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**THE BRIDGE BETWEEN THE SUPREME COURT'S DECISION AND
THE DISTRICT COURT'S DECISION IN A CIVIL RICO CLAIM**

Mark Aquilio
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ABSTRACT: In *Phoenix Bond & Indemnity Co. et al v. Bridge, et al.*, 2010 U.S. Dist. LEXIS 91178 (N.D. Ill, September 1, 2010) the district court granted the defendant's motion for summary judgment based on the claim that the plaintiffs lacked standing to bring a civil RICO claim alleging mail fraud, despite the fact that the Supreme Court had previously ruled first-party reliance on the fraud was not necessary to bring a civil RICO claim. The court held that proximate cause was lacking. Previously in *Bridge, et al. v. Phoenix Bond & Indemnity Co. et al.*, 553 U.S. 639 (2008) the Supreme Court ruled that the plaintiffs could assert a civil RICO claim predicated on mail fraud without showing, either as an element of its claim or as a prerequisite to establishing proximate causation, that it relied on the defendant's alleged misrepresentations. In rendering its decision, the district court determined that the actual facts of the case were different than they were portrayed as the case worked its way to the Supreme Court.

INTRODUCTION

The proliferation of lawsuits has included actions initiated with regard to civil claims brought under the Racketeer Influenced and Corrupt Organizations Act (RICO). Plaintiffs often try to bring their lawsuits under the ambit of the civil RICO claim provisions provided by RICO § 1964(c) as it provides for treble damages and attorneys' fees.

The *by reason of* language of RICO § 1964(c) limits the parameters of the scope of civil RICO claims. In fact, interpreting the *by reason of* language, namely whether there is proximate cause to connect the RICO predicate acts to the injury to *business or property*, is of such importance that in 1992, the Supreme Court addressed the issue in *Holmes v. Securities Investor Protection Corp.*, 503 U.S. 258 (1992) and revisited the issue three times in the last five years in *Anza, et al, v. Ideal Steel Supply Corp.*, 547 U.S. 451 (2006); *Bridge, et al. v. Phoenix Bond & Indemnity Co. et al*, 553 U.S. 639; (2008); and *Hemi Group, LLC and Kai Gachupin v. City of New York*, 130 S. Ct. 983 (2010).

In *Holmes*, the Court established that to have proximate cause in civil RICO claims there must be a direct relationship between the RICO predicate acts and the injury. It did not adopt a standard of proximate cause requiring mere foreseeability, namely a consequence that could be anticipated or was intended. Subsequently, in *Anza* and *Bridge*, cases involving unfair competition claims, the Supreme Court also applied the direct relationship standard. Most recently, in *Hemi Group*, the Court again applied the direct relationship standard.

In *Bridge*, the Supreme Court affirmed the decision of the Seventh Circuit in *Phoenix Bond & Indemnity Co. et al. v. Bridge, et al.*, 477 F.3d 928

(CA-7, 2007) and unanimously ruled that a plaintiff asserting a civil RICO claim predicated on mail fraud need not show, either as an element of its claim or as a prerequisite to establishing proximate cause, that it relied on the defendant's alleged misrepresentations. The Court held that Phoenix Bond & Indemnity Co. had standing to bring a civil claim under RICO § 1964(c) by asserting a violation of RICO § 1962(c) via mail fraud which caused damages to its business due to its competitor's alleged racketeering activity of unlawfully acquiring tax liens from Cook County, Illinois that the plaintiff could have acquired and profited from when it sold the properties subject to the tax liens. The Seventh Circuit had reversed the decision of the district court in *Phoenix Bond & Indemnity Co. et al. v. Bridge, et al.*, 2005 U.S. Dist. LEXIS 34912 (N.D. Ill., Dec. 21, 2005), which held that the plaintiffs lacked standing as they weren't the recipients of the defendant's alleged misrepresentations and at best were the indirect victims of the mail fraud. The Supreme Court summarized the Seventh Circuit's decision succinctly as follows, "It first concluded that '[s]tanding is not a problem in this suit' because plaintiffs suffered a 'real injury' when they lost the valuable chance to acquire more liens, and because 'that injury can be redressed by damages.' 477 F.3d 928, 930 (2007). The Court of Appeals next concluded that respondents had sufficiently alleged proximate cause under *Holmes v. Securities Investor Protection Corporation*, 503 U.S. 258, 112 S. Ct. 1311, 117 L. Ed. 2d 532 (1992), and *Anza v. Ideal Steel Supply Corp.*, 547 U.S. 451, 126 S. Ct. 1991, 164 L. Ed. 2d 720 (2006), because they (along with other losing bidders) were 'immediately injured' by petitioners' scheme. 477 F.3d at 930-932. Finally, the Court of Appeals rejected petitioners' argument that respondents are not entitled to relief under RICO because they did not receive, and therefore did not rely on, any false statements: 'A scheme that injures D by making false statements through the mail to E is mail fraud, and actionable by D through RICO if the injury is not derivative of someone else's.' *Id.*, at 932." *Bridge*, 553 U.S. at 645.

While the implications of *Bridge* are far-reaching as the victims of RICO violations are not required to plead and prove first-party reliance on acts of mail and wire fraud to establish standing to bring a civil RICO claim and the plaintiffs won an important victory in *Bridge*, the case did not end there. Subsequent to *Bridge*, the defendants' motion for summary judgment was granted by the district court in *Phoenix Bond & Indemnity Co. et al v. Bridge, et al.*, 2010 U.S. Dist. LEXIS 91178 (N.D. Ill, September 1, 2010) and the plaintiff's civil RICO claims were dismissed as lacking proximate cause. Regardless of the lack of first-party reliance on the mail fraud, the district court applied the direct relationship standard to establish proximate cause and held that it was lacking. Before analyzing the district court's most recent holding in *Phoenix Bond* a brief overview of the relevant provisions of RICO is necessary.

OVERVIEW OF THE PROVISIONS OF RICO RELEVANT TO THE HOLDING IN PHOENIX BOND & INDEMNITY CO.

The civil remedies provision of RICO provides in relevant part that "[a]ny person injured in his *business or property by reason of* a violation of section 1962 of this chapter [Title 18] may sue therefore in any appropriate United States district court and shall recover threefold the damages he sustains and the cost of the suit, including a reasonable attorney's fee." 18 U.S.C. § 1964(c). (Emphasis added)

Section 1962 provides, in relevant part:

“(c) It shall be unlawful for any person employed by or associated with any enterprise engaged in, or the activities of which affect, interstate or foreign commerce, to conduct or participate, directly or indirectly, in the conduct of such enterprise's affairs through a pattern of racketeering activity... “

In order to satisfy the requirement in RICO § 1964(c) that a plaintiff demonstrate its *business or property* was injured *by reason of* the defendant's violation of RICO § 1962, the plaintiff must show proximate cause. In *Holmes*, evaluating proximate cause for RICO purposes, the Court looked to its common law foundations and established that in the context of a civil RICO claim, the plaintiff must establish that the RICO violation was not only the “but for” cause of the damages but was also the legally cognizable or “proximate cause” of the damages. Noting that the concepts of direct relationship and foreseeability are two of the “many shapes [proximate cause] took at common law,” the *Holmes* Court applied the direct relationship standard, which was subsequently followed in *Anza*, *Bridge*, and *Hemi Group*.

While *Holmes* required “some direct relation between the injury asserted and the injurious conduct alleged,” it further held that a connection that is “too remote,” “purely contingent,” or “indirec[t]” does not establish proximate cause. *Holmes*, 503 U.S. at 271 and 274. The Court explained that proximate cause is a flexible concept not lending itself to “a black-letter rule that will dictate the result in every case.” It noted that the direct-relation requirement for proximate cause eliminates the difficulties attendant to determining the plaintiff's damages due to the defendant's actions as opposed to other independent factors. It also prevents courts from having “to adopt complicated rules of apportioning damages among plaintiffs removed at different levels of injury from the violative acts, to obviate the risk of multiple recoveries,” and acknowledges that “directly injured victims can generally be counted on to vindicate the law as private attorneys general, without any of the problems attendant upon suits by plaintiffs injured more remotely.” *Holmes*, 503 U.S. at 269-70.

In *Holmes*, the Court reiterated that “[t]he general tendency of the law, in regard to damages at least, is not to go beyond the first step.” *Holmes*, 503 U.S. at

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271-272. Also, in *Holmes* the Court established that one consideration relevant to the RICO “direct relationship” requirement to establish proximate cause is whether better situated plaintiffs would have an incentive to sue under RICO. *See, Holmes*, 503 U.S. at 269-270.

PHOENIX BOND & INDEMNITY CO. V. BRIDGE

The facts in *Phoenix Bond* are not complex, but they are different than the facts that the Supreme Court relied upon in *Bridge*. First, it is necessary to set forth the facts in *Bridge* and then the facts as determined in *Phoenix Bond* will be set forth as the district court’s decision is analyzed.

Annually the Treasurer’s Office of Cook County, Illinois conducts a public auction where it sells tax liens on the property of delinquent taxpayers. Rather than bidding in cash amounts the bids are made as percentage penalties which the property owner must pay the winning bidder (buyer) to clear the tax lien. The lowest penalty percentage bid wins the auction. The buyer pays off the delinquent taxes and receives the tax lien. The property owner still has the right to redeem the property within the statutorily mandated redemption period by paying the buyer the delinquent taxes, any taxes paid by the buyer accruing after the purchase of the tax lien plus a 12% penalty on those taxes, and the percentage penalty bid at the auction. If the owner doesn’t redeem the property, the buyer may obtain a tax deed for the property and essentially purchase the property for the taxes paid.

Illinois imposes on the buyer notice requirements in order to complete the purchase of the tax lien and to later petition for a deed to the property. 35 Ill. Comp. Stat. 200/22-5 (“22-5 notice”) provides that within four months and 15 days of the purchase of the tax lien buyers must provide notice pursuant to the County. The County then mails the notice to the owner. Also, if the owner doesn’t redeem the property 35 Ill. Comp. Stat. 200/22-10 (“22-10 notice”) mandates that the buyer must file a petition five months before the end of the redemption period and provide notice of the petition to the owners, occupants, or other interested parties to the property, which is served by the County sheriff or by certified mail to parties residing outside the state.

Since most bidders intend to make a profit by reselling the property above the amount paid to the County in back taxes to acquire the tax lien rather than from the penalty assessed on any redeeming property owner, most parcels attract multiple bids at the lowest percentage bid allowable under County regulation of 0%. Negative bids conceivably are not allowed as that would give taxpayers incentive not to pay their taxes and then redeem the property by paying the delinquent taxes less the penalty amount.

When a winning bidder bids a penalty percentage of 0%, there are three potential ultimate outcomes for the buyer: First, the buyer will receive only the repayment of the delinquent taxes if the owner redeems the tax lien promptly. Second, if the buyer pays any taxes accruing after the purchase of the tax lien, before the owner redeems the tax lien, the buyer will receive all the delinquent taxes plus the statutory 12% penalty. Lastly, if the owner does not redeem the

property, the buyer may obtain a tax deed in full ownership of the property after paying only the taxes on it.

When the bidding ends in a tie, *e.g.*, multiple bids at 0%, the County allocates parcels "on a rotational basis" in order to ensure that the liens are apportioned fairly among 0% bidders. As the Seventh Circuit stated, "If X bids 0% on ten parcels, and each parcel attracts five bids at that penalty rate, then the County awards X two of the ten parcels. Winners share according to the ratio of their bids to other identical bids. This creates an incentive to submit multiple bids per parcel, either directly or through agents. If Y submits two bids per parcel, then its take from the auction will be double that of X. To prevent this, the County promulgated what it calls the "Single, Simultaneous Bidder Rule"(Rule)." The Rule provides that "one tax buying entity (principal) may not have its/his/her/their actual or apparent agents, employees, or related entities, directly or indirectly register under multiple registrations for the intended or perceived purpose of having more than one person bidding at the tax sale at the same time for the intended or perceived purpose of increasing the principal's likelihood of obtaining a successful bid on a parcel." When registering for the annual auction, potential bidders must furnish the County with a sworn affidavit that no agent or other related entity will participate in that auction and it complies with the Rule.

Bridge, et al., petitioners in the Supreme Court case, and Phoenix Bond & Indemnity Co. et al., the respondents, are regular participants in Cook County's tax sales. In July 2005, respondents filed a complaint in the district court alleging that petitioners had fraudulently acquired a disproportionate share of liens at the auctions held in 2002 through 2005 by violating the Rule and had filed false sworn affidavits stating that they complied with the Rule as part of a scheme to defraud the Treasurer and competing bidders, thus depriving them of their fair share of the liens and the profits they would have made selling the properties.

The respondents alleged that the petitioners knowingly committed fraud by filing the false affidavits and since the tax-sale process utilizes the mail possibly to send the affidavits and to send the 22-5 and 22-10 notices they committed mail fraud entitling them to bring a civil RICO claim and seek treble damages based upon a violation of RICO § 1962(c).

As previously noted, subsequent to *Bridge*, the district court in *Phoenix Bond* granted summary judgment and dismissed the plaintiff's civil RICO claim as lacking standing due to failing to satisfy the proximate cause element based on a finding of facts different than those relied upon in *Bridge*.

In *Phoenix Bond* the court stated, "Defendants have moved for summary judgment on Plaintiffs' RICO claims, arguing that Plaintiffs cannot prove that Defendants' alleged violations of the Cook County Treasurer's SSBR proximately caused Plaintiffs' injuries. Specifically, Defendants contend that a number of independent and unaccountable variables prevent Plaintiffs from proving proximate cause, including (1) Plaintiffs cannot establish that the tax liens were awarded pursuant to the 'equal allocation' system previously alleged by Plaintiffs; (2) Plaintiffs have no evidence of what remedy the Cook County

Treasurer, Maria Pappas, would have imposed for violations of the SSBR (e.g., whether a defendant would have been barred from only one sale, permanently barred, or barred at all);(3) Plaintiffs cannot identify the specific liens they bid on at the 0% penalty rate and lost to a Defendant violating the SSBR; (4) Plaintiffs lack any evidence of how third-party bidders were bidding at the auctions; and (5) Plaintiffs cannot prove that the liens Plaintiffs would have won if Defendants had not allegedly violated the SSBR would have been more profitable than the liens Plaintiffs actually won.

“Plaintiffs insist that such evidence is unnecessary to establish proximate cause. Rather, according to Plaintiffs, proximate cause in this case is ‘simple and straightforward’: ‘Defendants improperly participated in the sales, obtained liens that—as ineligible bidders—they should not have obtained, and injured the eligible bidders, including Plaintiffs, by reducing the number of liens they obtained.’ ... Thus, in Plaintiffs’ opinion, they need not prove ‘just how many liens Plaintiffs would have received’ because that issue ‘is a damages question not raised by Defendants’ motions.’ ... The court, however, is not persuaded that, in the RICO context, simply establishing a logical connection between Plaintiffs’ harm and Defendants’ accused actions necessarily proves that Defendants’ actions proximately caused Plaintiffs’ injuries. To the contrary, despite Plaintiffs’ attempts to wholly separate their proof of proximate cause from their ability to prove damages, based on this court’s review of the relevant precedent, the two inquiries are not mutually exclusive but necessarily involve overlapping and related considerations.” *Phoenix Bond*, 2010 U.S. Dist. LEXIS 91178 at 13-14.

After discussing the history of proximate cause in *Holmes*, *Anza*, *Bridge* and *Hemi Group*, the court agreed with the defendants that the plaintiffs’ theory of proximate cause glossed over the specific facts of the case and focused more generally on the defendants’ foreseeability and intention that their scheme regarding the auctions would have injured the plaintiffs; thus, it failed to satisfy the Supreme Court precedents establishing the directness standard for proximate cause.

The district court looked to case law in its own circuit, namely *James Cape & Sons Co. v. PCC Construction Co.*, 453 F.3d 396 (CA-7, 2006), applying proximate cause in civil RICO claims involving the bidding context. In *James Cape*, the plaintiff brought civil RICO claims alleging that the defendants collaborated to rig bids for construction projects with the Wisconsin Department of Transportation. It alleged that the defendants’ collusion to underbid it caused the plaintiff to lose contracts. Rejecting the plaintiffs’ claim, the court held that proximate cause was lacking as it was too speculative. The court applied *Anza* and stated, “A court could never be certain whether Cape would have won any of the contracts that were the subject of the conspiracy ‘for any number of reasons unconnected to the asserted pattern of fraud’” and “[i]t is entirely possible that Defendants would have won some bids absent the bid-rigging scheme, even if making less profits in the meantime. Furthermore, Cape cannot show what portion of its ‘lost market share’ is attributable to the bids lost to the bid-rigging scheme.” *James Cape*, 453 F.3d at 403 (quoting *Anza*, 547 U.S. at 458).

In holding that the plaintiffs are unable to prove that the defendants alleged violations of the Rule proximately caused their injuries, the court determined the facts as they actually occurred with regard to the tax lien auctions and applied their findings to each of the five contentions, as noted above, made by the defendants supporting their claim that a “number of independent and unaccountable variables prevent” a showing of proximate cause. First, the court found that the plaintiffs’ descriptions of the Cook County tax lien sales were inaccurate as they “injected a level of mathematical precision into the auctions that never factually existed.” The court further stated, “Indeed, rather than employing a system that ‘guarantees equal distribution of properties,’ Plaintiffs do not dispute that the County instead instructed auctioneers to award liens to the first bidder to bid 0%. ... If the auctioneers were unable to determine who the first bidder was, they were instructed to ‘choose one buyer at random, but be sure to spread the choices fairly so as not to favor any one buyer.’ ... Neither the first bidder system nor the random ‘fair’ allocation of liens, however, ensures bidders the type of pro rata bid allocation previously described by Plaintiffs.” *Phoenix Bond*, 2010 U.S. Dist. LEXIS 91178 at 23. While the plaintiffs attempted to persuade the court by emphasizing that the auctioneers were countless times forced to use the “fair” method of allocation, the plaintiff’s argument was undermined as the court noted that several auctioneers awarded liens by doing “the best they could” to determine who made the first bid at 0%. The court reasoned that some of the tax liens were clearly not awarded under the “fair” allocation system but were awarded based on the subjective perception of the auctioneer as to who made the first 0% bid. The court ruled that the plaintiffs had no evidence from which a jury could reasonably identify which liens were awarded under the “fair” allocation system as there were no records kept either by the county or the parties making bids. The court further reasoned that even if they could make such an identification, the “fair” allocation system does not guarantee that “[w]inners share according to the ratio of their bids to other identical bids,” which was the facts as understood by the Seventh Circuit.

The court determined that between eleven to thirteen auctioneers were utilized in each tax lien sale; they change shifts every one and a half to two hours without any discussion between the auctioneers as to which liens the buyers were bidding on or were awarded. Besides a lack of oral communication, there was no written list of such information. Accordingly, the court agreed with the defendants’ argument that “the ‘fair’ allocation system, like the first bidder system, ‘was a subjective, contingent, discretionary method of awarding liens that depended on the conduct of other parties.’”

The court held that the Cook County auction system was not designed to insure an equal allocation of liens. Thus, to determine the impact the defendants’ alleged violation of the Rule had on the value of the plaintiffs’ portfolio of liens would involve “the type of intricate, uncertain inquiries” that the Supreme Court has cautioned against allowing to “overrun RICO litigation.”

Second, the court found that the plaintiffs had no evidence of the remedy that the Cook County Treasurer would have imposed for violations of the Rule;

namely, whether the defendants would have been barred from only one sale, permanently barred, or barred at all. This undermined the fundamental assumption underpinning the plaintiffs' civil RICO claims that the defendants should not have been bidding at the Cook County tax lien sales. The court noted that the Supreme Court stated in *Bridge*, "if the county knew petitioners' attestations were false but nonetheless permitted them to participate in the auction, then arguably the county's actions would constitute an intervening cause breaking the chain of causation between petitioners' misrepresentations and respondents' injury."

The court noted that a jury would have to speculate as to whether the defendants would have been permanently barred from the County tax lien sales, excluded for only a day or a year, or any other of a myriad of potential punishments such as requiring that the violation be rectified. The court stated, "...this court believes that requiring a jury to predict, without any evidence, just how long a defendant would have been barred from the tax lien sales, if barred at all, adds yet another layer of complexity and speculation to the proximate causation analysis."

Third, regarding the defendants' contention that a number of variables prevent the plaintiffs from proving proximate cause, the district court ruled that the plaintiffs could not identify the specific liens they bid on at the 0% penalty rate and lost to a defendant violating the Rule. Regarding three liens that the plaintiffs' bidder believed she placed a 0% bid on, the court determined that even assuming that the bids were made, the plaintiffs provided no evidence that the court could use to even reasonably infer that a defendant violating the rule actually won any of the liens or that the auctioneers did not award any of the liens to the bidder whom they subjectively perceived was the first bidder.

The court held that the plaintiffs failed to specifically identify any liens that they contended were lost to a defendant bidding in violation of the Rule. The court noted that the plaintiffs' bidders even conceded that they were unable to identify any specific liens bid on simultaneously by the defendants' bidders. The court noted that absent testimony from the auctioneers, a jury would be forced to speculate as to whether the liens were awarded to the bidder perceived to be the first 0% bidder or based on the "fair" allocation method.

Fourth, the court ruled that the plaintiffs lacked any evidence of how third-party bidders were bidding at the auctions. The court reasoned that the plaintiffs did not dispute that each tax lien sale involved multiple bidders who were not involved in litigation and that there were no records indicating any liens on which any buyer besides the litigants bid at 0%. Thus, the court reasoned that had the third-party bidders placed a 0% bid on a lien before the plaintiffs' bid, and the auctioneer had perceived the third party as the first bidder, the plaintiffs would not have been awarded the lien regardless of the defendants' participation in the tax lien sale.

Lastly, the court ruled that the plaintiffs could not prove that the tax liens they would have been awarded if the defendants had not violated the Rule would have been more profitable than the tax liens they actually won.

In summarizing its decision regarding the proximate cause considerations, the court stated, “In *Anza*, the Supreme Court recognized that the plaintiff's injury was too attenuated from the defendant's purported RICO violation where the proximate cause assessment would require the court to calculate not only ‘the portion of [the defendant's] price drop attributable to the alleged pattern of racketeering activity’ but also ‘the portion of [the plaintiff's] lost sales attributable to the relevant part of the price drop.’ ... Similarly in this case, the jury would need to determine which liens Defendants won as a result of their alleged violations of the [Rule] and then in turn calculate the impact those lost liens had on Plaintiffs' overall lien portfolio. Such an analysis would require the type of ‘complex assessment’ the Supreme Court discouraged in *Anza*.”

CONCLUSION

While the Supreme Court's decision in *Bridge* greatly expanded the potential for lawsuits that may be brought as a civil RICO claim, by holding that a civil RICO claim predicated on mail fraud need not show, either as an element of its claim or as a prerequisite to establishing proximate cause, that the plaintiff relied on the defendant's alleged misrepresentations, the district court in *Phoenix Bond* is a clear example of the limits placed on such lawsuits by the directness standard established in *Holmes* and applied in *Anza*, *Bridge*, and *Hemi Group* to establish proximate cause. While the requirement of proximate cause has no single black letter rule to be applied, *Phoenix Bond* demonstrates that when applying the directness standard, the facts of the case are crucial to a court's determination. Looking at the Supreme Court's precedents in this area and the application of the directness standard by the lower courts, one can see that there is still disagreement among the lower courts in the application of the directness standard. *Phoenix Bond* is an excellent example for taxpayers, tax practitioners, and the courts to refer to as a guide in understanding the intricacies of applying the directness standard. Clearly in the realm of potential civil RICO claims involving auctions or bidding, *Phoenix Bond* provides guidance on the elements necessary to establish a civil RICO claim.

While many people suffer damages to their business or property due to RICO violations, in order to successfully bring a civil RICO claim potential plaintiffs should be sure there is a Bridge between the RICO violations and the damages which is clearly supported by the facts. Otherwise, there will not be a Phoenix arising from the ashes of the damages.

REFERENCES

- Anza, et al. v. Ideal Steel Supply Corp., 547 U.S. 451 (2006)
- Bridge, et al. v. Phoenix Bond & Indemnity Co. et al., 553 U.S. 639 (2008)
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Phoenix Bond & Indemnity Co. et al. v. Bridge, et al., 477 F.3d 928 (CA-7, 2007)

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Title IX of the Organized Crime Control Act, Pub. L. 91-542, 84 Stat. 941, as amended, 18 U.S.C. §§ 1961-1968- Racketeer Influenced and Corrupt Organizations Act (RICO)

**EVALUATIONS OF AN ETHICS EDUCATIONAL INTERVENTION
USING DIT-2 RESULTS: PHASE II**

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ABSTRACT: The value of ethics instruction within business curricula has been debated for many years. However, with more emphatic calls for better ethics training and ethics programs at the undergraduate level, such programs have become increasingly important. The current study details preliminary results of a new ethics program introduced as part of the overall business education degree at an undergraduate institution. The study employs a pretest/posttest design using the DIT-2 research instrument to measure student levels of moral reasoning before and after a preliminary ethics intervention in an introduction to management course. Our findings indicate that little change is evidenced as a result of only one ethics intervention, and that many students reason at a low moral reasoning level. We also found that the change in scores from pretest to posttest were in a positive direction, that students tended to have more consolidated responses during the posttest, and that more students increased moral reasoning levels than decreased levels, although the largest percentage remained the same. The preliminary results will be combined and used as a benchmark for a longitudinal analysis that takes into account multiple ethics interventions throughout the business curriculum.

INTRODUCTION

In the fall of 2006, the Business Division at our institution implemented a new ethics curriculum whereby students receive ethics training in a 200-level management course and continue the training in specific ways in the core courses of the major until graduation. We have initiated a longitudinal study that will track students' ethical progress, as measured by the new Defining Issues Test, or DIT-2. The results of Phase I (Buchan & Flynn, 2007) were separately reported and the objective was to investigate any differences between students in the introductory business management course receiving the ethics instruction and students who had not yet received such instruction.

Phase II consists of a more fine-grained analysis of the sample data. The control group receiving no ethics training consisted of 111 students taking the introductory financial accounting course, a required course for all majors in the business division. The students taking the 200-level management course, a total of 100 students, comprised the test group. Both groups of students took the DIT-2 at the beginning and the end of the fall 2006 semester. We measured the changes in level of principled moral reasoning, as measured by the DIT-2, between the two groups of students. The changes were assessed by examining the scores on certain developmental indices. This study extends our earlier work

beyond the initial analysis of moral reasoning levels by considering other variables and levels of analysis that may provide a more comprehensive view. For example, we will extend our work beyond only investigating level of moral reasoning (e.g., Personal Interest, Maintaining Norms, Postconventional) into an investigation of types within those levels. Current research considers 7 types and takes into account whether a person is consolidated within a phase or transitioning into a new one.

It is the authors' intent to continue the DIT-2 research to track student increases in moral reasoning levels over time and through repeated exposure to ethics interventions in upper level business courses. As such, Phase I and this study together serve as a baseline for future comparison.

BACKGROUND

Overview of Phase I: The first phase of our research program (Buchan & Flynn, 2007) investigated the initial impact of an ethics educational intervention. It was completed as the first step in evaluating a newly developed ethics curriculum. This program is designed to provide a common framework for evaluating scenarios with ethical content and to provide a common casebook from which to study business ethics. The study used the DIT-2, which is the recently updated version of the original Defining Issues Test (DIT). The DIT (along with the DIT-2) is a well-known instrument in the area of cognitive moral development and is designed to measure the extent to which individuals adhere to various stages of moral reasoning. In educational settings, the DIT and DIT-2 have been used to measure increases in moral reasoning levels due to exposure to an ethics curriculum. Typically students complete the DIT as a pretest, then are given the ethics intervention, then complete the DIT again as a posttest after the ethics intervention.

In a similar fashion, the Phase I study used the DIT-2 in a pretest/posttest methodology and compared findings of the intervention group with students not receiving any ethics training, who served as the control group.

