the degree program.
2. Select specific contacts: Current students, alumni and employers of accounting alumni were selected as subjects for a survey instrument.
3. Identify the KQIs that were most important to the program.
4. Ensure that the selected KQIs were in alignment with the University's KQIs.

Step Two: This required validating the KQIs, which was accomplished through the administration of survey instruments to alumni, senior accounting majors, and employers and, after tallying the results, additional FAT Force meetings were held to consider the responses. An advisory council was formed, comprised of accounting alumni and employers of the program's graduates, and a focus group session was held wherein the advisory council met with the FAT Force to consider the KQIs and offer suggestions and opinions as to whether or not the FAT Force was correct in outlining its original KQIs. Based upon these criteria, the results of the input did indeed validate their KQIs.

Step Three: Next came the establishment of goals and the development of a deployment strategy. This step was completed by first identifying one or more goals for each KQI. A goal, according to Oehler and Knapp (1996), is defined as, "your interpretation of what the customer wants" (p. 5). Then, for each goal, the team developed a "deployment strategy (process/es for delivering your program)" (Oehler and Knapp, 1996, p. 5). The development of a deployment strategy was then done in three basic stages: (1) critical success factors (CSFs), events or occurrences that must happen to conclude that success was achieved, were identified, (2) deployment strategies were described, and (3) primary responsibility for the deployment of each CSF was assigned. The accounting program KQIs, goals, and critical success factors are shown in Table 3.

TABLE 3
GOALS ESTABLISHED AND CRITICAL SUCCESS FACTORS IDENTIFIED

KQIs, Goals (*) and Critical Success Factors

1. Technological Competency
   - * Increase the integration of technology into the classroom
     - Ø an understanding of computer based applications in accounting.
     - Ø a working knowledge of computer software in accounting.
   - * Provide input on the physical classroom environment, specific to the needs of accounting.
     - Ø obtain changes in Colden Hall to match the specific changes requested by the FAT Force.

2. Competency in the Discipline of Accounting
    * Develop students' competency in all aspects of accounting
        - Ø understand the principles of financial accounting.
        - Ø understand the principles of managerial accounting.
        - Ø *be familiar with Generally Accepted Accounting Principles (GAAP).*
        - Ø *understand the Generally Accepted Auditing Standards (GAAS).*
        - Ø *be familiar with the Statements on Financial Accounting Standards (SFAS).*
        - Ø *recognize the importance of ethics in the accounting profession.*
    * Improve computer based accounting technological skills
        - Ø *an understanding computer based software in accounting.*
        - Ø *a working knowledge of computer software in accounting.*
    * Revise the curriculum to match the changing needs in the business environment
        - Ø *implementation of program for 150-Hour requirement by the AICPA.*
        - Ø *establish a CPA review course for students with an outside provider.*
        - Ø *establish a CMA review course for students with an outside provider.*
    * Preparation towards graduate studies
        - Ø *establish a CMA review course for students with an outside provider.*
        - Ø *the ability to make professional oral presentations.*
        - Ø *develop computational and problem solving skills.*
        - Ø *understand the use of computer technology.*
        - Ø *development of research capabilities.*
3. Preparation Toward Professional Certification
    * Develop students' competency in all aspects of accounting
        - Ø *understand the principles of financial accounting.*
        - Ø *understand the principles of managerial accounting.*
        - Ø *be familiar with Generally Accepted Accounting Principles (GAAP).*
        - Ø *be familiar with Generally Accepted Auditing Standards (GAAS).*
        - Ø *be familiar with the Statements on Financial Accounting Standards (SFAS).*
        - Ø *recognize the importance of ethics in the accounting profession.*
    * Improve written communication skills
        - Ø develop the necessary skills to deliver professional written communications.
    * Improve analytical skills
        - Ø develop computational and problem solving skills.
4. Professional Growth in Communication Skills
    * Improve written communication skills
        - Ø develop the necessary skills to deliver professional written communications.
    * Improve oral communication skills
        - Ø the ability to make professional oral presentations.
5. Analytical Thinking Skills
    * Improve analytical skills
        - Ø develop computational and problem solving skills.
    * Improve critical thinking competencies
        - Ø develop the students' ability to critically examine accounting issues.

To develop a deployment strategy, the FAT Force first developed at least one deployment strategy for each critical success factor. These factors are, generally, not designed to be met in a particular course, but the level of deployment varies with the level of the course. For example, students in 200 level courses are expected to achieve a foundation for understanding the CSF; students in 300 level courses are expected to execute applications of the CSF; and, students in most 400 level classes are expected to master the CSF. Mastery is defined as the ability to assess existing applications, to arrive at new applications or combinations of applications. An example of the deployment strategy for "an understanding of computer based applications in accounting" is:

> The student has many opportunities to obtain an in-depth understanding of computers in accounting at Northwest. One principal opportunity for understanding the use of computers in accounting is Accounting Information Systems (AIS). It is a required course for all accounting majors. Other accounting courses have integrated computers into the curriculum providing further opportunities for understanding the use of computers in accounting. These courses include Accounting II (for accounting majors) and spreadsheet applications in Intermediate, Cost, Advanced Cost and Advanced Accounting. Students are exposed to applications and research in Tax I and Tax II. Students are also exposed to the use of computers in their accounting education through classroom use of hypergraphics, Powerpoint, and of projected computer spreadsheets. With the remodeling of Colden Hall and the University's commitment to the EC2000 program further opportunities for the student will be created (FAT Force untitled internal document).

Deployment strategies like this one were developed for each of the other CSFs as well.

Step Four: At this stage of the process an assessment strategy to track performance was designed. According to Oehler and Knapp (1996), "Assessment strategies are plans describing measures and/or indicators which can be tracked and used to identify trends" (p. 6). They further defined a measure as "a precise quantifier which indicates the achievement or non-achievement of a CSF, and an indicator as "an indirect quantifier which *suggests* achievement or non-achievement of a CSF" (p. 6). They suggest that "at least one measure or multiple . . . indicators" (p. 6) should be defined for each CSF. Oehler and Knapp also stated that, for each measure or indicator, an assessment type should be defined, the frequency of its administration should be decided, the audience to be addressed should be determined, and the usage of the information should be explained. In addition, they provided a list of nine distinctive types of assessment, recommending a variety for a more accurate picture of deployment. The nine assessment types are:

1. In class/in house testing or evaluation
2. Locally developed standardized test
3. Portfolio analysis
4. Oral examination
5. Performance evaluation
6. Evaluation by external report
7. Self-report
8. Longitudinal value-added study
9. Nationally standardized test (Oehler & Knapp, 1996, p. 7).

When developing the assessment strategy for the accounting curriculum, the FAT Force designed a matrix that depicts the KQIs, goals, CSFs, and the assessment strategies for each CSF. A portion of this matrix is given in Table 4. A narrative description accompanies the matrix to provide more detail. Some of the assessment strategies include: accreditation reports, advisory council recommendations and comments, advisor evaluation forms completed by all accounting students in their last semester before graduation, alumni surveys, comparisons with other institutions, employer surveys, employment (placement rates), GMAT scores, in class testing, Major Field Examinations (MFATs), and professional examination pass rates.

> [Editors' Note: Table 4 has been omitted due to technical difficulties. Please contact the authors for the full text including exhibits and tables.]

Step Five: In the fall of 1996, the FAT Force began to address steps five through seven. In Step Five, the team was charged with establishing baselines and designing a process for tracking trends and doing competitive comparisons. The team decided to establish baselines using: (1) the results from the spring 1994 alumni and employer surveys (either percentage responses or Likert scale averages, depending upon the question), (2) percentages of CPA exam pass rates for both first time and repeat candidates, and (3) Major Field Achievement Test (MFAT) scores.

To track trends, tables will be used to identify and track data from alumni and employer surveys, the second of which was administered in the spring of 1997. Percentage responses or the average of Likert responses to specific questions will be presented in table form and can be used graphically as well. Annual results of CPA exams, CMA exams (when available), and MFAT scores will be charted graphically.

For competitive comparisons, trend data will be compared with baseline data by category. Both trend and baseline data will be compared with national and state averages, where available. Results, when possible, will be compared with those of Truman State University, the school chosen by the FAT Force for comparison due to the reputation of its accounting program and Truman's consistent first place finish, state-wide, in CPA pass rates for first-time candidates.

Step Six: Since Truman State University was chosen for comparison, the results of Step Five will be benchmarked against Truman in Step Six. In order to do this, Oehler and Knapp (1996) report that, "before you begin benchmarking, you must COMPLETELY understand . . . how the deployment strategy you developed in Step Three produces the results you observe" (p. 10). Further, they state that the comparison school's processes, practices, and methods used must be learned and compared, identifying the differences and gaining understanding of how the differences affect the competitor's results.

Step Seven: Finally, based upon the competitive comparisons made in Step Five and the benchmark done with Truman State University, performance goals (stretch goals) will be targeted in Step Seven. At this time, the entire process will be reevaluated, and alternative actions to be implemented will be determined based upon the information learned in applying the Seven Step Process.

CONCLUSION

The Seven Step Process has been an described by the faculty as challenging, demanding, grueling, formidable, rigorous, taxing, tedious, and trying. However, in the words of U.S. President Bill Clinton, "the United States is the most competitive nation in the world. Quality is a key to retaining that title" (U. S. Department of Commerce, 1996, cover).

If American schools are to remain viable, and its students are to be globally competitive, academia must begin to examine itself as any good business would do. If academia were compared to business, it would most closely resemble a manufacturing operation. Its processes begin with raw materials (entering freshmen) and end with a completed product (an educated graduate).

The Seven Step Process begins by examining the product sought by customers and stakeholders, which include students, employers, other departments, and the overall accounting profession itself. In order to produce this product, it must be properly designed and all aspects of the manufacturing process must be examined. Thus, the process must begin with the identification of Key Quality Indicators (KQIs), following through to the processes needed to produce the product (goals, critical success factors). After the strategy has been designed, assessment must follow in order to ensure that the processes are, in fact, producing the desired result. Since single measures are seldom, if ever, adequate as measures of quality, baselines must be set so that trend analyses can be done over time. Finally, since perfection is virtually impossible in any manufacturing organization and since customer needs and wants change over time, stretch goals must be set, and the cycle must begin again. Thus, the Seven Step Process is iterative and somewhat circular.

Although the process has been described as arduous, it can also be rewarding and exciting. In this case, the product is a well-educated, employable graduate. The results of the educational system will often affect the life-long success or failure of that graduate. Therefore, the "status quo" is not acceptable! Failure to provide these students with the best possible education is akin to producing a defective product. However, when the institution and the faculty successfully provide them with the best possible quality education, both the educators and the graduates receive abundant rewards.

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USING LEGAL SOURCE DOCUMENTS TO ENHANCE TEACHING AND APPLICATION OF ACCOUNTING AND FEDERAL INCOME TAX SUBJECTS

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ABSTRACT

One clear message from the Accounting Education Change Commission was the need to restructure accounting courses to emphasize thinking and reasoning skills while still teaching the necessary substantive subject matter. Implementing thinking and reasoning skills into a federal income tax courses has usually been accomplished by using one or both of the following supplements: the use of tax research cases/problems (such as the Arthur Anderson Tax Challenge) and/or the use of tax return preparation problems (such as West Publishing's Turbo Tax Problems.

This paper illustrates a third approach where the author demonstrates the use of legal documents (or a part of them) to supplement the specific topical area being studied in the textbook. The potential impact of the paper is to illustrate how legal documents can be used to introduce and study every major topical area in the tax curriculum. Using real legal documents makes taxation "come alive" and dismisses the student notion that accounting tax curriculum is an academic study of rules from a textbook. It also illustrates the concept that tax accounting, like all accounting curricula, is not a discipline which is isolated from business law and other business subject areas. This interdisciplinary approach requires the student to exercise thinking and reasoning skills without sacrificing substance.

The author explores two ways in which a legal document can be used to supplement the substantive material contained in a tax textbook. The first illustration relates to the "corporate, partnership, estate and trust" undergraduate tax course offered in most business/accounting schools. The illustration uses portions of a partnership agreement to teach partnership taxation. The paper illustrates the parts of a partnership agreement which are relevant to accountants. It uses the "definition of partner's capital" clause to demonstrate the appropriate journal entry to establish the partnership accounting records. It illustrates how the agreement's profit/loss sharing ratio and special cash allocations for salary (or for differences in capital) affect the yearly operational accounting and taxation of the partnership and partners. The author contends that this approach is very effective in providing the students with a real understanding of partner's capital, tax basis, and the concept of guaranteed payments.

The second illustration relates to the "individual income tax" undergraduate tax course. The paper demonstrates how the use of a of a real estate escrow closing statement can teach many concepts at the same time. The closing statement is used to teach the students about calculating realized gain on sale (including which costs of sale are considered), apportionment of real estate taxes, deductions for residential interest (including points), the deductibility of lender fees (residential v. investment property), and the use of lender impound accounts.

INTRODUCTION

One clear message from the Accounting Education Change Commission was the need to restructure accounting courses to emphasize thinking and reasoning skills while still retaining the necessary substantive subject matter. Implementing thinking and reasoning skills into a federal income tax courses has usually been accomplished by using one or both of the following supplements: the use of tax research cases/problems (such as the Arthur Anderson Tax Challenge) and/or the use of tax return preparation problems (such as West Publishing's Turbo Tax Problems.

This paper illustrates a third approach where legal documents (or clauses from them) are used to supplement the specific topical area being studied in the textbook. This concept demonstrates to the student that tax accounting, like all accounting curricula, is *not* a discipline which is isolated from business law and other business subject areas.

This interdisciplinary approach requires the student to exercise thinking and reasoning skills *without* sacrificing substance.

Although this paper provides only two illustrations of this approach, one could use legal documents to introduce and study almost every major topical area in the tax curriculum. The first illustration relates to the "corporate, partnership, estate and trust" undergraduate tax course offered in most business/accounting schools. The illustration uses clauses from a partnership agreement to teach issues in partnership accounting and taxation. The second illustration relates to the "individual income tax" undergraduate tax course. An escrow closing statement is used to teach, property tax deduction apportionment, deduction of interest (including points) and the basis calculation.

ILLUSTRATION 1: USING A PARTNERSHIP AGREEMENT TO TEACH ISSUES IN PARTNERSHIP ACCOUNTING AND TAXATION

Ordinarily an entire partnership agreement would be distributed to the class at the beginning of the discussion of partnership accounting and taxation. For illustration, five clauses from the agreement will be examined to illustrate its usage. The following are common clauses used in a partnership agreement:

Clause # 1. Capital Account - An individual capital account shall be maintained for each partner, and the partner's initial capital contribution in cash or property shall be credited to that account. Capital accounts shall be maintained in accordance with Treasury Regulation section 1.704-1(b)(2)(iv).

Clause #2. Initial Contributions - Cash and Property - The partnership's initial capital shall consist of the amounts in cash and in property shown in Exhibit A to this agreement. That exhibit sets forth the capital contributions to be made by the respective partners, the nature of their respective contributions, and, for contributions consisting of property, the amounts that the partners agree are the market values of the respective items. Each partner's contribution to the partnership shall be paid in full or conveyed within 30 days after the date of this agreement.

Clause 3. Division of Profits and Losses. The partnership profits and losses shall be shared equally among the partners.

Clause #4. Contributed Property; Special Tax Allocations Because of Carryover Basis - Exhibit A to this agreement shows, for certain items of property to be contributed to the partnership's capital, the basis of those items for federal income tax purposes in the hands of the respective partners who are to contribute them. Notwithstanding any other provisions of this agreement, for the purposes of computing each partner's share of the partnership's federal and state taxable income, if the agreed market value of any of those items differs from the tax basis shown, (1) the depreciation expense or cost recovery as to that item, (2) the gain or loss on any disposition of that item, and (3) the recapture, on any disposition of that item at a gain, of any amounts previously credited or deducted, shall be allocated among the partners in such a manner.

Clause 5. Interest on Excess Initial Capital Contribution - Partner B shall be entitled to interest on the excess over $50,000 of his or her initial capital contribution accruing at the rate of 7 percent per annum from the date the contribution is paid. This interest shall be treated as an expense to be charged against income on the partnership's books and shall be paid to the partner entitled to it monthly on the last day of each month.

Teaching Topic: Difference between Partner Basis and Capital - One of the reasons partnership taxation is difficult is that a partner's capital investment can be different than their tax investment (basis) in the partnership. Often the same transaction can have a different impact on the partnership's books (including partner's capital) than it does on the partnership tax return (including partner's basis). Although partnership agreements contain clauses related to income tax issues, students learn that the partnerships agreement and books including partner capital accounts are concerned primarily with the economic (rather than tax) relation of the partners. The following examples demonstrate how the partnership agreement can be used to teach the student the difference between partner capital and basis.

Students understand that a partner's capital represents its economic investment in the partnership. They also learn that the partnership has a carryover tax basis of any assets contributed to it. However, students often get confused when asked to make an opening journal entry to establish the carrying amount of contributed assets and partners' capital on the partnership books. If a partner contributes property where its value is different than its tax basis, does the student record the assets and partners' capital using the tax basis amounts or using the fair market value amounts? Also, when the asset is sold, what is the effect of the sale on the books and the tax return? The real confusion is that

students often cannot distinguish the economic concept of capital from the tax concept of basis. The following example guides the students to the understanding of the difference.

Example #1: Partner A contributes $50,000 cash and Partner B contributes land with a value of $60,000 and a tax basis of $20,000. How does the partnership account for the initial contribution?

Solution: According to the *initial contributions* clause (clause #2 above), the land (and Partner B's capital) must be recorded at the $60,000 fair market value (not the $20,000 tax basis). The partnership balance sheet is:

Cash	$50,000	Capital A	$50,000
Land	$60,000	Capital B	$60,000

The capital account reflects the economic value Partner B has contributed even though Partner B's tax basis in the partnership and the partnership's tax basis in the land is $20,000. The distinction of economic capital from tax basis becomes clearer as the example is expanded.

Example #2: Assume that the partnership sells the Land for $60,000. What is the effect on the partnership books and tax return?

Solution: For book (capital purposes) the partnership does not have any gain. The $60,000 of land is converted to $60,000 of cash. The partnership does not have any economic profit and the capital accounts are unaffected. The year end partnership balance sheet is:

Cash	$110,000	Capital A	$50,000
		Capital B	$60,000

For tax purposes, the partnership has $40,000 of taxable gain ($60,000 sales price - $20,000 tax basis) which, on the partnership tax return, must be allocated to one or both of the partners. The *special allocation* clause (clause #4 above) basically overrides the partners normal profit/loss sharing ratio (clause #3 above) and requires the tax gain to be allocated only to Partner B. Although there is no book gain, and therefore no effect on partner capital, the tax gain is specially allocated only to the contributing Partner B. After the tax gain is allocated to Partner B, Partner B's tax basis has increased to $60,000 ($20,000 original basis plus $40,000 increase due allocation of taxable gain).

Teaching Topic: Guaranteed Payments to Partners - When a payment is made to a partner, it can be treated in one of three ways. It can be a distribution (draw) from that partner's capital account, a guaranteed payment to a partner, or a payment made to unrelated 3rd party. The partnership agreement, along with the following example, illustrate the purpose of a guaranteed payment, the effect on the partnership books (including partner capital), and the effect on the partnership tax return (including partner basis).

Example #3. As in Example #1 above, assume Partner A contributes $50,000 cash and Partner B contributes land worth $60,000. Since Partner B has contributed $10,000 more capital than Partner A, assume the partners agreed to insert clause #5, *interest on excess initial capital contributions*, into the partnership agreement. Also assume that the partnership pays $700 to Partner B to satisfy its obligation for the first year. How does the payment affect the partnership books (including partner capital) and the partnership tax return (including partner basis)?

Solution: Since the payment is based on a percentage of excess capital (not formalized as a promissory note) and is payable regardless of partnership profits, it is a guaranteed payment. For book purposes, clause #5 requires the $700 to be treated as a partnership expense. Absent any special allocation, clause #3 requires all profit and losses (expenses) to be spilt equally between the partners' capital accounts. Therefore each partner's capital account will be reduced by $350 (one-half of the $700). For tax return reporting, the allocation of profit and losses (expenses) follow the partnership agreement. Therefore, as on the books, the partnership deducts the $700 guaranteed payment as part of its ordinary expenses (Form 1065 pg. 1) and each partner's tax basis is reduced $350. However, unlike the books, an additional step is taken on the tax return. On schedule K-1, Partner B is specially allocated an additional $700 of taxable income to reflect his receipt of the $700. The $700 allocation of a guaranteed payment does not increase Partner B's tax basis in the partnership because Partner B has received the money.