Results from Phase I (Buchan & Flynn, 2007) showed very little difference between the control group's scores and the treatment group's scores. For both groups, the change in scores from pre- to posttest was significant for the new N2 score. Further investigation confirms findings in prior studies using the DIT of differences in scores between males and females. Female scores were significantly higher than male scores at the higher moral reasoning levels, not significantly different at the conventional levels, and in the experimental group, significantly lower at the preconventional moral reasoning levels on the posttest. The last finding suggests that the ethics intervention had a positive impact on females' reasoning in that they used less preconventional reasoning after the intervention.

Cognitive Moral Development: Lawrence Kohlberg's theory of cognitive moral development (CMD) is based on the work of Jean Piaget. Kohlberg (1969) proposed a three level, six stage (two stages at each level) model. Level one, the preconventional level, assumes individuals are primarily

concerned with rewards and punishment. Individuals reasoning at level two, the conventional level, consider the consequences of behavior in relation to others and as well as laws and other codes of conduct. Level three, the postconventional level, is the highest level and universal truths become a primary focus.

James Rest (1994) played a significant role in the advancement of Kohlberg's theory and considers the stages to be different views of how to organize cooperation. Rest (1979) developed the Defining Issues Test (DIT) which is a "pen and pencil" recognition test of moral reasoning that is much easier to administer than Kohlberg's elaborate Moral Judgment Interview. Extensively used in a variety of research domains, Rest et al. (1999a) report over 400 published studies using the DIT in the past twenty years. The DIT is now viewed as a schema activating device (Rest et al., 1999a); in other words it is considered to be a measure of schemas rather than stages.

The four-component model was introduced several years ago by Rest (1986), and is now conceptualized (Rest et al., 1999a) as the "inner psychological processes (which) together give rise to outwardly observable behavior" (p. 101). Stage one, moral sensitivity, involves identifying the issue and determining alternative courses of action. In stage two, moral judgment, the most appropriate course of action is identified (the authors point out that the DIT relates primarily to this stage). The next stage, moral motivation (intent), places moral values above others and requires one to assume personal responsibility for outcomes. The final stage, moral character, requires "persistence in a moral task, having courage, overcoming fatigue and temptations, and implementing sub routines that serve a moral goal." (p.101). Components are considered to interact in a complex reciprocal manner. Notably, several models used in general business ethics research incorporate the four-component model (e.g., Jones and Ryan, 1997; Jones, 1991; Ferrel et al., 1989).

Educational Interventions: Rest and Thoma's (1986) review of 55 studies of educational interventions suggest that programs of short duration were generally ineffective and those dealing with personality development produced results. Further, dilemma discussion appeared to be an effective pedagogical method. Bebeau (2002) asserts that professional school students' moral development does not appear to progress without some type of educational intervention. Similar to Rest and Thoma's (1986) findings, Bebeau's results suggest dilemma discussion is effective. Bebeau (2002) points out that the analysis of DIT schema scores and the new N2 index, rather than the P score, may increase our understanding of the factors influencing moral judgment development.

Results of King and Mayhew's (2002) review of 172 post-1980 studies includes identifying methods for improving the quality of intervention studies such as selecting both experimental and control groups, providing sufficient detail of intervention strategy, and relating the underlying theory to the technique used.

METHODOLOGY

Educational Intervention Program: The business curriculum did not include an ethics course, nor was a course from another department required (e.g., philosophy, psychology) that would enhance overall understanding of the ethical decision-making process and underpinnings of moral philosophy. Courses in the business curriculum were identified that contained certain ethics objectives, but no attempt had been made to develop a consistent approach to building an integrated program. Business faculty concurred that a comprehensive plan was required and a faculty member was assigned overall responsibility for developing an approach to content delivery throughout the curriculum. The preliminary plan was submitted and approved by the business faculty.

Adoption of a common text specifically designed to meet the business program's needs was an integral part of the ethics curriculum. The text is first used in the introduction to management course and is used in subsequent business courses in which ethics units are embedded. The following is a brief discussion of the program approved by the faculty.

The first year curriculum (i.e., the introduction to management course) comprises a one week unit that includes a combination of lecture, dilemma discussion, and analysis of a comprehensive case. The purpose is to provide an understanding of ethical principles and concepts (e.g., utilitarianism, justice and fairness, contractual rights, ethics of care, virtue ethics, etc.) and how ethical principles apply to business problems. An ethical framework is introduced that will be used in other units and is also applied to class discussion of the comprehensive case. Instructors in the introductory course will also apply the principles introduced in the ethics module as other ethical issues arise throughout the course. The purpose of the Phase I study (Buchan & Flynn, 2007) and this study is to assess the impact of the first year program, and to establish a comprehensive baseline from which to assess the efficacy of the ethics intervention longitudinally as students progressed through required coursework.

The principles and framework introduced in the fundamentals of management course will be reinforced and amplified in the law, corporate finance and marketing courses. Instructors are allowed flexibility with respect to topics and case selection; however, the common text must be used.

Instrument: DIT-2: Subjects are presented with five moral dilemmas (referred to as "stories") and a detailed set of instructions. After reading the scenario, subjects are asked to select an action choice. For each story, participants are also presented with a list of twelve issues/questions that might be raised and are asked to rate (on a 1-5 scale) the importance of each issue to the story. Participants then rank (in terms of importance) the top four issues. Schema scores (i.e., Personal Interest, Maintaining Norms and Postconventional) are based on the ranking of the issues and represent the relationship between the actual score for each schema to the total possible score. Schemas relate to Kohlberg's six stages: Personal Interest relates to stages 2 and 3; Maintaining Norms relates to stage 4 and Postconventional relates to stages 5 and 6.

P-score (principled score), which historically has been the most widely reported index in ethics research using the DIT, represents a quantitative measure of relative weight given to principled (stages 5 and 6) levels of moral reasoning. Thus, the higher the P-score, the greater use of higher level of moral reasoning. The scoring procedure also provides a test for social desirability bias. Subjects with an “M” (meaningless) score equal to or greater than eight are eliminated from the sample (Rest, 1993).

The DIT-2 used in this study represents an updated version of the DIT. Rest et al. (1999b) introduced the new instrument, citing several improvements including the elimination of outdated dilemmas, reduction of the number of stories from six to five, and reduction of the number of participants eliminated as a result of improved reliability checks. Improved validity is primarily due to the new N2 index (Rest, et al., 1997) and the reliability checks. Like Rest et al. (1999b), Bebeau and Thoma (2003) found a strong correlation ($r=.79$) between the two versions of the instrument.

The new N2 index uses both ranking and rating data. One component of the index is nearly identical to the P-score and the other component is based on the difference between average ratings given to lower stage (stages 2 and 3) items and the higher stage (stages 5 and 6) items. The composite N2 is the sum of the P-score and the weighted rating data. Rest et al’s (1997) meta-analysis compares the effect size of the P index and the N2 index and shows that the N2 index generally outperforms the P index based on validity criteria similar to that described below.

Rest et al. (1999a) cite over 400 published articles in assessing the validity of the DIT. Adequate reliability using Cronbach’s alpha was found to be in the upper .70s for the P index and low .80s for the new N2 index (p. 92). Alpha scores for the current study were computed for each treatment group and for pretest and posttest. Scores ranged from a low of .66 to a high of .73.

Consolidation/Transition: Thoma & Rest (1999) developed an approach for identifying periods of consolidation/ transition using the Defining Issues Test. Consolidated means that an individual primarily selects DIT items related to their dominant schema type. On the other hand, a transitional individual considers items from more than one schema and a clear schema choice is not evident. The following is a brief summary of the seven suggested type profiles (adapted from Derryberry & Thoma, 2005).

TYPE 1: Consolidated at Personal Interest schema; suggests low mixture.

TYPE 2: Transitional phase between Personal Interest and Maintaining Norms; Still favors Personal Interest items. Suggestive of more mixture.

TYPE 3: Transitional phase between Personal Interest and Maintaining Norms; Shift towards Maintaining Norms.

TYPE 4: Consolidated at Maintaining Norms schema and low mixture.

TYPE 5: Transitional phase between Maintaining Norms and Postconventional; high mixture with preference for Maintaining Norms items, but bias towards Postconventional items over Personal Interest items.

TYPE 6: Transitional phase between Maintaining Norms and Postconventional, high mixture.

TYPE 7: Consolidated at Postconventional schema; low mixture, significantly favors Postconventional items.

Participants in this study are identified as consolidated (Types 1, 4 and 7) or transitional (Types 2, 3, 5 and 6). Following Yeap (1999) and Bebeau (2002), Type has been used to develop a more complete picture of the subjects' cognitive profiles and to gain a more thorough understanding of the impact of the short-term educational intervention.

Type Pathways: Yeap (1999) developed an interesting approach to supplement the assessment of the impact of an educational intervention by using the "Type" variable derived from the DIT data. The question addressed was whether the intervention resulted in a shift from one Type to another. To facilitate the analysis, the author used the concept of Type "pathway." For example, if the pretest Type is 4 and the posttest Type is 6, the pathway is "46". Yeap suggests that this type of analysis may be most useful if the results show no change in other indices such as the P-score or N2.

Sample and Procedure: The experimental group consists of undergraduate students receiving ethics instruction during an introductory business management course. The DIT-2 was administered at the beginning and at the end of the semester in all four sections of the course which is taught by two instructors (each instructor teaches two sections). Entry testing took place prior to introduction of the ethics component of the course. Participation in the study is a course requirement; however, students absent from class were not required to complete the research instrument. Further, students were advised that performance on the DIT-2 was not a component of the course grade.

Students were advised that responses were confidential and anonymity was guaranteed. The DIT-2 forms were coded with identification numbers to facilitate matching of the pre- and posttests. Responses from students not participating in the pretest were eliminated from the sample prior to processing the results for the post-test. DIT-2 answer sheets were submitted to the University of Minnesota for scanning and scoring.

RESULTS

Descriptive Information: The experimental group consisted of 111 undergraduate students in the introduction to management course, representing business division majors (n=59, 53%), music industry majors (n=27, 24%), and various other majors (n=25, 23%). The mean student age was 20.5, which approximates junior standing for traditional college-age students. The mean pre- and posttest scores for the experimental group are summarized below:

EXPERIMENTAL GROUP	Pretest	Posttest
N2 Score	28.36	30.95
P Score	30.27	30.28
Maintain Norms Score	34.41	35.27
Personal Interest Score	29.63	28.57

The only difference from pre- to posttest that produced statistical significance was for the N2 Score ($p = .049$); all others showed no significant differences in scores on the pretest vs. scores on the posttest.

Data Analysis: The pretest and posttest scores were further analyzed using Wilcoxon's Matched-Pairs Signed Ranks Test as a measure of the directional change from pre- to posttest on the two variables of interest: degree of consolidation vs. transition, and type pathway indicator. For the consolidation/transition variable, a negative rank indicates movement away from consolidation, while a positive rank indicates movement towards consolidation of reasoning within one stage. The sum of negative ranks was 135 and the sum of positive ranks was 216, for a Z-score of -1.177. For the type pathway indicator variable, negative rank indicates a negative pathway (from a higher level on the pretest to a lower level on the posttest) while positive rank indicates upward movement in moral reasoning (from a lower level to a higher level on the pre- and posttest, respectively). For type pathway indicator, the sum of negative ranks was 991 and the sum of positive ranks was 1,355, corresponding to a Z-score of -1.122.

Specific results of the type pathway analysis for each set of matched responses are displayed in the following table.

Pretest → Posttest	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Total
Type 2	0	13	5	3	2	4	0	27
Type 3	0	5	8	1	1	4	0	19
Type 4	0	4	4	5	2	0	3	18
Type 5	0	1	3	0	0	4	1	9
Type 6	2	5	1	0	1	7	2	18
Type 7	1	3	1	3	0	2	10	20
Total	3	31	22	12	6	21	16	111

The consolidated types are considered to be 1, 4, and 7. For the pretest, the total consolidated type was 31, or 28%, leaving the remaining 72% of respondents on the pretest with transitional types (2, 3, 5, and 6). For the posttest, the number of consolidated types increased to 38, or 34%.

Bold numbers indicate the respondents showing no change in type from pretest to posttest. Below the bold number diagonal represents those respondents who increased type from pre- to posttest (a positive type pathway), and those above the diagonal indicate the number of respondents with a negative type pathway. To summarize, 43 of the respondents showed no change in type (39%), 36 respondents had a positive type pathway (32%) and 32 respondents had a negative type pathway (29%). The grid also shows the predominant reasoning level of the 111 respondents. The largest total type for the pretest was type 2 (at n = 27) and the largest total type for the posttest was also type 2 (at n = 31).

A ranking of the top 5 type pathway frequencies follows:

Pathway	Frequency	Percent	Rank
2-2	13	11.71	1
7-7	10	9.01	2
3-3	8	7.21	3
6-6	7	6.31	4
2-3	5	4.50	5
2-6	5	4.50	5
3-2	5	4.50	5
4-4	5	4.50	5

The top 4 out of 5 are pathways with no change, but of the 4 pathways that jointly ranked 5th, only 1 was negative (pathway 3-2).

DISCUSSION, CONCLUSIONS, AND FURTHER STUDY

Discussion of Results: The results indicate that there was little change from pretest to posttest with respect to moral reasoning levels as measured by the DIT-2. This is a rather confirmatory finding, and corresponds to DIT research demonstrating that ethics interventions of short duration produce very little change in DIT scores. However, the changes in mean scores for the various levels were in the directions consistent with a positive impact from ethics instruction: the mean level of personal interest scores decreased slightly from pre- to posttest, while p-scores increased slightly as well. It is encouraging that the N2 score increased from pre- to posttest and that the result was statistically significant. Though the scores for the other levels failed to reach statistical significance, it is of practical significance that the scores appear to be changing in favorable directions, away from a focus on personal interest and toward a more principled view of moral reasoning.

The findings related to the variables of interest in this study, consolidation/transition and type pathway, also suggest that ethics interventions have the potential to influence students' moral reasoning levels in a positive manner. The Wilcoxon tests tabulated the differences, and detailed analysis of the types and type pathways shows that consolidation/transition moved toward more consolidated from pretest to posttest (from 28% to 34%), and type pathways predominantly stayed the same or increased (71%), with only 29% decreasing from pre- to posttest. The largest percentage is attributed to the type pathways that showed no change (39%), but again we are encouraged that almost one third (32%) showed positive type pathways even with a short-duration ethics intervention.

Of some concern is the predominant type for both the pretest and the posttest. The single highest type frequency for both pre- and posttest was type 2, which is a transitional stage between personal interest and maintaining norms that tends more toward the personal interest level and maintaining norms. This is a relatively low level of moral reasoning and we are hopeful that ethics instruction throughout the business curriculum will help raise the overall student level of moral reasoning.

Conclusions and Further Research Opportunities: This work has served as a baseline for comparison for continued examination of a newly adopted ethics intervention program throughout the general business curriculum within our institution. The findings suggest that there is little change from only one intervention and that students' reasoning levels on average are in need of improvement. Given the recent emphasis on business ethics and the pressure for business schools to address the importance of integrity in business situations, the initial levels are within expectations and we expect to see increases in level of moral reasoning as a result of our efforts at implementing an ethics program that will impact students in multiple courses as they progress through the business curriculum.

These preliminary results will be combined with a longitudinal analysis of student responses as they complete their course of study in business at our institution. Students will be asked a final time to complete the DIT-2 in one of the senior-level business courses taken late in the sequence. We will then compare student responses from the final iteration to the original scores to assess the level of improvement in moral reasoning. This stream of research is of current interest to not only educators, but the business community as well, as business scandals and lapses of ethical judgment continue to afflict the business environment.

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**CROSS-SECTOR COLLABORATIONS AND ENTERPRISE RISK
MANAGEMENT – STRATEGIES FOR NONPROFIT ORGANIZATIONS
TO EFFECTIVELY PARTNER WITH FOR-PROFIT ORGANIZATIONS**

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ABSTRACT: Cross-sector collaborations between nonprofit (NP) and for-profit (FP) organizations are growing in popularity in the United States. The synergies of such collaborations allow NPs to more effectively use their capabilities to serve the needs of stakeholders, including donors and volunteers. Despite the popularity of cross-sector collaborations, NP management must maintain, and further reinforce its internal control policies when seeking collaborative partnerships. Reliable internal control policies, along with coherent enterprise risk management (ERM), will enable NP organizations to sustain efficient operations. The balance between growing operations through cross-sector collaborations, while maintaining sound ERM policies, is crucial for today's NP organization. This paper outlines strategies NPs should follow to achieve effective and efficient collaborations with FP entities. We also discuss the inter-relationship between internal control, ERM, and corporate governance within the NP sector. Lastly, we suggest a template for NP organizations to implement sound risk management policies when contemplating cross-sector collaborations.

INTRODUCTION

The NP sector in the United States (U.S.) has witnessed a significant growth in collaborations between NP and FP organizations. Current economic volatility has led to decreased funding opportunities and more competition for limited funds available to NP from government and private sources, creating increasing collaborative efforts (Guo & Acar, 2005; Abdy & Barclay, 2001). Such collaborations use the knowledge and capabilities of NP and FP organizations more effectively through the creation of new opportunities that achieve greater profitability, and assist NPs in their ability to better meet the needs of their target audience (Rondinelli & London, 2003).

Motivations for cross-sector collaborations include international diversification, technological transfer, market power/market share, competition, efficiency, new or continued services, reduced financial risk, and increased cost savings (Gazley & Brudney, 2007; Shaw, 2003; Tuckman, 1998). In spite of these positive reasons for collaborative structures with FP organization, NPs must be mindful of meeting their fundamental objective to serve the needs of stakeholders – including donors, volunteers, and the community at large, with adequate corporate governance. To meet this objective, NPs must establish program awareness, institute creativity and innovation, evaluate external trends,

and maintain strong financial stability. One of the most critical areas in collaborations is strong internal control policies.

Reliable internal control policies, along with coherent enterprise risk management (ERM) will provide assurance to management and key stakeholders that organizational objectives can be achieved while managing key risk factors. The Association of Certified Fraud Examiners (ACFE) found that government and NP organizations accounted for 16% and 10% respectively of all fraud cases reported, and that frauds caused by billing, check tampering, and skimming (actions most readily controlled by robust internal control practices) were often found in NP organizations (ACFE, 2010).

NPs engaging in collaborative structures are often unaware of internal control guidelines. This paper outlines strategies NPs should follow to achieve effective and efficient collaborations with FP entities, and suggests a template for NPs to implement sound risk management policies when contemplating cross-sector collaborations. This paper is organized as follows: Section 2 provides review of existing literature addressing NP cross-sector collaborations and ERM in the NP sector. Section 3 suggests measures that NP organizations can take to successfully collaborate while maintaining strong internal control measures. Section 4 provides concluding remarks.

LITERATURE REVIEW

Cross-sector Collaborations: Existing research documents the growing trend of cross-sector collaborative structures between NP and FP entities (Austin, 2000; O'Regan & Oster 2000). Austin (2000) established a cross-sector collaboration framework, consisting of four components: (1) collaboration-continuum (CC) (2) collaboration value constructs (3) alliance drivers and (4) alliance enablers. The CC allows researchers and practitioners to categorize the type of relationship between the NP and FP partner. The collaboration value construct allows one to determine how value is defined, while alliance drivers provide the power for collaboration. Alliance drivers identify forces that provide the primary power for strategic cross-sector collaboration such as alignment of strategy, mission, and values, as well as continual learning. Finally, alliance enablers represent the supporting factors that bring together management effectiveness.

Collaborations between these two distinct sectors raise numerous policy issues regarding whether a NP continues to meet the needs of the community and its stakeholders. The challenge is to form efficient and effective partnerships that are able to meet the needs of all participants (Guo & Acar, 2005). Partnerships that are based on good relationships are instrumental in cross-sector collaboration success because the relationships build trust and create member buy-in of the partnership objectives. Hettche & Walker (2010) argue cross-sector collaborations can be effective despite differences, so long as a commitment to a common goal is primary. For example, a NP hospital partnered with a FP hospital in Austin, TX to form a partnership to operate MRI facilities (Smith, 2006).

Effective collaborations must also promote accountability, benefits responsibility, and shared risks, and require strong leadership, honest communication, common goals and objectives, willingness and energy to move toward a purpose, and a common understanding of expected results (Center for Research and Education in Human Services, 2004).

Corporate Governance and Enterprise Risk Management: Limited focus on corporate governance appears in the NP setting, except for Parker's (2007, 2008) examination of the process of decision-making within two NP boards of directors. Smith and Edmond (2009) point out that an understanding of governance models within the NP sector is necessary to implement accountability measures. In the wake of continued corporate scandals in the FP arena, the pressure for increased accountability within the NP sector in the U.S. is growing. The International Committee on Fundraising Organizations (ICFO) suggests NP organizations develop good governance practices in order to improve accountability to donors (ICFO, 2008). This is necessary because of numerous cases of fraud and misappropriation of funds by NP managers and employees (Gibelman and Gelman 2001). One example is a businesswoman in Texas accused of stealing more than \$300,000 from a NP by using fake audit reports, misappropriating funds, and the creation of shell companies to receive fictitious payments (Wald, 2010). This is just one example of how internal control weaknesses can contribute to the demise of a NP organization. Some examples of major internal control weaknesses within a NP setting include:

Failure to segregate duties: NP organizations must establish and maintain an effective system of checks and balances to ensure the honesty of employees and executives.

Failure to conduct proper employment background checks: NPs must conduct thorough background checks to find any previous allegations of misappropriating funds or other criminal activity.

Failure to confirm auditor activity: The board's governance responsibilities should require that external audit reports be presented and reviewed regularly, and that board members become intimately familiar with any control deficiencies and corrective actions to be taken.

Lack of management review and/or override of existing internal controls: The ACFE reports the lack of management review existed in 18% of small organizations with less than 100 employees, and overriding of existing internal controls existed in 12% of the same organizations (ACFE, 2010). Control procedures must be developed to ensure that management reviews and approves all financial reporting to stakeholders, and any override of existing internal control procedures be independently reviewed and approved at the proper level.

The internal control weaknesses listed above should serve as reminders for NP management to focus on implementing and maintaining strong governance policies and procedures. The ACFE (2010) study found a median loss of U.S. \$95,000 in NP due to fraud. The study found that smaller organizations (fewer than 100 employees) suffered the greatest percentage of frauds, and suffered losses in the areas of check writing, cash collection, billing,

and payroll, all functions that require strong internal control and risk management. Lack of internal controls such as segregation of duties was cited as the largest deficiency in nearly 50% of the fraud cases reported by smaller organizations. Though smaller organizations generally do not possess the financial resources necessary to launch elaborate risk management procedures, there are simple measures that can and should be taken to reduce the risk of fraudulent activity in any organization. Without taking a proactive approach to risk management, NPs leave themselves vulnerable to an array of asset misappropriation schemes, from check tampering to theft of incoming donations.

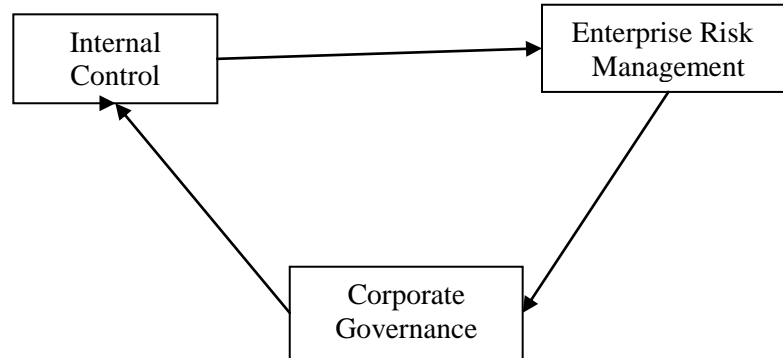
Academic research focusing on ERM and internal controls within the NP sector tend to be categorized with the corporate governance research stream. Existing literature on risk management mainly emphasizes for-profit setting (Spira & Page, 2003; Linsley & Shrivess, 2006). One contribution of this study is its application to NP organizations seeking to collaborate with for-profit entities. NP organizations should adopt ERM which builds on internal control procedures to provide assurance to management and stakeholders that the key risk factors can be managed as well as the organizational objectives are achieved. The organization's risk management framework consists of internal control as a subset of ERM, which is a subset of corporate governance. The Committee of Sponsoring Organizations of the Treadway Commission's (COSO) *Enterprise Risk Management — Integrated Framework* (2004) defines ERM as follows:

Enterprise risk management is a process, affected by the entity's board of directors, management, and other personnel, applied in strategy-setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within the risk appetite, to provide reasonable assurance regarding the achievement of objectives (COSO, 2004).

Entities can evaluate their internal control system using a COSO-based internal control framework (COSO, 1992), which identifies desired objectives and effective internal control as: effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations.

Figure 1 illustrates the continuous relationship between the three components of risk management - internal control, enterprise risk management, and corporate governance. The National Association of Corporate Directors (NACD) recommends various principles to assist corporate boards in strengthening their oversight of a company's risk management (NACD, 2009) such as the importance of the directors' understanding of the risks inherent in the business model, and agreement on the acceptable risk appetite. Their report emphasizes the need for organizations to go beyond the traditional compliance and risk identification procedures to considering the dimensions of monitoring critical alignments of strategy, risk, controls, compliance, incentives and people.

Figure 1: Risk Management framework



STRATEGIES FOR SUCCESS

NP organizations engage in cross-sector collaborations in order to meet the needs of their target audience, as well as achieve greater profitability. In order to be successful in these efforts, NPs must be attentive to numerous factors that can greatly impact the success of the collaboration. We outline six crucial areas for NP organizations to consider when developing potentially successful cross-sector collaborations: (1) a customer-centered focus, (2) creativity and innovation, (3) public relations, (4) resource allocation, (5) efficiency measures, and (6) ERM.

1. *Customer-Centered Focus*: The NP must adopt a customer-centered focus for a cross-sector collaboration to be both strategic in nature and to meet the needs of participating entities. In the past, NPs adopted either a product-oriented focus (good cause), or a sales-oriented focus (many overtures will result in one partner) (Edmond, 2007). NPs that develop a customer-centered focus start by identifying the needs of potential collaborators, and target their marketing efforts to meet those needs. By meeting the needs of the potential cross-sector partner, the initiating NP's needs are met as well (Anderasen & Kotler, 2003).

2. *Creativity and Innovation*: Due to increased competition, NPs should display creativity and innovativeness to help differentiate it from competing organizations (Anderasen & Kotler, 2003). A NP organization can utilize three strategies to enhance its creativity and innovation: differentiation from competition, cost leadership, and focus on a specific segment of the market that is not served by others to stand out and be recognized by their potential cross-sector partners.

3. *Public Relations*: NPs must establish effective public relations campaigns to highlight the potential value of collaboration. First, it should craft a message that targets the needs of the potential partner, and include the tangible benefits of partnering and meaningful opportunities available through the collaboration. Second, NP must effectively use its website, blogs, and white papers to promote its mission and operations (Mullen, 2006). Third, NP should evaluate the overall effectiveness of the program, and ensure its public relations programs are aligned with its organizational goals and mission.

4. *Resource Allocation*: A NP organization's ability to implement successful cross-sector collaborations is directly dependent on effective procurement and allocation of scarce resources including staff and volunteers. Some of these resource allocation concerns can be solved by using its board members' involvement in FP boards to fill short-term staffing needs necessary for cross-sector collaborations (Levesque, 2004). NP should maximize the potential of its volunteers by understanding how its volunteers identify with the mission of the organization, and recruiting the best volunteers to serve the organization efficiently and effectively. NPs should decide what benefits the volunteers want, and work to design volunteer roles to match those benefits, taking on a customer-focused role in terms of the volunteer recruitment efforts Mitchell and Taylor (2004).

5. *Efficiency Measures*: One motivation for cross-sector collaboration is the potential for increased diversification and reduction in costs. Financial ratio analysis is a well-established tool used by NPs to measure profitability, liquidity and financial stability (Abraham, 2006). Many charity watchdog groups including the Better Business Bureau (BBB) Wise Giving Alliance assist donors in making informed giving decisions by producing evaluative reports on charities. Their reports use financial ratio analysis to determine whether the NP has sufficient resources to support the organizational mission and if the financial resources are effectively and efficiently applied to support the overall mission. They use ratio analysis to determine if the goals of the organization are consistent with financial resources it needs to finance those goals; if the organization is maintaining intergenerational equity; if there is an appropriate matching between the sources and uses of resources; and if the present resources are sustainable.