ILLUSTRATION 2: USING AN ESCROW CLOSING STATEMENT VARIOUS INDIVIDUAL INCOME TAX TOPICS

At the point in the individual income tax course when property transactions are taught, the following escrow closing statement (condensed) for a residential home purchase is distributed to the class:

BUYER'S/BORROWER'S SETTLEMENT STATEMENT

		CHARGE BUYER	CREDIT BUYER
Sales Price		$ 182,500.00	
Deposits			
Received 04/23/96 BUYERS FUNDS	15,884.38		
Received 03/08/96 INITIAL DEPOSIT	1,000.00		
TOTAL RECEIPTS			16,884.38
New Loan from Mortgage Company			173,375.00
Loan Charges to Mortgage Company			
Interest from 04/24/96 to 05/01/96 @ $ 41.5600/day	290.92		
Loan Origination Fee	1,733.75		
Tax Service Fee	74.00		
Document Prep Fee	395.00		
Impounds - Hazard Ins, Mortgage Ins., Cty Tx. Reserve	811.48		
Appraisal Fee to Mortgage Company	300.00		
Credit Report	62.00		
Hazard Ins Premium to Insurance Company	519.00		
Prorations and Adjustments			
County Taxes from 04/24/96 to 07/01/96 Total amount $1,209.26 for 180 days	450.11		
Homeowners Association Dues from 04/24/96 to 01/01/97 Total amount $267.00 for 365 days	180.68		
Settlement or Closing Fee	224.75		
Title Insurance	345.10		
Incoming Wire-$10./Outgoing Wire-$25./Overnight Courier-$1	10.00		
Recording Fees	91.00		
Home Warranty Plan	340.00		
Funds Due to Buyer at Closing	1931.59		
TOTALS		$190,259.38	$ 190,259.38

Teaching Topic: Allocation of Real Estate Taxes. The escrow closing statement represents the Buyer's accounting of a residential home purchase which closed 04/24/96. The Seller prepaid the County Taxes (real estate taxes) to 07/01/96. Under the "Prorations and Adjustments" portion of the statement, the Buyer was charged $450.11 for the days the Buyer owned the property where the taxes were prepaid. For income tax purposes, although the Buyer did not pay the property taxes to the county, the Buyer is allowed a $450.11 real estate tax deduction. Although the Seller paid the 180 day installment of 1209.26, it will only be able to deduct $759.15 ($1,290.26 paid by Seller minus $450.11 allowed as a deduction to Buyer). The Seller will be credited an extra $450.11 of price on its closing statement. The escrow closing statement illustrates the tax rule that taxes are deductible based upon number of days one owns the property, not based upon who pays the county.

Teaching Topic: Deduction of Residential interest (including points) - According to the closing statement, the lender charged many fees to the Buyer. The tax laws do not allow a deduction for lender service fees but do allow a deduction for charges which are considered interest. Under the "Loan Charges to Mortgage Company" portion of the statement, there are two items which represent deductible interest. The $290.92 represents an interest only amount which will take the loan current to the beginning of May. It is deductible as interest paid. The $1,733.75 origination fee represents prepaid interest (a "point") and is currently deductible when paid to purchase a residence. The rest of the loan charges are fees or reserves for impounds and are not currently deductible.

Teaching topic: Calculating the Purchase Price (basis) of the Residence - When an asset is purchased, its basis should be determined because it will be needed to calculate gain or loss if it is subsequently sold. This topic is

not as important as it used to be. The 1997 tax law made resale of a residence a tax free event for most sellers. However, the exercise can be used to teach students to differentiate the costs which are included in basis from the costs which are not included. Generally, fees charged by the escrow/title company are considered closing costs and are included in basis, while fees to obtain a residential loan are not counted. Therefore the basis of the residence includes the following from the escrow closing statement:

Sales Price	$182,500.00
Settlement (closing fee)	224.75
Title Insurance	345.10
Wire Fee	10.00
Recording Fees	91.00
Basis	$183,170.85

From this example, the student understands that many costs of a residential transaction do not have any tax effect. Lender charges (other than interest), property insurance costs, reserve impounds, and home warranty plan costs do not have any tax effect. (Note, if this were the purchase of a rental rather than a residential home, these costs could be deductible.)

Summary: Using a legal source documents as a supplement to the textbook enforces a student's understanding that the tax and accounting subject matter is closely related to the legal agreements of the parties. Introducing these documents into the classroom makes the tax issues "come alive" and dismisses the student notion that accounting tax curriculum is an academic study of rules from a textbook.

ACTIVITY BASED COSTING OR TRADITIONAL COSTING: ARE THEY REALLY DIFFERENT

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ABSTRACT

Since the late 1980's, the term "Activity Based Costing" (ABC) has been seen in the literature, journal articles, news paper articles, textbooks, in increasing numbers. Most accounting professionals agree that the term was coined in the late 1980's but that some form of ABC has been around since sometime in the 1960's. Most of these professionals will also agree that the concepts behind ABC when used properly will benefit most large companies. However, this may not be true for small companies due to the cost of implementing ABC. Since its inception, many companies have implemented ABC and are satisfied with the results that they have obtained. Over the past eight to ten years, there have been some changes in the way that ABC has been used. There have been at least three different versions of the process. It is the authors' belief that most accounting professionals believe that ABC is a new concept and that it is very different from the traditional cost accounting system. However, is it really new or is it just a refinement of the traditional system? The authors prefer to look at it as a refinement to the traditional system since the concepts on which it is based are not new and have been around for over fifty years.

ABC: WHAT IS IT

Activity based costing, as originally used, was a method of cost allocation, mostly manufacturing overhead costs, to products based on the activities that caused these costs to be incurred. These costs are allocated by means of cost drivers which are the factors which cause the activity to occur. Cost drivers are classified according to the level at which they occur. These levels are: (1) Unit level, (2) Batch level, (3) Product level, (4) Technology level, (5) Customer level, and (6) Facility level. The fact that the drivers have different levels makes it more difficult to identify them. (Rayburn, 1993) Example: The cost of moving raw materials could be allocated by the number of moves rather than by the cost of the material or by lumping them in with other overhead costs and then allocating them to the products produced by using direct labor hours or machine hours.

In order for a company to use ABC, it must identify all of the activities within the company, both value-adding activities and non-value-adding activities. Value-adding activities are those that add value to the products that the company produces. Some examples are: Supplies used in the manufacture of the products, indirect materials used in the production of the products, indirect labor used in the production process, etc. Non-value-adding activities are those activities that do not add value to the finished product. Examples are: Inspection, setups, wait time, etc. If an activity is not value-adding, then it has to be non-value-adding.

Computer Aided Manufacturing International gives this definition of ABC. "ABC is a collection of financial and operational performance information dealing with significant activities of the business. Activities represent repetitive tasks performed by each specialized group within a company as it executes its business objectives."

In order for a company to implement ABC, it has to at a minimum do the following:

4. Identify the activities - value and non-value-adding.
2. Determine how the product flows through the activities.
3. Determine the time and cost value of each activity.
4. Determine how activities relate to functions.
5. Decrease throughput time.
6. Strive to continually improve processes. (Ray & Gupta, 1992)

This can be very expensive and time consuming for the company that decides to use ABC. The company needs to be sure that the benefits of implementing ABC will exceed the costs of using it. Many times it does not. However,

most accountants will agree that the product costs determined by using ABC are superior to the product costs that are determined by using the traditional cost accounting system. However, in a simple manufacturing facility, they may be the same. The more activities that a company has, the better the results using ABC. Companies using ABC have found that they have been missing some of the costs that they were incurring in the manufacture of products. The traditional cost accounting system did not show these costs. This was discovered by these companies when they were identifying the activities that were used in the manufacturing process. Also, ABC does not look at production costs alone. It looks at all costs that are caused by the fact that the company is manufacturing products.

Due to the changing business environment, companies are incurring more overhead costs and less direct labor costs. This changing environment has brought about a need for a change in the way that overhead costs are allocated. ABC came along at a time when businesses were looking for something different and as a result it has become very popular. Another reason that it has become popular, is because it does not affect the financial accounting model. An emphasis has been placed on financial accounting and reporting since the 1930s. The accounting needs of individuals and organizations outside of the business has been the number one priority of the accounting system in business organizations. This has come at the expense of the needs of industrial managers. (Baker, 1996).

TRADITIONAL COST ACCOUNTING

Cost accounting systems in the United States have been in use since the 1800s. It is estimated that 80% of the companies in the United States are still using the traditional system.(Montgomery, 1992) In traditional cost accounting systems, all overhead is accumulated into a single cost pool and it is then allocated to the products that are produced by determining an overhead application rate based on direct labor hours or possibly machine hours. This rate is then multiplied by the number of direct labor hours or machine hours that were used to manufacture the units that were produced. This amount is the overhead that is added to the cost of the units produced. This rate could be simply an estimate that was determined at the beginning of the year by estimating the total overhead costs that the company expected to have for the year and then dividing that amount by the total estimated direct labor hours or machine hours that the company expected to use during the year. The company could have a standard cost system in use and still allocate overhead by either direct labor hours or machine hours. Even though this method has been used by most companies, accountants were not taught that this was the only method that could be used. In 1959 Harold Bierman wrote (Bierman, Jr., 1959) “The ultimate choice of an allocation basis will depend on the facts of the situation.” Other authors mentioned that there should be a “cause and effect” relationship between the expense that was to be allocated and the base that was to be used to allocate the expense. The authors of this paper have been teaching cost accounting for over twenty years and when teaching in this area, they have always discussed other methods of allocating overhead costs that were based on the “cause and effect” relationship. Wyman Fiske and John Beckett (Fiske & Beckett, 1954) wrote that "Overhead costs should be allocated over production on an equitable basis." In 1972 Harold Bierman, Jr and Allan Drebin wrote, allocation of overhead “may be accomplished by the use of an overhead rate, the overhead rate being applied to some measure of activity.” (Bierman, Jr. & Drebin, 1972) Also, Eugene Grant and Laurance Bell wrote “Each type of expense is allocated among the centers on some basis that is deemed most appropriate for the particular type of expense.” (Grant & Bell, 1964) In 1953 the Hadley Editorial Staff wrote “Therefore, a rate of burden must be established which will result in the absorption by each job of its equitable share of total factory burden.” (Hadley Editorial Staff, 1953) Myron Gordon and Gordon Shillinglass wrote “The choice should depend on which measure of volume best summarizes the factors determining the amount of overhead costs that must be incurred.” (Gordon & Shillinglass, 1974) From these quotes, it can be seen that the concept of allocating costs to the product by using a base that caused the cost to be incurred was taught in traditional cost accounting courses in the 1950s, 1960s and 1970s and is not something that was discovered in the late 1980’s when the term activity based costing was coined. It is true that most companies did not use this approach, they simply used direct labor hours or machine hours but when direct labor was a large portion of total costs, the traditional method was probably accurate enough. However, as mentioned previously, the complexity of the business environment has changed and has been changing for many years. As a result, this has made the traditional method of cost allocation less accurate. Activity based costing methods have been proven to provide more accurate costs than the traditional costing method but it is not a totally new concept.

CONCLUSIONS

This article was not written to imply that ABC is not an improvement over the traditional costing method. It was written however, to say that the concepts underlying ABC are the same as the concepts underlying the traditional costing method. However, ABC has evolved to be more than just a method of allocating costs. It has brought about Activity Based Management (ABM) which is a concept that encourages continuous improvements in the manufacturing processes. Also, ABC is being used in more than just manufacturing. It has evolved into a system that has overcome some of the deficiencies of the traditional cost accounting system.

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A HIERARCHICAL CLASSIFICATION OF INTERNATIONAL AUDITING CHARACTERISTICS

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ABSTRACT

The main objectives of this study are to: (1) empirically classify selected countries using current auditing practices and auditor requirements as the criterion's, and (2) compare the resulting classifications to Berry [1987], and Doupnik and Salter [1993] which classified countries by accounting practices. Data on auditing practices and auditor requirements were obtained for fifty countries and were grouped using hierarchical cluster analysis. The resulting clusters have more similarities than dissimilarities to the aforementioned taxonomies, however differences exist that suggest auditing practices do not necessarily match or follow accounting practices. This finding has implications for efforts directed at harmonizing international auditing and accounting standards.

INTRODUCTION

Financial statements and the accompanying disclosures are useful only when they can be relied upon. The level of reliance is often measured in terms of the auditor's opinion that is issued. Unfortunately, uniform attestation services do not exist worldwide, so that the audit opinion may not necessarily provide the same level of assurance. Each country has its own unique requirements regarding the competencies to be an auditor, what constitutes independence, and the form that the audit report may take. The lack of uniform standards creates information barriers for the international investment community. Differences in the level of assurance that investors may place in audited information because of differences in the manner and form of the audit opinion, can prevent investors from diversifying their portfolio internationally in an optimal manner [Eitemann, Stonehill and Moffett, 1992]. Moreover, differences in auditing standards across countries act as an impediment to the international offering of securities [IASC, 1989: 2].

Harmonization of auditing has received considerable attention in recent years as markets have become increasingly globalized (Roussey, 1992; Needles, Jr., 1995, IASC, 1996), yet efforts to harmonize standards globally have met with limited success. It has been suggested that difficulties in standardization may stem from cultural and environmental differences among nations (Beresford, 1990; Choi and Mueller, 1992). Conversely this would imply that countries with similar auditing practices may share similarities in environments and cultures and might posses greater potential for harmonization. Studies within the last ten years (Berry, 1987; and Doupnik and Salter, 1993) which have grouped countries based upon similarities in accounting practices have suggested that their findings could be used to identify countries that may have less or more difficulty in harmonization of accounting practices based upon similarities and dissimilarities in practices respectively. In addition the groupings may provide insight into cultural differences that result in the observed differences in accounting practices. This study extends upon this premise by grouping countries using similarities in auditing characteristics rather than accounting. Intuitively, the audit, which attests to the quality of the information, and auditing standards, should be considered in addition to accounting standards when addressing harmonization issues. Harmonization can be defined as the reduction in differences in practices across countries ultimately resulting in a set of international norms to be followed worldwide (Doupnik and Salter, 1993).

To harmonize auditing; that is, the standards, competencies to become an auditor, and the audit opinion, requires an understanding of the auditing environment most relevant for the current global economy and an understanding of how specific national auditing practices differ from one another. This understanding requires a classification of national auditing practices by their fundamental characteristics.

Numerous studies (e.g. Nair and Frank, 1980; Nobes, 1983; Berry, 1987; Doupnik and Salter, 1993) have classified a variety of national accounting systems, however, few studies have been conducted that classify auditing practices and those that have (e.g. Hussein, et al, 1986) are outdated and employ methodologies inappropriate for

classification. The objectives of this study are to empirically classify selected countries using existing auditing practices and auditor requirements as criterion's and then comparing the resulting classifications to Berry [1987], and Doupnik and Salter [1993] which classified countries by accounting practices. These two prior studies will provide the most relevant comparisons given the age of the data and the methodologies employed.

The resulting classification from this study and comparisons to Berry [1987], and Doupnik and Salter [1993] may provide insight into where harmonization will be most and least difficult to achieve in auditing and accounting practices. Future replication of this study can be used to monitor the progress in harmonization. Additionally, as suggested by Nair [1982], the resulting classification can provide information to financial analysts as too the degree of reliance that can be placed on the audited financial information.

PRIOR CLASSIFICATION RESEARCH

Hussein, et al., [1986] represents the only attempt at classifying countries based on auditing practices. That study grouped 27 countries using differences in the audit report and cultural factors as the criterion's. The methodology used for classification was the authors' intuitive perception of breaks in the data patterns. Given the age of the data and the methodology employed, comparisons to the current study would not be appropriate, except for perhaps validating the earlier study. For comparative purposes, studies that classified accounting practices are of more promise since they use more recent data and methodologies that match the current study.

Berry [1987] presented a hierarchical classification scheme for forty-eight countries shown here as Table 1. Berry's classification of accounting reporting and disclosure practices appears to be primarily inductive in nature with no explicit statement of an underlying theory. However, Doupnik and Salter [1993] empirically tested Berry's classifications and found them to be in agreement with their classification for seventy-three percent of the countries that both studies included. In addition to thirty-seven capitalist countries, Berry included eleven communist countries in the classification. The scope of the current study did not include the countries labeled by Berry as communist (other than Egypt) as it was not expected that reliable data on auditing practices could be obtained. Of the remaining countries, thirty-three were included in this study, so that comparisons can be made.

Berry's classification is in two major parts. The first classification is between micro and macro based accounting systems. The second classification considers spheres of influence. Micro accounting systems tend to originate from self-regulation and common law, whereas macro accounting systems tend to arise from government intervention through tax law, or national law. The macro and micro split is as expected in table 1 and is in agreement with Doupnik and Salter [1993] shown in table 2. Where differences in classification studies is usually found is when the micro and macro groups are further decomposed into their spheres of influence. The major spheres of influence identified by Berry were the U.K., U.S., European, South American, and Chinese.

Table 1
Berry's [1987] classification by accounting practices
Panel A: Two Group Solution

Group1-Micro		Group 2-Macro

			Argentina	
Australia			Belgium	Hungary
Bahamas	Nigeria		Bolivia	Italy
Bermuda	Philippines		Brazil	Japan
Canada	Singapore		Bulgaria	Paraguay
Fiji	South Africa		Chile	Peru
Ireland	Spain		Chile	Poland
Jamaica	Sweden		Columbia	Romania
	Switzerland		Cuba	Spain
Malaysia	Trinidad		Czechoslovakia	Sweden
Mexico	U.K.		E. Germany	Switzerland
Netherlands	U.S.A.		Egypt	Uruguay
New Zealand	Venezuela		France	USSR
	Zimbabwe		Germany	Yugoslavia
Panel B: Ten Group Solution				
Group 1-U.K. Influence			**Group 5-S. American**	
			Argentina	Columbia
			Bolivia	Paraguay
Australia	New Zealand		Brazil	Peru
Bahamas	Nigeria		Chile	Uruguay
Fiji	Singapore		**Group 6-Law Based Communist**	
Ireland	South Africa			
Jamaica	Trinidad		Egypt	Yugoslavia
Kenya	U.K.			
Malaysia	Zimbabwe		**Group 7-Macro Government**	
Group 2-U.S. Influence			Sweden	
			Group 8-Law Based Capitalist	
Bermuda	Philippines		Germany	Japan
Canada	U.S.A.		**Group 9-Macro National Plan**	
Mexico	Venezuela			
Group 3-European			Bulgaria	Hungary
			Cuba	Poland
Belgium			Czechoslovakia	Romania
France	Spain		E. Germany	USSR
Italy	Switzerland			
Group 4-Micro Government			**Group 10-Macro Chinese**	
Netherlands			China	
Source: Berry [1987]				

Berry's classification included Latin American countries that were formerly under the influence or control of the British empire. Other than Bermuda, the countries within the British sphere of influence were hypothesized as being members of the micro class and the U.K.-influence family. Thus, the U.K.'s influence was seen to extend beyond the more highly developed members of the British Commonwealth to countries as diverse as Malaysia, Nigeria, and Trinidad. Similar arguments were made for ties between the U.S. accounting practices and several other countries under U.S.-influence. Berry suggests that due to geographical proximity, Mexican and Venezuelan accounting have been strongly influenced by the U.S. The Philippines was also classified as a U.S.-influence country by virtue of its former colonial status.

Berry also introduced a separate inflation adjusted South American sphere of influence sub-group within the macro class or tax-based family. All but two of the Latin American countries were hypothesized as being members of the South American sub-group.

Doupnik and Salter [1993] classify 50 countries on accounting reporting and disclosure practices using hierarchical cluster analysis. Their study is shown here as Table 2. Data from a questionnaire on accounting practices was used as input for the classifications. An initial split is also found in this study along the traditional micro and macro approach to accounting systems. Classification of countries was consistent between Berry [1987] and Doupnik and Salter [1993] for countries that were included in both studies for the micro and macro split. Differences arose between the two studies in classifying countries into spheres of influence. The most significant addition was of an Arab/Hybrid group by Doupnik and Salter.