According to Abraham (2006), some common ratios used in the NP setting allow researchers and donors to evaluate operations and efficiency. Some common ratios used in NP sector are:

Financial resource sufficiency:

Return on net assets: the total economic return to determine whether the organization is financially better off over time.

Net income: whether core operating activities result in a surplus or deficit.

Asset turnover ratio: matches assets and goals. Slow turnover assets require considerable investment and reduce flexibility.

Liquidity:

Liquidity and solvency: matches sources and uses of financial resources.

Percentage of revenues by source: analyzes quality of revenues in relation to mission.

Efficiency and effectiveness of NP utilization of resources:

Change in constituent served ratio: percentage change in the number of constituents served.

Cost per constituent served ratio: financial productivity for each dollar spent in relation to constituents.

In addition to utilizing ratio analysis, NP organizations should also consider adopting a modified version of the DuPont analysis sustainable growth formula to assist with the planning of potential cross-sector collaborations (Edmond, 2007). FP organizations use the DuPont analysis of sustainable growth to find the growth rate that a company can adopt without changing current policies. Sustainable growth rate, denoted by g^* , is the maximum rate in which a company's sales can increase without depleting financial resources. If the entity grows faster than its sustainable growth rate, it is necessary to make changes in its operations (such as taking on more debt, issuing more stock, or become more efficient in using its assets) to stay solvent. If a FP entity can estimate its sustainable growth rate, it can use the company's growth targets to plan the strategic initiatives to be undertaken to meet the anticipated growth rate (Higgins, 2007). Table 1 denotes the DuPont Analysis Sustainable Growth Rate Formula for a for-profit entity. NP managers can use an adapted version of the sustainable growth rate formula. Jegers (2003) developed a sustainable growth rate formula for NP entities (see Table 1). While Jeger's model may be useful for determining sustainable growth for a NP, it does not appear to very practical for everyday management use.

Table 1
DuPont Analysis Sustainable Growth Rate Formula
As applied to FP Organizations

$G = ROE * RR$, where

G = Sustainable Growth Rate

ROE = Return on Equity

= {Profit Margin * total asset turnover * leverage}

RR = Revenue Retention

= The percentage of income retained in the business, or the percentage of net income not issued as dividends to stock holders.

Sustainable Growth Rate Formula for NP Organizations, Jegers (2003)

$$g = \frac{(1 - d_1)\alpha'}{(1 - d_0)(1 - (1 + d_1)m)} - 1$$

Where:

$G = (X_1 - X_0)/X_0$: activity growth

$\alpha' = \alpha_1 / \alpha_0$: efficiency evolution
 $d_i = D_i / E_i$: capital structure by the end of year i
 $m = P_1 / T_1$: profitability in year 1
 X_i : activity level in year i
 E_i : equity by the end of year i
 D_i : debt by the end of year i
 $T_i = E_i + D_i$: total assets by the end of year i
 $\alpha = X_i / T_i$: efficiency in year i
 P_i : addition to equity in year i

The DuPont Analysis of sustainable growth will be useful to NP staff members that do not have a background in finance or accounting. Higgins (2007) suggests that a company's sustainable growth rate is nothing more than its growth in equity, and Abraham (2006) points out that return on net assets in a NP is equivalent to return on equity, so the DuPont Analysis Formula can be modified for NP entities to be:

$$G = \text{Return on net assets} = \text{change in net assets} / \text{net assets}.$$

Through the utilization of ratio analysis, NP managers can determine if they have the financial capacity to take on cross-sector collaborations, and determine what items need adjustment in order to successfully enter cross-sector collaborative structures. If the NP expects significant change in the sustainable growth rate due to cross-sector collaboration, it can analyze its financial condition to determine the changes necessary to meet the needs of the collaboration such as improving operational efficiencies, utilizing assets more efficiently, reducing or cutting costs, obtaining different or more funding sources, or considering taking on debt to meet the anticipated financial obligations during the cross-sector collaboration. Some examples of needed changes to achieve sustainable growth during the cross-sector collaboration could be: a) improving operational efficiencies, b) utilizing assets more efficiently, c) reducing or cutting costs, d) obtaining different or more funding sources, and e) taking on debt to meet the anticipated financial obligations (Higgins 2007).

6. *Enterprise risk management (ERM)*: Many FP entities have been subject to more stringent internal control and enterprise risk management guidelines than NP organizations, due to requirements from regulators such as the Securities and Exchange Commission (SEC), and the Federal Reserve Bank. Cross-sector collaborations will require NP management to focus more attention on implementing and maintaining sound internal control policies and procedures. NP management must maintain and reinforce its internal control policies when seeking collaborative partnerships. The balance between growing operations through cross-sector collaborations, while maintaining efficient, sound ERM policies is critical for today's NP organization.

In order to obtain a successful collaboration, NP managers must understand and identify internal control measures and their relationship to ERM.

Table 2 outlines a comparison of the COSO definitions of internal control and ERM, and highlights where ERM builds upon the internal control framework of an organization. An effective ERM process helps management and board to objectively consider the organization's appetite for risk, and ensure that the organization's strategic objectives are consistent with the appetite. Internal control procedures are focused on day-to-day processes, and form the basis for the more strategic entity-level view of risks view taken by ERM. ERM helps the board fulfill its responsibility of holding itself and management accountable to stakeholders, a key component of corporate governance. The objectives listed in Table 2 apply to all types of organizations including NP entities.

The recent financial crisis in the U.S. is leading to renewed focus on how senior managers approach risk management and the role of their boards in risk oversight. Effective implementation of ERM consists of five steps: 1) Identify mission critical services, 2) Identify strategic initiatives, 3) Identify risk exposures and drivers, 4) Prioritize risks and assess exposures, and 5) Perform enterprise-wide risk analysis. The following is a suggested implementation template for NPs to use the ERM and Internal Control frameworks to minimize risks while meeting its stated strategic objectives:

Discuss risk management philosophy and risk appetite: The organization's key strategic initiatives to fulfill its mission critical services should be identified, and the related risk exposures should be communicated to the board members to get their concurrence.

Understand risk management practices: Many organizations have ad-hoc and informal risk management processes leaving the board with insufficient understanding of the entity's top risk exposures. All stakeholders should be involved in identifying key drivers of risks, and the top risks facing the organization should be prioritized based upon the expected severity of impact and likelihood of occurrence.

Review portfolio risks in relation to risk appetite: The entity's stakeholders need to understand its top risk exposures relative to their appetite for risk. The agreed-upon list of top risks should be communicated to the board to be accepted and used to assist in their governance responsibilities.

Be apprised of the most significant risks and related responses: An effective risk management processes should provide timely and robust information about existing and potential risks on a dynamic basis. Management should proactively include key risk indicators to identify emerging risks, and board members and managers have a shared understanding of the top risks.

Table 2: Internal Control and Enterprise Risk Management

Objectives	Internal Control	Enterprise Risk Management
Operations	Effectiveness and Efficiency	Effectiveness and Efficiency
Reporting	Reliability of published financial statements	Reliability of all reports- regulatory filings, financial and non-financial statements
Compliance	Applicable laws and regulations	Applicable laws and regulations
Strategic	N.A.	Strategic objectives that flow from an entity's mission, and aligned with the operations, reporting, and compliance objectives.
Environment	Control environment	Internal environment: Entity's risk management philosophy reflecting its values, culture and operating style.
Risk Identification	Considers potential impact on the achievement of the entity's objectives and strategies.	Identifies potential events using past and emerging trends and triggers. Considers potential impact on the achievement of the entity's objectives and strategies.
Risk Assessment	Assesses risk in terms of likelihood of occurrence and potential impact.	Assesses risk in terms of likelihood of occurrence and potential impact. Expand concept to include an entity level portfolio view. Risks are considered on inherent, residual and inter-related bases.
Risk Response		Identifies four categories: avoid, reduce, share and accept. Management considers the aggregate effect of responses to achieve a residual risk level aligned with the entity's risk tolerances.
Information and Communication	Considers data from the past and present.	Considers data from past, present and potential future events. The information infrastructure captures timely, detailed data to assess and respond to risks and still remain within its risk appetite.
Roles and Responsibilities	Provides framework focusing attention on the roles and responsibilities of various parties involved.	Provides framework focusing attention on the roles and responsibilities of various parties involved including risk officers. Expands the role of an entity's board of directors.

* Based on the Committee of Sponsoring Organizations of the Treadway Commission, *Enterprise Risk Management-Integrated Framework*, 2004.

CONCLUDING REMARKS

The recent economic turmoil has led to focused of attention on risk oversight in the corporate sector, but efforts towards robust enterprise risk monitoring are lagging or non-existent in the NP sector. NP organizations must

evaluate their risk management practices and implement improvements. Credit rating agencies such as Standard and Poor's have started assessing enterprise risk management of FP entities during analysis of credit ratings. It would be worthwhile for board members with governance responsibilities of NP entities engaging in cross-sector collaboration agreements to understand the relationship between corporate governance, internal controls, and ERM, and implement risk management practices. Collaborations between NP and FP organizations provide an opportunity to expand services provided by the NP to its constituents. Numerous factors must be considered before entering cross-sector collaborations, yet the underlying charitable mission and goal of the NP must remain in the forefront. Cross-sector collaborations offer an opportunity to diversify services, and potentially increase efficiency. A NP that focuses on program awareness, while maintaining a customer-centered focus, will not only enhance its reputation among stakeholders, but will also increase visibility within the community and ultimately be able to better serve its current and future constituents.

The complexity of transactions, technology, globalization, product cycles, and the overall pace of change continues to increase the risks facing organizations, and regulators are working in concert to demand more robust risk management capabilities in both FP and NP entities that strengthen the board's risk oversight practices. Congress introduced legislation in 2010 that would mandate the creation of board risk committees. As explained by the SEC Chairman, Mary L. Schapiro, "Good corporate governance is a system in which those who manage a company — that is, officers and directors — are effectively held accountable for their decisions and performance. But accountability is impossible without transparency." (Schapiro, 2009) Corporate governance holds the board members responsible and accountable to stakeholders, while the ERM process helps management and the board to review the organization's overall risk appetite relative to its strategic objectives. Similar to the intense attention on corporate governance and ERM in the for-profit setting, it is crucial for NP managers to understand and apply these concepts in a NP setting.

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**THE RELATIONSHIP BETWEEN SYSTEMATIC RISK AND
INTERNATIONAL DIVERSIFICATION: AN EMPIRICAL INQUIRY**

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ABSTRACT: This paper examines the form of the relationship between international diversification, as measured by the ratio of foreign assets (FAR) and foreign sales (FOSA), and systematic risk (beta). First, we show that systematic risk as a function of international diversification is quadratic. Specifically, systematic risk increases with diversification when diversification is low but decreases with diversification when it is high. Such a finding is consistent with Lessard (1983) proposition that a significant part of risk that cannot be diversified within a single country can be diversified internationally. Second, the coefficients of the squared terms (FAR² and FOSA²) are significantly and negatively related to systematic risk, and are robust across different proxies and statistical procedures used. Finally, we find that foreign sales as a proxy for internationalization tend to have the strongest quadratic relation. The analysis supports the main hypothesis that higher levels of international diversification are associated with lower systematic risk, suggesting that the assumed linear dynamics appear to poorly describe the relation between systematic risk and a firm's overseas expansion in its entirety. Further, the evidence indicates that as firms become geographically diversified, predicting their systematic risk becomes more complex than that suggested in previous research.

INTRODUCTION

Foreign investment has grown rapidly over the last thirty years. The total value of global investment was estimated at \$105 billion in 1967. By 1984, it had surged to an estimated \$596 billion, and by 2005 it was estimated at \$9 trillion (United Nations 2005). U.S. firms have also substantially expanded their overseas investments as evidenced by the more than 700 percent growth in foreign sales. In addition, S&P 500 firms report that foreign sales, on average, account for more than 24 percent of total sales ((World Trade Organization 2000). This growth in international presence has spawned considerable regulatory and academic interest in the impact of internationalization on systematic risk and firm characteristics. A number of academic studies suggest that risk is a key factor in international diversification decisions (Agmon and Lessard 1977, among others). This paper investigates the nature and form of the relationship between corporate international diversification and systematic risk (beta). The form the relation takes is important to the determination of optimal level(s) of investment, which also impacts the economic value of the firm.¹ The Security and Exchange

Commission (SEC) requires all large U.S. publicly traded corporations to disclose quantitative information about their market risk in financial statements filed with the SEC.² Because of uncorrelated cash flows from different countries (e.g., Shapiro 1978), we expect that increase in corporate international diversification to be associated with lower systematic risk. Our findings show that systematic risk, as a function of diversification is quadratic.

While prior literature has concluded that foreign involvement exerts significant and statistical effects on systematic risk and security returns (e.g., Reeb, Kwok and Baek 1998, among others), there is little direct empirical evidence on the form this relation takes; as measured by foreign assets and foreign sales. As Hitt et al. 1997 shows, diversification can have a positive and a negative impact on firm performance³. The possibility that the relationship between systematic risk and diversification has a temporary component (i.e., stability of the relationship overtime) still remains an unaddressed empirical question.

Research has shown that investors' risk perception directly influences their decisions (Weber 2004), so knowledge of the effect of diversification on perceived systematic risk is not only important to managers but also to those interested in foreign investments. The risk of foreign investments will be evaluated by financial analysts who will assist investors in understanding the potential impact of overseas investment on shareholders' value.⁴ Managers and regulators can use the insights from this paper regarding the hypothesized determinants of systematic risk to craft more effective disclosures. As a practical matter, knowledge of the level of systematic risk in the MNC is important in effectively pricing equity, determining the cost of capital, and evaluating returns on designated projects. This takes on added importance as more U.S. firms expand overseas.

Evidence on the relation between beta and internationalization is also relevant to managers who seek optimal levels of international activity; suboptimal investment is costly. Thus, holding other factors constant, investors will prefer optimal foreign expansion that reduces risk. Studying additional factors that determine the pattern of beta behavior constitutes a definitive step in developing a better understanding of equity market valuation for diversified firms. The evidence that international diversification is, on average, associated with systematic risk in a nonlinear form suggests that investors and financial analysts can benefit from the current reporting requirements that provide data on multinational risks and opportunities for international operations (e.g., Financial Reporting Release No. 48 (SEC 1997).

Similar to Reeb et al. (1998) and Olibe et al. (2008), we use foreign assets and foreign sales as proxies for diversification to estimate the nature and form of the relation between systematic risk and diversification. Specifically, in pooled cross-sections over the prior period, we regress systematic risk (beta) on foreign assets and foreign sales. We hypothesize that low (greater) levels of diversification has a negative (positive) effect on systematic risk. We test this hypothesis by running cross-sectional regression over 1998-2003. Insight is

gained into the impact on risk from changing levels of international diversification and the usefulness of geographic segment information. As predicted, we show that systematic risk as a function of diversification is quadratic. Specifically, systematic risk increases with diversification when diversification is low but decreases with diversification when it is high. We find that foreign sales as a proxy for internationalization has the strongest quadratic relation. Our findings indicate that while this relation, on average, may be positive, it is also non-linear and negative in the high diversification range. Our evidence suggests that the relation between systematic risk and foreign involvement is more complex than that suggested in prior research.

The rest of the paper proceeds as follows. Prior related literature, theoretical consideration is provided in section II. Section III is hypothesis development and the nature of systematic risks. Research method and data description is presented in section IV. Results are presented in section V and the conclusions are in section VI.

PRIOR RELATED LITERATURE

The impact of international diversification on systematic risk (beta) has been a constant question in finance. Many studies have investigated whether additional wealth from international involvement accrued to the shareholders (Errunza and Senbet (1984), Doukas and Travlos (1988); Bodnar and Weintrop 1997), among others). The evidence of wealth enhancement from international involvement, however, is less obvious. The evidence of international involvement on MNCs performance has varied from positive, to negative, to insignificant. Errunza and Senbet (1984), and Doukas and Travlos (1988) report a positive relationship between MNC performance and the degree of international diversification. Evidence from Agmon and Lessard (1977), and Lessard (1983), find the risk reduction achieved by diversifying internationally to be very small, whereas Senchack and Beedles (1978) find portfolios of domestic firms achieved better risk reduction than their multinational counterparts. Hughes, Logue and Sweeney (1975) find that MNCs achieve higher returns, lower systematic risks, and higher risk-adjusted returns.

Although prior research has studied the links between corporate diversification and systematic risk, and between diversification and security returns, the nonlinear link between systematic risk and diversification has not yet been directly addressed. Our study provides a direct test of this link as well as a triangulation of the relationship observed in prior research. In this regard, it validates earlier findings by empirically documenting the relationship between systematic risk and diversification as measured by market-determined attributes of international diversification (FAR and FOSA).

Theoretical Development: A basic tenet of corporate finance and accounting theory is that firm managers will engage in behavior and activity, which maximizes the market value of firm's common stock at some acceptable level of risk. Such actions and behavior can be described as those that have positive benefit-cost analyses. Accordingly, firms internationalize to attain a

desired balance between profitability and risk. The theoretical justification of the possible nonlinear relationship between performance and international diversification is provided in Hitt et al. (1997), who argue that international operations could have both negative and positive impacts on performance.⁵ The negative impacts are expected to originate from greater risks and uncertainties attributable to economic and sociopolitical instability in most foreign countries, different tax and accounting rules, language barriers, and potential impairment in the ability of regulators to monitor managerial activity.

Although MNCs can exploit sources of competitive advantage that are not available to domestic firms, they are also exposed to additional costs and risk (e.g., geographic concentration risk, market and political risk).⁶ Multinational exposure to foreign exchange movements increases the volatility of foreign returns in domestic currency. As Madura (1992) points out, MNCs are more affected by exchange rate variations relative to domestic firms, which implies that MNCs have riskier cash flows. The economic impact of currency exchange rate changes is complex because such changes are often linked to variability in real growth, inflation, interest rates, governmental actions, and other factors. As the MNC expands into more countries, it is affected by higher cross-border transactions costs as it interacts with a wider variety and number of governments. The cultural differences, geographic constraints, differing legal systems, and language barriers combine to increase the complexity of international operations, thus increasing the risk profile of the firm.⁷ These factors are likely to cause returns volatility, thus increasing a firm's systematic risk.

The positive impacts are expected to originate from the MNCs' ability to leverage scale economies, access new technologies, and arbitrage factor cost differentials across multiple geographic locations. To the extent that these factors are reduced by the MNC, we expect a firm's risk to decelerate. As Lessard (1983) points out, the motivation for diversifying internationally is to improve the reward-to-risk tradeoff by taking advantage of the relatively low correlation among returns on assets of different countries. Consistent with this view, Shapiro (1978) notes that international diversification decreases earnings volatility due to the portfolio effect (i.e., uncorrelated cash flows from multiple countries).

HYPOTHESES DEVELOPMENT

Evidence in Shapiro (1998) suggests that multinational firms decrease their systematic risk because of the diversification benefits of having cash flows in different countries. It is logical to suggest that the relationship between diversification and systematic risk is non-linear, comprising a period of increased risk where costs exceed benefits and another period where incremental benefits exceed incremental costs; driven by location familiarity and adaptation. Diversification, therefore, has both advantages and disadvantages for the MNC. As Kogut (1985) points out, geographic diversity increases operational flexibility and value by exploiting the increased uncertainty of the international environment. In other words, global manufacturing gives managers of

multinationals additional opportunities to exercise discretion by shifting production to lower-cost jurisdictions.

As noted above, international diversification is associated with opportunities and risk. Managers' unfamiliarity with foreign business environment suggests that business risk increases as the firm initially ventures abroad. But with time, innovation, and adaptation any risk initially encountered should dissipate. Furthermore, if international financial product and factor markets were perfect and complete without segmentation, then multinational firms would not provide a valuable service for investors. Capital market participants could diversify internationally without the aid of the MNCs. The motivation for international diversification is, therefore, a function of market imperfections and increases in international diversification leads to decreases in market risk. As a result, we predict that systematic risk should increase (decrease) at low (high) levels of international diversification due to the liability (benefits) of foreignness. This leads to the following hypotheses (stated in alternative form).

H1: Low international diversification is associated with higher systematic risk, even after controlling for previously identified determinants of systematic risk (beta).

H2: Greater international diversification is associated with lower systematic risk, even after we control for known determinants of systematic risk.

This study proposes that systematic risk and diversification have an inverted U-relation (i.e., convex). Initially systematic risk rises due to the liability of foreignness but then falls as the liability of foreignness decelerates.⁸ If systematic risk increases initially with international diversification and falls later, then an inverted U relation between it and international diversification may exist regardless of whether or not international diversification also acts as an intervening variable. This suggests that within a feasible range of international diversification, a sub-range exists where the relation between international diversification and systematic risk is positive, and another sub-range exists where the relation is negative. Conversely, if systematic risk initially decreases with international diversification then a U relation (concave) path between it and international diversification may exist (concave) regardless of whether or not diversification acts as an intervening variable. We posit that the changes in international diversification are responsible for the non-linear relationship between systematic risk and international diversification.⁹

RESEARCH METHOD

The first stage of this paper examines international diversification-systematic relation in a linear specification. Specifically, we use foreign sales to total sales (FOSA) for consistency with previous research and foreign assets to total assets (FAR).¹⁰ The second stage, conditional upon detection of significant association between systematic risk and internationalization, examines the quadratic form (FAR² and FOSA²) of the relation. Consistent with prior research,

the proxy for systematic risk is Beta. We include three proxies for firm-risk for which we have theoretical supported directional predictions; growth, leverage, and size. Hence, this study not only provides further evidence on the existence of the theorized relation between variations in systematic risk and international diversification, it also provides insight into the mechanisms that drive these variations. Model formulation and a description of the independent variables follow.

Foreign Assets Ratio (FATA) Method

$$BETA_{jt} = \beta_0 + \beta_1 FAR_{jt} + \beta_2 LEV_{jt} + \beta_3 MTB_{jt} + \beta_4 \ln SIZE_{jt} + \Sigma \delta \gamma IND \gamma_{jt} + \Sigma \delta \gamma YD + \epsilon_{jt} \quad (3)$$

$$BETA_{jt} = \beta_0 + \beta_1 FAR_{jt} + \beta_2 FAR_{jt}^2 + \beta_3 LEV_{jt} + \beta_4 MTB_{jt} + \beta_5 \ln SIZE_{jt} + \Sigma \delta \gamma IND \gamma_{jt} + \Sigma \delta \gamma YD + \epsilon_{jt} \quad (4)$$

Foreign Sales (FOSA) Method

$$BETA_{jt} = \beta_0 + \beta_1 FOSA_{jt} + \beta_2 LEV_{jt} + \beta_3 MTB_{jt} + \beta_4 \ln SIZE_{jt} + \Sigma \delta \gamma IND \gamma_{jt} + \Sigma \delta \gamma YD + \epsilon_{jt} \quad (5)$$

$$BETA_{jt} = \beta_0 + \beta_1 FOSA_{jt} + \beta_2 FOSA_{jt}^2 + \beta_3 LEV_{jt} + \beta_4 MTB_{jt} + \beta_5 \ln SIZE_{jt} + \Sigma \delta \gamma IND \gamma_{jt} + \Sigma \delta \gamma YD + \epsilon_{jt} \quad (6)$$

Where,

$BETA_{jt}$ = the dependent variable is beta derived from the market model.

Measures of International Diversification

FAR_{jt} = the degree of international diversification for firm i at time t defined as foreign assets scaled by total assets.

$FOSA_{jt}$ = the degree of international diversification for firm i at time t defined as foreign sales scaled by total sales.

Definition of Control Variables

MTB_{jt} = market-to-book value for firm j at time t .

LEV_{jt} = total debt divided for firm j at time t divided by total assets both measured at the end of year t .

$SIZE_{jt}$ = the natural logarithm of total assets for firm j at time t .

IND = vector of industry classification.

YD = dummy variables corresponding to the years 2000 to 2004.

ϵ_i = the error term.

Market-to-Book Ratio: Beaver et al. (1970) argue that unexpected profits arising from growth opportunities erode as competition enters the market place. La Porta (1996) provides empirical evidence that unexpected earnings derived from growth opportunities are riskier than “normal” earnings, thereby generating a positive association between growth and risk. He finds high expected-growth stocks have higher standard deviations of returns and higher market betas than low expected-growth firms. We include market-to-book ratio as a proxy for growth opportunities (Collins and Kothari 1981).

Debt-to-Equity (LEV): We use two alternative measures of leverage: first, the ratio of long-term debt to total assets (LEV), and second, long-term debt to the market value of equity (LEV).¹¹ Leverage (LEV) is included because firms with higher levels of debt may have higher levels of systematic risk. Bowman

(1979) concludes that, in the presence of default risk, systematic risk is directly related to financial risk (debt-to-equity). Accordingly, we expect the sign on LEV to be positive.

Size and Information Environment: Theory suggests that greater information is associated with a lower cost of equity capital through reduced transaction costs and/or reduced estimation risk. Thus, we include the natural log of assets to (1) control for potential size related effects on beta, (2) control for information environment of the firm (Atiase (1985), and (3) obviate the problem of omitted variables. *Ceteris paribus*, large firms should have lower systematic risk due to economies of scale. Hence, β_5 is expected to be negative. We log transform size to mitigate the effect of skewness in the data. Fabozzi and Francis (1979) reports that industry effects explain a substantial proportion of variation in the degree of systematic risk. The industry dummy (IND) variables control for inter-industry differences in risk and industry membership and also for possible spurious correlation between diversification and the dependent variables.

The central prediction of this paper, per equations (4) and (6) is that diversification and systematic risk relation is quadratic and concave. Hence, the $\beta_{2,s}$ are hypothesized to be negative (i.e., $\beta_2 < 0$). A negative and significant value for β_2 supports the theoretical proposition that the systematic risk-international diversification relationship is quadratic. Since the relation is hypothesized to be concave with an interior maximum, b_1 is hypothesized to be positive. In addition, the explanatory power of the linear models (equations (1) and (3) are expected to be less than that of the quadratic models (equations (2) and (4)); tested by running cross-sectional regressions for each model.

Sample Selection

[Table 1]
Distribution of Sample by Industry

SIC Codes	Industry	Number of Firm-Year FAR	Observation FOSA
1000 -1999	Mining/construction	12	14
2000 – 3999	Manufacturing	361	491
5000 -5999	Wholesale/retail	10	12
7000 – 9999	Services	15	21
1000 – 9999	Total	398	540

The selection process yielded 398 firm year-observations for foreign assets ratio and 540 firm year observations for foreign sales ratio, a total of 939firm-year observations.

To test the relationship between international diversification and systematic risk, annual data are collected on an initial sample of 594 public firms in the EDGAR and Compustat database. We use Center for Research in Security

Prices (CRSP) data to estimate systematic risk (BETA) via the market model. For a firm to be included in a given year, yearly returns must be available in the CRSP data base. Consistent with previous research, firms in regulated industries (e.g., transportation and utilities) and financial services are excluded from this study. Table 1 gives the category industry classification scheme employed in the analysis and the number of firms in each industry. Two data sets are formed using two measures or proxies of international diversification. The first data set excluded firms without the requisite data. We trim the top and bottom 1 percent extreme values of the regression variable. Applying this filter yields 540 firm year-observations in the first data set. The second data set excluded those firms without a positive foreign asset ratio in a given year. Applying this filter produces 398 firm year observations.

EMPIRICAL RESULTS

Descriptive Statistics

Table 2

Panel A: Descriptive Statistics for Variables used in the regressions

Variable	Sample size	Mean	Median	Std. Dev.	Minimum	Maximum
BETA	567	.856	.843	0.397	0.090	1.990
FAR	359	0.350	0.352	0.140	0.022	0.761
FOSA	539	0.393	0.372	0.233	0.041	0.283
FAR ²	359	0.142	0.124	0.105	0.0005	0.580
FOSA ²	777	0.184	0.156	0.560	0.003	1.089
MTB	562	0.003	0.001	0.001	0.000004	0.143
LEV	562	0.001	0.001	0.004	0.00002	0.044
lnSIZE	562	8.469	8.390	1.387	4.843	13.112

BETA_{jt} = based on equally-weighted market return (degree of systematic risk) of firm *j* at time *t*,

FAR_{jt} = the degree of international diversification of firm *i* at time *t* defined as foreign assets to total assets.

FOSA_{jt} = degree of international diversification (foreign sales) for firm *j* at time *t* scaled by global sales.

FAR² = quadratic term of the degree of international diversification of firm *j* at time *t* scaled by global assets.

FOSA² = quadratic term of the degree of international diversification (foreign sales) for firm *j* at time *t* scaled by global sales.

MTB_{jt} = market to book value ratio, a proxy for growth and risk,

LEV_{jt} = debt to total assets for firm *j* at time *t*.

lnSIZE_{jt} = natural logarithm of total assets in millions of dollars for firm *j* at time *t*

Table 2, presents descriptive statistics for the sample: the means, standard deviation, median, minimum and maximum for variables used in estimating regression equations. The table shows that there is considerable dispersion in the foreign asset ratio as represented by the minimum and maximum values 2.2 percent and 76.1 percent with a standard deviation of .14. There is also dispersion in the foreign sales ratio as represented by the minimum and maximum values of 4.1 percent and 28.25 percent of global sales with a standard deviation of .233. Foreign assets and foreign sales, the independent variables of interest, average 35 percent and 39.3 percent, respectively. These numbers indicate that FOSA and FAR are economically significant.

[Table 3]

	Pearson (Spearman) Correlations Coefficients on the Upper (Lower) Diagonal							
	<u>BETA</u>	<u>FAR</u>	<u>FOSA</u>	<u>FAR²</u>	<u>FOSA²</u>	<u>MTB</u>	<u>LEV</u>	<u>lnSIZE</u>
BETA	1	.122*	.113*	.147**	.055	.142**	.077	-.116**
FAR	.122*	1	.453**	.768**	.157**	-.030	-.046	.096
FOSA	.113*	.453**	1	.412**	.776**	-.006	-.033	-.018
FAR ²	.147**	.768**	.412**	1	.138**	-.021	-.043	.081
FOSA ²	.055	.157**	.776**	.138**	1	.028	.004	-.061
MTB	.142**	-.030	-.006	-.043	.004	1	.553**	-.606**
LEV	.077	-.046	-.033	-.021	.028	.553**	1	-.663**
lnSIZE	-.116**	.096	-.018	.081	-.061	-.606**	-.663**	1

*. Correlation is significant at the 0.05 level (2-tailed)

** . Correlation is significant at the 0.01 level (2-tailed)

$BETA_{jt}$ = based on equally-weighted market return (degree of systematic risk) of firm j at time t ,

FAR_{it} = the degree of international diversification of firm j at time t defined as foreign assets to total assets.

FAR^2 = quadratic term of the degree of international diversification of firm j at time t scaled by global assets.

$FOSA_{jt}$ = degree of international diversification (foreign sales scaled by total sales) for firm j at time t .

$FOSA^2$ = quadratic term of the degree of international diversification (foreign sales) for firm j at time t scaled by global sales.

MTB_{jt} = market to book value ratio, a proxy for growth and risk,

LEV_{jt} = debt to total assets for firm j at time t .

$lnSIZE_{jt}$ = natural logarithm of total assets in millions of dollars for firm j at time t .

Table 3 reports correlation matrices between the variables used in the regression analysis. The variable FAR is correlated with FAR^2 (.768), and FOSA and $FOSA^2$ are also correlated (.776). The high correlations between these independent variables indicate a potential multicollinearity problem. We attempt to assess the severity of the problem by computing variance inflation factors (VIF) and eigenvalues (see, e.g., Kennedy 1998, 190). The magnitude of the variance inflation factors and eigenvalues for FOSA and $FOSA^2$ are within acceptable limits, suggesting that harmful collinearity may not be present. For FAR and FAR^2 , the VIF is above the acceptable limits. However, the highest eigenvalue is 4.393, which is substantially below 10, the value that Neter et al (1990) suggests is a possible indication of multicollinearity problems. The correlation coefficient between MTB and LEV is statistically significant. High growth firms tend to have higher LEV (coefficient of .533).¹²

Table 4 column (3) presents summary statistics (linear regression) for Equation (3) with FAR data set. The OLS coefficient estimate on FAR (β_1) is .00008, and is on average, positively and significantly different from zero (t-statistic = 2.24). Consistent with Reeb et al. (1998), our evidence suggests that the net effect of low levels of diversification is an augmentation of systematic risk. The results hold even after we control for known determinants of systematic risk (e.g., leverage, growth and risk and size). As expected, the coefficient estimate on MTB (β_2) is 25.08, and is positively and significantly related to systematic risk (t-statistic = 4.07). The finding provides support that growth firms are riskier than non-growth firms as in Beaver et al. (1970). The coefficient estimate on LEV, (B_3) is negative (-67.80), opposite the predicted association, and on average, is significantly associated with systematic risk (t-statistic = -4.26). This is surprising because firms with higher levels of debt are expected to have higher levels of systematic risk. The negative coefficient, however, is consistent with that of Reeb et al (1998). The coefficient estimate on natural log of assets (SIZE) is -.065, and, on average, is negatively and significantly linked to systematic risk. This finding is consistent with the idea that large firms are expected to have a lower level of systematic risk due to economies of scale.

Foreign assets (FAR) Linear Results

Table 4

Regression Results of Linear and Quadratic Models [FAR and FAR²]

$$BETA_{it} = \beta_0 + \beta_1 FAR_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 \ln SIZE_{it} + \Sigma \delta \gamma IND \gamma_{it} + \Sigma \delta \gamma YD + \epsilon_i$$

$$BETA_{it} = \beta_0 + \beta_1 FAR_{it} + \beta_2 FAR^2 + \beta_3 LEV_{it} + \beta_3 MTB_{it} + \beta_4 \ln SIZE_{it} + \Sigma \delta \gamma IND \gamma_{it} + \Sigma \delta \gamma YD + \epsilon_i$$

Variable	Pred.	Ordinary Least Squares (OLS) Results		Minimum Absolute Deviation (MAD) Results		Weighted Least Squares (WLS) Results	
		Linear	Quadratic	Linear	Quadratic	Linear	Quadratic
Intercept	?	1.639 (7.720)***	1.926 (7.600)***	1.443 (8.168)***	1.774 (6.388)***	1.368 (7.335)***	1.463 (6.783)***
MTB	+	25.080 (4.073)***	25.476 (4.156)***	23.536 (4.600)***	35.532 (5.132)***	32.990 (5.333)***	25.333 (4.136)***
LEV	+	-67.800 (-4.256)***	-74.064 (-4.588)***	-67.822 (-4.979)***	-85.421 (-4.534)***	-66.800 (-4.647)***	-58.102 (-4.022)***
lnSIZE	-	-.065 (-2.360)**	-.101 (-3.126)***	-.0512 (-2.544)**	-.098 (-2.882)***	-.038 (-1.679)*	-.054 (-1.985)**
FAR	+	.0000083 (2.243)**	.0000003 (2.698)***	.0000009 (3.245)***	.00000033 (2.961)***	.0000007 (2.355)**	.000002 (2.740)***
FAR ²	-		-.0000004 (-2.048)**		-.0000004 (-2.332)**		-.0000003 (-2.154)**
N		327	327	327	327	327	327
Adj. R ²		.061	.081	Pseudo R ² .037	Pseudo R ² .053	Adj. R ² .085	Adj. R ² =.112

The regression model includes non-tabulated industry and year dummy variables (t-statistics in parentheses).

*** and ** denote significance at the .01 and .05 levels respectively.

BETA_{jt} = the degree of systematic risk of firm *j* at time *t*,

MTB_{jt} = market to book value ratio, a proxy for growth and risk for firm *j* at time *t*.

LEV_{jt} = debt to total assets, a proxy for financial leverage for firm *j* at time *t*.

lnSIZE_{jt} = natural logarithm of total assets for firm *j* at time *t*.

FAR_{jt} = the degree of international diversification of firm *i* at time *t* defined as foreign assets standardized by total assets,

FAR² = quadratic form of the degree of international diversification measured as foreign assets to global assets of firm at time *t*.

Results--Evidence of Nonlinearity (FAR²): Table 4 column (4) reports the results of the quadratic coefficient estimates of equation (4). The results support the paper's main hypothesis that FAR² coefficient is less than zero (p-

value = 0.001), while the FAR coefficient exceeds zero (p-value = 0.001). The results suggest that increasing the level of foreign assets (foreign expansion) decreases systematic risk. Using the estimated regression coefficient of FAR², our analysis indicates that a 1 percent increase in FAR² leads to a decrease of .000006393 percent in systematic risk.¹³ This implies that suboptimal foreign investment is a cost to the firm. Holding other factors constant, firm owners will prefer international diversification that promotes optimal investment. The adjusted R² for the linear model is 6.1%, in contrast to the adjusted R² for the quadratic model of 8.1; a 24.7% improvement. The R² improvement reflects the possibility that the quadratic term is economically important.

The point of inflection where it is relatively beneficial to increase the level of foreign assets (FAR) can be determined by taking the partial derivative of regression equation 4 with respect to the foreign assets variable as follows: $\partial \text{Beta} / \partial \text{FAR} = \beta_1 - 2(\beta_2 \text{ FAR})$

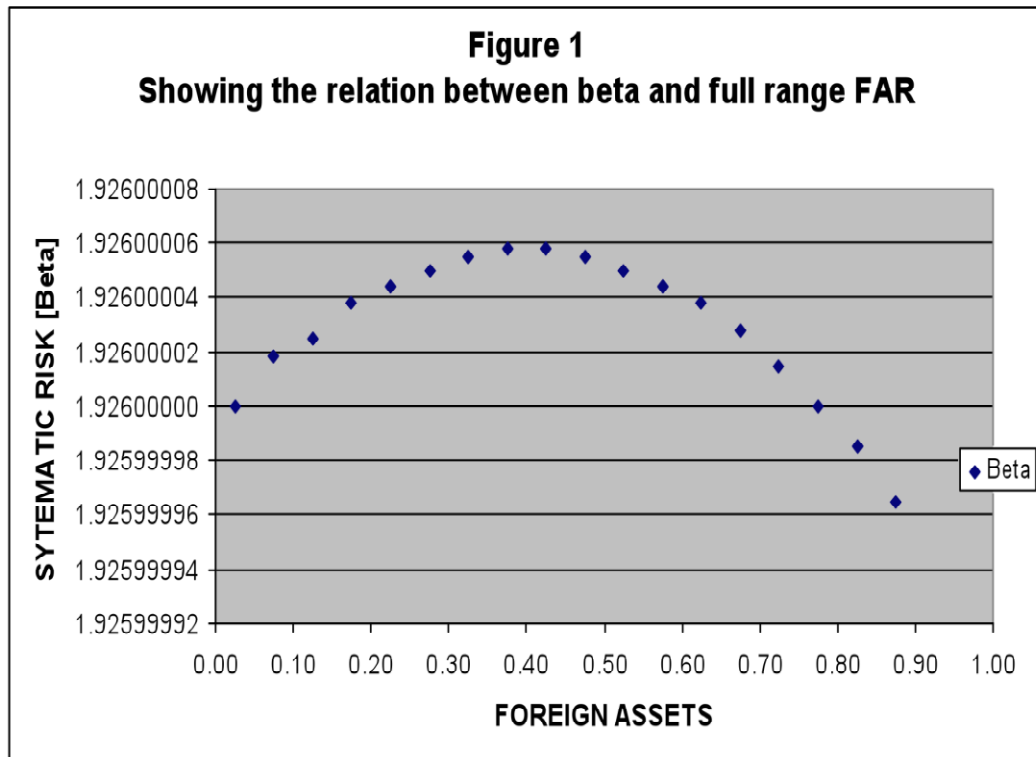


Figure 1 graphs the estimated relation between foreign assets ratio (FAR) and systematic risk (Beta). It shows that systematic risk increases and reaches a maximum and then falls at the highest observations of international diversification, perhaps due to a deceleration of the liability of foreignness. Ignoring the other variables (except for the intercept), beta ranges from 1.926 when FAR is zero, reaches a maximum of 1.92600006, and then decreases to 1.92599996 at the highest FAR observation. This illustrates that the potential for

risk reduction through foreign assets may be quite small. This pattern of beta behavior suggests that the impact of changes in firm level FAR is an important determinant of a firm's level of systematic risk; beta diminishes at higher levels of international diversification.

Results--Foreign Sales (FOSA) Linear

[Table 5]

Regression Results of Linear and Quadratic Models (FOSA and FOSA²)

$$BETA_{it} = \beta_0 + \beta_1 FOSA_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 \ln SIZE_{it} + \Sigma \delta \gamma IND \gamma_{it} + \Sigma \delta \gamma YD + \epsilon_i$$

$$BETA_{it} = \beta_0 + \beta_1 FOSA_{it} + \beta_2 FOSA_{it}^2 + \beta_3 LEV_{it} + \beta_4 MTB_{it} + \beta_5 \ln SIZE_{it} + \Sigma \delta \gamma IND \gamma_{it} + \Sigma \delta \gamma YD + \epsilon_i$$

Variable	Pred.	Ordinary Least Squares (OLS) Results		Minimum Absolute Deviation (MAD) Results		Weighted Least Square (WLS) Results	
		Linear	Quadratic	Linear	Quadratic	Linear	Quadratic
Intercept	?	1.502 (7.977)***	1.412 (7.354)***	1.559 (6.874)***	1.613 (7.326)***	1.504 (7.966)***	1.423 (7.420)***
MTB	+	.024 (2.272)**	.024 (2.305)**	22.412 (2.981)***	39.463 (5.484)***	24.729 (3.306)***	24.323 (3.283)***
LEV	+	-.036 (-2.195)**	-.032 (-1.996)**	-50.779 (-3.352)***	-75.508 (-4.930)***	-52.784 (-3.527)***	-52.919 (-3.500)***
lnSIZE	-	-.055 (-2.416)**	-.065 (-2.831)***	-.042 (-1.662)*	-.066 (-2.757)***	-.057 (-2.891)***	-.062 (-3.153)***
FOSA	+	.265 (2.125)**	.762 (2.883)***	.227 (1.797)*	.794 (3.104)***	.261 (2.573)**	.556 (3.637)***
FOSA ²	-		-.228 (-2.130)**		-.201 (-2.151)**		-.20 (-2.504)**
N		347	347	347	347	347	347
Adj. R ²		.123	.142	Pseudo R ² .096	Pseudo R ² .107	Adj. R ² .175	Adj. R ² .195

The regression model includes untabulated industry and year dummy variables (t-statistics in parentheses).

***, ** and * denote significance at the .01, .05 and .10 levels respectively.

BETA_{jt} = the degree of systematic risk of firm j at time t,

MTB_{jt} = market to book value ratio for firm i at time t, a proxy for growth and risk,

LEV_{jt} = debt to total assets for firm j at time t

lnSIZE_{jt} = natural log of total assets for firm j at time t.

FOSA_{jt} = degree of international diversification measured as foreign sales standardized by global sales of firm i at time t.

FOSA² = quadratic form of the degree of international diversification measured as foreign sales standardized by global sales of firm at time t.

Table 5 columns (3) reports linear regression estimates for Equation (4) with (FOSA) data set. Consistent with Reeb et al. (1998), the coefficient estimate on FOSA (β_1) is .265 and is on average, positively and significantly different from zero (t-statistic = 2.13).¹⁴ This finding suggests that the net effect of low levels of diversification is an augmentation of systematic risk. The results hold even after controlling for the effects of leverage (LEV), growth (MTB), and other firm characteristics. Anecdotally, this may be the reason why firms in practice use a higher discount rate for evaluating international projects. The coefficient estimate on market-to-book value (MTB), (B_2) is .024, and is positively and significantly related to systematic risk (t-statistic = 2.27). This finding provides support that growth firms are riskier than non-growth firms (Beaver et al. 1970). The coefficient estimate on LEV (β_3) is -.036, opposite the predicted relation and, on average, is significantly and negatively associated with systematic risk (t-statistic = -2.195). The coefficient estimate on natural log of assets (SIZE) is -.055 and, on average, is negatively and significantly linked to systematic risk. This finding is consistent with the idea that large firms are expected to have a lower level of systematic risk as discussed above. The Size results also provide evidence that large firms are not as risky as smaller firms.

Results--Evidence of Nonlinearity (FOSA²): Table 5 column (4) reports the results of the quadratic coefficient estimates of equation (6). The results support the paper's main hypothesis that FOSA² coefficient is less than zero (p-value = 0.001), while the FOSA coefficient exceeds zero (p-value = 0.001). The results suggest that increasing the level of foreign sales decreases systematic risk; higher levels of foreign expansion benefit the firm. The adjusted R² for the linear model is 12.3%, in contrast to the adjusted R² for the quadratic model of 14.2%; a 15.4% improvement. The R² improvement reflects the possibility that the quadratic term is economically important.

The point of inflection where it is beneficial to increase the level of foreign sales (FOSA) can be determined by taking the partial derivative of regression equation (6) with respect to the foreign sales variable as follows:

$$\frac{\partial \text{Beta}}{\partial \text{FOSA}} = \beta_1 - 2(\beta_2 \text{ FOSA})$$

Since this partial derivative represents the slope of the curve, it is zero at the crossover point. Therefore, by substituting the β coefficients, the inflection point can be obtained. Based on this procedure, the inflection point for the FOSA² model is determined to be 1.67 for the OLS, 1.97 for the MAD, and 1.39 for the WLS. This suggests that, on average, systematic risk begins to decelerate when diversification (FOSA) exceeds 1.67 for the OLS, 1.97 for the MAD, and 1.39 for the WLS. In other words, at higher levels of FOSA, systematic risk begins to decline when the diversification index exceeds the inflection point. The inflection point falls inside the maximum value of the level of foreign sales, indicating that the quadratic term is important in the specification.

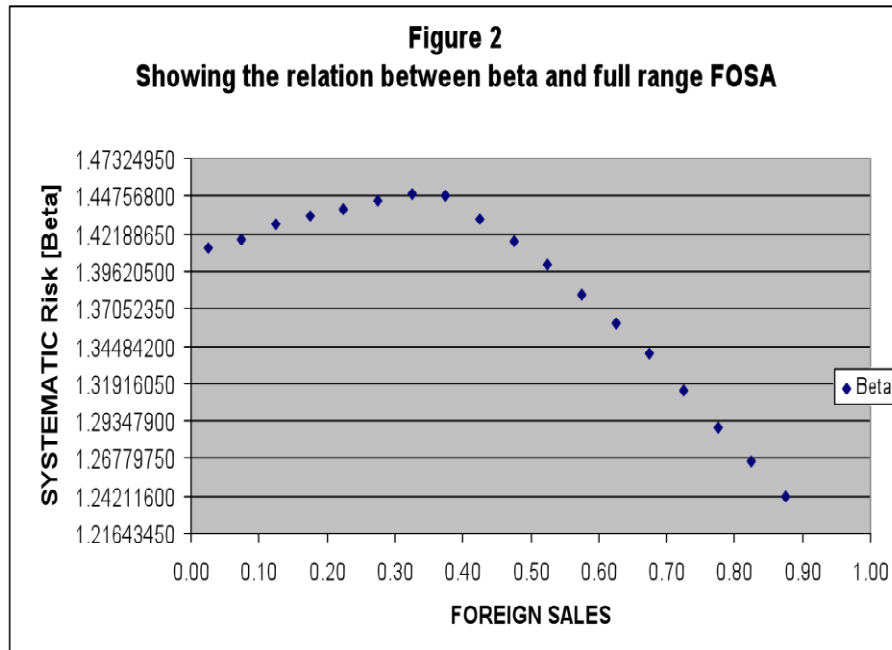


Figure 2 graphs the estimated relation between FOSA and systematic risk (Beta). Excluding the intercept and holding all other variables constant, beta ranges from 1.412 when FOSA is zero, reaches a maximum of 1.447568, and then decreases to 1.242116 at the highest FOSA observation. This illustrates that the potential for risk reduction through foreign sales may be quite significant. This pattern of beta behavior suggests that while risk might rise with lower levels of diversification it might also fall at higher levels of diversification.

In our sample, 15 firms out of 116 that reported foreign assets exceeded the .38 level (FAR), while only 3 firms had levels higher than 1.67 for firms reporting foreign sales (FOSA). The distribution of firms suggests that a majority of the sample firms were operating below the optimum point beyond which systematic risk decline take hold. The fact that some firms exceeded the crossover point shows that the sample was not constrained by range restrictions, lending further credence to the conclusions that the diversification-systematic relation is nonlinear. This is consistent with Lessard's (1983) theory of international diversification, in which he posits that a significant part of risk that cannot be diversified within a single country are diversifiable internationally.

The argument that higher levels of foreign expansion are not beneficial to the firm, and thus futile, seems inconsistent with firm behavior; many firms in practice have increased their foreign operations. If increased operation is not value-additive, then firms should and would restrain their foreign expansion. But unabated expansion is also counter-productive to profitability and wealth creation, key firm objectives. How much is enough? As Gomes and Rawasmay (1999, p. 184) point out, "[F]irms [do not know] the exact point of optimality

where costs of diversification exceed benefits” because foreign operations are complex, with subsidiaries dispersed in different countries. Factors that determine both cost and benefits also change with changes in host government accounting and tax regulations including earnings repatriation policy. Thus, while the benefits of increased expansion may not be readily recognizable, it is possible that over extended periods of innovation and technology, firms may increase their foreign expansion and obtain the maximum benefit of international diversification.

Other sensitivity analysis: Additional tests were performed to assess the sensitivity of the coefficients to (1) extreme outliers, and (2) serial correlation in the residual structure. We examine the sensitivity of the results to outlying observations using robust estimation. While there are various robust estimation methods we use the minimum absolute deviation method (see Amemiya, 1988 pp. 70-80) to reestimate equations 4 and 6. The objective of minimum absolute deviation (MAD) is to minimize the sum of the absolute values of the residual, instead of the sum of the squared residuals. Therefore, the MAD coefficients are less distorted by outlying observations than are the OLS coefficients. The results of the MAD estimation are very similar to the OLS results. The Durbin-Watson statistic was used to test for serial correlation in the residuals. The results suggest the absence of serial correlation in the residuals.

Given that firm-level systematic risk measures may be subject to substantial measurement errors (see e.g., Black, Jensen and Scholes 1972 and Thompson 1985), equations 1, 2, 3, and 4 were re-estimated using weighted least squares (WLS). The weights adopted were the dependent variable standard error, following Dixon (1980). The weighting improved the overall fit but did not alter the findings of the OLS and MAD estimations as can be seen in Tables 4 and 5. In the equations estimated, the diversification variables consistently retain positive coefficients for FOSA and FAR, and negative coefficients for FOSA² and FAR². They are also significant at the conventional levels. The size variable consistently retains its expected negative coefficients, which were statistically significant at the 1 percent level for the (WLS) regression results. The robust performance of the weighted least square (WLS) regressions (Tables 4 and 5) corroborate the results of the OLS and MAD regressions: higher levels of international activity appear to reduce systematic risk.

CONCLUSIONS AND IMPLICATIONS

The research objective was designed to assess the nature and form of the relationship between international diversification (foreign assets and foreign sales) and systematic risk. We extend prior accounting and finance research by empirically investigating the nature and form of the connection between systematic risk and market determined measures of international diversification'. Our tests are unique because the costs and benefits of foreign operation allow us to examine trade-offs between systematic risk and international diversification at low and higher levels. To implement this research objective, we first examine the relationship between systematic risk and international diversification in a linear

specification and find that at low levels, the net effect of diversification is an augmentation of systematic risk. Next, we investigate the association of systematic risk and international diversification by incorporating quadratic terms (FAR^2 and $FOSA^2$) in an attempt to provide evidence on the form of the relationship between systematic risk and international diversification. When quadratic terms are incorporated in the models, we find that systematic risk is a decreasing function of international diversification.

The study's results contribute to our understanding of the economic effects of the degree of international diversification on systematic risk in two ways. First, we provide valuable information for analysts, investors, and accounting regulators by shedding light on the impact of both low and high levels of foreign assets and foreign sales on systematic risk. Consistent with our hypotheses, we find that lower (higher) level of international diversification brought about an increase (decrease) in systematic risk. In addition to providing important insights to accounting regulators for their risk disclosure requirements, our study is the first to examine the nonlinear relationship between systematic risk and international diversification. Although earlier studies have documented a negative relationship between systematic risk and the degree of international diversification, we believe that this is the first study that provides evidence suggesting that lower levels of international diversification plays an important role in determining a firms' systematic risk.

Second, by documenting that higher levels of international diversification is associated with decelerating systematic risk, our results suggest that international diversification can significantly affect firms' risk and discount rate used by firms in international projects. Third, we extend prior research on the impact of diversification on systematic risk. Reeb et al. (1998) and Olibe, Michello, and Thorne (2008) report that diversification is associated with increase in systematic risk. We add to these findings that higher levels of diversification enhance the role that foreign assets and foreign sales play in reducing systematic risk.

Our findings have potential implications for firm managers, investors and analysts on systematic risk behavior in the presence of internationalization. Although prior work suggests that systematic risk is a linear function of diversification (e.g. Reeb et al. 1998; Olibe et al. 2008), our results suggest that investors would benefit from increased proxy statement or Form 10-K disclosures about risk opportunities inherent in foreign market. We provide no evidence on the costs of firm risk assessment and expanding risk disclosure beyond the disclosure required by Securities and Exchange Commission (SEC) Financial Reporting Release No. 48 (FRR No. 48). If standard setters determine that the benefits to investors outweigh the costs to firms, they may consider additional disclosures of risk unique to foreign expansion.

This study is subject to the following limitations. First, we do not control for all possible determinants of systematic risks (e.g., political stability, geographic distance and currency exchange risk). We must point out that "parsimony is a virtue in modeling" (Beaver 2002, p. 459). Our model focuses

attention on specific variables of interest, and the trade-off between insights and comprehensiveness is common in modeling exercise. These risks apparently can be diversified away resulting in a beta that behaves in a diminishing form. Lastly, this study did not examine the possibility of bi-directional causation (i.e., whether a decline in systematic risk causes firms to diversify overseas). Notwithstanding, these caveats, this paper provides evidence that, for the period we studied, systematic risk appears to decline at higher levels of international involvement. Our results set the stage for researchers to investigate whether the results documented here would differ yearly, across different types of MNCs, e.g., manufacturing vs. non-manufacturing sector, large versus small firms, using the market returns on a global portfolio to estimate beta and total risk.

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Endnotes

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1. Prior research in international finance and economics has been concerned with whether international portfolio diversification results in enhanced risk-return opportunities available to market participants. A number of literature in accounting and finance attempts to explain and predict market risk using accounting variables (see e.g., Beaver et al. 1970; Beaver and Manegold 1975; Eskew 1979; Hills and Stone 1980).

2. The SEC encourages, but does not require the inclusion of market risk due to nonfinancial assets, liabilities, or transactions, such as inventories or sales commitments to provide a more complete picture of market risk, although nonfinancial item may be more difficult to measure (Linsmeier and Pearson 1997). In addition, Financial Reporting Release No. 48 (SEC 1997) mandates quantitative market risk disclosures in companies' 10-K reports. FRR No 48 defines market risk as the risk of loss due to adverse changes in market rates or prices, such as interest rates, foreign currency exchange rates, and commodity prices.

3. Hitt et al. (1997) examined and report a curvilinear relationship between international diversification and firm performance. Their analysis showed that the relationship was curvilinear although the strength of the association appear weak.

4. Financial economics literature suggests that market risk disclosures can reduce information asymmetry between managers and investors, if firms manage risk for reasons that are not transparent to investors. In perfect capital markets, firm level hedging of interest rates or foreign currency exchange rates is ineffective because investors can diversify these risks on personal account, according to their own risk preferences (DeMarzo and Duffei 1991). In imperfect markets, however, firm-level risk management can enhance firm value in many ways. These include reducing anticipated tax payments, reducing the likely costs of financial distress or bankruptcy, protecting investment, and increasing perceived firm value by preserving a trend of earnings (Barth et al. 1999)

5. Firms that diversify internationally are in effect "bonding" themselves to increased levels of regulation and disclosure. This increased transparency could affect firm value by reducing the cost of capital. Diversification creates value because the higher disclosure requirements of various regulatory agencies reduce the cost of capital and improves firm level corporate governance. This increases the investor base and, therefore, the demand for the firm's securities. International diversification may also be

associated with improved firm-level corporate governance because this greater transparency reduces the potential diversion of a firm's cash flows to managers and controlling shareholders.