When differences in classification within spheres of influence arose, it was invariably for counties that had formerly a colonial status or strong economic ties relative to the U.S. or U.K. Berry tended to classify former colonies with the country that had colonized it, or where still a significant trading partner. Although this was supported by Doupnik and Salter, some significant departures were found. Berry using a judgmental approach classified the Philippines under the U.S. accounting model, because of its ties to the U.S. Doupnik and Salter, however, empirically found that the Philippine was closer to the U.K. in accounting practice. Mexico was classified with the U.S. by Berry and with Latin America by Doupnik and Salter. These departures from a country's "colonial roots," that were identified by Doupnik and Salter, are expected to be even greater for auditing practices, given the greater length of time it takes for auditing practices to develop. Doupnik and Salter included more middle-eastern countries than had prior studies, making the identification of an Arab/Hybrid group more likely. It is hypothesized that a similar grouping will be found for the middle-eastern counties included in this study. Forty-one of the countries used by Doupnik and Salter are also included in this study.

PURPOSE OF THE STUDY

The hierarchical classification schemes inductively developed by Berry [1987] and empirically developed by Doupnik and Salter [1993] address only accounting reporting and disclosure standards. The evolution of auditing practices within countries over time could lead to a current classification of auditing systems very different from accounting classifications if auditing practices and accounting practices do not develop concurrently.

In addition, this study introduces methodological improvements to the empirical auditing classification research introduced by Hussein et al [1986] (1) by creating a multi-source database which should provide more reliable data on country practices, and (2) by grouping countries directly through the use of hierarchical cluster analysis, rather than indirectly through an intuitive approach as in Hussein [1986] or Berry [1987].

METHODOLOGY

Auditing variables were selected based upon how well they describe the auditing environment, their potential to differentiate among countries, and their ability for being operationalized. An examination of the relevant literature over time (e.g. Needles, Jr., 1985; Choi and Mueller, 1992; Mueller, et al., 1997) leads to five areas within auditing that are common to all the literature: 1) Auditor Requirements for Licensing, 2) The Attest Function, 3) Ethical Standards, 4) Independence, and 5) Audit Reports.

Multiple variables within each category were then developed using suggestions by Hussein, et al., [1986] and Wood [1995]. The preliminary variables were reviewed by three academicians and two practicing accountants in the United States. The persons were familiar through academic training or experience with auditing principles in countries of Europe (the U.K., France and Germany), Australia, China, Jordan, Kuwait, Saudi Arabia, and several South American countries.

Table 2
Doupnik and Salter's [1993] classification by accounting practices
Panel A: Two Group Solution

Group 1-Micro		Group 2-Macro	
Australia	Nigeria		
Bermuda	New Zealand	Argentina	Japan
Botswana	Philippines	Belgium	S. Korea
Canada	Papua	Brazil	Liberia
Hong Kong	South Africa	Chile	Mexico
Ireland	Singapore	Columbia	Norway
Israel	Sri Lanka	Costa Rica	Panama
Jamaica	Taiwan	Denmark	Portugal
Luxembourg	Trinidad/Tobago	Egypt	Saudi Arabia
Malaysia	U.K.	Finland	Spain
Namibia	U.S.A.	France	Sweden
Netherlands	Zambia	Germany	Thailand
Netherlands Ant.	Zimbabwe	Italy	United Arab Emr.

Panel B: Nine Group Solution

Group 1-U.K. Influence	
Australia	New Zealand
Botswana	Philippines
Hong Kong	Papua
Ireland	Singapore
Jamaica	South Africa
Luxembourg	Sri Lanka
Malaysia	Taiwan
Namibia	Trinidad/Tobago
Netherlands	U.K.
Netherlands Ant.	Zambia
Nigeria	Zimbabwe

Group 2_U.S. Influence	
Bermuda	Israel
Canada	U.S.A.

Group 3-Arab/Hybrid	
Belgium	
Egypt	Saudi Arabia
Liberia	Thailand
Panama	United Arab Emr.

Group 4	
Costa Rica	

Group 5-Latin America	
Argentina	Chile
Brazil	Mexico

Group 6	
Finland	Sweden

Group 7	
Germany	

Group 8-European	
Columbia	
Denmark	Norway
France	Portugal
Italy	Spain

Group 9	
Japan	

Source: Doupnik and Salter [1993]

Reviewers were asked to: (1) rate each variable on a three-point scale indicating its importance (in terms of relevance to the auditing function), and (2) suggest alternate practices of key importance. From the reviewers' feedback the variables were reduced from forty to thirty-two variables that could be operationalized. The review of variables will reduce the likelihood of swamping important auditing criterion's for trivial ones, and in creating artificial classifications among countries due to differences in unimportant auditing characteristics. This allowed the researcher to proceed to the data collection stage with some confidence that a reliable database of national auditing practices could be developed.

To obtain data on current international auditing practices the sources are KPMG, Peat Marwick's TRANSACC (Transnational Accounting) [1995] and Cooper and Lybrand's International [Auditing] Business Practices [1995]. Both sources received input and review from many sectors of the world business community, however, to avoid the criticism of erroneous data, verifications for 41 of the countries on selected variables were made with other sources. No discrepancies with other data sources were discovered. Guatemala, India, Jordan, Kuwait, Nigeria, Peru, Portugal, Turkey, and Uruguay could not be verified with other sources. However one of the reviewers with experience in the middle-east, found Jordan and Kuwait to be accurate. The other sources, used only for "spot-check" verification, are Price Waterhouse's "Doing Business In..." series [1993-1997], and Anyane's "International Handbook of Accounting Education and Certification" [1992]. To avoid redundancy, for countries with multiple types of auditors (e.g. Japan), only the numerically dominate auditor form was included when addressing auditor requirements of licensing, independence, and related competency issues. A final issue regarding the suitability of the data remains unresolved however. As noted by Meek and Saudagaran [1990] the data may not reflect actual auditing practice but what practice would be if rules were followed, and hence is a limitation of the data.

The data set was used as input into hierarchical cluster analysis using the average-linkage and Ward's methods. This is identical in all ways to the statistical method employed by Doupnik and Salter [1993], except that SAS is foregone in favor of the newer SPSS version 7.5. The underlying algorithms would appear to be the same between the two statistical packages. Since neither the average-linkage nor Ward's method is clearly favored in the literature [Punj and Stewart, 1983], both were tried initially. The average-linkage method was found to produce slightly more stable results using a validation technique suggested by SPSS [1997]. After initial clustering with the average-linkage method, seven countries identified as outliers were eliminated from further analysis in accordance with Punj and Stewart's [1983] recommendation. The countries were Austria, Greece, Guam, India, Indonesia, Pakistan, and Turkey. These countries were identified as outliers in the sense that they are not members of either of the two major clusters that emerged in the optimal solution. Inspection of the raw data showed that, in general, these countries had a poorly developed structure of auditing in Western terms. None of these countries were included in Berry's [1987] or Doupnik and Salter's [1993] group of countries. This study includes thirty-three of the thirty-seven capitalist countries classified by Berry [1987] and fort-one of the fifty countries included in Doupnik and Salter [1993]. The remaining countries comprising the usable sample of fifty countries were not examined in either Berry or Doupnik and Salter.

RESULTS

The number of significant clusters was determined by examining pseudo F-statistics for local and maximum peaks and pseudo t^2-statistics for breaks or rapid drops in value [SPSS, 1997]. The best (global) solution using the pseudo F peak and t^2 drop heuristics occurred at two clusters with a strong local solution at nine clusters. The results of the two and nine cluster hierarchical solutions are presented in Figure 3. Hierarchical cluster analysis is an aggregative procedure in which the countries with the most commonality form seed pairs to which are added additional countries with similar practices. At various stages in the hierarchy, individual clusters are joined eventually resulting in all countries combined into one cluster.

The two-cluster solution that arises from this initial split represents the most statistically significant solution from the cluster analysis. It is consistent with Berry's [1987] and Doupnik and Salter's [1993] classification of macro and micro clusters. The micro group includes those countries that rely primarily on practitioners and other non-legislative sources to develop auditing principles. This group includes all British Commonwealth countries (included in the sample), the U.S., the Netherlands, and their related colonies and former colonies. It also includes Taiwan, which has strong U.S. economic ties.

The macro group consists of countries that traditionally have relied on legislative fiat for auditing matters. This group includes all continental European countries (excluding the Netherlands) and countries drawing their law from a continental base, namely countries in Latin America, the Middle-East, and non-British Asia. Middle-eastern countries, however, were late in the clustering process to be classified with the macro group. Jordan, Kuwait, and Saudi Arabia possess many of the characteristics of the micro group. It is speculated that this stems from the U.S. and U.K. influence in the oil and gas industry when these countries where developing their auditing practices.

Table 3
Classification by auditing practices
Panel A: Two Group Solution

Group 1-Micro		Group 2-Macro	
Australia		Argentina	Jordan (N)
Bahamas (B)		Belgium	Kuwait (N)
Bermuda		Brazil	Mexico
Canada		Chile	Norway
Hong Kong		Columbia	Panama
Ireland		Costa Rica	Peru (B)
Israel		Denmark	Portugal
Jamaica		Ecuador (N)	S. Korea
Malaysia	South Africa	Egypt	Saudi Arabia
Netherlands	Taiwan	Finland	Spain
New Zealand	Trinidad	France	Sweden
Nigeria	U.K.	Germany	Switzerland (B)
Philippines	U.S.A.	Guatemala (N)	Thailand
Singapore	Venezuela (B)	Italy	United Arab Emr.
		Japan	Uruguay (B)

Panel B: Nine Group Solution

Group 1-U.K. Influence		Group 4	
		Costa Rica	Ecuador (N)
		Group 5-Latin American	
Bahamas (B)	Nigeria		
Hong Kong	Philippines	Argentina	
Ireland	Singapore	Brazil	Mexico
Jamaica	South Africa	Chile	Peru (B)
Malaysia	Taiwan	Guatemala (N)	Uruguay (B)
Netherlands	Trinidad		
New Zealand	U.K.	Group 6	
Group 2-U.S. Influence		Finland	Sweden
		Group 7	
Australia	Israel		
Bermuda	U.S.A.	Germany	
Canada	Venezuela (B)	Group 8-European	
		Columbia	
Group 3-Arab/Hybrid		Denmark	Portugal
		France	S. Korea
		Italy	Spain
Belgium	Panama	Norway	Switzerland (B)
Egypt	Saudi Arabia		
Jordan (N)	Thailand	Group 9	
Kuwait (N)	United Arab Emr.		
Source: author		Japan	

(N): Countries not included in Berry [1987] or Doupnik and Salter [1993]
(B): Countries included in Berry [1987] but not Doupnik and Salter [1993]

After decomposing the two clusters into the nine cluster solution (see Table 3 - panel B) the spheres of influence become more apparent. Two subgroups within the micro group of countries appears to exist: (1) a

U.K.-influence group (Group 1), and (2) a U.S.-influence group (Group 2). The macro class of countries splits into seven groups including two single-country groups: 1. an Arab/Hybrid group (Group 3), 2. Costa Rica/Ecuador (Group 4), 3. a Latin American group (Group 5), 4. Finland/Sweden (Group 6), 5. a European group (Group 8), 6. Germany (Group 7), and 7. Japan (Group 9).

The emergence of Belgium in an Arab/Hybrid group (Group 3) was unexpected. It has been speculated that a link among these countries may arise from a common French accounting system heritage (Doupnik and Salter, 1993). Colombia does not emerge with the other South American countries perhaps because historically it has not suffered from the hyperinflation of its neighbors. The Philippines do not emerge in the U.S.-influence group (Group 2), but instead in the U.K.-influence group (Group 1). As in Berry [1987], and Doupnik and Salter [1993] the current study classifies most British empire countries, as members of the U.K.-influence family. This is noteworthy given the geographic and economic distance that exists among these countries.

It was expected that Canada, Bermuda, and Israeli auditing practices would fall in Group 2 under the U.S. influence. Australia also appears to have been strongly influenced by the United States. Berry [1987] and Doupnik and Salter [1993] classify Australia in the U.K. group. This suggests that auditing developed in Australia independently and at a later time than accounting influences from the United Kingdom. Australia is striving to comply with the international auditing requirements established by the International Federation of Accountant's Committee (IFAC). The U.S. is also in conformance with the majority of auditing standards established by IFAC. The U.K. however, differs from IFAC on several important educational standards. An examination of the raw data shows the U.K.'s long standing system of apprenticeship for auditing versus the U.S. and Australia's greater emphasis on formal education. This may explain why Australia although closer to the U.K. in accounting practices, bears greater similarities to the U.S. for auditing practices. As with accounting practices, Panama, and Taiwan did not adopt a U.S. model of auditing, instead they are found in Group 3 - Arab/Hybrid, and Group 1 - U.K. influence respectively. Political and economic ties have apparently not been strong enough for this to occur.

The macro class, European family (Group 8) consists not only of Romance language members of the European Community, but includes two Scandinavian countries as well. For various reasons, one might expect all the Scandinavian countries (Denmark, Finland, Norway, and Sweden) to have similar auditing systems. The current results suggest that this is not the case as Finland and Sweden form a separate cluster (Group 6).

The cluster denoted above as Arab/Hybrid (Group 3) does not lend itself to simple ex post explanation. Borrowing one of Berry's [1987] factors for differentiation, perhaps one can use the legal system to explain the clustering of Arab countries as they all at least partially adhere to Islamic law. I do not care to venture a guess as to the relationship between these countries and countries such as Belgium, Panama and Thailand. A study of the business environments and auditing systems in the countries comprising this cluster might lead to the identification of an additional macro family that can be added to the hierarchical classification. Until such a family can be defined through a priori reasoning it would be imprudent to include those countries in the judgmental classification.

Germany (Group 7) and Japan (Group 9) formed the only single country groups. Although Germany and Japan have the most in common in the hierarchical groupings, they decomposed into separate groups very early in the process suggesting this relationship is at best very tenuous. Both are members of the macro group, which statistically is the only conclusion that one can reach regarding these two countries. This is consistent with Doupnik and Salter [1993], but not Berry [1987] which groups Germany and Japan together.

As the study was not limited to those countries included in Berry [1987] or Doupnik and Salter [1993], the results of the cluster analysis provide an opportunity to suggest further insight into the hierarchical classifications. Countries that are denoted with "(N)" in Table 3 were not included by Berry or Doupnik and Salter. Countries denoted with a "(B)" were included by Berry but not by Doupnik and Salter. The Bahamas, Peru, Switzerland, Uruguay, and Venezuela grouped the same as in Berry [1987]. As expected, Jordan and Kuwait clustered in the macro-Arab/hybrid family (Group 3). Guatemala clustered with the Latin American countries, which again was expected, given the similarities in language, culture, economics, and legal system. The most interesting grouping is Ecuador with Costa Rica (Group 4). This grouping, although it contains only two members, suggests a sub Latin-American group.

CONCLUSIONS

The results suggest the existence of several different families of auditing systems, consistent with Berry's and Doupnik and Salter's hypothesis for accounting systems. However, the hierarchy for auditing is not identical to those proposed for accounting reporting and disclosure. As an aside it is interesting to note that even after integration of the 4th and 7th Directives into national law, the eleven members of the EC included in this study, can be found in four different clusters spanning the two major classes of auditing systems and is also consistent with accounting systems as classified by Doupnik and Salter [1993].

Comparisons with prior studies reveal more similarities than differences, the most notable exceptions being Australia and Japan. Prior studies group Australia with the United Kingdom whereas this study groups Australia with the United States. Japan was found to form its own distinct group, whereas Berry [1987] grouped it with Germany. The other primary finding is that labeling groups as following a leader is not as apparent as similar research with accounting practices, notably the Arab/Hybrid group. These findings suggest that countries which follow very similar accounting practices do not necessarily establish the same auditing environment, that the development of auditing has some independence from the development of START accounting. Historically and rationally a country's accounting practices are developed before any formalized system of auditing would be needed. The auditing environment, being established somewhat later, may follow a different model than that used for accounting practices. Australia for example is closer to the U.S. in auditing characteristics, yet retains many of the accounting practices it inherited from the U.K. These findings suggest that countries do not always follow the same "leader" when choosing audit principles that they do when choosing accounting reporting and disclosure practices.

The results also indicate a dichotomization of auditing systems consistent with the macro and micro characterization of Berry, and Doupnik and Sorter. If the IFAC's International Auditing Standards can be viewed as an international norm, then companies in micro class countries, on average should be expected to exhibit greater compliance with international norms than their macro class counterparts. The existence of only two families within the micro class, as compared with seven families in the macro class, suggests that harmonization within the former class may be more easily effected. The existence of seven separate classes of auditing system with significant differences across a broad range of auditing characteristics provides less encouraging news for worldwide harmonization efforts. Even if efforts were to concentrate on the highly developed countries of Western Europe, North America, and Japan, given that those countries emerge in seven different groups, harmonization efforts appeal to have significant difficulties to surmount. These differences warrant that the auditing environment should be expressly considered and evaluated when addressing harmonization issues. Differences among countries in the auditing "culture" even where accounting practices are very similar may act as a potential barrier to harmonization. The current classification represents a snapshot of the worldwide patterns in auditing systems in 1995. Future replication of this study could provide interesting information on how worldwide auditing systems change over time.

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AUDIT SELECTION: INCREASING THE EFFICIENCY OF SALES TAX ADMINISTRATION

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ABSTRACT

The sales tax is an important revenue source for both state and local governments in the United States. The sales tax is relatively simple to collect, but political issues complicate the tax, demanding a wide range of administrative duties which must be performed by both the taxpayer and the taxing authority to ensure compliance under the tax laws. These are costs associated with each of these duties of administration. One such duty, audit, is one of the strongest compliance tools available to taxing authorities enabling direct access to taxpayers' books and records. Using efficient audit selection techniques, a taxing authority can maximize the results of an audit program while minimizing costs of administration.

This paper compares the audit selection techniques of sales tax operations in four states. Based on this analysis an audit selection model for a local municipal sales tax office will be developed.

BACKGROUND

The sales tax is a consumer-based tax which can be levied as a fixed percentage of value of tangible personal property or services rendered. In effect, it is a flat tax on consumption. The sales tax covers all transactions at a given level (generally retail), unless certain transactions are explicitly excluded. The seller in a taxable transaction is responsible for collection of the tax from the purchaser, or consumer. The tax is then reported and submitted by the seller, or taxpayer, to the taxing authority periodically as required. The sales tax is essentially a self-assessed tax, as the seller is responsible for determining their liability. Therefore, the seller bears a large portion of the cost of administration of the sales tax in record-keeping and reporting.

The sales tax was first instituted in the United States by the Sate of Mississippi in 1932. The Mississippi tax was levied as an emergency measure to combat the declining effectiveness of other state-imposed taxes brought about by the Great Depression. The collection of income and property taxes reflected the declines in American employment. At the same time, expenditure needs, in the welfare arena in particular, were increasing dramatically. Most states had few other resources which would yield the necessary additional revenues. The sales tax proved to be more productive than expected. Within a six year period, an additional twenty-six states (plus Hawaii) followed Mississippi in establishing the tax. The states found that the tax could be administered at a very low rate, yet still provide sufficient revenues at a relatively low collection cost.

AUDIT ADMINISTRATION

Although the taxpayer bears a substantial burden in the collection of the tax, the taxing jurisdiction must consider its own costs in the administration of the tax. The sales tax, when effectively administered, has a low cost to the jurisdiction as compared to the yield. Tax administration includes six general steps (1) inventory preparation, (2) base valuation, (3) computation and collection, (4) audit, (5) appeal-protest, and (6) enforcement (Mikesell, 1986).

Audit is essential in determining taxpayer compliance. In a sales tax audit, the tax auditor examines the books and records of the taxpayer in order to determine compliance with the sales tax law. "The objectives of the audit program are to promote taxpayer compliance, and also to increase net tax revenue (Winn, 1992)." Overall, the audit program is one of the most effective means of recovering revenues not reported to the taxing authority. An audit program should be used to ensure that the tax is being collected correctly and consistently. Recognizing that most under-reporting of tax is not due to deliberate evasion, the audit program should penalize under-reporting of tax but

identify and resolve overpayments of tax as well (Due and Mikesell, 1983). Audit programs yield from between twice and fifteen times as much as they cost (Due and Mikesell, 1983).

Careful selection of accounts for audit can maximize the productivity of an audit program. Statutes of limitations restrict the period of time in which a taxing authority can extend its audit privilege over an account. To ensure complete compliance with tax law, the taxing authority would ideally audit each account at least once within the statute, and repeat the process as often as necessary in order to examine each period of activity. Realistically, resources are not available to most taxing authorities to provide this thorough coverage of each account. Furthermore, "The states have never had the personnel to audit all firms within the period of the statute of limitations and would not find it worthwhile to do so, as experience has shown that many accounts will yield little or no additional revenue from audit (Due and Mikesell, 1983)." On the other hand, larger accounts are felt to hold greater potential for audit gain. A taxing authority can simply rely on examination of these accounts for their revenue potential. Yet, this method overlooks the educational aspect of the audit program stressed by many taxing authorities. The taxing jurisdiction must balance its objectives in the selection of accounts for audit.

Methods of audit selection are of great importance if the taxing authority wishes to maximize the benefits of the audit program. Between 1979 and 1992 twenty-five states reduced sales tax audit coverage (Murray, 1995). "The decline in audit coverage likely reflects several factors, including budget shortfalls, growth in the number of sales tax accounts, and the reallocation of audit resources to more complicated accounts (Murray, 1995)." Account selection is one of the most vital aspects of the audit process (Cowan, 1961).

AUDIT SELECTION TECHNIQUES

There is a wide rage of audit selection techniques employed by taxing authorities in the United States. Traditional audit selection techniques may be employed by taxing authorities under the constraints of limited resources. Simple examination of sales tax returns submitted by the taxpayer can reveal unusual values which suggest a need for further examination. Previous audit experiences can provide leads to other businesses, as can complaints and informers from the public at large, when non-compliance with the law is suspected. Additionally, previous audit experience with a specific account may suggest that continued examination of the account would be beneficial. And many jurisdictions favor larger accounts, recognizing a greater audit potential among the more complex businesses (Cowan Moak 1961). Some jurisdictions simply select accounts at random, though no jurisdiction relies completely on random selection.

Many taxing authorities examine groups, or cells, of accounts for norms, watching for deviations from what is considered normal. These cells are generally grouped by industry, but considerations are made for business size, tax liability, locations, and other factors. Some jurisdictions focus audit efforts on one cell at a time in the belief that certain similarities should be found among the accounts making up each cell. Data from similar accounts may be compared more readily, thus making problem accounts more apparent. It is also felt that an auditor focusing on a specific industry becomes accustomed to the record-keeping mechanisms employed by that industry, granting the auditor greater awareness of "problem areas." (Cowan and Moak,1961)

Computer technology has given taxing authorities additional power in the audit selection process. Computers enable taxing authorities to track account data more accurately than in the past. Many jurisdictions use data processing to input general account information (location and industry), sales tax return data (dales volume and tax liability), and audit data (audit date and results). Once account data is compiled in a computer system, the taxing authority can sort data based on specified criteria. The taxing authorities are then able to prepare reports detailing information as needed. These reports are used to facilitate decision making in the audit selection process.

Some taxing authorities use computers to reach beyond simple report compilations for audit selection, statistically analyzing account data and past audit results. The computer can be used to establish industry norms for account data and audit data. Correlations between the audit data and the industry data are analyzed with the intent of identifying types of variances which point to highly productive audit results. Then, information for a given account can be compared against a range of established criteria in order to locate similar patterns of variance. Generally, these programs assign a score to each variance found, with larger variances receiving higher scores. All of the scores for an account are then totaled, so that the account may be compared to other accounts in terms of expected audit productivity.

MODEL

The local government's sales tax resources are limited. In the past they have used traditional audit selection methods. For instance, they might select an industry and audit all businesses in that industry. The chief goal of this study was to find an audit selection program which would increase the efficiency of the local sales tax office's audit program. A statistical modeling program will be developed which will be capable of providing information about each account in relation to other accounts and previously audited accounts.

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TESTING THE QUALITY OF ENVIRONMENTAL LIABILITY DISCLOSURES

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ABSTRACT

The estimated cost of toxic waste cleanup in the United States is $750 billion dollars over the next thirty years (Gibby and Patella, 1993) (Chadwick, Rouse and Surma, 1993). Over sixty two percent of American firms at risk have indicated that they have a possible environmental cost exposure (Petracca, 1993).However, many companies record no actual liability on their balance sheets. FASB Statement 5 states that if a loss exposure is probable and the amount can be reasonably estimated, then the firm is required to record a liability. However, the standard provides no guidance on how to estimate or measure the dollar amount of the loss exposure. Firms that have a probable liability but which can not determine a dollar estimate for their environmental cleanup costs are only required to disclose information in a footnote.

While the FASB has been considering environmental disclosure issues, the Securities and Exchange Commission and the Governmental Accounting Standards Board (GASB) have both adopted some specific requirements for treatment of cleanup costs. The SEC, in Staff Accounting Bulletin (SAB) 92, indicated that firms should record a liability at least equal to their minimum estimate of the eventual cost of the environmental exposure for disclosure on the balance sheet. That liability can be restated later as additional information becomes available. The GASB requires municipalities to recognize garbage dump environmental cleanup costs over the useful life of the site. Therefore, the three authoritative bodies have different requirements for disclosure of environmental liabilities. The question remains whether or not the sum of those disclosures is providing adequate information for financial statement user decisions.

This paper is the second of a two part examination of environmental reporting practices by U.S. firms. The initial portion of the research dealt with assessing corporate awareness and management consideration of potential environmental liabilities. This second phase examines the information available regarding superfund sites and the methods and extent of disclosure made by the firms involved. Environmental liabilities reported to the SEC were compared with disclosures made in the financial statements for two hundred and forty firms over a six year time period. Although the extent of environmental liability disclosure increased appreciably during the period under review, the information content and usefulness of such disclosures was poor. There still appear to be appreciable differences between the ideal disclosure of environmental liabilities and the reality of the financial statements.

WHAT DETERMINES R&D EXPENDITURES IN THE COMPUTER INDUSTRY?: AN EMPIRICAL INVESTIGATION FROM ACCOUNTING ANALYSIS

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ABSTRACT

The purpose of this paper is to investigate the determinants of research and development expenditures in computer industry. Prior studies have suggested a number of factors that determine the amount of R&D expenditures in general. This paper focuses on the computer industry, one of the high-tech industries. Additionally, instead of relying on finance data such as stock returns, this paper focuses on the impact of accounting data on the R&D expenditures. We found that firm's ability to cover interest payment, liquidity position, profit margin, and net income are the most important determinants of R&D expenditures in the computer industry.

INTRODUCTION

Research and development activities play a major role on maintaining a firm's competitiveness in an increasingly competitive global market. This is particularly true for high tech industries. Research has suggested that R&D activities enhance a firm's competitiveness, therefore, the firm's value. These studies employ finance data such as stock returns, and examine how stock markets react to R&D activities by using the event study approach. Studies in this area also suggest a number of factors that influence R&D expenditure.

This paper attempts to investigate the factors that influence R&D activities by employing accounting data. To provide more insight as to why some firms spend significantly higher amounts of R&D expenditures, we focus on only one industry, the computer industry. To a large degree, R&D activities are far more important for the high tech industry than for the less technology-intensive industry. Therefore, the main purpose of the paper is to examine what determines R&D expenditures in computer industry.

LITERATURE REVIEW

Previous event studies suggest that stock prices react positively to firms' R&D announcements. The methodology in the event studies utilized the abnormal return, derived from the difference between actual return and expected return derived from the capital asset pricing model, to measure the impact of R&D activities on the firm's market value.

To a large degree, those studies suggest that R&D activities enhance the firm's value. What is not clear in literature is the determinants of R&D expenditures. Most prior studies use finance data to analyze this issue. However, from the accounting viewpoint, R&D expenditures are treated as expenses that go against operating income. The implication is that R&D expenditures erode net income as well as overall profits of R&D expenditures by using accounting data. Given the fact that R&D activities affect firms in the high tech industry significantly more than firms in others, we select the computer industry as the focus of this paper.

METHODOLOGY AND DATA COLLECTION

R&D expenditure is used as the dependent variable. Independent variables include the following:

CR: Current ratio, which is defined as current assets/current liabilities
QR: Quick ratio
DSO: Days sales outstanding, defined as accounts receivable/daily average sales
EPS: Earnings per share
NI: Net income
TIE: Times interest earned, defined as operating income/interest charges
PM: Profit Margin, defined as net income/sales
IT: Inventory turnover, defined as sales/inventory

A sample of firms in the computer industry and variables were collected from the database in Compact Disclosure. Firms with SIC codes of 3571 and 3572 were included in the sample.

This study will employ a multiple regression analysis to build an exploratory model. Based on independent variables described above, the model will explain the size and directional relationship between R&D expenditure and explanatory variables. Because linear relationship is convenient and easy to understand, regression models are frequently applied to accounting/financial studies. In this study, the following multiple regression model is proposed to investigate the impact of variables on the R&D expenditures, and several reduced models will be also estimated:

$$Y_i = ß_0 + \sum_{j}^{p} ß_j X_j + e_i$$

where Y_i = the amount of R&D expenditure for the *i*th firm,
X_j = independent variables (j = 1,2, ..., p),
e_i = random error, and
i = 1,2, ..., m (firms).

Coefficients of determination and F-values will be used as measures of validity and reliability of multiple regression models. Individual t-values will be employed as relaibility measure of each explanatory variable. Variance inflation factors (VIF) will be computed to estimate whether multicollinearity problems exist.

EMPIRICAL RESULTS

Table 1 provides descriptive statistics for variables in the study. Larger firms tend to incur a higher amount of R&D expenditures. To normalize this variable, we use the R&D ratio, defined as R&D expenditures/sales, to measure R&D activities. It ranges from the maximum of 9.133 to the minimum of .27, with a standard deviation of 1.04.

Table 1

	Minimum	*Maximum*	*Mean*	*Median*	*Std Dev*
Current Ratio	0.01	47	3.358	2.12	5.562
Quick Ratio	0.001	1066	10.225	1.27	118.987
DSO	11.39	282.29	74.126	62.98	39.523
EPS	-12.38	7.23	-0.582	-0.1	2.804
NI (000)	-816000	4178000	57006	-891	506080
Sales (000)	183	7194000	2742266	88822	9332293
Profit Margin	-27.44	0.33	-0.83	-0.03	3.547
IT	0.54	279.19	12.942	7.07	31.809
RD Expenses(000)	22	6010000	188184	8105000	734081
RD Ratio (S/R&D)	0.002	9.133	0.27	0.093	1.041
Debt Ratio	0.09	120.37	2.108	0.53	13.313

Times Interest Earned	-91.78	366	22.898	2.435	75.8

To investigate the potential multicollinearity problem, we perform a coefficient correlation matrix, as shown in Table 2. Except the coefficient between sales and net income, it shows that multicollinearity problem is not significant. Th coefficient between sales and net income is .79 and significant at 1% level. That indicates that sales, to a large degree, substitutes for net income. For this reason, we drop net come, and utilize sales as part of the independent variables.

Table 2

	CR	*DSO*	*EPS*	*Inv_t*	*NI*	*PM*	*QR*	*Sales*	*TIE*
CR	1								
DSO	-0.207	1							
EPS	0.089	-0.096	1						
Inv_t	0.078	-0.11	-0.135	1					
NI	-0.028	0.008	0.541	-0.003	1				
PM	0.05	.-214	0.124	0.014	0.042	1			
QR	0.365	0.33	0.142	0.213	.-014	-0.08	1		
Sales	-0.085	-0.006	0.381	-0.022	0.798	0.072	-0.035	1	
TIE	0.0488	-0.083	0.284	0.018	0.025	0.316	0.23	-0.045	1

Table 3 provides the regression results. The first model indicates that quick ratio, profit margin, and times interest earned are significant in determining R&D amounts. The model is highly significant at the one percent level with F value of 34.44. In Model 2, we include additional variables, net income. The results are similar to Model 1. All three variables remain significant.

Table 3

Variable	Model 1	Model 2	Model 3
CR			.002 (.013)
DSO	-.021 (-.275)	-.022 (-.289)	-.18 (-1.85)
EPS			.200 (1.58)
INV_TU			-.12 (-.683)
NI		.094 (.697)	.006 (1.91)**
QR	.215 (2.84)***	.212 (2.73)***	.204 (1.98)**
TIE	.132 (1.70)**	.127 (1.588)*	.186 (2.04)**
PM	-.908 (-11.1)***	-.91 (-10.77)***	-1.04 (-9.3)***
F value	34.44***	22.3***	13.41***
Adj R square	0.72	0.714	0.717

To further test the impact of three significant variables in previous models, we include all variables in Model 3. Three variables, profit margin, quick ratio, and times interest earned, remain significant. Additionally, net income shows that it is marginally significant at the 10% level.

DISCUSSION

From the empirical analysis, it suggests that quick ratio and times interest earned positively correlated to the R&D investments in the computer industry. Surprisingly, profit margin shows a negative impact on the R&D investment and it is significant at the 1% level. Results indicate that computer firms spend more on product development and innovation, proxied by R&D investment, when they possess a higher degree of liquidity than their counterparts.

Results also suggest that profit margin negatively correlated with R&D investment. This result is somewhat puzzling. It indicates that firms spend lesser amounts of R&D investment than their counter parts when profitability derived from operations is high.

CONCLUSION

This paper attempted to build an explanatory model to find out significant factors that determine the amount of R&D in the computer industry. It is concluded that quick ratio, time interest earned, profit margin, and net income variables are significantly related to R&D expenditures in high tech firms. This study provides a further insight to the literature regarding R&D. Future studies may improve the model by incorporating additional accounting information into the model.

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NEW EVIDENCE ON FINITE-LIFE AND PERPETUAL REAL ESTATE INVESTMENT TRUSTS

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ABSTRACT

The purpose of this paper is to examine excess returns and systemic risk of finite-life and perpetual real estate investments trusts (REIT). The present study used two significant research (Goebel and Kim 1989 and Martin and Cook 1991). This study has incrementally contributed over the existing literature by including a longer time horizon covering 1988 through 1993. The extension and improvement proposed by this study relies heavily on capturing and characterizing the financial performance of real estate investment during the period of 1988 through 1993 when the underlying industry has grown dramatically. An argument is made that the organizational differences between finite-life and perpetual REI T are not as restrictive as may be perceived, and as such, have not necessarily led to different operating strategies for the two REIT types. Consequently, there should be no substantive difference in their risk and return measures. The results of the underlying research suggest that there is no difference in the financial performance or in estimates of systematic risk between finite-life and perpetual REIT.

INTRODUCTION

This paper presents new evidence about the risk and return characteristics of finite-life and perpetual real estate investment trusts. Despite their organizational differences (pre-specified termination versus perpetual entity), an argument is made that the differences have not necessarily led to different operating strategies for the two REIT types. Consequently, there should be no substantive difference in their return and risk measures. The results reported herein support this contention.

Two key studies represent the most comprehensive research on finite-life REITS published to date. Goebel and Kim (1989) examined the financial performance of finite-life REITs and compared them with the more conventional perpetual REITs. The authors calculated excess stock returns for finite and perpetual REITs over the period 1984 through 1987. Martin and Cook (1991) used generalized stochastic dominance to characterize the performance of finite-life REITs, perpetual REITs, and common stocks. Both studies suggest that on a risk adjusted basis, perpetual REITs outperform finite-life REITs.

The purpose of this research is to further examine excess returns and systematic risk of finite-life and perpetual real estate investment trusts. Following Goebel and Kim, financial performance is measured by Jensen's alpha, the intercept in a regression of REIT risk premia on the market risk premia. This research expands on previous contributions as follows: 1) Excess real estate returns and risk measures are examined over a calendar period not previously studied (1988-1993); 2) This study focuses on the time period following the Tax Reform Act of 1986, and encompasses the 1989-1992 "Credit Crunch" analyzed by Fergus and Goodman (1994) which was characterized by decreased real estate investment, lending and construction activity; 3) The 72 monthly portfolio returns (1988 through 1993) provide additional insight over the forty-eight observations (1984 through 1987) used by Goebel and Kim (1989); and 4) This study examines the argument that organizational differences between finite-life and perpetual REITs are relevant in explaining the disparity in systematic risk and returns.

The remainder of the essay is organized as follows. The following section provides an overview of the REIT industry. The third section focuses on the organizational differences between finite and perpetual REITs and develops the motivation for this research. A review of relevant literature is provided in the fourth section. Data collection and

the research methodology are the focus of fifth section. The empirical findings are presented in sixth section. A summary of the results and possible implications of the research are included in seventh section.

OVERVIEW OF THE REIT INDUSTRY

The National Association of Real Estate Investment Trusts (NAREIT) reports that there are currently 307 tax-qualified REITs. Approximately 226 of these REITs trade on major stock exchanges. The remainder are recently formed or non-publicly traded REITs. REITs are generally classified as equity, mortgage, or hybrid REITs, depending on their particular real estate investment strategies. REITs may be further classified as finite-life real estate investment trusts or perpetual REITs. Finite-life REITs have pre-specified termination dates. The bylaws of finite-life REITs require that assets be liquidated and the proceeds distributed to the beneficiaries on or before this date. This finite-life feature is not shared by the more traditional perpetual REITs.

The first finite-life REIT was the McKee Income Realty Trust formed in 1975. Its original duration was ten years, calling for asset distribution in 1985. However, the organization's bylaws were later amended to allow for liquidation and final shareholder distribution by December 31, 1989. McKee acquired its first property on July 15, 1976. Over the next thirty-three months, McKee purchased ten additional properties, completing its property acquisitions on April 13, 1979. For the next five years McKee managed its investments. Property disposition began in 1984 with the sale of three of its eleven properties. By December 1989, property disposition was complete and the trust had been liquidated.

The case of McKee Income Realty Trust is not unlike other blind-pool perpetual and finite-life REITs that raise funds to acquire, operate, and dispose of real property. However, not all such REITs begin as blind-pool investments. Some are formed for the purpose of acquiring a specific property, or all of the real assets of an existing entity. The REIT sponsor raises funds on the strength of the existing assets that will be brought into the pool.

MOTIVATION FOR THE RESEARCH

Goebel and Kim (1989) provide convincing arguments about different investor perceptions regarding risk and returns of finite-life and perpetual REITs. The authors note that as a finite-life REIT approaches its liquidation date, the price of the stock should rise to reflect the value of the real estate. Also, while finite-life REITs have a specific liquidation date, managers have the option of liquidating sooner should favorable market conditions exist. They suggest, therefore, that finite-life REITs should be considered less risky to investors.

In support of these arguments, the authors document a difference in both financial performance and the systematic risk measures between finite-life and perpetual REITs. They used a CAPM-derived model advanced by Jensen to calculate excess market returns and systematic risk of perpetual and finite-life REITs. Their results show that finite REITs have lower excess returns (a) and lower systematic risk (b) than the perpetual REITs. Based on their results, perpetual REITs appear to dominate finite-life REITs on a return per unit of risk (a/b) basis. They also showed that both finite-life and perpetual REITs were outperformed by the market portfolio during the period of observation.

It should be noted, however, that the finite-life aspect is not necessarily as restrictive as may be implied. First, there is considerable variation in the initial durations of finite-life REITs. For example, Cedar Income Fund 2, Ltd., established in 1987, had a duration of 4 years. Landsing Institutional Properties Trust-V, established in 1983, had an initial duration of 39 years. Many finite-life REITs have established a range of duration. National Income Realty Trust had a range from 8-33 years. Most of the Public Storage Properties finite REITs established in 1990 and 1991 have durations of 3-10 years.

Second, as in the case of McKee, finite-life REIT shareholders may vote to extend the life of the entity. This option may be used to avoid liquidation under adverse market conditions. In fact, some trust bylaws provide for the extension of the REIT liquidation phase to pre-specified future dates. In this regard, finite-life shareholders enjoy similar protection as perpetual REIT shareholders against asset liquidation in poor real estate markets. Goebel and Kim (1989) also suggest that finite-life REIT managers have the flexibility to liquidate the trust assets sooner if favorable market conditions exist. However, perpetual REITs also have the ability to sell real assets if warranted by favorable market conditions.

Third, finite-life REIT shareholders may vote to permanently change the operating structure of the entity. Of the forty-nine finite-life REITs introduced prior 1988, approximately one of every three finite-life REITS has reorganized into an entity which does not qualify as a REIT, or has reorganized as a perpetual REIT. Given the ability of both perpetual and finite-life REIT managers to time asset disposition to maximize shareholder returns, and the ability of a finite-life REIT to permanently change its classification through reorganization, then there may be no substantive difference between the strategic operations of the two REIT types.