6. Firms may invest a substantial amount of their assets in a single country or in a limited number of countries. If a firm concentrates its investments in this manner, it faces the possibility that the economic, political, and social conditions in those countries will affect its risk exposure.

7. Prior studies offer a number of explanations for why systematic risk increases/decreases in the presence of diversification. A crucial component in almost all the explanations is the liability of foreignness. The costs and risks of multiple authorities, values and cultures should rise as their number and diversity increases. However, as the MNC becomes more familiar with existing pattern of affiliates, subsidiaries and countries, the liability of foreignness should fall, encouraging further expansion of the MNC network and a decline in the level of risk initially faced by the firm. In addition, over time, adaptations and innovations reduce transaction and communication costs, permitting a decline in systematic risk.

8. MNCs are better informed because they tend to have lower marginal costs of gathering information. Thus, MNCs realize greater returns to information search and acquisition than do domestic firms and thus are more involved in such activity. MNCs spend substantial resources on information research. Since they dedicate significant resources to information production, they are well-informed relative to domestic firms. The higher level of informedness of multinationals also implies that on average they acquire more precise information than domestic firms. This implies that MNCs with high level of information are likely to reduce their risk exposure through selective investment.

9. The risk of a portfolio comprises systematic risk (non-diversifiable risk), and unsystematic risk (idiosyncratic risk or diversifiable risk). Systematic risk refers to the risk common to all securities- market risk. Unsystematic risk is the risk associated with individual assets. Unsystematic risk can be diversified away to smaller levels by including higher number of assets in the portfolio (specific risks "average out"). However, systematic risk within one market cannot be diversified. The total risk of a firm can be divided into two parts: systematic risk and unsystematic risk. Unsystematic risk can be thought of as firm-specific risk. The beta (β) of an asset measures the variability of an asset relative to the market index. It is a popular risk measure, and has been used for the past 25 years. Since beta reflects assets-specific sensitivity to non-diversifiable, that is market risk, the market as a whole, by definition, has a beta of one. With a sufficient portfolio, investors can diversify away this portion of total risk. Systematic risk (Beta) is derived from Sharpe's (1963) market model:

$$\bar{R}_{jt} = \alpha_j + \beta_j \bar{R}_{mt} + \varepsilon$$

where \bar{R}_{jt} is the return on the jth security in period t; \bar{R}_{mt} is the same period return on a market portfolio; $\beta_j = \text{COV}(R_{jt}, R_{mt}) / \text{VAR } R_{mt}$ is the

systematic risk measure for security j ; α_j is a constant and ϵ_{jt} is a random error term with zero mean and zero covariance with the other variables.¹² The total variance of the return for firm j can be written as: $\sigma_j^2 = \beta_j^2(\sigma_m^2) + \sigma_\epsilon^2$ (2)

In this format, $\beta_j^2(\sigma_m^2)$ is systematic risk and σ_ϵ^2 is unsystematic risk. Because the variance of the market return is constant across firms, the primary determinant of systematic risk is β . Since international diversification may increase a firm's exposure to other pervasive economic factors, this may increase the return variance (σ_j^2) of a firm. Using equation (1), the beta for each firm for each year is calculated using monthly return data of four consecutive years (the current year plus four previous years). The monthly market return used is the CRSP value-weighted market return. The risk-free rate employed is the one month return on the Treasury bill index. The market return used to estimate beta is the return on the U.S. market portfolio. Since beta reflects asset-specific sensitivity to non-diversifiable, i.e., market risk, the market as a whole, by definition, has a beta of one. An investor in a large, diversified portfolio therefore expects performance in line with the market.

10. Reeb et al. (1998) note that the foreign asset ratio (i.e., foreign assets scaled by total assets) mitigates the problem of mixing export and foreign subsidiary sales, and it captures geographic structural information. Deflating by total assets yielded similar results.

11. The results of these leverage measures are similar. As a result, the ratio of long-term debt to total assets is utilized in all subsequent analysis.

12. Besides the inherently positive correlations between FAR and FAR²; FOSA and FOSA² the Pearson correlation among the variables indicate that firm size (LnSIZE) is correlated with financial leverage (LEV). This is expected because larger firms usually have the capacity to carry more debt than smaller firms. We compute the VIF for FAR² removing FAR from the model. The measures indicate no substantial multicollinearity among the regressor variables. Firm size is the most collinear variable, having the highest VIF value of about four. In order to ensure that FAR and FAR² are not sensitive to the inclusion of LnSIZE, we repeated the analysis excluding the size variable. The results (not reported in detail here) are unaffected, except for slight decrease in adj. R².

13. Mean Beta and FAR² for the sample are .856 and .142 respectively. We estimate the average firm-level decrease on Beta as [(mean FAR²) X FAR² coefficient] x mean Beta.

14. There were no problems with multicollinearity per the regression models' variance inflation factors (VIFs), which measure the inflated variances associated with each independent variable. The highest VIF for the model in this analysis was 5.322, less than 10, which Neter et al. (1990) identifies as a threshold for collinearity. The highest eigenvalue is 8.900E-02 is substantially less than 30, which is the level indicating a collinearity problem.

**AN ANALYSIS OF DIFFERENTIAL MARKET REACTIONS TO
PERVASIVE VS. ACCOUNT-SPECIFIC ADVERSE 404 OPINIONS**

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ABSTRACT: This study investigates the differential market reactions to initial pervasive versus account-specific adverse opinions expressing material weaknesses in internal controls over financial reporting (ICFR). The study is motivated by the uncertainty about the value-relevance of the reporting provisions of Section 404 of the Sarbanes-Oxley Act of 2002 requiring auditor opinions on a company's ICFR. The study predicts that the magnitude of the negative stock price reactions of firms receiving adverse ICFR opinions will be greater for firms with pervasive internal control problems than for firms with account-specific problems. Using a sample of 146 firms receiving adverse ICFR opinions and a control sample of 1,540 firms receiving unqualified reports, multivariate regression analysis reveals that there is a significantly negative price reaction to account-specific weaknesses. However, contrary to prediction, the study finds no significant reaction to pervasive material weaknesses. Finally, supplemental analysis of a matched sample of 125 pairs of companies with and without material weaknesses in ICFR reveals the study's results are robust to differences in press coverage during the event window.

INTRODUCTION

The Sarbanes-Oxley Act of 2002 ("the Act") was designed to improve the reliability and accuracy of corporate disclosures (SOX 2002). Section 404 of the Act, *Management Assessment of Internal Controls*, requires company management to evaluate and report on the effectiveness of internal controls over financial reporting (ICFR). Management's assessment must include the disclosure of any material weaknesses in ICFR. The company's external auditor then must opine on company's overall effectiveness of ICFR. Accelerated filers (i.e., those companies with a market value of common equity of at least \$75 million) were required to adopt the provisions of Section 404 for fiscal years ending on or after November 15, 2004 (SEC 2004a).

This study investigates differential market reactions to initial adverse audit opinions on ICFR. Specifically, differential stock price reactions are analyzed based upon whether the disclosed material weaknesses in ICFR are due to pervasive or account-specific problems. This study provides empirical evidence on the market reactions to the information content of the reports resulting from this requirement.

The study's motivation comes from uncertainty over the impact that material weakness opinions will have on the market. This uncertainty is problematic for regulators trying to assess whether the Act achieves the goal of

protecting investors. While prior studies have shown that financial statement users generally agree that mandatory reports on internal controls improve a company's internal control system (Hermanson 2000), the SEC has expressed concern that investors may not understand the findings contained in Section 404 reports (Gullapalli 2004). Investors' misunderstanding would diminish the goal of increased transparency from the provisions contained in the Act. Accordingly, SEC officials have encouraged investor groups to issue guidance on how investment group decisions will be affected by the reports (SEC 2004b).

It is unclear how market participants will react to the information contained in Section 404 reports. To determine the market's assessment of the incremental information content of such disclosures we measure the extent that firm equity values are impacted by disclosures of material weaknesses in ICFR reflects. The assessment of differential market reactions to these reports is important given the high cost of compliance with the provisions. This information should be helpful for analyses of whether the costs of noncompliance of the provisions outweigh the benefits of compliance.

Prior research (e.g. Dopuch et al. 1986; Choi and Jeter 1992; Loudder et al. 1992) has shown that investors generally find audit report qualifications to be informative. This study uses this finding along with a theoretical approach of firm valuation similar to Palmrose et al. (2004) to predict that disclosures of material weaknesses in ICFR will result in a significantly higher stock price reaction than the reaction compared to a control group of firms with no material weaknesses. This hypothesized expectation of a significant market reaction is contrary to prior literature that shows no significant market reactions to disclosures of internal control weaknesses prior to the implementation of SOX Section 404 (e.g. Whisenant et al. 2003).

Specifically, this study examines companies with either November 2004 or December 2004 year-ends with 10-K filings through April 30, 2005 that are included in the Russell-3000 index. For each of the companies selected, market-adjusted cumulative abnormal returns are calculated for the three-day period surrounding the IC opinion announcement date. Multivariate regression analysis is used to regress the calculated cumulative abnormal returns on binary test variables indicating the presence of a pervasive or account-specific material weakness. The analysis controls for previous disclosures of internal control problems, firm size, book-to-market ratio, debt-to-asset ratio, and earnings surprise. The results indicate that account-specific material weaknesses are associated with a negative stock price reaction. However, the pervasive problems are not associated with a significant reaction.

This study contributes to the internal control literature by addressing questions about the information content of internal control disclosures as measured by market price reactions. Additionally, the results of the study should be useful to firm management in assessing the impact on a firm's market value from material weakness disclosures. Finally, the study should help policymakers assess the usefulness of the reporting provisions of Section 404 of the Act.

The remainder of this paper is organized as follows. The next section provides background information on internal control disclosures and develops the hypothesis. The third section describes the study's research methods and design. The fourth section presents the results of the study. The last section concludes with discussion of the study's implications and limitations, as well as recommendations for future research.

BACKGROUND AND HYPOTHESIS

The Evolution of Internal Control Disclosures: Internal control is a process or set of processes implemented by a company's board of directors and management that is designed to provide reasonable assurance on the reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations (COSO 1992). Investors, corporate management, and the government have long understood the importance of internal controls on investor confidence in financial reporting (Kinney et al.1990). However, regulation requiring a company to have an adequate internal control system was not mandated until the Foreign Corrupt Practices Act of 1977 (FCPA) (McMullen et al.1996). Unexpected business failures and incidents of corporate fraud in the 1980's led Congress to question the adequacy of the internal controls of public companies. As a result, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) was formed in an effort to develop guidance on internal controls (Kinney et al.1990).

An integrated framework of five interrelated components derived from the way management runs its business was developed by COSO. The five components of internal control include the control environment, risk assessment, control activities, information and communication, and monitoring (COSO 1992). This conceptual framework provides management with the criteria for evaluating internal controls (Heier et al. 2005). Additionally, COSO made a recommendation that all public companies include a report on internal control effectiveness in their annual report (COSO 1992).

Despite the recommendations of COSO, internal control effectiveness disclosures remained largely voluntary until a new set of business failures began emerging in 2001 and 2002. Corporate scandals such as Enron and WorldCom reinvigorated the debate over the need for further corporate governance regulation. This debate resulted in the passage of the Sarbanes-Oxley Act of 2002 in an effort to restore investor confidence in corporate financial reporting (Heier et al. 2005).

Section 404 of the Act addresses the assessment and disclosures of ICFR which are designed to ensure the integrity and reliability of a company's external reporting processes (SOX 2002). The Act does not address internal control processes over effectiveness and efficiency of operations and compliance with laws and regulations not affecting financial reporting. The rules concerning initial reporting under Section 404 of the Act were governed by PCAOB Auditing Standard No. 2, *An Audit of Internal Control Over Financial Reporting Performed in Conjunction with An Audit of Financial Statements*. Under Section

167 of this standard, management must disclose all material weaknesses in the company's ICFR. Management must use an established framework in assessing the effectiveness of ICFR. Additionally, the company's external auditor must opine separately on management's assessment and on the overall effectiveness of the company's ICFR. If the auditor discovers a weakness that prohibits the company's internal control systems from providing reasonable assurance that material misstatement in the financial statements will be prevented or detected, the auditor must issue an adverse opinion on the effectiveness of the company's ICFR (PCAOB 2004).

Market Reactions to Internal Control Disclosures: Prior to the passage of the Act, the disclosure of information on the effectiveness of a company's internal control systems was largely voluntary (McMullen et al.1996). An exception to voluntary reporting of internal control was a requirement of mandatory 8-K disclosures of auditor changes resulting from internal control weaknesses under SEC Financial Reporting Release (FRR) No. 31 (SEC 1988). Whisenant et al. (2003) evaluated companies disclosing auditor changes during the pre-Sarbanes-Oxley period from 1993 to 1996 and found a significant negative price reaction to disclosure of financial reliability issues such as doubt about management's representations made in financial statements or issues that led to an increase in audit scope. Yet, they found no significant stock price reaction to internal control event disclosures. However, the more recent literature (e.g. Jain and Rezaee 2006; Li et al.2004) suggests that recent accounting scandals have caused investors to place greater emphasis on companies' internal control structures based upon evidence that the market reacted positively to the passage of the Act.

Section 404 disclosures are unique due to the fact that they contain internal control assessments made by a company's auditor. This is particularly important because several studies have shown that investors find other reports provided by auditors (e.g., qualified financial statement audit reports) to be informative as evidenced by a negative market price reaction surrounding the issuance of the reports (e.g. Dopuch et al.1986; Choi and Jeter 1992; Loudder et al.1992).

Hypothesis: Strawser (1991) notes that audit reports generally have one of three effects on user perceptions and decisions: (1) there may be no effect if the user already knows about the underlying events and thus, the accountant report simply reinforces prior known information, (2) there may be a small effect if the report provides incremental information to disclosures already made by management, or (3) there may be a large effect if the report is the initial source of information about the event. Section 404 internal control reports represent information that up until the passage of the Act was only directly made available through FCPA, voluntary disclosure, 8-K disclosures of auditor changes listing internal control weaknesses, or inferences of indirect signals by companies restating earnings or engaging in fraudulent activities.

Similar to Palmrose et al. (2004), this study's theoretical development relies on a model where market participants use a discounted cash flow model of

expected dividends or expected earnings to value a company's stock price. A firm's value is determined by estimating future cash flows and discounting them by an expected rate of return commensurate with the associated risk of those cash flows (Watts and Zimmerman 1986). Negative price reactions should occur when there is a decrease in expected earnings (i.e. future cash flows) and/or an increase in the discount rate due to an uncertainty or an increase in a company's risk (Palmrose et al. 2004). The PCAOB (2004, par.6) intended for the information contained in internal control opinions to be an early warning to stakeholders as to the quality of the company's financial information, including information issued aside from annual audited financial statements of the company. Indeed, even the Big 4 firms have acknowledged:

Even if a company receives an unqualified audit opinion on its financial statements, ineffective internal control over financial reporting could potentially influence the integrity of financial information prepared by the company (The Firms 2004).

Thus, *ceteris paribus*, the risk of firms receiving adverse ICFR opinions should increase relative to those firms with unqualified opinions due to the potential reduction in information quality in company-prepared financial information. This resulting increase in risk should decrease the firm's stock price as the risk-adjusted discounted future cash flows should decrease.

Aside from the increased risk due to a reduction in the reliability of company's financial information, anecdotal evidence suggests material weakness opinions could have further detrimental effects on an organization. Material weaknesses in internal control may trigger downgrades in credit ratings that increase the cost of future borrowings to the company (Leone 2004). Prior studies have shown that ratings downgrades are perceived as new information to the market (e.g. Holthausen and Leftwich 1986; Hand et al. 1992). To the extent that the market perceives the possibility of a decrease in a firm's prospects resulting from the credit downgrade, a decrease in firm's stock price should occur as investors reevaluate the intrinsic value of the company.

Market price reaction, however, should only occur to the extent that new information is not already known by the market (Watts and Zimmerman 1986). Therefore, if the internal control reports represent information that is already known by the market, then no price reaction should be observed. Additionally, SEC Chief Accountant Donald Nicolaisen stated that investors should not be surprised by internal control findings during this initial pass. He further stated that findings should not "necessarily be motivation for immediate or severe regulatory or investor reactions" (SEC 2004b).

The PCAOB (2004, par. 164) suggests that the severity of material weakness opinions will differ depending on the magnitude and nature of disclosed material weaknesses. For example, Ge and McVay (2004) noted that material weaknesses in ICFR are generally linked to inadequate accounting resources such as qualified accounting personnel. To address this concern, Big 4 firms have encouraged the marketplace to evaluate material weaknesses based upon two separate types of weaknesses (The Firms 2004). The first type of

material weaknesses result from account-specific problems in transaction processing. For example, control problems associated with the calculation of tax accruals would generally be categorized as an account-specific problem. These types of weaknesses may be overcome by the auditor increasing substantive procedures in these areas (Doss and Jonas 2004). The second (more severe) type of material weaknesses results from pervasive problems in internal controls, such as problems in the control environment and the overall financial reporting process. Recent reports indicate that certain bond-rating companies (e.g. Moody's Investor Services) are expected to evaluate material weakness opinions based upon whether the problems are account-specific or pervasive in making bond-rating decisions (The Firms 2004).

Given that disclosing pervasive problems are likely to be more alarming to market participants, market reactions to pervasive material weakness opinions should be more negative than reactions to material weakness opinions involving account-specific weaknesses. The hypothesis, stated formally:

Ceteris paribus, the stock price reactions to adverse ICFR opinions will be more negative for firms disclosing pervasive material weaknesses than for firms disclosing only account-specific material weaknesses.

DESIGN AND SAMPLE

Model specification: The following multivariate regression model is used to test the study's hypothesis:

$$CAR_i = b_0 + b_1ACCTSPC + b_2PERVASIVE + b_3PRIORDISC + b_4ES + b_5SIZE + b_6BTM + b_7DEBT + \sum b_j INDUSTRY + e_i$$

where:

CAR	=	cumulative abnormal return;
ACCTSPC	=	1 if an account specific material weakness, else 0;
PERVASIVE	=	1 if a pervasive material weakness, else 0;
PRIORDISC	=	1 if internal control problems were previously disclosed else 0;
ES	=	the extent to which earnings reported in the annual report are unexpected, calculated as described below;
SIZE	=	natural log of total assets;
BTM	=	book value of equity to market value of equity;
DEBT	=	ratio of debt to total assets; and
INDUSTRY	=	vector of sixteen industry indicator variables consistent with Ge and McVay (2005).

Cumulative Abnormal Returns: Abnormal returns are calculated using an event-study market-adjusted return model similar to Palmrose et al. (2004):

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on security i at time t and R_{mt} is the Russell-3000 index return at time t . In this study, the material weakness opinion event date (day 0) is considered to be the date of the 10-K filing.

Cumulative abnormal returns for each security i (CAR_i) are obtained by summing the daily abnormal returns from across a period of time considered sufficient to observe a market reaction to the material weakness disclosure. Consistent with prior daily event studies (e.g. Palmrose et al. 2004; Defond et al. 2005), this study uses a three-day (-1, +1) event window for measuring cumulative abnormal returns.

Test Variable: ACCTSPC and PERVASIVE are the binary test variables of interest taking a value of 1 for the presence of an account-specific or pervasive material weakness, respectively. These variables are included in order to test the hypothesis of the study. The determination of whether material weaknesses are account-specific or pervasive is based upon the classification scheme developed by Moody's Investor Services (Doss and Jonas 2004). For purposes of this study, pervasive problems consists of one or more of the following weaknesses mentioned in the ICFR opinion:

- Ineffective personnel,
- Problems with revenue recognition,
- Pervasive ineffective processes, and/or
- Problems in period-end financial reporting.

All other weaknesses are considered account-specific. The hypothesis predicts a negative predicts the magnitude of the negative coefficient for pervasive material weaknesses will be larger than the magnitude of the negative coefficient for account-specific material weaknesses.

Control Variables: PRIORDISC is a binary control variable taking the value of 1 if any internal control problem has previously been disclosed. This variable is included since the market would have likely already reacted to these disclosures. These companies are identified by searching the *Compliance Week* database for prior SEC filings disclosing the weakness(es). A negative coefficient is expected for this variable as cumulative abnormal returns should be smaller for firms previously disclosing internal control problems.

ES represents a control variable measuring the extent to which earnings reported in the annual report are unexpected. Consistent with Jones (1996), the variable equals zero if an announcement of annual or fourth-quarter earnings as identified in the I/B/E/S database is made at least five days prior to the release of the annual report. Otherwise, the variable is defined as $ES_i = (A_i - F_i) / P_i$ where:

- A_i = the actual I/B/E/S earnings per share for firm i ;
- F_i = the latest analysts' mean forecasted earnings per share obtained from I/B/E/S; and
- P_i = the per share common stock price for firm i as of end of the most recent fiscal year.

A positive coefficient is expected for this variable as stock price is positively associated with earnings (Watts and Zimmerman 1986).

The multivariate model also includes control variables for company size, growth opportunities, leverage, and industry. Consistent with prior event study

research (e.g. Defond et al. 2005; Espahbodi et al. 2002), these variables are included to ensure that the stock price responses are attributable to the test variables instead of cross-sectional differences in firm specific characteristics.

SIZE is the natural log of the firm's assets at the close of the fiscal year under study. This control variable is included as prior studies have shown that a firm's information environment is affected by firm size (e.g. Freeman 1987; Bhushan 1989; O'Brien and Bhushan 1990; El-Gazzar 1998).

BTM is the book value of equity divided by the market value of equity as of the end of fiscal year under study. Consistent with prior event studies (e.g. Asthana and Balsam 2004; Defond et al. 2005; Espahbodi et al. 2002), this variable is included to control for the effect of future growth opportunities of the firm.

DEBT is the ratio of debt-to-total assets. This control variable is included as prior research has shown differential stock price reactions based upon debt levels (e.g. Dhaliwal et al. 1991; Ball et al. 1993; Dhaliwal and Reynolds 1994; Fischer and Verrecchia 1997; Billings 1999; Core and Schrand 1999).

INDUSTRY is a vector of sixteen industry indicator variables. This control variable is included as prior research has shown that material weakness disclosures tend to cluster by industry (Ge and McVay 2005).

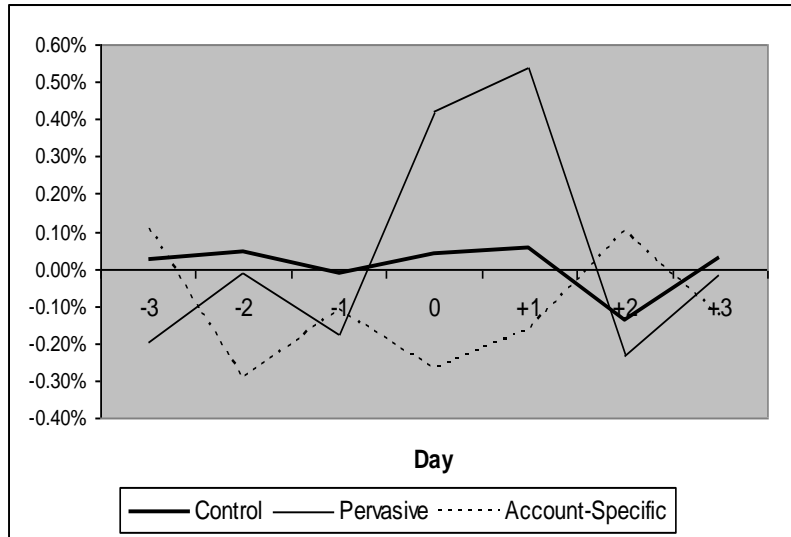
Sample Selection and Data: Firms in the Russell-3000 index with either November 2004 or December 2004 year-ends with 10-K filings through April 30, 2005 are identified using the *Compliance Week* database. The database indicates whether the internal control report contains an adverse or unqualified opinion. This designation is derived by reviewing the section of the 10-K entitled Report of Independent Registered Public Accounting Firm. In order to ensure the reliability of the database, each adverse ICFR opinion is checked against the SEC filing. Additionally, the completeness of the sample is verified using the *10-K Wizard* search engine. An additional criterion is that only companies receiving unqualified financial statement audit opinions are included in an attempt to control for the confounding effects of a market reaction to qualified financial statement audit opinions. The search identified 1,690 companies of which 193 contained adverse ICFR opinions. The final criteria to be included in the sample requires that the firms have the necessary data available in COMPUSTAT, Yahoo Finance, and I/B/E/S. This restriction resulted in the deletion of 150 companies of which 47 contain adverse ICFR opinions. The results in Table 1 detail the sample development process.

Abnormal Returns: Table 2 presents a graph of the mean daily abnormal returns for the account-specific, pervasive, and control samples. The mean abnormal returns for day 0 and day +1 are of particular interest. Contrary to expectations, companies in the pervasive control problem sample have larger mean abnormal returns than those in the control sample ($p = 0.02$). Conversely, firms with account-specific returns are smaller than the control sample ($p = 0.04$). The day +2 returns appear to somewhat correct the spikes in returns experienced on day 0 and day +1.

TABLE 1: Sample Description

	Material Weakness Sample	Control Sample	Total
Initial sample	193	1497	1690
Less:			
Companies missing COMPUSTAT data	0	1	1
Companies missing Yahoo Finance data	3	19	22
Companies missing I/B/E/S data	44	83	127
Final sample	146	1394	1540

TABLE 2: Abnormal Return Graph



Multivariate Analysis: Table 3 presents the multivariate regression results. The model is significant indicating that at least one of the independent variables explains a significant portion of variation in the firms' cumulative abnormal returns ($F = 3.28$; $p < 0.01$). The combination of ACCTSPC and PERVASIVE is not significant ($p = 0.24$). Consistent with expectations, the coefficient of ACCTSPC is negative and significant ($p = 0.02$). However, PERVASIVE is not significant ($p = 0.35$). Therefore, the hypothesis is not supported as the coefficient of PERVASIVE is not more negative than that of ACCTSPC.

TABLE 3: Multivariate Regression Results

Variable	Predicted			
	Sign	Coeff.	t-stat	<i>p</i>
INTERCEPT	+/-	0.007	1.38	<i>0.167</i>
ACCTSPC	-	-0.009	-2.15	0.016
PERVASIVE	-	0.004	0.94	<i>0.347</i>
PRIORDISC	-	0.006	1.18	<i>0.240</i>
ES	+	4.258	5.73	<0.001
SIZE	+/-	<0.001	-0.74	<i>0.462</i>
BTM	+/-	0.004	1.15	<i>0.249</i>
DEBT	+/-	<0.001	0.12	<i>0.907</i>
Observations			1686	
F-value / <i>p</i>		3.28	<0.001	
Adjusted R ² (%)		3.02		

Sensitivity Analysis: A series of sensitivity tests is performed to evaluate whether the results are robust to changes in event windows. Results show that the coefficients and significance are qualitatively similar over two-day (0, +1), five-day (-2, +2), and seven-day (-3, +3) windows. However, the significance of the test variables decreases as the event windows are lengthened. Over the two-day (0, +1) window, ACCTSPC is negative and significant ($p = 0.02$) and PERVASIVE is positive and marginally significant ($p = 0.10$). These results are consistent with the mean abnormal return graph in Table 2.

Additional sensitivity tests are performed to ensure that the results are robust to an alternative cumulative abnormal return calculation. Abnormal returns are calculated using the standard event-study OLS market model as described in Brown and Warner (1985):

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

where R_{it} is the return on security i at time t , R_{mt} is the Russell-3000 index return at time t , and α_i and β_i are the ordinary least squares parameters obtained by regressing company i 's individual daily returns on market returns. The parameters are estimated using daily stock returns for 250 trading days prior to the year-end under study. Using the alternative CAR measure, the coefficients and significance levels of the independent and control variables remain qualitatively similar to those reported in Table 3.

Finally, tests are performed to ensure the results are not sensitive to the deletion of the following:

- Banking (SIC 6000-6999) and utility (SIC 4900-4999) firms,
- Firms with stock prices of less than five dollars, and
- Firms with negative book-to-market ratios.

After deleting the above companies, the coefficients and significance levels of the independent and control variables remained qualitatively similar to those reported in Table 3.