It is the contention of this research, therefore, that the differences between perpetual and finite-life REITs do not *a priori* establish that there is any difference in the operating strategies of the two REIT classes. Consequently, there should be no difference in excess return measures or systematic risk measures between the two REIT types. The sample used by Goebel and Kim ended with 1987 data. The Martin and Cook sample ended with March 1990 data. Since January 1989, the REIT industry has grown dramatically, both in nominal and real terms. Goebel and Kim suggested that additional research is needed covering a longer period of time to determine if finite-life REITs will outperform perpetual REITs under different market conditions. As such, the collection of research that characterizes the financial performance of real estate investment trusts will be enhanced by examining the active and volatile seventy-two month period from 1988 through 1993.

LITERATURE REVIEW

Numerous studies have compared the financial performance, risk characteristics, and diversification benefits of different real estate investment vehicles. In an early contribution, Roulac (1976) concluded that real estate returns are less volatile than returns of common stock. He found no evidence, however, that real estate as an investment dominated common stock returns. In another summary article, Sirmans and Sirmans (1987) do not generalize real estate return performance because the results of the various studies are often contradictory. Corgel, McIntosh and Ott (1995) present the most exhaustive REIT survey research conducted to date. Brueggeman, Chen and Thibodeau (1992) examined CREF performance over the period 1972-1991. The results support the portfolio diversification and inflation hedge benefits of including real estate in a portfolio. The authors also reported that real estate returns dominated both common stock and bond returns on a risk-adjusted basis because of lower real estate return volatility. Zerbst and Cambon (1984) found that real estate returns generally exceeded the returns on common stocks, bonds and treasury bills, and the rate of inflation. Further, correlation calculations showed consistently low to negative correlation between real estate and other asset classes.

Several studies have examined the performance of real estate limited partnerships (RELPs). Rogers and Owers (1985) computed RELP internal rates of return and compared them with returns of other reported real estate investments. They found that on an after tax basis, adequate returns are earned only by investors in high tax brackets. Kapplin and Schwartz (1988) compared RELP performance with common stock, Treasury bill and long-term government bond performance. The authors found that RELP returns have not consistently dominated returns of common stocks or other income-producing properties.

Roulac (1976) highlights the difficulties of comparing real estate returns with the returns of other assets. Some of the problems cited by Roulac are overcome by using REIT returns as a real estate proxy. In one of the earliest REIT studies Davidson and Palmer (1978) reported that publicly traded equity REITs outperformed the market. Chan, Hendershott and Sanders (1990) tested for the existence of a relationship between closed-end mutual funds and equity REITs. The authors concluded that real estate returns are not superior to common stock returns and they are not a hedge against unexpected inflation. They are, however, less risky than common stocks.

Burns and Epley (1992) offer evidence that inclusion of equity REITs in a diversified portfolio of common stocks increases portfolio return and lowers overall portfolio risk. Titman and Warga (1986) offer another perspective on performance measures. They examined the risk-adjusted performance of the REITs using both single index and multiple index models. Returns were measured against both the equally-weighted and value-weighted market portfolios as performance benchmarks. The authors concluded that REIT returns are so volatile that even large measures of abnormal performance are not statistically different from zero.

Kuhle (1987) examined the effects of diversification in reducing total portfolio risk in REITs. He reports that common stock portfolios realized a greater reduction in risk than did real estate portfolios as the number of assets held

in the portfolio increases. However, Kuhle also reported that the overall performance of mixed portfolios of common stocks and REITs is not significantly different from that of portfolios consisting entirely of common stocks.

Goebel and Kim (1989) compared the financial performance of finite-life REITs with the returns of perpetual REITs. They examined thirty two publicly traded perpetual and finite-life REITs over the period from 1984-1987. Using monthly returns, the S&P 500 Stock Index, the change in the Consumer Price Index, and the average one-month Treasury bill return, the authors calculated excess returns using both a single index model and a two-factor model. Jensen's alpha served as a measure of abnormal return. Their findings were as follows: 1) Perpetual REITs significantly outperformed finite-life REITs, however all REITs were outperformed by the market (proxied by the S&P 500 Index); and 2) There are risk diversification benefits from including REIT securities in a portfolio. It is not clear, however, that the benefits of diversification outweigh the marginal returns.

Martin and Cook (1991) compared the financial performance of traditional equity REITs, finite-life REITs, and publicly traded limited partnerships (PTLPs), with the returns of closed-end mutual funds (a proxy for common stocks). They employed generalized stochastic dominance (GSD) as a performance measure. They found that closed-end mutual fund performance is superior to PTLPs and REITs. The authors did find, however, that the performance of traditional REITs, finite-life REITs, and PTLPs improved when they were combined into portfolios. In fact, these portfolios dominated the mutual funds for the period 1980-1985. Martin and Cook attribute this phenomenon to the fact that securitized real property portfolios are not as well diversified as the closed-end mutual funds.

DATA COLLECTION AND RESEARCH METHODOLOGY

There are 226 tax qualified REITs that trade on the New York Stock Exchange, the American Stock Exchange, or through the National Association of Securities Dealers Automated Quotation System (NASDAQ). To be included in this research, the REIT securities must have traded over the entire 72 month period from 1988 through 1993. A total of 66 real estate investment trusts met this screening criteria and serve as the sample for this study.

The comparison of finite-life and perpetual REITs involved two phases. First, Jensen's measure of financial performance was used to calculate estimates of excess return and systematic risk for each REIT class. This methodology is based on portfolio theory attributed to Markowitz and on the capital asset pricing model (CAPM) framework first introduced by Sharpe in 1964. Jensen's procedure involves a time series regression of excess returns on the portfolio's risk premium. The model takes the form

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \qquad (1)$$

where

R_{jt} = excess rate of return (R_{jt} - R_{ft}) on portfolio j in period t;

R_{mt} = excess rate of return (R_{mt} - R_{ft}) on the market portfolio in period t;

α_j, β_j = the intercept and the slope terms of an ordinary least squares regression line;

ε_{jt} = a random error term with $E(e_{jt}) = 0$

Jensen (1968) showed that the intercept term a_j may be interpreted as a measure of a portfolio's excess return relative to the market portfolio. Positive alpha values indicate superior performance given the portfolio's measure of systematic risk, b_j. Negative alpha values indicate below market performance. The statistical significance of the parameter estimates is determined by calculating t-statistics and testing the null hypothesis H_{01}: a_j=0. Hypothesis (1) states that real estate investment trusts performed as well as the market portfolio during the period from 1988 through 1993. Daily return data from tapes provided by the Center for Research in Security Prices (CRSP) were utilized. For each REIT in the total sample, holding period returns were calculated for each month during the seventy-two month period. A monthly return for the market portfolio was calculated as well. The REITs were partitioned into two portfolios: finite and perpetual. The portfolio monthly returns were calculated by averaging the monthly holding period returns of the individual securities. The portfolio return was the dependent variable in the regression equation.

A consideration when analyzing asset returns using a CAPM-based model is the appropriate index for the market portfolio. Liu, Hartzell, Grissom and Grieg (1990) studied the impact that market portfolio composition has on inferences regarding financial performance of investment in real estate. They found that the selection of the market portfolio may significantly influence the degree to which abnormal or excess returns are found. The authors reported that there is a lower incidence of reported abnormal return activity when the S&P index is used as the benchmark portfolio. To reduce the probability of spurious results due to mis-specification of the market portfolio, three proxies for the market portfolio derived by CRSP were used: the return on the Standard & Poor's Composite Index, the return on a value-weighted market portfolio, and the return on an equally-weighted market portfolio.

Goebel and Kim (1989) suggested that additional insight into real estate trust performance might be gained by comparing REIT returns to a real estate index. Therefore, a fourth benchmark portfolio was developed using CRSP daily returns for real estate stocks. Two screens were used in developing the real estate market proxy. First, the CRSP database of NYSE and AMEX stocks was sorted by primary SIC codes. Securities with the following SIC codes were included: 6500-6599 (Major Group 65 includes real estate operators, and owners and lessors of real property, as well as buyers, sellers, developers, agents, and brokers), 6798 (real estate investment trusts); and 6799 (investors, not elsewhere classified but identified as a real estate entity). A second screen identified only those firms that traded during the period of study. A monthly holding period return was calculated for this group of real estate stocks. The seventy-two monthly returns serve as a proxy for real estate market returns from 1989 through 1993.

Calculating monthly excess returns following Jensen (1968) requires the use of a monthly risk free rate. The yield of a 90 day treasury bill with thirty days to maturity serves as a proxy for the risk free rate in this analysis. Using quotes published in the Wall Street Journal, yields were calculated as follows:

$$\frac{0 - \left[100 - \frac{30}{360} \text{ x Askdiscou}\right.}{\left[100 - \frac{30}{360} \text{ x Askdiscount}\right.} \qquad (2)$$

Generally, four or five quotes were published each month for treasury bills with thirty days until maturity. The individual yields were calculated and then averaged to determine a risk free rate for each month.

Part two of the analysis involved determining whether estimates of excess returns and systematic risk for perpetual REITs are statistically different than those for finite-life REITs. However, direct comparison of the regression coefficients from two linear regressions may involve statistical unreliability. The validity of the model is diminished if the dependent variable is affected by other variables, which may be difficult to control and standardize within classes of REITs.

To facilitate these comparisons, the following regressions were estimated over the 72 month period.

$$R_t^* = \alpha + \alpha^* D_{st} + \beta R_{mt} + \beta^* D_{st} R_{mt} + e_t \qquad (3)$$

$$R_t^* = \alpha + \beta R_{mt} + e_t \qquad (4)$$

where

R_t^*	=	$[R_{Ft}, R_{Pt}]$ {i.e. the stacked vector of finite-life and perpetual REIT returns}
D_{st}	=	shift dummy variable that takes on a value of 0 if REIT is finite, 1 if REIT is perpetual
a^*	=	the shift in the estimate of excess returns due to REIT being classified as perpetual
b^*	=	a shift in the systematic risk due to REIT being classified as perpetual

The coefficients to the dummy variables in regression equation (3) allow the development and testing of the null hypotheses H_{02}: $a^* = 0$ and H_{03}: $b^* = 0$. Hypothesis (2) tests whether excess returns for finite-life REITs and perpetual REITs are equal. Hypothesis (3) tests whether the finite-life and perpetual REITs face similar degrees of systematic risk.

RESULTS

The results of the tests are summarized in table 1 and table 2. The Jensen procedure generated estimates of excess returns and systematic risk for portfolios of finite-life and perpetual REITs over the 1988-1993 time period. Using the S&P Index as the proxy for the market portfolio, the a estimates for finite-life and perpetual REITs are -0.005035 and 0.003212, respectively. The associated t-statistics that test H_0: $a_j = 0$ are -.630 and .436. These results indicate that the estimates of abnormal average returns for both classes of REITs are not statistically different from zero. Comparable results were obtained using the value-weighted index derived by CRSP. The interpretation is that the real estate investment trusts performed as well as the market portfolio during the period of study. If the CAPM model is correct, that is, if a security's expected return is determined by the sensitivity of its return to the market portfolio, then the intercept in the regression should be indistinguishable from zero. Alpha values that are significantly different from zero, such as the negative values reported by Goebel and Kim (1989) for the 1984-1987 period, suggest that REITs earned excess returns relative to the market.

TABLE 1
JENSEN'S ALPHA AND SYSTEMATIC RISK ESTIMATES
FINITE AND PERPETUAL REITS

Market Proxy	aF t-stat for H0: aF = 0	aP t-stat for H0: aP = 0	bF t-stat for H0: bF = 0	bP t-stat for H0: bP = 0
S&P INDEX	-0.005035 (-.630)	0.003212 (.436)	0.304317 (1.369)	0.277593 (2.606)**
VALUE WTD	-0.006102 (-.755)	0.002068 (.289)	0.345337 (1.491)	0.32813 (2.918)**
EQUAL WTD	-0.015364 (-2.035)*	-0.006351 (-1.355)	0.76108 (4.471)**	0.669765 (7.745)**
RE PROXY	-0.003984 (-.666)	0.003836 (.936)	0.754933 (7.454)**	0.53447 (10.51)**

* significant at .05 ** significant at .01

Using the equally-weighted market index produced somewhat conflicting results. The alpha values for finite-life and perpetual REITs were -0.015364 and -0.006351, respectively. The estimate of excess returns for the finite-life REITs is significant at the 5% level. This suggests that finite-life REITs underperformed the market from 1988 through 1993, while perpetual REITs performed as well as the market portfolio.

The results support the contention of Liu, Hartzell, Grissom and Grieg (1990) that market portfolio composition impacts inferences regarding financial performance in real estate. However, because the S&P and value-weighted indices produced similar results, more weight was given to those findings in the reconciliation and interpretation of the results. As such, the weight of the evidence on finite-life and perpetual REIT returns generated using Jensen's procedure as a measure of return performance is not sufficient to reject H_{01}: $a_j = 0$.

The b-measures generated by the Jensen procedure are estimates of the systematic risk for the finite-life and the perpetual REIT portfolios. Regardless of the proxy used for the market portfolio, the beta estimates for REITs are low relative to that of the market. The low betas support the arguments of Burns and Epley (1992), Brueggeman, Chen and Thibodeau (1984), and Miles and McCue (1982) that including REITs in a diversified portfolio lowers portfolio risk.

Table 2 documents the shift in the regression parameter estimates due to REIT classification. Regardless of the proxy used for the market portfolio, the shift in the intercept, represented by a^*, is not statistically significant. This indicates that the estimates of excess returns between finite-life and perpetual REITs are not different, and that the two REIT classes performed equally as well over the 72 month period from 1988 through 1993. The evidence is not sufficient, therefore, to reject H_{02}: $a_F = a_P$. These findings are contrary to those reported by Goebel and Kim, who found that perpetual REITs dominated finite-life REITs from 1984 through 1987.

TABLE 2
PARAMETER ESTIMATES
AND TEST STATISTICS
FOR SHIFTS IN REGRESSION COEFFICIENTS
FINITE AND PERPETUAL REITS

Market Proxy		a* t stat for H0: a* = 0	b* t stat for H0: b* = 0
S&P INDEX		0.006569 (.709)	0.17018 (.660
VALUE WTD		0.005948 (.638)	0.19648 (.735
EQUAL WTD		0.007721 (.918)	-0.01845 (-.097
RE PROXY		0.007541 (1.136)	-0.16577 (-1.476

* significant at .05, ** significant at .01

Similar tests were performed to determine whether there is a difference in the systematic risk measures for the two REIT classes. The results indicate that the shift in systematic risk, represented by b^*, is not statistically significant. The results hold regardless of the proxy used for the market portfolio. This indicates that finite-life and perpetual REITs face similar degrees of market risk. The evidence is not sufficient to reject H_{03}: $b_F = b_P$. These findings directly conflict with previously published results.

The analyses using a real estate index as the appropriate benchmark against which REIT returns are measured did not provide additional insight into REIT financial performance. More specifically, the analyses produced results similar to those generated with the S&P Index, the value-weighted portfolio, and the equally-weighted portfolio. Perpetual and finite-life REITs appear to have performed at the same level. Further, there is no indication that finite-life and perpetual REITs differ in their reaction to an index of real estate market returns.

SUMMARY

This paper has examined the risk and return characteristics of finite-life and perpetual real estate investment trusts. The results presented herein overwhelmingly indicate that REITs performed as well as the market portfolio over the period from 1988 through 1993. Also, the average market performance and the relatively low betas for real estate investment trusts as a whole indicate that there are diversification benefits from including REITs in a portfolio. Further, it is shown that there was no difference in the financial performance or in estimates of systematic risk between finite-life and perpetual REITs.

These results are not surprising given the identical tax qualification requirements and similar operating structures of finite-life and perpetual REITs. The major difference between the two entities is the fixed-term aspect of the finite-life REIT. However, it was shown that this aspect is not as restrictive as may be implied. The termination date of the finite-life REIT may be extended to avoid liquidation under adverse market conditions, or shortened to take advantage of favorable market conditions. This flexibility of finite-life REIT managers is comparable to the ability of perpetual REIT managers to time asset disposition to maximize returns. Additionally, it is possible for a finite-life REIT to permanently change its operating structure to a perpetual REIT, or to another legal entity that does not qualify as a REIT. Therefore, the fixed-term aspect of the finite-life REIT does not establish there should be a difference in the operating strategies, financial performance or systematic risk measures between the two REIT types. The results of this study confirm this contention.

The results findings reported herein differ from those reported by Goebel and Kim (1989), who studied REIT performance over the 1984 through 1987 period. The authors found that REITs were outperformed by the market portfolio, and that perpetual REITs dominated finite-life REITs on a risk adjusted basis.

The most obvious explanation for the differences in results is that there may have been a structural change in the risk and return characteristics of finite-life and perpetual REITs from the 1984-1987 period to the 1988-1993 period. REITs trading between 1984 and 1987 were mostly sheltered from the impact that the Tax Reform Act of 1986 had on real property values and real estate investment. In addition, the REITs analyzed over the period from 1988 - 1993 were influenced by the "credit crunch" of 1989-1992, which was characterized by lower real estate investment, real estate lending and construction activity. These and other economic events may have altered the performance of finite-life and perpetual REITs relative to each other, and to the market portfolio.

Another explanation for conflicting results is the small sample size of finite-life REITs available for research. Drawing inferences for an entire population based on the observations of a small sample may lead to spurious conclusions. Additionally, some of the finite-life REITs trading during the 1984-1987 period were in a liquidation stage, while none of the finite-life REITs analyzed from 1988-1993 were in the liquidation process. Therefore, the influence of risk and return measures of a few REITs may have greatly impacted the performance of the portfolio and led to the different inferences regarding finite-life REIT performance.

The results presented herein generally support the contention of Liu, Hartzell, Grissom and Grieg (1990) that market portfolio composition impacts inferences regarding financial performance in real estate. The results were similar when using the returns on the S&P Index and a value-weighted portfolio as the market proxies. There were fewer incidences of abnormal activity under these scenarios, compared to results using the equally-weighted portfolio or the real estate market index.

This essay has extended the body of knowledge on finite-life and perpetual real estate investment trusts. Given the large number of perpetual and finite-life REITs entering the market, and recent tax changes designed to attract investment capital to the REIT industry, there will continue to be interest and the opportunity for research in this area.

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PROFESSIONAL ATTITUDES AND BELIEFS:

A DIFFERENTIAL TEST OF CULTURE AND GENDER

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ABSTRACT

This research used a six-item survey to examine differentiation on professional beliefs and attitudes for gender and cultural variables. The professionalism items sample beliefs of public accountants on both overall attitudes about their profession, as well as professional activity levels.

Culture is defined using the power distance (PDI) and individualism (IDV) dimensions developed by Hofstede (1984, 1991). The surveyed countries are chosen based on the low PDI/high IDV cultural designation (i.e., United States and Australia) and high PDI/low IDV cultural designation (i.e., Brazil and Philippines).

*The regression analysis of the professionalism items indicate significant differences on all six items on the cultural variable. However, not all of the results are in the predicted direction. Possible reasons for this result are discussed. A significant difference on the gender variable is indicated on only one survey item, with one culture*gender interaction effect.*

INTRODUCTION

This research targets the link between gender and cultural factors and the professional beliefs and actions of public accountants. Based on a review of the relevant literature, it is hypothesized that there will be a potential relationship between cultural dimensions identified as a component of the work environment and professional attitudes and activity levels.

Whenever the focus turns to national or regional differences, culture often enters into the discussion. However, defining culture for research purposes presents a problem because culture has been defined in so many different ways. An additional problem becomes breaking down the definition into terms that are specific enough that the components can be operationalized for the study of the concept.
many of their mutually held understandings.

The definition of culture from the standpoint of this study adheres to what is generally termed the "ideational" theory, which defines culture as being representative of the beliefs and values of a group composing a society (Rohner, 1984). These ideational mental programs used by society members act as a "filter" or even "automatic pilot" that guides them as they make judgments and express preferences on a day-to-day basis.

The ideational theory of culture harmonizes with the cultural definition of Hofstede as "'collective programming of the mind . . .'," which "is largely invisible and unconscious" (1987, 1) and as "software of the mind" (1991, 4). One way to define culture for research purposes is to describe culture as composed of a set of dimensions. Hofstede's (1984) extensive analysis of more than 117,000 surveys across 67 countries over six years identified dimensions that systematically describe the differences among the employee subjects of the countries surveyed. This study uses selected cultural dimensions of Hofstede's work for the cultural component of the examination. From his research, Hofstede identified the following four work-related cultural dimensions: power distance, uncertainly avoidance, individualism, and masculinity. These cultural dimensions supply the basis for dissecting the broad definition of culture so that its link to professionalism can be examined.