Supplemental Analysis: To decrease the likelihood that the results are not being driven by other news events that may have occurred during the event window, a matched sample of firms is created by matching each company with an adverse ICFR opinion with a similar company receiving an unqualified opinion. Each company is matched on SIC code and size. The matched companies, at a minimum, have the same 2-digit SIC and have total assets within 30% of their matching company receiving an adverse opinion. The final sample consists of 125 matched pairs of companies after deleting 21 companies with no adequate match. Univariate testing of the matched pairs reveals no significant difference in size of total assets between the groups (t-statistic = 0.05; p = 0.96).

For each company, a search of *Factiva*, a global news and business information service that combines the content sets of *Dow Jones Interactive* and *Reuters Business Briefing*, is performed to determine if any news event occurred during the five-day window surrounding the 10-K filing. The binary variable, *PRESS*, takes the value of “1” if there is a news event and “0” otherwise. The difference in *PRESS*, *DPRESS*, is used to control for differences in press coverage between the matched pairs.

A multivariate regression analysis is performed on the matched sample of firms. Similar to Menon and Williams (2004), a model is used that does not pool the experimental and matched company but rather uses the differences in variables between the matched pairs. This model is used to address concerns (e.g. Cram et al. 2003) that studies that pool their matches do not properly exploit the power of a matched sample design. In addition, pooling of experimental and matched companies may lead to unreliable results as bias is introduced into the model. The following matched-sample no-intercept model is developed:

$$DCAR_i = b_1DACCTSPC + b_2DPERVASIVE + b_3DPRIORDISC + b_4DPRESS + b_5DES + b_6DSIZE + b_7DBTM + b_8DDEBT + e_i$$

where:

- DCAR = the difference in CARs between firms reporting a material weakness in ICFR and corresponding matched firms;
- DACCTSPC = the difference in ACCTSPC and
- DPERVASIVE = the difference in PERVASIVE
- DPRIORDISC = the difference in PRIORDISC;
- DPRESS = the difference in PRESS (press = 1 if the company has a news event during the event window, else 0);
- DES = the difference in ES;
- DSIZE = the difference in SIZE;
- DBTM = the difference in BTM; and
- DDEBT = the difference in DEBT.

The results are reported in Table 4. These results are similar to those reported for the full sample in Table 3. The coefficient of account-specific weaknesses are negative and significant ($p = 0.03$) while the coefficient of pervasive weaknesses is not significant. Therefore, the hypothesis is again not supported.

TABLE 4: Supplemental Matched-Sample Analysis

Variable	Predicted			
	Sign	Coeff.	t-stat	<i>p</i>
DACCTSPC	-	-0.011	-1.98	0.025
DPERVASIVE	-	0.004	0.60	0.548
DPRIORDISC	+/-	-0.003	-0.58	0.562
DPRESS	+/-	0.014	1.84	0.068
DES	+/-	14.866	3.02	0.003
DSIZE	+/-	0.016	0.54	0.591
DBTM	+/-	0.020	1.65	0.101
DDEBT	+/-	0.003	0.25	0.806
Observations		125		
F-value / <i>p</i>		2.84	0.007	
Adjusted R ² (%)		10.52		

DISCUSSION AND CONCLUSION

This study reports the results of an event study that examines the market reaction to first-time adverse ICFR opinions. After splitting the sample of adverse opinions into account-specific and pervasive problems, the results indicate that account-specific material weaknesses are associated with a negative stock price reaction while pervasive problems are not associated with a significant reaction. Therefore, the market reaction to adverse ICFR opinions with pervasive problems is not more negative than the market reactions to adverse ICFR opinions with only account-specific problems.

The study extends internal control literature by examining the market's assessment of the information content of the SOX reporting provisions related to ICFR. This study broadens the findings of no significant market reaction to internal controls problems as documented in Whisenant et al. (2003) to the post-SOX era. The findings may be useful to policy makers and management in understanding market reaction to this new reporting mechanism. Managers should be aware that the market generally reacts negatively to account-specific material weaknesses.

The results should be evaluated in the context of the study's limitations. First, while this study attempts to include factors associated with differential market reactions, correlated omitted variables may affect the results. Subsequent studies should examine other factors associated with the market assessment of these opinions. Furthermore, since this study only assesses first-time ICFR opinions, additional studies should be conducted to assess market reactions in subsequent years.

Second, the measurement error in the market's expectation to these disclosures used in this study may affect the results. This study attempted to control for this expectation by using a binary variable for prior internal control disclosures. Additional studies should be conducted to look more closely at the market's prior expectation of internal control problems and how those expectations affect market reaction surrounding the issue of the adverse ICFR opinion.

Finally, Bailey (1982) notes that inferences made about the information content of audit reports may be inappropriate given the confounding effects of concurrent information contained in the financial statements and notes. Additional confounding information associated with concurrent new events surrounding the event window may be present. This study tried to control for the effects of earnings surprises, financial statement audit qualifications, and news events. However, to the extent that the 10-K filings contain additional information of value to the market, the inferences drawn concerning the information content of adverse ICFR opinions may be inappropriate.

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PEDAGOGICAL DEVELOPMENT FOR COMPUTER TUTORING: INNER LOOP TASKS

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ABSTRACT: This paper reviews the computer tutoring program relating to the decision-making components that need to be included in such programs. Existing algorithms allow the solving of many technical problems for tutoring program development. Computer model construction goes through multiple stages which will be described in this paper. We explore the use of linear equations to solve a training problem. The model thus developed was tested and its use in the classroom was found to be efficient.

INTRODUCTION

One of the purposes of intelligent computer tutoring programs (ICTP) creation is the effective transfer of knowledge and skills to the trainees due to adaptation to each of them, and also implementation of such important pedagogical principles, as activity, deliberateness and self-diagnostics (Komenski, Lock, Rousseau and Pestalozzi 1989). Problems identified with past ICTP were inconsistent and incomplete learning had taken place. The perceived solution to the problem can be found in the creation of a tutoring system to model the learning process for receiving of the full and correct information and the formation of correct pedagogical actions.

In the present research the problem of method development for ICTP pedagogical actions sequence formation is solved. In the following section the question of the approach choice to the developed method performance is considered.

THE APPROACH TO THE TUTORING ACTIONS SEQUENCE FORMATION

There are multiple approaches to the learning process (VanLehn 2006). The simplest is the trainee's independent choice of the next task from a static list. Another that is more widespread is a sequence developed by the teacher and given to each trainee. But an essential disadvantage of these described approaches is the absence of adaptation of computer tutoring programs to knowledge and skills of each separate trainee. Hereupon performance of deliberateness and activity pedagogical principles at studying of new materials can become impossible. For one trainee of a high level of competence the given tasks can seem too easy and uninteresting, for others there can be failure due to what is perceived as a high level of complexity. Formation of an adaptive

sequence of ICTP pedagogical actions taking into account different levels of competence could become an exit from the current situation. This purpose could be reached by the implementation of ICTP inner and outer loops formation proposed by American researcher Kurt Van Lehn in work (VanLehn 2006).

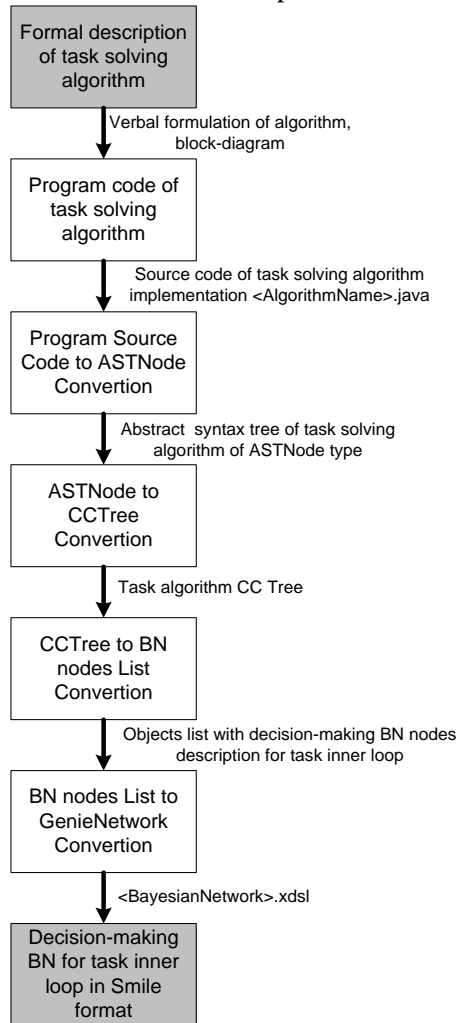
Outer loop is responsible for the decision-making, about what the next task to present to the student. ICTP should contain a set of tasks ordered automatically or manually by the teacher due to varying complexity levels. Transitions in outer loop are carried out by corresponding decision-making model which chooses the next problem proceeding from “Vygotsky zone” condition (Vigotsky 2005), i.e. it should be a bit more difficult than the previous one. Inner loop is responsible for splitting of the task into a sequence of steps and providing of timely feedback to the student at time of execution. Inner loop execution means observance of a rationality criterion at next tutoring iteration choice as the final goal of mastering by a set of task competence components (CC) should be reached for the minimum quantity of steps.

Because the work of the inner loop occurs in conditions of uncertainty about the tutoring process and is aimed at the development of a rational sequence of tasks execution for loop transition model implementation. It is suitable to use the probabilistic approach methods based on decision-making Bayesian networks (BN) (Murray, Lehn and Mostow). The given model allows to estimate probabilities of each task execution success and to choose the most useful of them from a pedagogical point of view. Principles of inner loop execution can be applied to solving various technical problems which algorithm can be formalized and presented in the form of a program code. In following section the method of automatic formation of the transition model for ICTP inner loop on the basis of source program code of problem solving algorithm is described.

DEVELOPMENT OF TUTORING ACTIONS FORMATION METHOD FOR ICTP INNER LOOP

The first stage of process of inner loop transition model automatic formation based on a program code of problem solving algorithm is its parsing. It is aimed at identification of CC, necessary for task performance. After that on the basis of task CC structure there is construction of the decision-making BN, forming rational sequence of task steps execution due to choice of the most useful alternative after receiving of the next evidences about tutoring process progress. In picture, the scheme of decision-making BN automatic formation stages for ICTP inner loop is presented.

Picture 1 - The scheme of decision-making BN automatic formation stages for ICTP inner loop



The initial data for work of transition model automatic formation system is the formal description of problem solving algorithm in the form of the verbal information on sequence of its stages, block diagrams, formulas of mathematical calculations.

The result of system work is decision-making BN for tutoring program inner loop. BN is represented in SMILE format (GeNIe) (platform-independent library of classes for implementation of graphic probabilistic models, and also decision-making models), convenient for the decision of its analysis problems and solving of probabilistic inference problems.

For receiving of final decision-making BN it is necessary to execute a number of actions:

1. The initial problem algorithm is represented in the form of program code written in high level language, in our case in Java. Java provides wide tools for program code syntax analysis. The given function is carried out by the developer of the tutoring program or by available automated tools of problem solving algorithm graphic representation transformation in a corresponding program code. Result of this stage performance is the file with a Java-code of initial problem solving.
2. The construction of an abstract syntax tree (AST) of problem solving program code is made. The object of ASTParser class is created for this purpose. ASTParser is an element of the Eclipse JDT API-functions (Gamma, Helm, Johnson and Vlissides 1995) for program code AST construction, manipulations it, detection of its errors, compilation and execution. AST is the final, oriented tree in which internal tops are associated with operators of a programming language, and leaves with corresponding operands. Thus, leaves are empty operators and represent only variables and constants. After reference of program source code the object of ASTParser class will transform it to hierarchical structure of ASTNode type. Every Java language construction can be presented by node of corresponding type with various nesting degree concerning root node of a tree. For example, the function containing the declaration of two variables, can be presented at top level by MethodDeclaration type node (ASTNode successor) and two nodes of VariableDeclarationStatement type nested in it. As a result the source program java-code will be transformed to corresponding hierarchical structure of abstract syntax tree nodes.
3. Algorithm AST will be transformed to a problem CC tree (CCT). The given tree represents the hierarchical structure consisting of terminal type nodes (operators and names of variables of a source code) and non-terminal, containing the information on the list of the nodes nested in them. CCT can be received from AST by application of idea of Composite pattern [6]. Thus for CCT construction AST nodes connected only with CC interested to us are analyzed, other nodes are ignored.
4. CCT will be transformed to objects array with the information on decision-making BN nodes for an inner loop of a problem. Thus, if CCT contained relations between the nodes, hierarchies going from the top nodes to the nodes nested in it the direction of BN relations changes from more nested to the top nodes of hierarchy. It is connected with features of decision-making BN probabilistic inference as large CC acquirement depends on results of performance of its components.
5. On an available array of the information on BN nodes the BN object of Network type which is a copy of API SMILE class is constructed. The given object can be saved in a file of Genie format (graphic environment for synthesis and the analysis of probabilistic models), and also is used for the internal program analysis and solving of BN probabilistic inference problems.

Let's consider process of decision-making BN automatic construction for a problem of tutoring to the solving of the linear equations systems.

Let the system of two linear equations in a general view looks as follows:

$$\begin{cases} a_{11}x_1 + a_{12}x_2 = b_1, \\ a_{21}x_1 + a_{22}x_2 = b_2 \end{cases} \quad (1)$$

where $a_{11}, a_{12}, a_{21}, a_{22}, b_1, b_2$ - some known integers, $a_{11}, a_{12}, a_{21}, a_{22}, b_1, b_2 \in Z$. It is necessary to define values of roots $x_1, x_2 \in R$.

There is a set of ways of the given linear equations system solving. Let's use Kramer's method and find a system determinant, i.e. the determinant of the second order made of factors at unknowns:

$$V = \begin{vmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{vmatrix} \quad (2)$$

Let's make two more determinants from (1), having replaced in the first of them the first, and in the second - the second columns with the column made of free members b_1, b_2 :

$$V_1 = \begin{vmatrix} b_1 & a_{12} \\ b_2 & a_{22} \end{vmatrix} \quad V_2 = \begin{vmatrix} a_{11} & b_1 \\ a_{21} & b_2 \end{vmatrix} \quad (3)$$

Then, according to Kramer's rule, if a system determinant $\Delta \neq 0$ the considered system has one and only one decision, and:

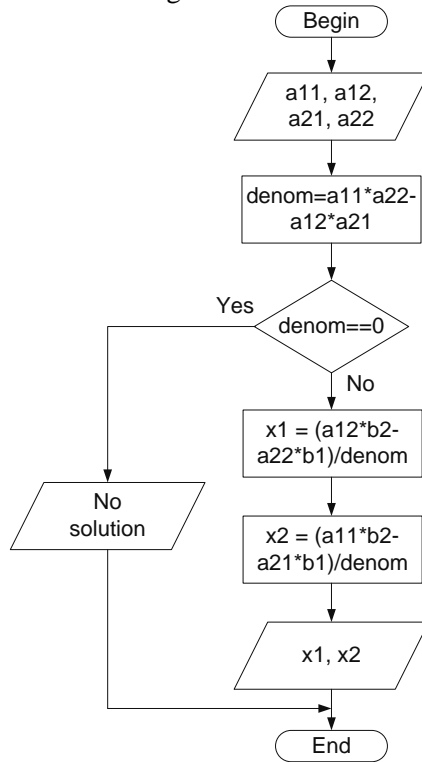
$$x_1 = \frac{V_1}{V} \quad x_2 = \frac{V_2}{V} \quad (4)$$

Thus, for finding of linear equations system roots it is necessary:

- 1) To find value of system determinant according to the formula (2);
- 2) To check up a condition of system decision existence ($\Delta \neq 0$);
- 3) To construct 2 private system determinants according to the formula (3);
- 4) To find values of the first and second roots according to the formula (4).

Having the verbal description of solving algorithm of system from two linear equations, we can make the block diagram of program algorithm of system solving:

Picture 2 - Algorithm of two linear equations system solving



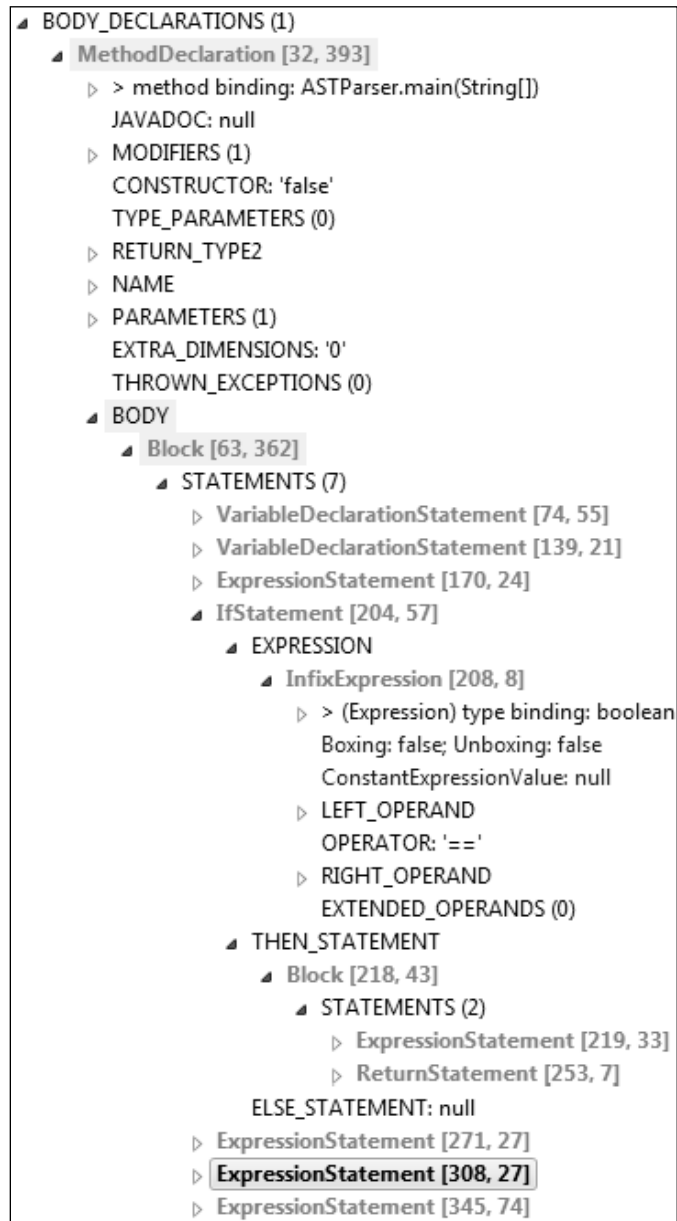
According to the algorithm (Picture 2) it is possible to make its implementation in Java language. The program code by system roots finding (1) will have the following view:

```

public class EquatSystemSolving {public void main(String[] args) {int
a11 = 1, a12 = 2, a21 = 3, a22 = 4, b1 = 5, b2 = 6; double x1, x2, denom; denom
= a11*a22-a12*a21; if (denom==0) {System.out.println("No solution"); return;}
x1 = (a12*b2-a22*b1)/denom; x2 = (a11*b2-a21*b1)/denom; System.out.println
("x1="+ Double.toString(x1) +"; x2 = "+Double .toString (x2));}}
  
```

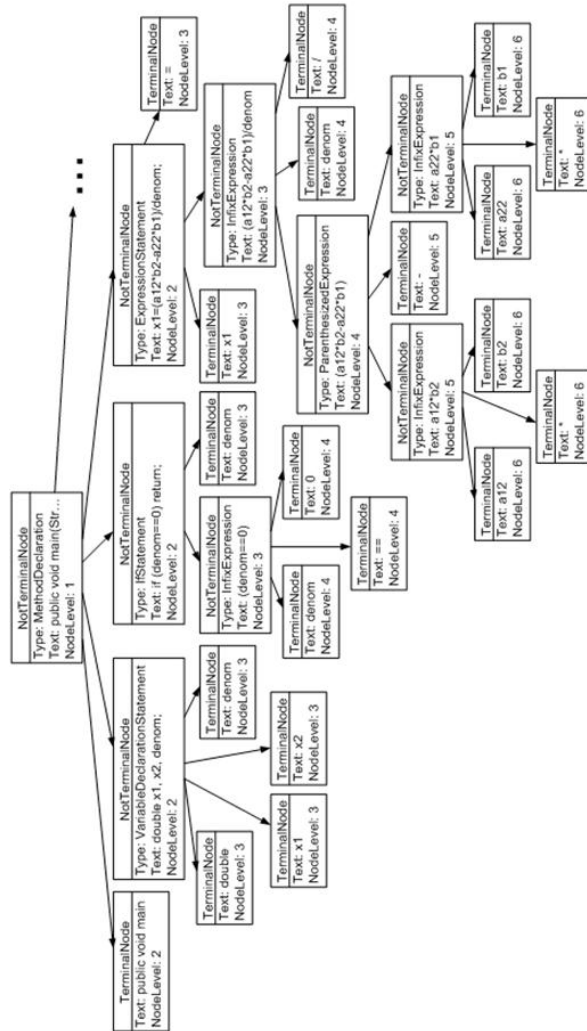
For creation of algorithm abstract syntax tree it is necessary to create object of ASTParser class and by means of a function setSource call to specify the java-code of system solving described above. By means of utility ASTView it is possible to receive visual AST representation.

Picture 3 - The fragment of AST structure of equations system solving algorithm



It is necessary to transform received AST algorithm in CCT which includes only interesting us AST nodes and their some characteristics. CCT represents hierarchical CC structure which the trainee should acquire for the linear equations system solving. Received CCT for a considered problem will have the following view (Picture 4):

Picture 4 - The fragment of problem CCT



CCT consists of two types nodes: terminal (not having descendants, private CC) and non-terminal (having descendants, compound CC). Nodes have an indicator of nesting level concerning root node. For example, the node with the text «a12» has the sixth nesting level concerning the uppermost node of a method main at which the given indicator is equal to 1. Each private CC has the corresponding weight factor defining degree of its importance in a problem solving concerning other components. The weight of compound CC is equal to the sum of weight factors of its components plus its own weight.

$P(A=\text{Satisfied}|a_1, a_2, \dots, a_n)=0.9$, $P(A=\text{Violated}|a_1, a_2, \dots, a_n)=0.1$ at $a_1 \wedge a_2 \wedge \dots \wedge a_n = \text{Satisfied}$;

$P(A=\text{Satisfied}|a_1, a_2, \dots, a_n)=0$, $P(A=\text{Violated}|a_1, a_2, \dots, a_n)=1$ at $a_1 \wedge a_2 \wedge \dots \wedge a_n = \text{Violated}$.

Thus, on the basis of received statistics data, it is 90% of confidence that the trainee acquires compound CC if he acquires all its private CCs. In case the trainee does not acquire one of private CC it is obvious that he will not acquire also a compound component.

For example, for node «a12*b2», having three ancestors «a12», «*» and «b2», CPT will have the following view (Table 1):

Table1. CPT of «a12*b2» node

a12	Satisfied				Violated			
b2	Satisfied		Violated		Satisfied		Violated	
*	Satisf.	Violated	Satisf.	Violated	Satisf.	Violated	Satisf.	Violated
Satisfied	0.9	0	0	0	0	0	0	0
Violated	0.1	1	1	1	1	1	1	1

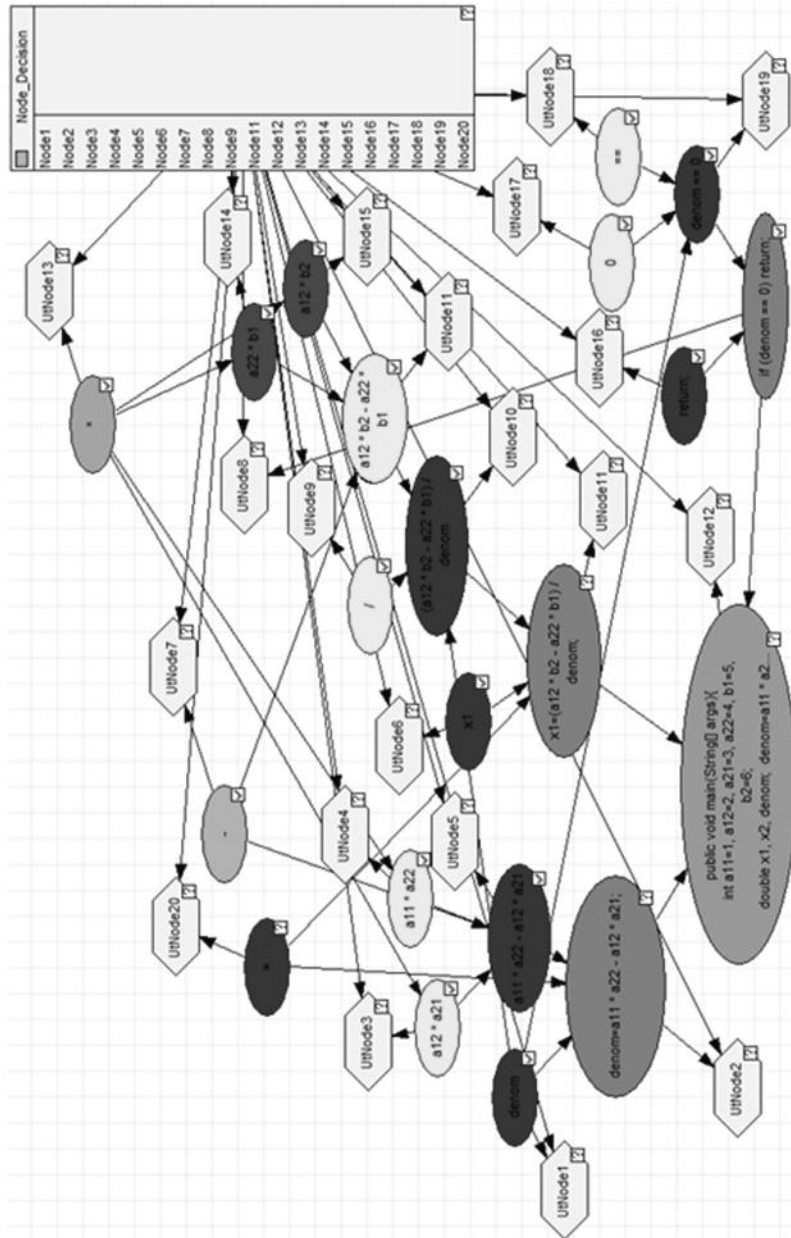
For implementation of function of a choice by system of the most useful next task execution step from the list of alternative variants, BN represented in picture 5, should be transformed in decision-making BN. For construction of the given network, and also possibility of solving of its various probabilistic inference problems, we will use the tools of platform-independent library SMILE. It is necessary to complement present BN with decision node which list of conditions (alternatives of a choice) will include all network chance nodes. Besides it, it is necessary to connect utility node corresponding to it with each chance node of a network. Utility values of a_i node if decision node has n alternatives a_1, a_2, \dots, a_n are defined as follows:

Utility ($a_i=\text{Violated}$) = weight (a_i), utility values of other variants are equal 0,

where weight (a_i) - weight value of a_i node, equal to the sum weight of all its private nodes and initial weight value of a_i node.

Created through API SMILE interface decision-making BN can be seen by means of graphic editor Genie 2.0.

Picture 6 – The fragment of decision-making BN in Genie 2.0 editor



In picture 6 chance nodes of the ellipse form are shown by different colors depending on their nesting level in initial CCT. With each of such nodes the utility node is connected with names UtNode1 ... UtNode20. The decision block “Decision Node” has 20 alternative conditions Node1 ... Node20, which are corresponded by network nodes and CC associated with them.

For check of adequacy of the received model testing of it was performed in Genie 2.0 editor. Different variants of network nodes evidences sequences and the analysis of correctness of next step decision-making were modeled. One of such scenarios is presented in table 2.

Inner loop execution begins with setting of the main network node evidence reflecting acquirement of whole equations system solving CC (method main), equal Violated. The system defines that the most possible reason of absence of this CC acquirement consists in absence of acquirement by definition of roots x_1 or x_2 values (nodes « $x_1 = (a_{12} * b_2 - a_{22} * b_1) / \text{denom}$ » and « $x_2 = (a_{11} * b_2 - a_{21} * b_1) / \text{denom}$ » accordingly). Further we model a situation when check of CC « $x_2 = (a_{11} * b_2 - a_{21} * b_1) / \text{denom}$ » acquirement shows positive result. The system in this case unequivocally defines that the possible lack of knowledge is covered in CC « $x_1 = (a_{12}*b_2-a_{22}*b_1)/\text{denom}$ ». After given CC check, having negative result, the decision on error search in the right part of the given equality « $(a_{12}*b_2 - a_{22}*b_1)/\text{denom}$ » is made. Further, after incorrect performance of the task for check of the last CC, the system defines numerator of fraction as the most probable place of the competence lack. The situation of correct performance of the task for check of numerator calculation is simulated. Search moves to CC of system determinant « $\text{denom}=a_{11}*a_{22} - a_{12}*a_{21}$ »

Table 2. The description of the ICTP possible inner loop scenario execution

№	Current step	Result	Next step decision
1	<pre>public class EquatSystemSolving { public void main(String[] args){ int a11 = 1, a12 = 2, a21 = 3, a22 = 4, b1 = 5, b2 = 6; double x1, x2, denom; denom = a11*a22-a12*a21; if (denom==0) {System.out.println("No solution"); return;} x1 = (a12*b2-a22*b1)/denom; x2 = (a11*b2-a21*b1)/denom; System.out.println ("x1="+Double.to String (x1)+"; x2="+Double.toString(x2)); }}</pre>	Violated	$x_1=(a_{12}*b_2 - a_{22}*b_1) / \text{denom};$ or $x_2=(a_{11}*b_2 - a_{21}*b_1) / \text{denom};$
2	$x_2=(a_{11}*b_2 - a_{21}*b_1) / \text{denom};$	Satisfied	$x_1=(a_{12}*b_2 - a_{22}*b_1) / \text{denom};$
3	$x_1=(a_{12}*b_2 - a_{22}*b_1) / \text{denom};$	Violated	$(a_{12}*b_2 - a_{22}*b_1) / \text{denom}$
4	$(a_{12}*b_2 - a_{22}*b_1) / \text{denom}$	Violated	$(a_{12}*b_2 - a_{22}*b_1)$
5	$(a_{12}*b_2 - a_{22}*b_1)$	Satisfied	$\text{denom}=a_{11}*a_{22} - a_{12}*a_{21};$
6	$\text{denom}=a_{11}*a_{22} - a_{12}*a_{21};$	Violated	$a_{11}*a_{22} - a_{12}*a_{21}$
7	$a_{11}*a_{22} - a_{12}*a_{21}$	Violated	$a_{11}*a_{22}$ or $a_{12}*a_{21}$
8	$a_{11}*a_{22}$	Satisfied	$a_{12}*a_{21}$

Calculations which further check leads to conclusion that a lack of knowledge is in nodes « $a_{11}*a_{22}$ » and « $a_{12}*a_{21}$ ». In case of acknowledgement

of «a11*a22» CC acquirement error search passes to «a12*a21» node. Thus, similar iterative search of the most probable place of trainee knowledge and skills lack with a choice of next step also forms dynamic sequence of TP task inner loop which performance is capable to produce to independent revealing of the reason and place of the made error, and also its correction. Hereupon due to realization of self-diagnostics principle the lack of required task CC acquirement is compensated.

MODEL TESTING IN REAL CONDITIONS OF EDUCATION

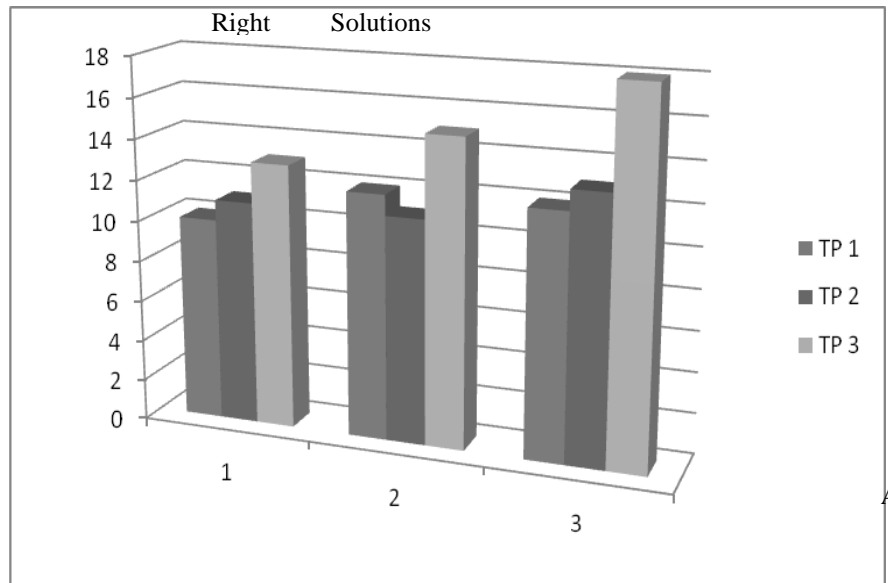
For check of efficiency of developed inner loop execution organization method was tested in real conditions of education. Three groups of students, 20 persons in each group were selected. Execution of TP task consisted in construction of linear equations system solving algorithm and performing of numerical calculations of its roots according to the given values of its factors. Task execution correctness was checked by comparison of results of constructed student's algorithm execution with results of work of etalon algorithm on some test set of the input data. Each of groups of students was given for learning the following linear equations systems solving TP:

- 1) TP task requires one attempt of its solution, thus after check of correctness of task execution it is informed the general result of its performance: correctly or incorrectly;
- 2) TP task supposes execution of three attempts of its solving, thus after each wrong attempt the trainee is notified on the fact of presence of an error in task execution;
- 3) TP task realizes the idea of inner loop described in the present article. The message of wrong task execution can be received only in case of wrong performance of all steps of task execution.

TP contained three task copies with different values of linear equations system factors. Sets of factors values in different TP kinds were identical. As a result of the performed testing following results of task execution success for each of TP kinds, represented on picture 7 have been received.

Apparently from the diagram, TP with inner loop (TP 3) has shown the greatest learning efficiency because as a result of third problem copy execution we have achieved that 90 % of students have solved a problem correctly. Thus the first and second TP kinds as a result of third problem copy execution have shown 60 and 65 % of success accordingly. The developed inner loop execution organization method allows providing engineering problems learning efficiency increase, such as linear equations system solving, practically on 30 % in comparison with traditional methods of TP task execution organization.

Picture 7 - Comparative results of linear equations system solving TPs execution



CONCLUSIONS

In the given research choice of approach to the formation of ICTP pedagogical action sequences, and also the development of a method of automatic construction of the decision-making model for performance of its inner loop was performed. The principle of the developed method has been investigated using an example of two linear equations in the system solving. According to the algorithm of system solving, its program implementation in java-code form was created. The program code formed a basis for algorithm AST formation. AST was transformed in CCT by identification of the nodes in it, associated with the necessary CC. On the basis of last tree BN of CC has been constructed. The final stage was the inner loop decision-making BN construction for the considered problem. Testing of created decision-making BN in graphic Genie 2.0 editor with different scenarios of the task step execution has confirmed the adequacy of the model and its ability to compensate the insufficient trainee competence due to the correct choice of the next task execution step. Compensation is reached due to independent revealing by the trainee of error reason and character, and also its correction. Thus, such important pedagogical principles in education as activity, deliberateness and the self-diagnostics, were achieved thus allowing increasing efficiency of computer tutoring.

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FAIR VALUE ACCOUNTING AND THE CONCEPTUAL FRAMEWORK

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ABSTRACT: Even before the Financial Accounting Standards Board (FASB) had issued Statement of Financial Accounting Standard No. 157 (SFAS 157), Fair Value Measurements in 2006, there was controversy over the use and application of fair value accounting (FVA). This paper compares FVA to the conceptual framework of accounting embodied in FASB's Statements of Financial Accounting Concepts (SFAC's). FVA is found to deviate significantly from this set of guiding accounting principles in several respects. FVA sacrifices reliability for a questionable degree of relevance; it fails to faithfully represent what it purports to represent; it focuses on investors to the detriment of other user groups; and it changes the focus of financial reporting from earnings to asset valuation, from business transactions to market events, and from management performance to entity liquidation value. In addition, variations in the application of FVA among firms reduce comparability, consistency, and (although not in the conceptual framework) transparency—an oft-cited benefit of FVA. Pushing forward with FVA even beyond their international peers, US standard-setters seem more concerned with foreign approval than with the needs of their domestic constituents. FVA needs to be reevaluated, and FASB should adopt a mixed model approach that faithfully represents the values of assets and liabilities as they are intended to be used by management. Ultimately, the “new” FVA standards that emerge from this process should be thoroughly grounded upon and in agreement with the conceptual framework of accounting to serve the needs of all stated users of financial reporting.

INTRODUCTION

Controversial accounting pronouncements are not new to the accounting profession. Involved and complicated accounting issues such as leases, deferred income taxes, pensions, and business combinations are, by nature, controversial; and despite the passage of standards related to these issues, some would still say that the underlying accounting questions are still unresolved. Yet there have been only a handful of accounting standards that have generated the degree of controversy as Statement of Financial Accounting Standard No. 157 (SFAS 157), *Fair Value Measurements*. Even years after its adoption and application, there may not be a phrase that will spark more controversy in financial circles than “mark-to-market” or “fair value” accounting. In fact, Jenkins (2008) says that the more appropriate term may be “mark-to-mayhem.”

In 2006, the Financial Accounting Standards Board (FASB) issued SFAS 157 (FASB 2006, now referred to as Accounting Standards Codification (ASC) 820) to prescribe the methodology for carrying certain financial instruments at fair value. In 2007, SFAS 159 (FASB 2007) permitted all financial assets and

liabilities to be carried at fair value and extended the use of FVA to nonfinancial assets. Some of these provisions were later curtailed. During and after the financial crisis of 2008, some alleged that FVA was the primary cause of the crisis. Although it was not the primary cause of the crisis, FVA played a peripheral role, and the ensuing debate resulted in additional scrutiny of FVA guidance and application.

This paper addresses the issues surrounding FVA and the conceptual framework of accounting. The following three sections of the paper will explain what is required under fair value standards; compare the fair value standards to the relevant portions of the conceptual framework in existence at the time that SFAS 157 was issued (and to FASB's recent conceptual framework update); and provide analysis and comment on FVA. The final section will summarize the discussion.

FAIR VALUE ACCOUNTING STANDARDS

In 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard No. 157 (SFAS 157) to establish fair value accounting standards under United States generally accepted accounting principles (US GAAP). In 2009, FASB recodified its accounting standards, and SFAS 157 was included under topic 820 of the Accounting Standards Codification (ASC 820). Although both original (SFAS 157) and recodified (ASC 820) source documents are cited throughout the paper, "ASC 820" will be used to refer to both sources of documentation unless a difference between SFAS 157 and ASC 820 is being highlighted.

Under ASC 820, US GAAP requires that fair value measurements be recognized in the financial statements for certain financial statement elements. The recognition process requires adjustments to the carrying amount of assets and/or liabilities which results in the recognition of unrealized gains and losses. ASC 820 (ASC 820-10-35-2, originally SFAS 157, para. 5) provides a single definition for fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." Thus, ASC 820 defines fair value as an "exit price" (AICPA 2010b). ASC 820 also establishes a framework for measuring fair value, and requires enhanced disclosures regarding fair value measurements. ASC 820 does not require any new fair value measurements, but it does standardize measurement and disclosure practices (Grant Thornton, 2008).

The main purpose of ASC 820 was to increase consistency and comparability in fair value measurements. Thus, ASC 820 (FASB 2006, SFAS 157, paras. 22-30) prescribes a framework for performing fair value measurements using a three-tiered hierarchy of inputs (Grant Thornton, 2008). Level 1 inputs are observable inputs based upon quoted market prices for identical assets and liabilities in active markets. Level 2 inputs are quoted prices from sources other than Level 1 which are observable either directly or indirectly (e.g., valuing an interest rate swap using observable data on Treasury bond yields, or determining the fair value of ski resort property based upon a market

multiple of sales revenue for comparable properties as detailed in a case by Gore and Herz (2010)). Level 1 and Level 2 inputs are considered “mark-to-market” methods.

Level 3 inputs are unobservable management assumptions (such as an entity’s internal valuation model) that cannot be corroborated with observable market data. Thus, the use of Level 3 inputs is sometimes referred to as “mark-to-model” accounting (King 2006), and it is used when observable inputs are not available (FASB 2006). It is interesting to note that when SFAS 157 was issued, textbooks depicted Level 3 inputs as the present value of either net income or cash flows; however, the same interpretation did not carry over to practice. The fact that Level 3 fair value estimates depend upon management’s assumptions makes these estimates less neutral than Level 1 and Level 2 inputs.

In 2008, ASC 820 was amended by FASB Staff Position (FSB) No. 157-3 (FASB 2008) to relax the measurement requirements with regard to financial assets that are no longer part of an active market. Securities no longer part of an active market are measured using Level 3 inputs instead of Level 1 inputs. This change in categories results in a shift in measurement schemes which allows entities to find a valuation alternative other than a zero market value when such securities are no longer traded in an active market place. Even more recently, FASB and the International Accounting Standards Board (IASB) agreed that ASC 820 should be amended to reflect FASB’s decision that the “highest and best use” concept should apply only to measuring the fair value of nonfinancial assets; to add guidance for measuring the fair value of financial assets and financial liabilities; and to amend related guidance for determining premiums and discounts in a fair value measurement (AICPA 2010a).

ASC 820 also includes disclosure requirements related to FVA (Stines and Auteri 2010). Without focusing on technical disclosure details beyond the scope of this paper, ASC 820 requires that the fair values for all affected assets and liabilities be reported as of the statement date along with the input level (i.e., Level 1, 2, or 3) and valuation techniques used to measure each asset or liability. In addition, all transfers in and out of the Level 3 category, and significant transfers in and out of the Level 1 and Level 2 categories, must also be disclosed. For those elements measured using Level 3 inputs, additional disclosures are required for period gains and losses, and category purchases and sales.

CONCEPTUAL FRAMEWORK ISSUES

Beginning in 1978, FASB issued six Statements of Financial Accounting Concepts (SFACs) over the span of seven years with SFAC 6 replacing SFAC 3 in 1985. In 2000, FASB issued SFAC 7 on present value based measurements. These seven concepts statements formed the conceptual underpinnings of financial standard-setting during the time that ASC 820 (then called SFAS 157) was enacted. More recently, FASB issued SFAC 8 in 2010 to replace the two foundational concepts statements, SFAC 1 and SFAC 2.

The concepts statements were and are a significant advancement in the field of accounting standard-setting. Although there are a number of reasons for

the demise of the US private-sector standard-setting bodies that existed prior to FASB (i.e., the Committee on Accounting Procedure (CAP, 1938-1958) and the Accounting Principles Board (APB, 1958-1972)), one of the issues was a lack of (or failure to produce) a cohesive set of concepts upon which financial accounting standards could be established. Instead of looking to a set of consistent guiding principles, the CAP and APB set accounting standards *ad hoc* based upon the needs of its constituents. When financial transactions are simple and few, this method can potentially work well; but with the increased complexity and volume of accounting issues, a formal framework was needed. The purpose of FASB's conceptual framework was "to set forth fundamentals on which financial accounting and reporting standards will be based. More specifically, the SFACs are intended to establish the objectives and concepts that the FASB will use in developing standards of financial accounting and reporting (FASB 1978, para. 1). Because the SFACs serve as the underpinning of FASB Standards, all financial accounting standards should be aligned with the concepts.

The following discussion will summarize the portions of the SFACs relevant to the FVA debate. Specifically, issues in SFAC 1, SFAC 2, and SFAC 5 will be addressed. Additionally, the content of SFAC 8 will be reviewed. Although this latter concept statement did not exist at the time that ASC 820 (SFAS 157) was issued, the alignment of ASC 820 with SFAC 8 could have significant implications for the future of FVA. Alignment between ASC 820 and the conceptual framework will be discussed and analyzed within each section.

SFAC 1, *Objectives of Financial Reporting by Business Enterprises*, provides a foundation for the other SFACs by defining the purpose of financial reporting for business enterprises. It states that financial reporting should communicate transaction-based financial information about the earnings of a particular firm that is useful to internal and external parties for the purpose of determining future cash flows for investment, credit, and similar decisions. The following discussion of SFAC 1 will begin by identifying the intended users of financial information, continue by examining the usefulness of the information for the intended users, and conclude by considering the content and focus of the information.

SFAC 1 (FASB 1978, paras. 24, 32) recognized several possible users of financial statements but remarked that the information reported externally was geared primarily for investors and creditors—user groups who should be informed about such matters. Therefore, accounting information should be understandable and understood by these user groups. However, Hague (2009) cites financial illiteracy as one of the factors contributing to the financial meltdown. This was not entirely the fault of the users, though. The use of Level 3 inputs under FVA is not applied comparably across firms nor consistently within each individual firm, and it allows firms to "produce subjective, unobservable information out of thin air" (Pounder 2010, 15).

For example, the presentation and discussion of Level 3 inputs found in intermediate accounting textbooks indicates that fair value amounts should be based on the present value of cash flows or net income using the entity's own

internal data. Yet during the recent market collapse, the valuation of collateralized debt obligations (CDOs) changed from Level 1 inputs to Level 3 inputs literally overnight, and the measurement approach should have changed from that of an actively traded market to that of the present value of income or cash flows. Instead, financial statement preparers continued to apply the market value approach even though there was no longer an actively traded market and despite the fact that FASB had provided clear guidance on present value measurements (FASB 2000). Thus, FVA contributed to the financial meltdown because it permitted the use of an incorrect measurement attribute. Therefore, the users of fair value information did not adequately understand the reporting and interpretation of FVA information as provided by financial statement preparers, and this misapplication and misunderstanding of FVA resulted in contagion in the marketplace as discussed by Laux and Leuz (2009).

With respect to the usefulness of financial information, SFAC 1 states that the role of financial reporting is to provide information to users regarding the amount, timing, and uncertainty of cash flows (FASB 1978, paras. 33, 37). Wesbury and Stein (2009) and Forbes (2010) assert that the gains and losses arising from FVA are paper losses, not realized losses, and that they have no relationship to cash flow. In their economic analysis of the banking sector, Allen and Carletti (2008) note that application of FVA allowed short-term market price fluctuations to drive the amounts reported on the balance sheet and income statement, distorting banks' portfolios and causing contagion. These changes were solely the result of applying FVA, and they had no relation to cash flows.

Historically, measuring stock compensation expense was one of the early applications of fair value measurement whereby the reported value was based upon something other than a value obtained in an active market. In accounting for stock options, the value of the option is based upon the Black-Scholes model, and the entity uses that value to determine the compensation expense to be recognized. Thus the model, not the market, ultimately determines the expense to be recognized. The objection to this approach, other than the magnitude of subjectivity, is that the actual economic cost to the entity is the cost of covering the options either through treasury stock repurchased in the open market or via issuance of securities from a shelf registration. Either way, the compensation expense recognized for stock options is completely unrelated to the cash consequence of covering the options. Similarly, measuring financial assets such as CDOs based upon a market value is unrelated to the cash flow associated with the financial asset. Young (Young *et al.* 2008) concludes that fair value has not afforded investors and creditors with any more relevance about the cash flows of financial instruments. In summary, FVA fails to provide useful information with regard to the amount, timing, and uncertainty of cash flows for an entity.

Furthermore, SFAC 1 (FASB 1978, paras. 42, 50, 51) states that financial reporting should provide information about the financial performance of an enterprise during a period and about management's stewardship of business resources on behalf of the owners. Earnings performance is the most common measure for assessing both enterprise performance and management

stewardship—two measures which financial reporting does not and cannot separate (FASB 1978, para. 53). Investors, creditors, and other users evaluate management performance, estimate “earning power,” predict future earnings, and/or assess risk based upon earnings (FASB 1978, para. 47).

Cherry and Hague (2009), Johnson *et al* (2010), and Arya and Reinstein (2010) concur that FVA is a market-based measurement system, not an entity-based measurement system. The gains and losses recognized via fair value accounting all too easily become the result of market events and not management performance. Returning to the example of CDOs, valuing CDOs at the present value of the future cash flows allows for the measurement of management performance relative to controllable factors; but valuing CDOs based upon seized market prices measures management performance relative to uncontrollable market forces. Management performance should be assessed by comparing actual results with predicted results; and this assessment is usually carried out by evaluating the results of operations, either by comparing predicted versus actual results or by comparing the results of this period to last period. To measure management performance versus uncontrollable market results, management would have to predict fair values (market events) and manage to them. This could have the perverse incentive of driving managers to manage events instead of devoting their attention to managing operations (transactions). This is, in part, what led to Enron’s demise. As Enron began to generate more and more of its profits from trading paper, they began managing assets for their market value instead of producing products from central operations.

Flegm (Young *et al* 2008) asserts that in controlling a company’s operations, managers forecast an income statement and compare actual results to the prior month’s forecast. On the other hand, the balance sheet is used by the treasury department to analyze cash flows and evaluate the need for financing. Flegm (Young *et al* 2008) states that he does not know of any company that compares the values of the beginning and ending balance sheets to determine the success of its operations. It appears that the standard-setters no longer consider the stewardship needs of the manager but focus instead on investors and creditors and potential values rather than transactional results. However, in 1999 banks responded negatively to the feelers put out by the FASB with regard to FVA indicating that fair value was not relevant for investors, did not suit the business model of most banks, and was not appropriate for illiquid assets or held-to-maturity assets. Nevertheless, Flegm (Young *et al* 2008) believes that FVA’s emphasis on the balance sheet (an asset-liability approach) does a better job of measuring the “well offness” of a firm than the results of operations reported via the traditional income statement. The rationale for this shift is that fair value data is more relevant than the traditional accounting model and not as subjective with regard to matching costs with related revenues. It is further argued that fair value data is more relevant and of more value to investors and creditors while ignoring the needs of the managers and/or owners.

FVA’s balance sheet emphasis is also in conflict with SFAC 1 which states that earnings performance is the most commonly used measure for

assessing stewardship. Earnings are derived from a transactions approach, not events-based measures. Power (2010) cites a report from a 2000 Joint Working Group of the International Accounting Standards Committee (now the IASB) recommending that economic pricing methodology be permitted for financial assets when other reliable estimates for their fair value (i.e., market prices) are unavailable. Power (2010) concludes that FVA changes the focus of financial reporting from transaction-based measurements to economic valuation models. In so doing, FVA attempts to place an economic value on the firm as a whole, a purpose expressly outside the scope of financial reporting (FASB 1978, para. 41).

The word “transactions” refers to actual, verifiable activity in which a firm is engaged, as opposed to events that can be broadly significant but lack the concreteness normally associated with transactions (Ohlson *et al.* 2010). Transactions are a component of operating activities while fair value measurements tend to be the result of events. Ohlson *et al.* (2010) states that financial reporting recognizes the income statement as the centerpiece in financial reporting. The primary function of the income statement is to report the results of operations because operating income provides a logical starting point for forecasting future results of operations. From this, the value of the firm can be estimated in at least two ways, via fair value measurement and by forecasted earnings (market value versus intrinsic value).

In May of 1980, the FASB issued SFAC 2 entitled *Qualitative Characteristics of Accounting Information*. In their summary of principal conclusions, FASB states that relevance and reliability are the two primary qualities that make accounting information useful for decision making. Relevant accounting information is capable of making a difference in the decisions of financial statement users by providing predictive and/or feedback value in a timely manner. The reliability of a measure rests upon the faithfulness with which it represents what it purports to represent and on the appropriateness of the representational quality. In addition, reliable information should be verifiable and neutral. For information to be useful to financial statement users, it must be both relevant and reliable. The discussion of SFAC 2 will evaluate FVA in the light of each of these primary qualitative characteristics and their components.

SFAC 2 (FASB 1980, para. 32) introduces “A Hierarchy of Accounting Qualities” (Hierarchy) which implies a balance between relevance and reliability. Although some believe that relevance and reliability are not in opposition (Power 2010), the truth is that reliability and relevance often impinge on each other (FASB 1980, para. 90). The tradeoff between relevance and reliability has long been the source of an ongoing philosophical debate (Grant Thornton 2008; Laux and Leuz 2009) which has become an element of several authors’ comments on FVA (Allen and Carletti 2008, Arya and Reinstein 2010, Cherry and Hague 2009, Duangploy and Pence 2010, Johnson 2005, Power 2010). Proponents of FVA argue that financial statements based on historical cost are not relevant because the information is not transparent with regard to current market values. FVA detractors argue that the information provided by financial statements based on fair value measurements is not reliable because it is based on volatile and

subjective measurement assumptions (Grant Thornton 2008). Critics further argue that fair value does not provide relevant and reliable information when companies must use complex mathematical models to measure fair value (Chasan 2008). “It seems...that the recent meltdown in the finance industry as well as the Enron experience would have made it clear that to be relevant the data must be reliable” (Young *et al* 2008). The trade-off between relevance and reliability is at the core of the fair value debate (Grant Thornton 2008).

FVA is said to tip the scale more toward relevance and away from reliability; but Johnson (2005), discussing FVA well before the present market difficulties, indicated that neither relevance nor reliability should be the dominant trait of useful accounting information. Referring to SFAC 2, Johnson (2005) also cautions that neither relevance nor reliability can be entirely eliminated. The Hierarchy supports these assertions indicating that relevance and reliability are primary decision-specific qualities. In order for FVA to place a greater emphasis on relevance it must sacrifice the three components of reliability—verifiability, neutrality, and representational faithfulness. At the same time it must place greater emphasis on the three components of relevance—predictive value, feedback value, and timeliness. All of this must be accomplished while satisfying the secondary and interactive qualities of comparability and consistency (FASB 1980, Figure 1).

SFAC 2 (FASB 1980, para. 51) indicates that “information can make a difference...by improving decision makers’ capacities to predict or by confirming or correcting their earlier expectations. Usually, information does both at once, because knowledge about the outcome of actions already taken will generally improve decision makers’ abilities to predict the results of similar future actions.” It goes on to state that disclosure requirements almost always have the dual purpose of helping to predict and to confirm or correct previous decisions (FASB 1980, para. 52,).

The notion that information should be reliable as well as relevant is central to accounting (FASB 1980, para. 58). For information to be reliable it must be verifiable, neutral, and representationally faithful. Level 1 inputs provide such reliability because they are based upon values from active markets (Pounder 2010). With the lack of an active market for most assets and liabilities, fair value is left to be determined by models based upon management assumptions using surrogate values (i.e., Level 2 and Level 3 inputs). Our financial reporting system does not need a valuation model other than those already in place (Chasan 2008). The subjectivity involved in fair value accounting renders the values based upon Level 2 and Level 3 inputs suspect. Level 1 fair value inputs are neutral while the assumptions utilized by management in deriving Level 2 and 3 inputs are far from unbiased. Not surprisingly, Hoffman (2009) found that users consider Level 3 inputs to be less reliable than Level 1 or Level 2 inputs.

The cornerstone of reliability is representational faithfulness: “Accounting information is reliable to the extent that users can depend on it to represent the economic conditions or events that it purports to represent” (FASB

1980, paras. 59, 62). Representational faithfulness is the correspondence between a measure or description and the phenomenon it purports to represent. In accounting, the phenomena to be represented are economic resources and obligations and the transactions and events that change those resources and obligations (FASB 1980, para. 63). The financial information should depict the entity and its position in the marketplace, not the marketplace itself.

There are two important elements to the preceding paragraph. First, fair value information based upon Level 1 inputs is not only verifiable and neutral, but also representationally faithful. Although Level 2 and Level 3 inputs may or may not be representationally faithful, Magnan and Thornton (2010) point out the moral hazard of permitting management to determine their own models for FVA measurement. Second, paragraph 63 of SFAC 2 (FASB 1980) clearly indicates that balance sheet, cash flow, and income statement data work in concert to faithfully represent economic phenomena. As Flegm (Young *et al.* 2008) pointed out, fair value information captures the events to be depicted but not the transactions that should be depicted. Reporting on the results of operations primarily requires the depiction of transactions and not events. Managers manage based upon transactions and not events; and while presenting “events” might seem to provide a broader perspective, Power (2010) notes that FVA provides only point estimates of asset and liability values.