The *power distance* dimension refers to the way in which individuals accept and prefer established power differences in their environments. The *uncertainty avoidance* dimension refers to the way societal members prefer rules and rituals of varying complexity to deal with environmental uncertainties. The *individualism* dimension refers to the way in which individuals place concern in their everyday lives--either primarily with self or with the focus of

the group as a whole. The *masculinity* dimension refers to the preference of a society to perpetuate and promote either an assertive or a nurturing mental programming.

Professions have received attention in the literature for decades. An examination of the various dimensions or attributes composing the definition of "professionalism" was a popular topic in the literature during the sixties and seventies. By the mid seventies, this earlier work expanded into examinations of the relationship between professionalism variables and organizational characteristics and/or employee beliefs and preferences. Studies of professionalism in the accounting environment evolved from this background.

Hall (1968) proposed a multidimensional model of professionalism, which considered both the occupational dimensions and the individual dimensions of professionalism. The structural attributes are related to the formation of the profession, are more objective in nature, and closely parallel the attributes discussed by Wilensky (1964). The attitudinal attributes are related to how members of the profession view their work, are more subjective in nature, and represent beliefs considered important to the individual members of the profession. Hall studied subjects from nine professions and found strong support for his dual-attributional model. Behavioral data also strongly supported the attitudinal responses.

Snizek (1972) built on the 50-item instrument of Hall (1968) and analyzed professional attitudes from additional professional groups. Principal component factor analysis resulted in a parsimonious alternative to the original 50 survey items down to 25 items with only a minimal decrease in reliability coefficients (i.e., from .86 to .84 fro the Hall data; from .80 to .78 for the Snizek data).

The professionalism/bureaucratic organizational conflict within an accounting environment was examined by Sorensen (1967) and Sorensen and Sorensen (1974). They examined the link between professional and bureaucratic work environments. The results indicated bureaucratic orientations increased and professional orientations decreased from junior to partner. The analysis strongly suggested that professional orientation are changed by bureaucratic organizational perceptions.

The study by Kerr et al. (1977) was directed toward identifying "ideal" professional characteristics. A secondary objective used scientists and engineers to classify individuals as more or less professional according to those characteristics. The results of their study suggested broad differences in adherence levels to the professional characteristics.

Bartol (1979) examined the relationship between professional dimensions and several organizational outcome variables (i.e., organizational commitment, role stress, turnover, and turnover expectancy). The results indicated that professional attitudes were generally found to be related to greater organizational commitment.

According to the sociological theory of professionals, a society grants prestige to professionals because they possess an expertise deemed important to the needs of the society (Hughes, 1963). In return, the society expects a professional commitment beyond those of meeting minimum requirements. The unique service offered by the public accounting profession is primarily service to third party interests (financial statements users) rather than second party interests (clients). Such an environment often places accountants in a situation of conflicting requests or expectations. The study of Aranya et al. (1981) centered on the professional commitment of Chartered Accountants. The study examined whether the conflict between professional and organizational variables could negatively affect professional commitment, believing that commitment should be affected by satisfaction concerning the rewards within the work environment. The results indicated that partners were shown to be committed to their professions, which was the opposite of the results reported by Sorensen (1967) and Sorensen and Sorensen (1974).

Another study examined the professionalism/organizational commitment concept (Norris and Niebhr, 1983) in an environment considered supportive of professional accounting orientations. Professional personnel from three field offices of a Big-8 accounting firm were surveyed. There were no significant differences in professionalism or organizational commitment of employees in different functional areas or between certification categories (CPA versus non-CPA). Higher job levels indicated higher measures of professionalism, which was supportive of the work of Bartol (1979).

Groves et al. (1984) used a different international environment to examine the professional commitment of accountants through attitudinal responses to statements concerning (1) specified breaches of the code of ethics, (2) the national professional organization, and (3) the accounting profession in general. The analysis considered the surveyed respondents as one group, without any attention to cross-cultural issues.

Amernic et al. (1983) expanded the examination of professionalism of accountants into an international context. The objective of studying the cultural effect was accomplished by focusing on two cultural groups within one national setting (i.e., Anglophile and Francophile CAs from the province of Quebec in Canada). The study used a model that examined professional commitment as a part of extrinsic and intrinsic job outcomes. The results supported the hypothesized effect of cultural background that the Anglophiles would generally score higher on intrinsic job outcome variables (i.e., significant differences were found on eight of the 12 intrinsic items). The authors also suggested that the cultural background effect may have been lessened by the professional accounting environment (i.e., organizational culture).

Forsyth and Danisiewicz define the term "profession as a "fundamental process embedded in the relationship between society and those who practice certain expert occupations" (1985, 60). The belief in a link between culture and professions was expressed by Hughes when he referred to the specific effect of culture on the universal aspect of professions.

> The professional may learn some things that are universal in the physical, biological or social world. But around this core of universal knowledge there is likely to be a large body of practical knowledge which relates only to his own culture. . . . While professions are, in some of their respects, universal, in others they are closely ethnocentric. (1963: 667-668)

The link between culture and professional attitudinal attributes is the specific focus of this study. This link is referred to by Gray (1988) in his discussion of the link between the cultural orientation of a society and the value systems and attitudes expressed by societal members in their work environment (e.g., the accounting subculture).

Gender difference in the response patterns of subjects have been studied in many fields. The area of ethics has been one productive field. However, the results reported have not been conclusive. This study includes a gender variable to see if there are basic differences in the professional attitudes and beliefs of male and female accountants across the cultural areas surveyed.

Based the Hofstede cultural dimensions and the interest in the gender variable, the research question of interest becomes: Is there a link between culture and gender and the professional beliefs and attitudes of public accountants?

METHODOLOGY

The cultural variables identified by the power distance index (PDI) is a measure of interpersonal power or influence that is both accepted and preferred by societal members. The subjective elements of power distance are controlled by the individuals' "mental software." This mental programming, in turn, is influenced by societal norms, as evidenced by the individuals' personalities and value structures (Hofstede, 1980, 92-100). The basic issue addressed by this cultural element is how members of a society handle inequalities of influence handed down from an upper level of their environment. As such, professional attitudes and actions are more likely to be positive in high PDI countries.

The cultural dimension identified by the individualism index (IDV) is a measure of how societal members view their environment from an interpersonal standpoint. Whenever the members of a culture prefer an environment where individuals primarily take care of themselves, the term individualist (high IDV) is applied. Whenever the group members prefer an environment where individuals do not routinely consider themselves separate from the group or organization of which they are a member, the term collectivistic (low IDV) is appropriate.

Members of a collectivistic culture (low IDV) consider the commitment and the perpetuation of the organizational goals and objectives to be very important. Collectivistic societies, as a matter of routine, tend to consider what is good for the organization must also be good for the individual members that compose that organization. Therefore, professional attitudes and behaviors are more likely to be more positive in low IDV countries. Using the theoretical development of Hofstede's PDI and IDV dimensions leads to the following research hypothesis (based on a review of the literature, *a priori* expectations concerning responses by gender could not be made.):

> Accountants from countries that rank high on PDI and low on IDV will exhibit more positive professional attitudes and actions than accountants from countries that rank low on PDI and high on IDV.

The selection of the target countries was based on the seminal work of Hofstede (1984). The countries were chosen because of (1) their differentiating power on the PDI and IDV dimensions and (2) their relative similarities on the other dimensions. High PDI/low IDV countries surveyed were Brazil and the Philippines. Low PDI/high IDV

countries surveyed were Australia, Canada, and the United States. Table 1 gives the Hofstede (1984) cultural index scores used in selecting the target countries.

TABLE 1 - CULTURAL INDEXES FOR TARGET COUNTRIES
(Hofstede, 1984)

Countries	PDI	UAI	IDV	MAS
High PDI/Low IDV:				
Brazil	69	76	38	49
Philippines	94	44	32	64
Low PDI/High IDV:				
Australia	36	51	90	61
Canada	39	48	80	52
U.S.	40	46	91	62

The subjects for the study were accountants working in public accounting in the selected countries. Data were collected by two means. Part of the data were drawn through mailings in batches to the international offices by direct mail from the U.S. The rest was collected by personal contact with accountants in individual firms. Five hundred ninety-nine responses from public accountants were received and used in the analyses.

The data were collected through a four-page, self-report survey. A cover letter, which requested each respondent's cooperation on the project, guaranteed both individual respondent and firm anonymity. After completion, each survey was sealed in a separate envelope and returned to the authors for analysis.

Two forms of the survey instrument were used. The response order of Form X is the reverse of Form Y to address the response-order bias problem. The survey is composed of three parts. The first part is designed to access ideas and beliefs related to Hofstede's cultural dimensions. (See Hofstede, 1984: 283-286, for the complete *Values Survey Module*.) Table 2 summarizes the demographic data drawn from the second part of the survey. The mean composite respondent is a male manager between the ages of 25 and 34 years old.

TABLE 2 - RESPONDENT DEMOGRAPHICS

		n[a]	Percent
Gender:	Male	391	65.4
	Female	207	34.6
	Total	598	100.0
Age:	< 25	135	22.6
	25-34	305	51.1
	35-49	123	20.6
	≥ 50	34	5.7
	Total	597	100.0
Firm Position:	Junior	93	17.5
	Senior	160	30.1
	Manager	190	35.8
	Partner	88	16.6
	Other	68	11.4
	Total	599	100.0

[a] The totals do not all equal the 599 responses used in the analyses due to survey omissions.

The third part of the survey elicited responses concerning attitudes and activity levels of professionalism. Table 3 gives the X version of the third part of the survey, which used a 5-point Likert scale denoting 1 = strongly agree to 5 = strongly disagree. The items used in the third part were adapted from a longer survey used in professionalism research by Hall (1968) and Snizek (1972). Items 1, 2, 4, and 5 request data concerning attitudes toward the accounting profession in general, while items 3 and 6 target information concerning actual behavior levels. The combination of survey items permitted both professional beliefs, as well as actions, to be surveyed.

TABLE 3 - PROFESSIONALISM SURVEY ITEMS

	S/A	A	U	D	S/D[a]
1. The overall benefits the accounting profession gives to individuals and society are understated.	1	2	3	4	5
2. I believe that professional organizations should be supported.	1	2	3	4	5
3. I regularly read professional journals related to my interest and/or work assignment.	1	2	3	4	5
4. The professional organization is generally powerless in terms of enforcing rules.	1	2	3	4	5
5. The professional organization does not really accomplish much for the average member.	1	2	3	4	5
6. I regularly attend professional meetings at the local level.	1	2	3	4	5

[a] S/A = strongly agree; A = agree; U = undecided; D = disagree; S/D = strongly disagree

The SAS statistical procedures are used to analyze the data for the predicted differences in professionalism responses. Regression ($p \leq 0.05$) was used to analyze the professionalism responses as they relate to the culture and gender variables, as well as a culture*gender interactive term. Table 4 supplies the regression results. Whenever significance was indicated, Duncan's multiple comparisons were used to examine specific differences in the mean responses. As noted earlier, items 1, 2, 4, and 5 are statements related to attitudes toward the accounting profession (or some specific aspect of it). Items 1 and 2 are positive in nature, and items 4 and 5 are negative in construction. The expectation was for the high PDI/low IDV culture countries (i.e., Brazil and the Philippines) to agree more (i.e., have a lower response mean) on than the low PDI/high IDV culture countries (i.e., Australia, Canada, and the U.S.) on items 1, 2, 3, and 6. Because of the negative construction of items 4 and 5, the opposite was expected.

TABLE 4 - PROFESSIONALISM STEPWISE REGRESSION RESULTS
($\alpha \leq 0.05$)

Item No.	Variable Entered[a]	Model R^2	F Value	P Value
1	CULT	0.042	22.670	0.001
2	CULT	0.017	8.756	0.003
3	POSI	0.039	21.266	0.001
	CULT	0.056	8.954	0.003
4	CULT	0.090	51.026	0.001
	GEN	0.103	7.855	0.005
5	CULT	0.050	27.385	0.001
6	CULT	0.103	59.644	0.001
	POSI	0.112	5.466	0.020

[a] Explanatory variables used in the stepwise regression:

CULT -High PDI/low IDV = Brazil, Philippines; Low PDI/high IDV = Canada, Australia, U.S.

GEN - Gender of the respondent

POSI - Firm position of the respondent: junior, senior, manager, partner

Item 1 (refer to Table 3) is a positive statement about the accounting profession in general: "The overall benefits the accounting profession gives to individuals and society are understated." There are significant differences in the responses on the cultural variable in the hypothesized direction. As predicted, the high PDI/low IDV culture agree more with the statement than the low PDI/high IDV culture.

Item 2 stated that "I believe that professional organizations should be supported."
Similar to the first professionalism item, the responses are in the hypothesized direction. The culture accepting power differences and preferring collectivist attitudes responded in a significantly more positive way than the low PDI/high IDV culture.

Item 3 dealt with professional actions/behaviors. The statement was "I regularly read professional journals related to my interest and/or work assignment." The responses to this item were primarily driven by the gender variable. Male accountants responded in a significantly more professional way than did the female accountants. Regression results also indicated a culture*gender interaction. Additional analysis used a four-level varaible for gender and culture (i.e., Asian Male/Asian Female/Anglo Male/Anglo Female) to further examine the difference indicated. Duncan's multiple comparisons indicated that the Asian male accountants provided the most professional responses, and they were significantly different from the other three groups.

Item 4 was the first of the professionalism items stated in the negative: "The professional organization is usually powerless in terms of enforcing rules." The responses are primarily driven by the cultural variable. However, The difference is not in the predicted direction. The high PDI/low IDV culture agree more with this negatively stated

item. In addition, there are significant differences by the gender of the respondents, with the female accountants providing the more professional response.

Item 5 was also stated in the negative: "The professional organization does not really accomplish much for the average member." There is a significant difference by the cultural variable, but the response difference is not in the predicted direction. The nature of the survey statements for *Items 4 & 5* cannot, however, be examined without reference to the environments within the individual countries surveyed. While a lower mean on these items generally would imply lower professionalism, the national environments of Brazil and the Philippines have to also be considered. In both countries, the professional organization has little status or influence. The significant difference indicated in the responses is in keeping with the overall lack of structure and ongoing effectiveness on the part of the professional organization. This is, in turn, shown in the responses of the accountants. Arpan and Radebaugh make the following specific reference to the Brazilian professional organization.

> . . . the Brazilian accounting profession plays a very minor role in establishing accounting standards and procedures. The Brazilian Institute of Independent Auditors simply lacks the size, status, and hence power to have any significant influence (1985, 343).

Item 6 was also a behavioral item: "I regularly attend professional meetings at the local level." The difference is primarily in the responses by culture. As predicted, the accountants from the high PDI/low IDV culture agreed more with the statement than the accountants from the low PDI/high IDV culture. The collectivistic countries, which both accept and prefer varying structures of influence (i.e., the PDI measure) and support the objectives and goals of the organization (i.e., the IDV measure), expressed greater support for professional organizations by reported attendance at professional meetings.

The four items surveying professional attitudes (1, 2, 4, 5) indicate conflicting results. Items 1 and 2 support the research hypothesis, but items 4 and 5 do not. However, this result may be linked to the specific environments of the professional organizations in the countries surveyed. The professional environment in low PDI/high IDV culture countries surveyed has generally nurtured and helped to produce strong, unified professional organizations, which exhibit published enforcement procedures and powers. This has not generally been the situation in the high PDI/low IDV culture countries surveyed.

In addition, in a collectivist society (high PDI/low IDV), "enforcement" of rules and regulations can present problems because society members are more accepting of work-environment inequalities and do not generally question the roles they play in the organization or in society. The concept of enforcement within an individualistic culture (low PDI/high IDV) is viewed as a necessary societal element to promote the resolution of conflicts among members, each of which is primarily looking out for himself/herself.

Items 3 and 6 of the questionnaire surveyed professional behaviors (i.e., reading journals and attending meetings). The expectations that high PDI/low IDV culture countries would have lower means is supported on both items. The combination of the results on items 1 and 2 and items 3 and 6 tend to support the linking of attitudes and actions on professionalism.

SUMMARY AND DISCUSSION

The potential link between cultural and gender variables and the professional attitudes and actions of public accountants was examined using the cultural indexes developed by Hofstede (1984) as the basis for cultural expectations. The power distance and individualism cultural variables were used as the basis for the countries selected for the examination. The results indicate some support for the proposed link. Four of the six survey items were significant in the hypothesized direction.

In addition, there was a main effect for the gender variable on only the "professional organization is generally powerless in terms of enforcing rules" survey item. This may raise the possibility of differing perceptions by gender in the rule enforcement area. There was a culture*gender interaction on the "regularly read professional journals" survey item. The pairwise comparions on the gender/culture variable indicated the mean responses discriminated primarily on the gender variable, with male public accountants providing the more professional responses.

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DETERMINANTS OF CEO STOCK OPTIONS

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ABSTRACT

After a significant and fiercely contested debate, the FASB finally issued SFAS No. 123, "Accounting for Stock-Based Compensation". The standard requires companies to either recognize or disclose the fair value of the stock options they grant to employees, starting December 15, 1995. The initial disclosures became available this year and some of the compensation numbers reported were extraordinary. The high levels of executive compensation have led stockholders and analysts to question the economic factors that determine CEO compensation. This paper investigates the relationship between stock option compensation expense and corporate financial performance. Executive pay is measured using three variables: (1) Basic compensation, which includes salaries and bonuses earned during 1996, (2) Total direct compensation which includes salaries, bonuses, and gains from the exercise of stock options; (3) present value of the option grants made during the fiscal year. The first two variables represent rewards for past performance, while the third represents compensation potential for future performance. The determinants of executive compensation are hypothesized as follows: Sales, Earnings, Return on Assets, Return on Equity, Cash Conversion Efficiency, Days of Working Capital, Year-end Stock Price, Price/Earnings Ratio, Firm Size, Growth Opportunities, and Financial Leverage. Three sets of regression are run. The results indicate a strong relationship between financial performance and executive pay. In all three cases, Sales is the most significant factor in determining compensation. Current compensation is also explained by earnings and the efficiency of the CEO in managing working capital, while other factors like stock price, PIE ratio, and growth show greater significance for future performance.

INTRODUCTION

In recent years, CEO compensation has seen tremendous increases. The average compensation for chief executives of major companies was S 4.37 million in 1995. Roughly, 25% of the pay came from salary - the rest were from annual bonuses and stock options. The average stock option package was valued at S 1.52 million. This represented a 45% increase over 1994 bonuses. A survey by a consulting firm found that the CEOs of some of the biggest corporations saw their compensation increase 23% in 1995, even as thousands of workers were being laid off. Recently released IRS data showed that between 1980 and 1995, total executive pay rose 182%, while corporate revenues rose 127%. The Wall Street Journal reports that the modern day CEOs have become celebrities partly due to their expensive pay packages.

The extravagant numbers reported above have made the stockholders aware that the chief executives of large companies are much more highly paid than their counterparts in other countries. Two questions are raised as a result:

1. Is executive performance really aligned with performance?
2. Should companies be granting stock options to their chief executives, at the same time showing zero compensation expense in their income statements (a practice allowed by APB Opinion No. 30)? This practice is further compounded by the fact that companies could take tax deductions for the stock options, thus reducing their tax payments.

The non-recognition of the expense attributable to employee stock options led to a wide debate, the result of which was SFAS No. 123, " Accounting for Stock-Based Compensation." Under the new standard, companies can either recognize the fair value of the stock options awarded on their income statements, or continue to account for their stock compensation plans under current rules (APBO 30), but with additional footnote disclosures regarding their fair value. If disclosure is chosen, extensive disclosures, including pro forma net income and earnings per share are

required. The fair value is essentially the difference between the current market price of the stock and the present value of the option exercise price, discounted at a risk-free rate over the life of the option, adjusted for the volatility of the stock. Recognition began with transactions entered into during fiscal years beginning after December 15, 1995.

A majority of the companies chose footnote disclosures, and for the first time, for fiscal year 1996, the fair value of stock options granted appeared on financial statements. The footnote disclosures included earnings a company would have reported after deduction stock option compensation expense - and some of the numbers reported were remarkable. In a survey done by the Wall Street Journal, reductions in reported earnings due to stock options ranged from a staggering 296% for Netscape to a smaller 8% for MCI Communications (see Table 1). A insidious side-effect not discernible in the income statement is the fact that companies have to resort to enormous stock repurchases to cover the stock options. For Intel, stock repurchases absorbed 60% of net income. Given these facts, the economic factors fueling compensation packages becomes extremely important.

TABLE I
REDUCTION IN REPORTED EARNINGS
DUE TO STOCK OPTIONS

COMPANY NAME	REDUCTION IN EARNINGS (%)
Netscape	-296%
Westinghouse Electric	-129%
Reynolds Metal	-18.30%
Unocal	-14.30%
MCI Communications	-8.10%
Pepsico	-6-90%

The purpose of this paper is to combine the regularly reported CEO compensation with the newly disclosed share options to construct a broader measure of executive pay in order to examine the legitimacy of executive compensation and the factors that determine the levels of such pay. Prior studies have researched the determinants of salaries and bonuses, but this study includes stock options, which are of particular importance because of their magnitude and the fact they are not normally charged against earnings.

BACKGROUND AND MOTIVATION

Many prior studies have examined whether companies use accounting earnings to compensate managers. Healy (1985) documents that most bonus schemes define a variant of reported earnings for use in the computation of the amount allocated to bonus pools. Antle and Smith (1985), Lambert and Larcker (1987), and Sloan (1993) show that there is a
significant statistical association between top-executive cash compensation and reported earnings - these studies also show that stock price performance is a determinant of CEO cash compensation, though to a lesser extent than earnings. In a related study, Kumar et.al (1993) find that models which include working capital from operations in addition to earnings have a higher ability to explain executive compensation than models based on earnings alone. Dechow et. al (1994) found that adjusted pre-tax income and restructuring charges together possess more explanatory power than pre-tax income alone in the association of performance measures with top management cash compensation. Natarajan (1996) showed that earnings and cash flow measures together have a better association with cash compensation paid to CEOs than aggregate earnings alone.

Preceding research has used CEO cash compensation as the dependent variable. In their studies, researchers had assumed that cash compensation was likely to capture much of the variation in total compensation. Due to FASB

123, the fair value of stock options granted to CEO's have become available for the first time and the option values granted to top executives were not always proportional to their cash compensation. Table 2 shows that the fair value of stock options deviate widely among the sample of corporations presented. The correlation coefficient between cash compensation and fair value of option gains is a very low .23.

TABLE 2
SAMPLE OF EXECUTIVE COMPENSATION

COMPANY NAME	INDUSTRY	BASIC PAY	OPTION GAINS	PV OF GRANTS
Air Products	Basic Materials	1211.1	560.6	887
Monsanto	Basic Materials	2920	1492.7	24468
Armco	Basic Materials	559.2	0	559.2
Amoco	Energy	1886.2	956.3	1860.1
PanEnergy	Energy	1215	222.1	711.5
Enron	Energy	2610.9	4409.4	11696.3
Allied Signal	Industrial	4800	7005	n/a
Briggs & Stratton	Industdal	499.2	87.7	652.1
Delta Airlines	Cyclical	1007.6	1243.8	2365.9
Kodak	Cyclical	3986.9	1495.5	1947.7
Anhauser Busch	Noncyclical	2473	6105.2	2664.1
Coca-Cola	Noncyclical	5213.3	9009.4	n/a
AT &T	Technology	2436.3	1303.9	n/a
Compaq	Technology	4250	23546.1	14748.4
Microsoft	Technology	562.6	0	n/a

In contrast to the focus on cash compensation, this paper combines cash compensation with the fair value of stock options to obtain a broader measure of executive pay. The relationship between total compensation and certain measures of corporate financial performance is investigated, in order to examine the economic factors driving such tremendous increases in pay. This paper also contributes to extant literature by examining the determinants of future pay potential, represented by the present value of option grants.

RESEARCH DESIGN AND EMPIRICAL MODELS

The main variable of interest is CEO compensation. Such pay is usually a combination of salaries, bonuses and perks, gains from the current exercise of stock options and option grants for future exercise. SEC rules for proxy statements require disclosure of the compensation of the chief executive officer plus four or more other highly compensated executives. The term "salary" refers to base salary earned during the year, even if deferred or paid in common or restricted common stock. "Bonus" data reflect annual bonuses earned in cash for commendable financial performance. "Option gains" indicate gains from the exercise of stock options and/or stock appreciation rights. "Present value of option grants" is a new disclosure required under SFAS No. 123. It is calculated using option pricing models with the following inputs: stock price at grant date, exercise price of the option, term of option, risk-free rate of return on the grant date, expected dividend yield and expected volatility of the stock.

Using the information required by the SEC, the following three variables are defined to represent CEO compensation:

1. Basic compensation (BC): This includes salaries and bonuses earned by the CEO during a fiscal year. Any pavment not related to salary or annual bonus (for example, directors' fees, insurance premiums) reported as cash compensation is excluded.
2. Total direct compensation (TDC): is defined as the sum of salary/bonus, option gains, and other long term incentive compensation.
3. Option grants (PO): characterizes the compensation potential for future performance. The present value of option grants is used as a proxy for future compensation.

There is a wide variation in the three types of compensation between companies across industries and within the same industry (See Table 2). This paper explores potential reasons for the magnitude and direction of the variation, based on firm specific factors.

Normally, corporate performance, as measured by bottom-line earnings is expected to be significantly associated with CEO compensation. However, certain components of earnings may be better able to explain compensation (which is usually based on performance) for the following reasons. First, the various components of earnings, namely, cash flows from operations, current accruals, and non-current accruals are differentially informative about underlying managerial actions. Also, it may be easier for the manager to manipulate some components of earnings than others. Second, the components of earnings are available to the shareholders at the end of each accounting period. The logical shareholder (who contracts with the manager) would prefer to use the more detailed information provided by the components of earnings, rather than an overall measure. Further, anecdotal evidence (Mintz and Lazere, 1997) suggests that working capital measures are an important in measuring managerial performance. To better explain the cross-sectional variations in compensation, other firm specific characteristics are also used to test whether they possess explanatory power over and above earnings and components of earnings.

1. Sales: The primary source of income for corporations is revenue from sales. Major strategic decisions as to the sales mix, sales price and geographic regions have to be made to maximize sales revenue. Decisions are made at the planning stage - it requires the input of the top executives. Therefore, sales should play an important factor in determining compensation. Sales is also used as a proxy for the size of a corporation. Large corporations may be willing to pay more for its CEO's performance, and may have more resources to pay larger salaries and bonuses.
2. Earnings: The major focal point of investors and other users of financial statements is bottom line earnings. There is a large body of research indicating that stock prices respond to earnings numbers. Managers are under tremendous pressure to report high earnings every quarter and every year. Compensation packages are linked to company performance measured in terms of earnings and stock prices. Higher the earnings of a corporation, larger is the compensation received by the managers.
3. Return on Assets: Ratio analysis can provide indications of underlying conditions that may not be apparent from inspection of the individual components of the financial statement. An overall measure of profitability is the return on assets ratio. A high ratio may attest to commendable financial performance, and therefore lead to higher compensation.

Apart from earnings and its components, executives are also evaluated on their ability to manage working capital (Natarajan, 1996). Recovering cash from working capital (inventories and receivables) can signal ways to boost flnancial performance, and therefore shareholder value. The following measures are used to link working capital management to CEO compensation:

4. Cash Conversion Efriciencv: measures how well companies transform revenues into cash flows. The highest cash conversion efficiency is related to high corporate performance, and therefore, high rewards.
5. Days of Working capital: is a summary of receivables, payables and inventory as related to sales. This ratio denotes the ability of a corporation to turn its working capital into revenues. Fewer days of working capital reflects high efficiency, and therefore high rewards.

Other firm specific characteristics which might account for variations in CEO pay were assumed to be:

6. Changes in Stock Price: Agency theory suggests that managerial compensation should be tied to a specified gauge of financial performance. One such target used in compensation packages is the stock price of a

corporation. The stock market responds to exception performance with increases in stock prices; high levels of performance then should lead to higher compensation.

7. Price Earnings Ratio: The price earnings ratio reflects the investors' assessment of the company's future earnings and growth potential. Consistently high prospects of growth and earnings should be compensated with high levels of pay.
8. Leverage: Apart from working capital management, long term flnancial management is also an indicator of good fiscal performance. An optimal combination of debt and equity is necessary for long term growth and stability. Leverage, as measured by the debt/equity ratio plays an important role in managerial performance.

The variables used in the regression model and the hypothesized direction of the relationships between the dependent and independent variables are shown in Table 3.

TABLE 3: VARIABLES USED IN THE REGRESSION

VARIABLE	MEASUREMENT	HYP. DIRECT
Dependent variables:		
1. Basic Compensation (BC)	Salaries and bonuses given to CEOs in 1996	
2. Total Direct Compensation (TDC)	Salaries, bonuses, and option gains in 1996	
3. Present Value of Options (PO)	Present value of stock options granted in 1996	
Independent variables:		
1. Sales	Net sales in 1996	+
2. Earnings	Net income in 1996	+
3. Return on Assets	Net Income/Avg. assets	+
4. Cash Conversion Efficiency	Cash flow from operations/ Sales	+
5. Days Working Capital	(Receivables + Inv. - Pay)/Sales/365	-
6. Changes in Stock Price	Stock Price (Dec. 1996) - Stock Price Jan. 1996) -	+
7. Price Earnings	Stock Price/EPS	+
8. Leverage	Debt/Equity	-

Executive pay and the economic characteristics of the firm are then combined in three sets of regressions. In each case, a variation of executive pay is the dependent variable. The hypothesized determinants of executive pay are the independent variables.

$$BC = \beta_0 + \beta_1 \text{ Sales} + \beta_2 \text{ Earn} + \beta_3 \text{ ROA} + \beta_4 \text{ CCE} + \beta_5 \text{ DWC} + \beta_6 \text{ CSP} + \beta_7 \text{ PE} + \beta_8 \text{ DE} + \varepsilon \quad (1)$$

$$TDC = \beta_0 + \beta_1 \text{ Sales} + \beta_2 \text{ Earn} + \beta_3 \text{ ROA} + \beta_4 \text{ CCE} + \beta_5 \text{ DWC} + \beta_6 \text{ CSP} + \beta_7 \text{ PE} + \beta_8 \text{ DE} + \varepsilon \quad (2)$$

$$PO = \beta_0 + \beta_1 \text{ Sales} + \beta_2 \text{ Earn} + \beta_3 \text{ ROA} + \beta_4 \text{ CCE} + \beta_5 \text{ DWC} + \beta_6 \text{ CSP} + \beta_7 \text{ PE} + \beta_8 \text{ DE} + \varepsilon \quad (3)$$

Where:

BC = Salary plus bonuses (basic compensation)

TDC = Total direct compensation (basic compensation plus stock option gains)
PO = Present value of stock option grants
Sales = Sales of the firm for the current year
Earn = Net income for the current year
ROA = Return on assets
CCE = Cash conversion efficiency
DWC = Days in working capital
CSP = Change in price of common stock during the year
PE = Price earnings ratio
DE = Leverage as measured by the debt-equity ratio.

The regression models are run to assess the effect of firm specific characteristics on the compensation received by executive management. BC and TDC represent rewards for past performance, while PO represents potential compensation for future performance.

SAMPLE SELECTION

CEO compensation data for this study are collected from the Wall Street Journal survey for the year 1996. The WSJ survey provided information about cash compensation, as well as stock option gains and the present value of option grants. Initially, 348 firms were selected for the study. Firms were deleted because:

a. Data for the present value of option grants were not available. The main focus of this paper is to combine cash compensation and option grants to obtain an extensive measure of compensation. The option values, required by SFAS 123, is necessary for extending this analysis beyond direct cash compensation.
b. Data necessary for the multiple regression model was not available.

The final sample consists of 263 firms across eight industry classifications. The industry composition is dominated by Cyclical firms and Technology companies. Energy companies had the smallest representation, followed by Basic Materials. A large number of Financial companies had also provided option data in their financial statements. Most of the companies had chosen footnote disclosure, rather than inclusion in their financial statements (See Table 4)

TABLE4: SAMPLE SELECTION

DESCRIPTION	NO. OF FIRMS	
Firms initially selected from WSJ survey	348	
Firms deleted due to lack of option information	-58	
Firms deleted due to lack of other financial information	-27	
Total firms selected in the final sample		263
INDUSTRY CLASSIFICATION	NO. OF FIRMS	
Basic Materials	22	
Energy	20	
Industrial	**44**	
Cyclical	51	
Non-cyclical	47	
Technology	53	
Financial		31
Utilities	14	
Total	263	

Average basic compensation for the companies in the sample was S 21 million, with a maximum of $ 6 million and a minimum of $ 562,000. The compensation varied widely between companies, with a standard deviation

of $ 14 million. Total direct compensation showed an average of $ 45 million, with a median figure of $ 26 million, and a standard deviation of $ 55 million. The present value of option grants had a maximum value of $ 17 million and a minimum of $ 0. (See Table 5)

TABLE 5
DESCRIPTIVE STATISTICS OF THE SAMPLE

DESCRIPTION	MEAN	MEDIAN	STD. DEV.	MAXIMUM	MINIMUM
1. Basic Compensation ($ mil.)	2115.52	1681.35	1452.11	6300	562.6
2. Total Direct Compensation ($ mil.)	4554.68	2613.2	5559.23	27620.6	562.6
3. Present Value Stock Options ($ mil)	3031.2	1407.1	4293.14	17286.9	0
4. Net Sales ($ 000)	24,473	11,364	31,225	131,543	2,364
5. ROA	0.06	0.07	0.0506	0.22	-0.01
6. CCE	0.15	0.14	0,097	0.43	0.02
7. DWC	103.81	29.29	225.22	1029.7	-14.62
8. PE Ratio	19.2	15.6	14,347	58.6	1.36
9. CPS	52.55	46	21,183	89.44	16.19

The average net sales of these companies was S 24 billion, with sales ranging from S 1.3 billion to $ 2.3 million. The highest ROA was 22% with a mean of 6% and median of 18%. Cash conversion efficiency had a mean of 15% and a median of 14%. Maximum CCE was 43% and minimum was 2%. PE ratio had a maximum of 58 and a minimum of 1.56, with a standard deviation of 14.3. Leverage ranged from 82% to 36%, with a mean of 45%. As with the CEO compensation, there seems to be a wide range of performance levels.

RESULTS AND CONCLUSIONS

The first set of regressions uses Basic Compensation (BC) as the dependent variable. The firm specific factors are able to explain 57% of the variation in salaries and bonuses (the regression has an R2 of 57%, with an F value significant at the.07 level). The predominant independent variable is Sales, which is significant at the .001 level (See Table 6).

Bottom-line earnings (EARN), growth potential of the company (PE) and the efficiency of the CEO in managing working capital (DWC) also showed significance at the.01 level. Leverage (DE) was significant at the .10 level. These results indicate that sales productivity, earnings performance and short term/long term financial management and stability play an important role in determining the cash compensation of CEOs.

Next, the dependent variable TDC (salaries, bonuses and stock option gains) is regressed against the economic factors hypothesized to influence compensation. The results are robust, with an R' of 68%, where the F-value was significant at the .003 level. Once again, Sales is the most crucial factor, showing a significance of.0001. Earnings and short term capital management (DWC and CCE) are significant at the.01 level. Finally, leverage (DE) and growth potential (PE) are also significant at the .05 level. Overall, the results of the first two regressions imply that the size of the firm (as proxied by Sales), the competence of the CEO in managing short term and long term financing (CCE,DWC, and DE), as well as the perception of the stock market as to the growth potential of the firm (PE) seem to be the chief factors in determining the levels of compensation received by the top executives.

TABLE 6
REGRESSION RESULTS

DEPENDENT VARIABLE	BASIC COMPENSATION	TOTAL DIRECT COMPENSATION	PRESENT VALUE OF OPTION GRANTS
R-SQ.	57%	68%	51%
F-VALUE	0.07	0.003	0.1
INDEPENDENT VARIABLES: [P-VALUES]			
SALES	3.1126	21.54	7.32
	[.001]	[0.001]	[0.01]
EARNINGS	23.58	48.29	264.58
	[0.01]	[0.01]	[0.42]
RETURN ON ASSETS	19.83	157.77	94.14
	[0.801	[0.481	[0.67]
CASH CONVERSION EFFICIENCY	2749.71	16.527	29.73
	[0.20]	[0.01]	[0.75]
DAYS WORKING CAPITAL	-1.87	-9.501	-0.924
	[0.01]	[0.01]	[0.81]
CHANGES IN STOCK PRICE	13.147	25.64	48.29
	[0.53]	[0.48]	[0.05]
PRICE EARNINGS RATIO	20.64	86.23	81.49
	[0.41]	[0.05]	[0.05]
LEVERAGE	-39.95	-76.56	-21.93
	[0.10]	[0.05]	[0.05]

The final regression uses the present value of options granted (PO) as the dependent variable. As discussed earlier, this variable represents the potential compensation for future performance. The regression has an R^2 of 51%, with an F-value significant at the.10 level. Once again, Sales is the most significant factor, with a significance level of .01. None of the short term variables, such as earnings, DWC, CCE or ROA shows any significance. Future growth potential (PE), change in stock price during the year (CSP) and leverage (DE) which represents long term stability and financial management are significant at the .05 level. Long term growth and stability seem to be the critical factors in explaining future compensation.

In conclusion, Sales is the most substantial factor in determining current as well as future levels of compensation. The predominance of Sales could mean two things. As a proxy for size and therefore the political costs borne by the corporations, larger corporations could be paying more to their CEOs because of the sheer size of the companies that need to be managed. The emphasis on Sales could also explain some of the practices used by companies to boost their sales figures without an actual transfer of ownership (for example, some companies ship products to their warehouses and book the shippings as sales). Current compensation is explained by a company's earnings performance and the efficiency of the CEO in managing working capital, while long term factors like stock price, growth and financial stability show greater significance for future compensation levels.

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THE ECONOMICS OF ACCOUNTING EDUCATION CHANGE

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ABSTRACT

The changes in higher education in response to many external and internal factors have caused a shift in resource allocations among colleges within a university. AACSB, for example, has changed its accreditation of business schools to be mission-based. This new mission-based criteria was supposed to give business schools more freedom to adopt different missions, strategies, and promote more innovative approaches to curriculum design and content. However, this mission-based approach has different implications on resource requirements among different schools. The economic consequences of these accreditation mission-based criteria were not analyzed to examine whether there is a difference in cost/resources impact between private vs. public business schools, and the same for accounting programs.

In this paper, a model is developed analyzing the strategic options for different business schools to attain different missions. As each school positions itself for the 21st century, different competitive strategies will emerge impacting program content, structure and scope. The full cost of this differentiated strategy, in response to the accreditation mission-based approach, will not be the same for private business schools vs. public colleges.

The future impact of this differentiated strategy and its corresponding different economic requirements on different schools are analyzed as they affect future societal needs. Many stakeholders are not aware of these implications. However, it is timely to discuss these issues now before waiting for too long that the economic cost is too high.

SAS NO. 55: ANALYSIS OF PRESENTATION IN CURRENT AUDITING TEXTS

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ABSTRACT

SAS No. 55 laid out new standards for the evaluation of internal control structure. When issued in 1989, this Statement on Auditing Standards provoked criticism from academics and practitioners. These critics were concerned that the standard introduced ambiguities concerning the methods of Internal Control Structure evaluation. The criticisms include charges that the definition of Control Risk is unclear, that the relationship of control tests and substantive tests is unclear, that Control Risk is used in two ways, that Control Risk can be assessed at less than the maximum without direct evidence, that collecting additional evidence can reduce Control Risk, that the Standard stresses efficiency.

The paper discusses the potential problem areas in SAS No. 55 identified in the literature. To summarize the literature suggests that in SAS No. 55:

1. The Control Risk definition is unclear.
2. The relationship between substantive tests and control tests is unclear.
3. Control Risk is represented two different ways-both as an assessment and as a measure of planned audit effort.
4. Control Risk can be assessed at less than the maximum without gathering direct evidence.
5. Obtaining additional direct evidence on internal controls can reduce Control Risk.
6. Audit efficiency is stressed at the expense of audit effectiveness.

We show that these ambiguities lead to different interpretations of SAS No. 55 in auditing textbooks. These ambiguities are likely to lead to different applications in practice, thereby accentuating the ambiguous interpretations. In this study we compare and contrast major auditing texts and their presentation of SAS No. 55. We find that while 14 of the textbooks we studied substantially adhere to SAS No. 55, many texts add steps, delete steps or restructure the process of assessing Control Risk. Some of these changes have the potential to improve understanding of the process, but they also introduce variation in the presentation. We find that many texts, fairly reflect the Standard, but other authors omit items, such as stressing efficiency, that were controversial in SAS No. 55.

STAFF ACCOUNTANTS' OVERRELIANCE ON COMPUTER TAX RETURN PREPARATION PROGRAMS

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ABSTRACT

Most tax returns prepared by accounting firms are processed using computerized tax preparation programs. Many tax managers and partners are concerned that staff accountants overrely on the computer tax preparation programs. Due to the tremendous time pressure to complete a tax return, there is concern that staff accountants assume that the tax return is correct because the computer generated it, and therefore may not take enough time and energy to ensure that the information is input correctly.

The tax return can be incorrect for many reasons. Some of the errors can be mitigated by the use of a computerized tax return preparation programs, i.e., mathematical mistakes, incorrect form usage, and incorrect flow of information. But several errors can still occur with the use of a computer program. The correct information must be input (only relevant information input and irrelevant information not) and the information must be input on the correct computer form and on the correct line.

The staff accountant may also have problems reviewing the processed returns. If they do not have a sufficient understanding of the actual tax forms and of the proper flow of information through the tax return, they may not be able to ascertain if the computer prepared all the necessary tax forms or even if the forms are prepared correctly.

It is hypothesized that overreliance on the computerized tax return preparation programs could hinder performance and cause the staff accountants to be overconfident of their performance.

An experiment will be conducted using two groups. One group will be asked to prepare the tax return manually and the second group will prepare the tax return using Lacerte, a computerized tax return preparation program. The subjects will be students in the federal income tax course. They will be randomly assigned to the treatments. The group preparing the tax return manually will receive four hours of training on actual tax forms. The group preparing the tax return using Lacerte will receive four hours of training on the computer program similar to the training received by new staff accountants prior to the tax season.

The subjects will be given the client provided information (including irrelevant information) and a packet of tax forms (including tax forms that are irrelevant). The subjects will have six hours to prepare the tax return.

This research study should make contributions in the instruction of collegiate accounting students and the training of staff accountants. If accountants are shown to overrely on computerized tax preparation programs, then additional training should be provided. They should be taught the tax law and the application of the law. They should be taught how to manually prepare a tax return, e.g., which tax forms are applicable or how the information flows through the forms. They should also be informed about the potential problems of overreliance on the computerized programs.

DETERMINANTS OF PRICE-EARNINGS RATIOS IN THE OIL AND GAS INDUSTRY

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ABSTRACT

The price earnings ratio has long been used as an investment analyst's tool to assess earnings growth potential and investment risks. However, are these two factors the only determinants of the variation in price earnings ratio values especially when comparing across companies and industries?

The results from this research clearly indicate that opportunity to make different accounting method choices in the oil and gas industry is an important factor in explaining variations in price earnings ratios between companies in this industry. The variable "quality of earnings" which serves as a proxy to demonstrate the effects of accrual accounting choices proved to be the dominant variable in a regression model that also included long-term projected EPS growth and Beta (a measure of investment risk). The results of this study differ from previous research that indicate that while different accounting method choices are important they are less important in explaining variations in price earnings ratios.

THE BEARDSTOWN LADIES: A HARD ACT TO FOLLOW

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ABSTRACT

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Famous the world over, the Beardstown Ladies have built a small empire in publishing and personal appearances, built upon their extraordinary investment success. Over a ten year period the ladies earned a 23 percent annual return on their investment club's portfolio. The method they used is outlined in their first book, *The Beardstown Ladies' Common Sense Investment Guide*. Essentially, the ladies used information from the *Value Line Investment Survey* to select stocks, and generally followed a buy-and-hold strategy.

Their performance is A Hard Act to Follow. Twenty-three percent annual return during the period 1983 to 1993 is roughly three times the growth rate of the S&P 500 Index. In addition, the Efficient Market Hypothesis concludes that extraordinary profits cannot be earned by employing historical information to direct investment strategy. Finally, it is not clear that the Ladies always followed the strategy they expound in their book. After outlining ten rigid objective guidelines for stock selection, the ladies allow that they also employ "a large dose of common sense."

The Ladies' book strongly implies that anyone can achieve similar results by using their method. Subjective "common sense" criteria essentially makes it impossible to precisely emulate their strategy. However, there can still be meaningful analysis of the investment method. We propose to answer two questions. First, if one precisely followed the ten guidelines, omitting the "common sense" input, would a portfolio so created earn greater than the market return? If so, it would lend significant support to the implication that the Ladies found a way to beat the market.

Second, just how much common sense did the Ladies employ in constructing the 1991 portfolio detailed in their book? In the case where two or more securities appear to be nearly equal investment opportunities, the software the Ladies used evaluates the investments and ranks them. If after this operation, two or more stocks were silll very close, and the Ladies chose one stock over the others, we would tend to conclude that the influence of "common sense" was modest, and the stock selection valid. If, however, the Ladies had one or more stocks that met all of the criteria, and chose to buy a stock not meeting those guidelines, the integrity of their method would be severely compromised.

To test the method, omitting common sense, we propose to construct two portfolios. The first portfolio will folllow the guidelines strictly. Work-to-date shows that the stock selection opportunites will be very restricted. The second portfolio will have moderately relaxed criteria for safety, timeliness, and debt. Success in earning greater than the market return in both portfolios would suggest a robust strategy. A third portfolio will be constructed that analyzes the Ladies' 1991 portfolio to determine how precisely they followed their own guidelines.

Clearly, investors everywhere would be gratified to learn that the Ladies' method had been tested and found to be valid. Alternatively, if the Ladies' book tended to overstate the benefits of their method, that too would be valuable news to the investing community.

FORENSIC ACCOUNTING: THE PROFESSION OF THE FUTURE

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ABSTRACT

White collar crime may be the most serious and yet most underrecognized problem in the United States. This report will detail the seriousness of the problem and explain that losses due to fraud in the United States currently run $400 billion per year, nearly twice that of the national defense budget (Geis, 1996). This paper will investigate the historic sources of fraud losses which have been predominantly employees and managers in victim organizations. It will trace the increase in the forensic accounting profession as it relates to the rapidly growing problem with white collar crime and the inadequate preparation which accounting professionals and managers have for preventing or detecting such fraud.

This paper will also explain that computer based fraud is the most serious kind of white collar crime because the potential for loss is so great. This situation is greatly worsened by the advent of professionals and organized crime who are turning to computers as a more lucrative way to steal than guns.

This paper will discuss why fraud persists as a problem in modern society. Much of this problem is related to education and training as well as a mind set which tolerates fraud as a minor irritant in business dealings.

Educational solutions to the problem with fraud and suggestions that changes in curricula are required to help accountants and managers cope with the problem are explored. The value of continuing education will be examined as well as the potentially devastating results which will ensue if educational institutions fail to rise to the challenge.

Forensic accounting as the profession of the future will be examined and indications will be included which demonstrate why it is enjoying now, and will continue to enjoy, explosive growth. This paper will investigate the role of the forensic accountant in stemming the tide of white collar crime.

Finally, this paper will examine the professional skills required for a successful career as a forensic accountant. Those skills are a combination of accounting, computer information systems, and investigation skills. The forensic accounting profession may well be the last bulwark against disaster as we struggle to control the explosive growth of white collar crime in the United States.

IMPACT OF EARNINGS VARIABILITY ON EARNINGS RESPONSE COEFFICIENTS

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ABSTRACT

This study examines the relationship between historical earnings variability and the coefficient relating earnings to returns. Recent research on the stock returns-earnings relation has focused on factors that explain differences in this relation across firms. This study extends that line of research. Based on the results of theoretical models, it hypothesizes a negative relationship between earnings variability and the stock returns-earnings coefficient. The empirical analysis provides evidence consistent with this hypothesis. Earnings response coefficients are significantly higher (lower) when earnings variability is lower (higher). These results are obtained using cross-sectional, time series and variable parameter models, suggesting that they are quite robust.

COMPUTER ASSISTED LEARNING: EFFECT ON STUDENT ATTITUDE AND PERFORMANCE

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ABSTRACT

Pronouncements of the Accounting Education Change Commission (AECC) since 1989 strongly suggest that a decreasing number of capable students are entering the accounting profession and that the fault for this decline can be laid on the doorstep of accounting instructors. The essential charge is that students are being driven away by the boring way we teach the technical details of accounting, auditing and tax. In addition, partners of the international accounting firms stated in "The White Paper" (1989) that the focus of accounting education should be on developing analytical and conceptual thinking (Perspectives, 1989). Both criticisms suggest a need for new teaching methods. Williams reiterates this suggestion saying, "Accounting research is needed which deals with the way in which accounting subjects are learned and explains the kind of teaching/study methods that foster student knowledge retention," (Williams, et al., 1988, 123-124). He further suggests that there should be research on the question of whether computer integration and other technological innovations have any bearing on knowledge retention and/or class sizes. Educators in higher education are facing both great challenges and great opportunities. General reductions in student enrollment and budget cuts threaten the existence of institutions and programs. These problems are making administrators more receptive to curriculum changes and teaching methods that promise increased efficiency to offset reductions and cuts. Jensen (1992a) suggests that technology may help solve these problems while creating opportunities. He suggests that in the next century virtually all academic disciplines will teach technical details better by using networked hypermedia learning materials. This will allow "live classrooms" to concentrate on the limited areas that can be better taught face-to-face.

This study addresses some of the concerns of accounting professionals by reporting on the use of hypermedia materials potentially useful in assisting students in their academic pursuits. The research addresses whether combining computer aided lectures in the classroom and computer aided study materials outside the classroom assist students in learning specific accounting concepts. Two undergraduate classes of financial accounting were used in this study. The only planned difference between the two classes was that the treatment class was taught using computer aided lectures. The lectures and additional study materials were available to students of the treatment group for use outside of class. Throughout the semester the control class was taught using traditional teaching methods. The two classes were given identical exams on the material presented throughout the semester.

A one-way ANOVA was used to determine if the treatment group's test results on the four major tests administered during the semester were statistically different than the results of the control group's test results.

ACCURACY OF COMPENSATION EXPENSE ESTIMATES RELATED TO STOCK OPTIONS

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ABSTRACT

Statement of Financial Accounting Standards, No. 123 encourages companies to recognize the fair value of stock options granted on their balance sheets and the related compensation expense on their income statements. Fair value is to be estimated using an options pricing model such as the Black-Scholes model. Both the exposure draft and the final standard have been the targets of strong criticism. Among the many concerns expressed is the ability of the Black-Scholes model to accurately estimate the value of stock options.

This study provides empirical evidence on the accuracy of compensation expense estimates based on the Black-Scholes options pricing model. It also assesses the potential impact on income of recognizing these compensation expense estimates. The empirical analysis, based on a sample of 53 firms with outstanding stock options at December 31, 1990, indicates that the Black-Scholes model overestimates compensation expense by approximately 39 percent. Furthermore, reported income would be considerably lower if compensation expense related to stock options is recognized in the financial statements rather than being disclosed in the footnotes to the statements.

REVERSE THE MOMENTUM: DOES THE STOCK MARKET TEND TO OVERREACT TO NEW INFORMATION?

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INTRODUCTION

There has been much recent discussion of the concept of momentum investing. Though definitions may vary somewhat, a rising volume of trading in one sector, say technology, and a decline in another, like oil, might be described as a shift in momentum. Any substantial, and especially sudden, shift in investment preferences is likely to result in higher prices in the stocks of that sector. As a measure of market sentiment in the short term the stocks with the largest percentage weekly gains and losses could be viewed as an extreme reflection of investor's short term preferences and a reaction to information about the relative momentum related merits of different types of stocks. This study examines the largest weekly percentage changes in stock prices and then compares their price, and return movements four weeks after they make the winners and losers list to see if these stocks outperform or underperform the general market. In other words, after a substantial weekly move, do they continue to go up, or down, or do they reverse and move in the opposite direction. The top eleven largest percentage gainers each week is defined as the "winners" group and the top eleven largest percentage declines is defined as the "losers" group. Weekly price changes are measured to capture any large movements in price regardless of when in the given week they occur. These stocks are evaluated four weeks later under the efficient market assumption that whatever caused the large weekly change has been fully discounted in the stock's price. If subsequent movement in the next four weeks are in the same direction those changes may be related to momentum. A reversal in direction over the next four weeks would suggest that the market overreacted to the initial news. Whether or not the move in either direction is considered important is also related to whether the stock has simply moved with the general market or not.

LITERATURE SEARCH

There have been a number of studies, using somewhat different methods and holding periods, that have attempted to answer the question of whether stock prices overreact to (new) information. For example DeBondt and Thaler (1985, 1987) found that buying past losers and selling past winners resulted in above average returns. Their historical holding periods were 3 to 5 years for stocks that performed poorly in the previous 3 to 5 year period. For shorter time periods stocks that performed well or poorly in the previous week or month subsequently generated significant abnormal returns in studies by Jagadeesh (1990) and Lehmann (1990). De Long, et al. (1990) also postulate a model that suggests that the market is likely to overreact to news.

Success of the opposite trading strategy emphasizing relative strength, continuation of a trend not a reversal, was documented by studies by Grinblatt and Titman (1989, 1991) that showed mutual funds tend to buy stocks that increased in price over the previous quarter. More recently Grinblatt et, al. (1995) found that 71% of their sample of 155 mutual funds from 1975-1984 were "momentum investors" that bought stocks that were past winners. They also found, however, that most did not systematically sell past losers. They also analyzed stock returns around earnings announcements and found that past winners generate consistently higher returns around their earnings announcements. The predictive power of Value Line rankings, which rely largely on historical based relative strength as suggested by Bernard (1984), was shown in studies by Copeland and Mayers (1982) and Stickel (1985) to also bolster the case for buying previous winners. Further evidence that supports continuation rather than reversal of past price performance is found in Jagadeesh and Titman (1993). Specifically, their paper tested relative strength trading strategies which resulted in significant profits over 3 to 12 month periods for NYSE and AMEX stocks from 1965 to 1989. They selected stocks based on their returns for 1-4 quarters and then studied the subsequent returns for the following 1-4 quarters. Thus, their results were based on testing 16 trading strategies. (Also, Wilcox (1993) discusses the costs associated with short term trades for trend followers, momentum investors, and finds that the returns may be

significantly lessened by direct costs and trade execution delays. See Hanley (1993) for a cogent critique of momentum investing.) However, they skipped a week between the two periods.

This study examines the potential short term profitability of buying or selling the weekly list of the largest percentage NYSE & NASDAQ winners and losers in Barron's and then analyzing their return performance over the next four weeks.

METHODOLOGY

This study examines the largest eleven weekly percentage New York Stock Exchange and NASDAQ common stock winners and losers listed in Barron's on the first Monday of each month over a one year period, March 1996 through March 1997. To calculate 12 monthly returns a total of 13 months are needed to complete the evaluation.

The subsequent gains or losses a month later (Actually four weeks later using Barron's weekly list. Stocks that repeat in the lists over the period studied are also noted.) for each of these stocks is then measured. At the same time a new top eleven winners and losers are identified and subsequently evaluated a month later. The fundamental question posed is:

If the market overreacts, or properly reacts, to good and bad news then approximately a month later does the performance of the previous top or bottom eleven stocks significantly outperform or underperform the market as measured by the S&P 500 over the same period? If extreme monthly changes in stock prices are a good predictor of future performance then the bottom eleven losers should subsequently underperform the market. Likewise the top eleven winners should outperform the market.

If the market correctly and completely absorbs important information then these thirteen four week samples of eleven stocks should not subsequently perform significantly different than the general market. Other important information could, of course, be discovered during the four week interval. This approach could be considered a rather extreme and short term evaluation of the merits of momentum investing. One major aspect of the study is to conclude whether a large above average percentage move in a week is an indication that subsequent moves will be above average and in the same direction over the subsequent four week period.

Another premise to be tested is whether the market overreacts to relatively transient weekly information compared to a subsequent approximately one month long, period which investors could use to reconsider the wisdom of previous action. The average degree of volatility for the eleven largest percentage gainers and losers is also evaluated over the twelve monthly periods. Securities chosen in this way are likely to have high, above average, volatility. Therefore, return comparisons should be adjusted for risk. Volatility of the twelve groups of eleven stocks is evaluated for both winners and losers. Also analyzed is how much on average, a stock had to move up or down to make the top and bottom eleven weekly list and how much this varies over time. There will be an upward bias in favor of percentage gainers in any comparison against percentage losers because a stock can only fall 100% but can have percentage increases without limit. Thus, stocks that repeat on the list of winners and losers may be more likely winners than losers.

SAMPLE

The sample consists of observations of the eleven largest weekly percentage gainers and losers on the NYSE and NASDAQ based on closing prices for the first week in the month listed in Barron's. The study begins with Monday, March 4, 1996 and ends with a final evaluation on April 7, 1997. Overall a total of 132 weekly winning and 132 weekly losing stocks are evaluated, two pairs of eleven at a time, at four week intervals. Subsequently their approximately one month return performance is analyzed to measure whether, adjusted for market movements, they tend to continue to move in the previous direction or reverse. These 13 winners and 13 losers portfolios, if the market is efficient, should tend to move in the same direction, and possibly the same magnitude, as the market when adjusted for risk.

RESULTS

The average weekly percentage change necessary to make the top eleven list of the NASDAQ (weekly) winners over the 12 month period was a change of 45.65%. (Table 1) For the NASDAQ losers the average weekly loss necessary to make the bottom eleven list over was 34.98%. The corresponding average weekly percentage change for the NYSE winners was 25.70% For the NYSE losers it was 18.56%. (Table 2)

REVERSALS

Initial analysis suggests that the market tends to overreact on a weekly (or monthly) basis to good and bad news. Subsequent changes in the value of winners and losers observed a month later suggests that there is often an adjustment in the opposite direction i.e, a reversal, or in some cases at least a continuance, with the general market movements. This tends to occur when investors have about a month to reconsider the weekly information and make adjustments associated with the previous large percentage price move. On average for six out of 13, four week, return intervals the NYSE winners reversed their gains with losses. They continued gains in the other seven 4 week periods. NYSE losers reversed direction in 8 of 13 four week periods following their large losses. The NASDAQ winners reversed direction in five out of 13 four week intervals. Losers on the NASDAQ reversed direction in 6 of the 13 four week, intervals.

AVERAGE RETURNS

No dividends are included in return calculations and virtually none of the sample stocks paid dividends. The average gain or loss for the four week period after the stock made the winners or losers list, over the 13 months, was 1.48% for the initial winners and 1.05% for the initial losers on the NYSE, vs 1.3 2 % for the S&P 500 (Table 3). The average gain or loss for the period ending four weeks after making the list, over the 13 months, was a loss (.03%) for the initial NASDAQ winners and a loss (.014%) for the losers in that market, vs 3.08% for the NASDAQ 100 Index. (Table 4)

In summary, despite many reversals, buying NYSE winners on average would have outperformed buying NYSE losers and also outperformed the S&P 500 for this period. Buying NASDAQ winners or losers would have resulted in virtually no average gain or loss but would have been substantially less profitable when compared with the overall NASDAQ 100 performance.

The return volatility of the NYSE winners as measured by standard deviation was significantly greater than that of the NYSE losers and that of the S&P 500. The return volatility of the losers on the NASDAQ was greater than but similar to the NASDAQ winners group volatility but significantly greater than for the NASDAQ 100. Thus, the realized returns on the very volatile NASDAQ stocks clearly were not commensurate with the risk.

CONCLUSIONS

These study results suggest that for the period studied buying winners on the NYSE would have resulted in above average profits, even after adjustments for risk. However, buying winners or losers on the NASDAQ over the same period would have yielded significantly below average results. The risk adjusted results are even worse.

Stocks appearing on the list of losers or winners more than once during the study period are listed in Table 5. It is of interest to note that all the stocks appeared at least twice as a winner or loser with a minority appearing as many as 3 times. Many stocks made both the winners and losers lists during the period.

POTENTIAL IMPACT OR INTEREST

The results of this study: (1) have implications for investment strategies related to stock groups that are currently in or out of favor (2) provide an indication of whether the stock market participants tend to react appropriately or possibly overreact to significant new information and (3) also has implications related to market efficiency. Based

on this study a relative strength trading strategy tends to be preferable for the NYSE while neither relative strength or reversal based strategies appear to be promising for the more volatile NASDAQ stocks.

FUTURE RESEARCH

Data is currently being collected and tabulated for the 12 month period preceding this study and will be incorporated into the results in the near future.

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Editors' Note: Exhibits furnished by the author are not included due to technical difficulties. Please contact the author for the full text including tables and exhibits.

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