Under ASC 820, property is valued at its “highest and best use,” which may be unrelated to its present use or management intent. The “highest and best use” concept comes into play when determining the fair value of nonfinancial assets, and it clearly violates representational faithfulness. This approach does not depict the financial position of the entity because FVA does not faithfully represent the operating value of the entity. It reports market values and not the intrinsic value of the entity. Gottlieb *et al.* (2009) state that assets have long been valued based upon the entity’s intended use, and Johnson *et al.* (2010) go so far as to conclude that determining values according the “highest and best use” concept is outside the scope of an accountant’s skills.

The FASB’s recent announcement that they may require held-to-maturity securities to be carried at fair value is a clear violation of representational faithfulness. The IASB prefers a mixed-measurement approach which divides financial assets into those intended to be traded and those to be held to maturity (Christodoulou 2010). FVA “idealists” find a mixed measurement model flawed (Power 2010), but using fair value for all financial assets requires entities to take artificial reductions to capital without respect to the actual performance of the underlying assets and/or liabilities (Magnan and Thornton 2010, Wesbury and Stein 2009). This fails to satisfy the concept of representational faithfulness. Conversely, FVA “pragmatists” find FVA useful for some measures, but not all (Power 2010). Overall, though, the mixed measurement approach provides a better measurement system in terms of representational faithfulness, and it better reflects the business model followed by the entity because it depicts what it purports to represent. Because of this, the mixed-measurement concept has wide support from several authors (Allen and Carletti 2009, Allon 2009, Arya and

Reinstein 2010, Johnson *et al* 2010, Laux and Leuz 2009, Magnan and Thornton 2010, Power 2010) as well as from the AICPA (Lamoreaux 2010).

Although transparency is not mentioned anywhere in the Hierarchy as a qualitative characteristic of accounting, several authors cite transparency as a benefit of FVA (Allon 2009, Cherry and Hague 2009, Del Core and Barbagallo 2010, Laux and Leuz 2009). It may be possible to conclude that transparency is analogous to disclosure; but if that were the case, then traditional accounting data could simply be supplemented with fair value information. In addition, if FVA provides transparent information, why is there latitude to value assets and liabilities inappropriately (e.g., valuing CDOs in a seized market at fair value instead of at present value of cash flows)? Why were knowledgeable, primary users of financial information fooled by FVA presentation? How do the additional disclosures required to understand FVA (especially for Level 3 inputs) promote transparency? It appears that FVA does little to improve transparency while greatly increasing the potential for confusion and misunderstanding.

SFAS 5, *Recognition and Measurement in Financial Statements of Business Enterprises* (FASB 1984, para. 27), reiterates the scope of financial reporting set forth in SFAC 1 (FASB 1978, para. 41) that the statement of financial position does not purport to show the value of a business enterprise but, together with the other financial statements and disclosures, should provide information that is useful to those who desire to estimate an enterprise's value. Financial statements articulate because they relate different aspects of the same transactions or events affecting an entity. No single financial statement is likely to provide all of the financial information desired by users for a particular decision (FASB 1984, para. 23). The statement of financial position is often used to assess liquidity and financial flexibility, but it provides an incomplete picture of either (FASB 1984, para. 24a). FVA emphasizes the balance sheet where traditional accounting emphasizes reporting on the results of operations.

SFAC 5 (FASB 1984, para. 79) defines "earnings" as the primary measure of entity performance during a period. The income statement and statement of comprehensive income generally reflect a great deal about the profitability of an entity during a period, but this information is more meaningful if it can be compared with information from other periods (FASB 1984, para. 24b). This corroborates Flegm's (Young *et al.* 2008) assertion that management actually evaluates operations on comparative earnings results. Thus, FVA measurement of industry, market, or even management performance based on point estimates is precluded according to the definition of "earnings" as stated in SFAC 5. In addition, the income statement is based on the concept of financial capital maintenance, not physical capital maintenance (FASB 1984, paras. 45-48). Under financial capital maintenance, "earnings" or "income" is achieved only when the *capital* of the entity is increased during a period. In contrast, physical capital maintenance would recognize "earnings" when the *assets* of an entity increase during a period. SFAC 5 (FASB 1984, para. 48) also indicates that recognition of fair value adjustments for held assets should be omitted from "earnings" and recognized directly as a portion of equity under both methods.

SFAC 5 reflects the model used by management to evaluate operations and to make decisions when it states that the statement of financial position has limited value unless used in conjunction with the other financial statements, such as the income statement, when comparing current financial results with those of prior periods. SFAC 5 (FASB 1984, paras. 66-70) also recognized the use of different attributes for measuring financial statement elements (e.g., historical cost, current cost, market value, net realizable value, present value) and anticipated that such diversity would continue due to the varying degree of relevance and reliability that each attribute contributes with respect to various types of assets and liabilities. Miller and Bahnson (2010, 431) conclude that the relevant attribute is actually found in the financial reporting objectives described in SFAC 1: investors and creditors are interested in the amount, timing, and uncertainty of cash flows. Cash flows are overwhelmingly driven by transactions occurring in the normal course of business and not by changes in fair value.

In 2010, FASB (2010) issued SFAC 8, *Conceptual Framework for Financial Reporting*, replacing SFAC 1 and SFAC 2 and making significant modifications to the Conceptual Framework. In chapter one, SFAC 8 reaffirms that the reporting focus is the *entity* (FASB 2010, para. OB2, *emphasis added*) and that determination of the value of the reporting entity is *not* the purpose of financial reporting (FASB 2010, para. OB7, *emphasis added*). Chapter three changes the qualitative characteristics of accounting information from relevance and reliability to relevance and *faithful representation* (FASB 2010, paras. BC3.11, BC 3.19). Thus, SFAC 8 elevates faithful representation to the level previously occupied by reliability. Faithful representation is the faithful depiction in financial reports of economic phenomenon, and it is accomplished when information is complete, neutral, and free from error (FASB 2010, QC12). The concept of “substance over form” is explicitly excluded from the terminology of SFAC 8 because FASB felt this term was redundant (FASB 2010, para. BC3.26). Interestingly, the concept of “transparency” is also explicitly omitted from the qualities listed in SFAC 8 (FASB 2010, para. BC3.44).

The usefulness of the information about an enterprise increases greatly if it can be compared with similar information about other enterprises and with similar information about the same enterprise for other periods (FASB 1980, para. 111, retained in SFAC 8, para. QC 20). Comparability addresses comparing information among different entities while consistency addresses comparing information over time for the same entity. Comparability between firms has always been problematic. Different firms may use different accounting principles making comparison among firms, even within the same industry, difficult at best. FVA does not ease the comparability problem and likely exacerbates it. FVA also has a significant impact upon consistency. When the market for a financial asset declines precipitously and the valuation inputs are changed from Level 1 to Level 3 overnight, it is impossible for the information to be consistent. The change in measurement attributes from market-traded financial assets to those that use more subjective schemes will also vary from firm to firm. The assumptions used for Level 3 inputs would vary even more

dramatically from one firm to another. The “highest and best use” premise for nonfinancial assets will vary from firm to firm and from period to period. In short, FVA results in a situation where comparability and consistency are more compromised than in the traditional accounting model. SFAC 8 mentions comparability and consistency but does not attempt to explain how this would be possible under FVA since each manager would be required to make his or her own value judgments, which would not be comparable to any other company’s evaluation. Nevertheless, McConnell (2010) believes that universal application of FVA throughout all financial statements will reduce earnings management and enhance inter-company comparability (though without stating why or how).

Before the present FVA debate, Johnson (2005) noted the departure of standard-setters from the perspective of preparers and auditors (who desire reliability) toward the perspective of investors (who want relevance). Flegm (Young *et al.* 2008) confirms this line of reasoning, stating that documents released by the FASB in 2006 indicate that the FASB has abandoned the users who apply traditional accounting to manage their businesses. The issuance of both ASC 820 (despite its many violations of extant concepts statements) and SFAC 8 provide further corroboration of FASB’s current change in focus away from management and preparers and toward investors. Power (2010) also supports this conclusion, charging that standard-setters are more concerned about global recognition than they are about meeting the needs of their constituents. In response to Power, McConnell (2010) declares that “thought leaders” in the US support FVA. As a former member of the investment community, she also notes that FVA has strong support in the investment community and concludes that preparers, auditors, and regulators just need time to adjust to the new system. Power (2010) asserts that individuals with a “certain perspective on accounting” have been elevated into standard-setting positions, have redefined reliability to mean “market value,” and have collapsed reliability into the concept of relevance. Power (2010) also proposes that the battle over FVA ensues at the application level (where FVA has significant deficiencies) because there is no competing conceptual rebuttal for FVA.

ANALYSIS AND COMMENTS

How did FVA come to be a “generally” accepted accounting principle when it is surrounded by so much debate? Furthermore, how was ASC 820 passed by FASB when it disagrees significantly with several points of the Conceptual Framework? It is argued that the recognition and measurement process prescribed in FVA marks a move toward relevance and away from reliability (Grant Thornton 2008, Laux and Leuz 2009), and this is a primary reason that FVA cannot be reconciled to the conceptual framework. Neither relevance nor reliability need to be sacrificed for a technical perception of what “good accounting” should look like. The recognition and measurement process should reflect the character of the item being displayed. As accentuated in SFAC 8, “representational faithfulness” should be the overriding criteria affecting measurement and display in financial statements. The financial information

should depict what it purports to represent, an entity's results of operations, and not some artificial concept. Fair value accounting fails to encourage the use of the most appropriate measurement attribute for different financial statement elements—measurement attributes that agree with the conceptual framework.

This is why a complete set of financial statements is composed of financial position at the end of the period, earnings for the period, comprehensive income for the period, cash flows for the period, and a statement of changes in equity for the period (FASB 1984, para. 13). This is also why the financial statements have been composed of a mixture of measurement attributes for decades. If an entity expects to hold a financial asset to maturity, then the amortized cost or the present value of future cash flows is a more appropriate measurement method than market value (if there is a market value). If the financial asset is likely to be sold or is not to be held to maturity, then reporting it at the market value levels the playing field across entities. If there is no active market for the financial instrument, then it should be carried at acquisition cost, unless it can be substantiated that market is less than cost. For example, Whalen (2007) points out that an asset like a CDO is not sold in an "active market," but through specially-negotiated auctions. In this case, the use of discounted net future cash flows would serve as the appropriate measurement attribute whether or not a secondary market for the security exists.

FVA changes the focus of the financial statements from presenting entity performance to reflecting market performance. The divergence between the fair value of an entity and its intrinsic value is exacerbated by the "highest and best use" concept which requires valuation of financial statement elements without regard to their actual or intended use. Although both FVA and historical cost accounting have shortcomings, different elements of the financial statements necessitate different measurement schemes (FASB 1984, paras. 66, 67). Recognizing that neither fair value nor historical cost, alone, is the optimal measurement model for all financial statement elements, the mixed model approach (sometimes called the "Tweedie model") attempts to report each financial statement element using the most appropriate measurement model (Allen and Carletti 2008, Allon 2009, Arya and Reinstein 2010, Christodoulou 2010, Laux and Leuz 2009, Magnan and Thornton 2010, Power 2010).

The fair value of an entity relies heavily on market values while the intrinsic value of an entity is derived from its earning power. SFAC 6 (FASB 1985, paras. 82-86) defines gains and losses as changes in equity arising from peripheral transactions. Peripheral transactions should not be a significant component of operations, hence the term "peripheral." However, FVA can result in gains and losses becoming a major component (if not *the* major component) in reporting "earnings." The results of operations should reflect management's performance and stewardship, and management should not be encouraged to manage profit by manipulating peripheral transactions and events (e.g., Enron). In the case of nonfinancial assets, if real property is held for use in the production of income, then it should be carried at some form of amortized cost.

FVA is also contrary to the objectives of consistency and comparability. The use of Level 3 inputs for valuation diminishes, rather than enhances, comparability and consistency in financial reporting. The use of Level 3 inputs, which are designed and evaluated by management, also violates the concepts of freedom from bias and neutrality set forth in the concepts statements.

Examination of the conceptual underpinnings of accounting standard-setting embodied in FASB's Statements of Financial Accounting Concepts (SFAC), from which US accounting standards are supposed to flow, reveals that ASC 820 violates several assertions of the conceptual framework. ASC 820 clearly was enacted despite many of the established conventions and foundational concepts of US GAAP that were in place at the time. However, given the *post hoc* changes to the foundational SFACs, ASC 820 is unlikely to be repealed or substantially changed despite its divergence from the principles that have explicitly guided accounting standards for almost 40 years and have implicitly guided standard-setters for decades more.

It is also worth noting that US standard-setters prior to FASB were replaced, at least in part, because of their failure to establish and follow a conceptual framework for accounting. Although a conceptual framework is in place, FASB appears to be reverting to *ad hoc* standard-setting based not on the conceptual framework (as it existed at the time ASC 820 was enacted), but on a technical (rather than practical) notion of what "good accounting" ought to be (Power 2010). Interestingly it appears that either the replacement of SFAC 1 and SFAC 2 by SFAC 8 was a *post hoc* attempt to align the conceptual framework with FVA, or that ASC 820 was enacted in anticipation of a change in the underlying accounting concepts. Johnson (2005) hints at such a forthcoming change a year before ASC 820 (then called SFAS 157) was passed, and McConnell (2010) presents FVA as an inevitable outcome endorsed and driven by "thought leaders" regardless of practitioner and practical concerns.

Accounting standard-setters in the US seem to be less concerned with the needs of their constituents than they are with the global perception of their efforts. Convergence with international accounting standards is a major issue facing FASB right now, but FVA (as set forth by FASB for US GAAP) overreaches even the fair value methods endorsed by the IASB. Thus, FVA under US GAAP moves the US *away from* rather than *toward* convergence with international accounting standards.

Beyond the conceptual framework, FVA also fails to provide the "transparency" desired by many of its supporters. According to a ranking member of the audit staff of a major international CPA firm, if fair value measurements using Level 3 inputs are encountered during an audit, that information is passed along to a team that does nothing but evaluate Level 3 inputs for all of that firm's audits. If the on-site audit team is not permitted to audit or cannot audit fair value estimates that use Level 3 inputs, then how can this information be relevant, reliable, or representationally faithful? How can this information be transparent for investors and creditors if it must be evaluated by an audit staff dedicated to the evaluation of Level 3 inputs? This is especially

odd since FVA tends to tailor financial statement information in favor of investors, neglecting the needs of other stated user groups (i.e., creditors and other interested parties). Yet this hyper-focus on investors is also contrary to the conceptual framework.

CONCLUSION

It appears that FVA may have been an attempt to provide desirable information but was simply not well thought out in practice. At the time that ASC 820 (then SFAS 157) was issued, it was in violation of several of the basic concepts of accounting as established in SFAC 1, SFAC 2, and SFAC 5.

More specifically, FVA has failed to provide the appropriate information to the primary users of financial statements—investors and creditors. These two groups are interested in the amount, timing, and uncertainty of cash flows; but fair value reports unrealized amounts that are not tied to cash flow. Fair value information based upon Level 3 inputs should be carried at the present value of cash flows or net income to better reflect the information desired by investors and creditors. Further, FVA does not appropriately reflect the stewardship performance of management. Application of the “highest and best use” concept may not have anything to do with the business model and tends to reflect liquidation values instead of earning power. FVA, as presently reported, is not consistent with the day-to-day operating practices of management. Managers manage the central ongoing operations of the entity and not the fair value of the assets/liabilities on the balance sheet.

FVA’s balance sheet focus is in violation of SFAC 5 which states that traditional accounting emphasizes reporting the results of operations and that financial position is not intended to depict the market value of the entity. While FVA reports the results of market events in the financial statements, SFAC 5 calls for “earnings” to reflect the results of the transactions in which the business was engaged. SFAC 5 focuses on earnings which are tied to the central ongoing operations of the entity instead of managing the values of assets and liabilities.

SFAC 8 seems to have been written to justify FVA, yet the elevation of faithful representation as a primary qualitative characteristic of useful accounting information is a positive change. Representational faithfulness (SFAC 2, retained and elevated in SFAC 8) should be the overriding qualitative characteristic of accounting information. For information to be representationally faithful, it should retain the character of the financial statement element being depicted, which implies a mixed-model approach. However, current fair value methodology seems to be at odds with the concept of faithful representation. FASB needs to realign FVA requirements so that they depict an entity’s periodic results of operations and long-run earning power rather than the market value of the firm as of a particular date.

Finally, it is said that FVA is more transparent than information reported via the traditional accounting model; but the controversy surrounding FVA tends to lead one to conclude otherwise. If FVA information is transparent, why is so much additional explanatory disclosure required? Why are financial statement

elements reported using the wrong measurement attribute (e.g., CDOs)? Why were investors and creditors fooled by the information? Why do CPA firms retain teams of specialists that do nothing but evaluate fair value information based on Level 3 inputs? Each of these issues adds complexity, not transparency.

The fair value model needs to be reevaluated. FASB should adopt a mixed model approach and should improve or refine the inputs used in the valuation process for fair value information. Ultimately, the “new” fair value accounting that emerges from this process should be soundly based upon the conceptual framework of accounting, should provide relevant information to all stated user groups, and should be relevant and reliable through appropriate representational faithfulness.

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**CONVERGENCE OF INTERNATIONAL FINANCIAL REPORTING
STANDARDS (IFRS) AND US GAAP: LAST-IN, FIRST-OUT (LIFO)
METHOD: ACCOUNTING, CONTRACTUAL AND TAX
IMPLICATIONS**

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ABSTRACT: FAS 157 requires firms to value all items in the financial statements at fair value. LIFO values the inventory at the oldest market prices, resulting in higher cost of goods sold and lower net income and deferred income tax liability. International Financial Reporting Standards (IFRS) prohibit the use of LIFO. There are significant arguments to use it both for accounting and for taxation purposes. The Internal Revenue Code provides that to adopt LIFO as a tax accounting method, it must also be used as a financial accounting method for inventory valuation and financial statement purposes. Various databases information indicates that LIFO Reserves significantly exceed \$100 Billion. If current US tax law were to remain in effect, a mandatory change from LIFO to a method approved by the convergence would require a payment of the deferred tax liability/reserve. Congress would be required to amend the Internal Revenue Code to extend payment of deferred income tax liability attributable to LIFO over, say, eight to ten years. Certain industries have particularly benefitted by LIFO reserves and postponement of tax liabilities, such as the oil, petroleum and other natural resources, distilleries and other long-term assets held in inventory. As the process has developed, it has been suggested that the result should be condorsement (rather than convergence).

INTRODUCTION

More than one hundred billion (\$100B) dollars is estimated by various sources as the current dollar amount of deferrals/LIFO reserves due to the use of last-in, first-out (LIFO) as the accounting method used for inventory valuation.

In order to understand certain basic aspects that relate to LIFO, some terminology should be explained as it will be used in the context of this presentation. An assumption is made, when LIFO is used, that goods sold are those purchased most recently and that goods remaining in inventory at the end of the period that the company purchased since it adopted LIFO, in order of its purchase, earliest first and most recent last. The reason that this method is used is the matching of revenues (merchandise sold) during the most recent accounting period with the most recent purchase costs of goods acquired. Using LIFO in times of increasing prices creates an effect by which the value of the most recently purchased, highest costs merchandise, when compared to other inventory valuation methods, such as first-in, first-out (FIFO) and average cost, is that higher cost items are included in the cost of goods sold, while the older, lower cost merchandise will remain valued in inventory. The bottom line effect

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of utilizing LIFO therefore is a lower inventory valuation, a higher cost of goods sold calculation and lower net and taxable income.

Another way to analyze the effects of LIFO would be that in inflationary periods, LIFO shifts the rising price impact from inventory valuation in the balance sheet to cost of goods sold in the income statement, resulting in lower net income and therefore lower income tax liability.

The U.S. Treasury Department permits a simplified method of calculating LIFO, whereby the Inventory Price Index Computation (IPIC) method permits taxpayers to use published U.S. government inflation indexes to calculate inflation for purposes of valuing LIFO inventories. These external indexes and the application of this method are permitted in Internal Revenue Code (IRC) regulations (Reg.) Section 1.472-8(e).

Many large corporations use LIFO, particularly those in the natural resources industries, such as oil and gas, metals companies, wholesalers, retailers and manufacturers, such as Ford. Billions of dollars of income tax have been deferred by these huge public companies. About forty (40%) percent of these benefits went to the oil and gas industry.

However, also US small businesses will be greatly impacted, if the U.S. Congress repeals or restricts the use of the LIFO inventory accounting method under U.S. tax laws, which is currently being proposed by the Obama administration and is being considered by the Congress.

Arguments are made that foreign competition would have a substantial advantage over U.S. companies in the market place, if LIFO were not permitted to be elected. Some industries, by their nature, have to hold their inventory for a long time. Using LIFO would be a reasonable and fair manner to recognize the special problems that these businesses would have with their non-U.S. competitors.

In addition to the explanation of LIFO and the impact inflationary increase in prices has in regard to the pricing of inventories, cost of goods sold and net taxable income, the LIFO method is also important to companies that maintain large inventories over a period of several years, such as distilleries, wineries, and other businesses that must age their inventories. Mandatory changing from LIFO to FIFO would have the effect of giving those types of companies income on which they would have to pay taxes, even though the merchandise they have placed into inventory may not be available for sale, because of the necessity to age, for numerous years.

It is not only the distilleries, wineries, natural resources (oil, gas, etc.) and similar industries that would be impacted, but also any other business that retains inventory for long periods of time, such as the aerospace industry, equipment and other very high priced production.

The purchase of inventory represents an exchange of cash for an equal value of assets. However, an entity cannot deduct inventory, when it is purchased. The deduction is taken by companies for the cost of inventory that has been disposed of as reflected in the cost of goods sold, as a deduction against revenue in computing net profit.

Depending upon the dates when inventory was purchased, similar merchandise which is in the entity's operational process and accounting for inventory, may have different costs assigned to them (even for similar, if not identical, goods) depending on various factors including the time when they were purchased, the methods that have been adopted, and whether the costs have been properly accounted for as a product cost or as a period cost, in order to determine cost of goods sold, which will be deducted from sales revenue, in arriving at net income and taxable income.

LIFO is unique in its application, since companies can elect to use the method as long as they use it for both financial statement purposes and for income taxation purposes. Another way to describe LIFO is that this method assumes that the first purchased goods make up the entity's inventory at the close of the year. As stated before, if prices are rising (i.e. inflationary), LIFO allocates higher costs to sold merchandise, which reduces current income (for both financial and tax purposes) and calculates a lower value to the inventory at the end of the accounting period.

The principal topic of this presentation is focused on convergence of IFRS and GAAP, their accounting and tax implications pertaining to LIFO.

However, the negotiations currently taking place between the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) to accomplish the merger of accounting rules, regulations, policies and standards by the international governing body and the U.S. governing body, and the announcement by the U.S. Securities and Exchange Commission in August 2008 to accomplish the convergence setting a deadline of 2014, with some aspects to occur in 2011, has brought this topic not only to financial awareness, but also the political and legislative implications as well, since LIFO is one of the specific topics that impacts financial reporting and taxation simultaneously.

The convergence combined with the announcement of the SEC focused on the deferred U.S. income tax of those corporations that have elected LIFO.

Considering the economic circumstances that have occurred in the past more than three years and their major effect on the economy, tax collections, and the U.S. deficit, presented an opportunity for the Obama administration and their budget to propose to the Congress a repeal of the election to use LIFO for income tax purposes.

Currently electing taxpayers that use the LIFO method would, under the pending budget proposal, be required to revalue their beginning LIFO inventory to FIFO value in the first taxable year beginning after December 31, 2011. This one time increase in gross income by revaluing inventory from LIFO to FIFO would be taken into account ratably over the first taxable year and the following seven taxable years. Therefore, over a period of eight years, corporations would have to increase their federal income tax liability (and probably state income tax liability) by one-eighth (12½%) of the deferred income tax liability as of December 31, 2011.

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To estimate, for example, if the deferred U.S. Income Tax Liability exceeds one hundred billion dollars currently, this would mean, using those assumed figures, that corporations would have to do their corporate planning to have at least Twelve Billion Five Hundred Million (\$12.5B) Dollars each year available for additional income tax in their cash budget, if not more.

There are various arguments among persons that are for and those that are against what repeal of LIFO may effectuate, particularly from a tax standpoint. Those in favor of repeal argue that LIFO has no value as a management tool and serves only to cut tax liability for a relatively small number of companies. Those against repeal argue that LIFO makes the effective tax rate on inventory comparable to that on machinery, equipment, buildings and other depreciable assets and that repeal would overtax inventory. In addition, they believe that in the presence of inflation, FIFO taxes firms on profits that represent changes in the price level instead of low economic profits and that LIFO may represent a better approximation of real economic income. Finally, those who are in favor of a repeal point out that LIFO is not permitted under the International Financial Reporting Standards (IFRS).

From a political standpoint, the Congress and the Obama administration are being pressed by the large budget deficit and the need to obtain more resources to meet the ever increasing negative impact of these problems and the economy. Convergence of IFRS and GAAP, give a big advantage in the political sphere, since the executive and legislative branches of government can say that this issue was brought to them from outside sources, namely corporations in foreign countries, who want to list their securities on American exchanges. Currently, their financial statements are prepared using IFRS, which has not been acceptable to the U.S. Securities and Exchange Commission, since the financial statements are not prepared in accordance with requirements of the Financial Accounting Standards Board (FASB) and generally accepted accounting principles (GAAP).

Apart from the global convergence issue, on July 13, 2011, Robert Pear reported in a New York Times article entitled "Rush to Defend Tax Rule on Inventory and Profits" that the Obama administration was proposing termination of LIFO, not because of the global issues, but because of the substantial budget shortfall, and as an indirect way of avoiding the increase in tax rates issue. This proposal is projected to raise \$65 billion to \$95 billion dollars over ten years and would increase the taxable income and tax liability of companies that have been using the LIFO method for decades. Therefore, the termination and/or changes in LIFO that originated from the convergence of IFRS and the rules being discussed by the IASB and FASB, have now become an issue for all taxpayers, whether international or solely domestic, because of the serious debt issues. Lobbyists are now working overtime to convince Congress to terminate this bill.

For reasons related to the desire to have United States securities and other exchanges be more open to the global economy, the IFRS provisions require many modifications in U.S. accounting practices. LIFO is one of those methods not permitted by IFRS. Both United States accounting provisions as

well as United States tax law require that LIFO is necessary to be used for both financial and tax reporting purposes, if a company elects to use LIFO.

Congress may use LIFO repeal to offset the costs of some pending tax incentives, such as the package of tax extenders that has been before Congress, or to meet other major budget deficits attributable to adverse economic conditions.

On August 2, 2010, the Committee on Taxation of Financial Executives International (FEI) sent a letter, executed by the Committee's Chairman, Ron Dickel, addressed to Jeffrey Minton, Chief Counsel, Office of Chief Accountant, Securities and Exchange Commission, also sent to Heather Maloy, Commissioner, Internal Revenue Service Large and Mid-Size Business Division, with various suggestions of the FEI Committee on Taxation. The letter requested consideration of guidance on transfer pricing, inventory accounting, and other related topics, as well as weighing new policies to respond to major tax-related changes presented by a potential shift to International Financial Reporting Standards.

The FEI Taxation Committee letter not only focused on how major inventory accounting changes from an adoption of IFRS, such as an inability to use LIFO, would affect taxes by U.S. companies, but indicated that was only one situation that should be considered. The shift in permissible accounting inventory methods would concurrently "surrender a potentially significant tax benefit that may have accrued over an extended period of time".

Mr. Dickel commented on several of the topics we have already discussed hereinabove in this paper, but, in addition, his committee also focused on existing transfer pricing policies and documentation and how the use of IFRS will probably affect those organizations.

Another topic raised by the FEI Committee dealt with the process of conversion from LIFO to IFRS and whether IRS consent must be obtained by filing Form 3115-Application for Change in Accounting Method, and if so, the need for issuance of guidance to limit taxpayer and IRS burdens in filing and reviewing "what would otherwise be significant numbers of Forms 3115 arising from IFRS conversions", which would in effect not be elective in this situation, but mandatory based upon the action of the FASB, the IASB, and the Congress through the changing of accounting rules and regulations and tax law.

The final point made by the FEI dealt with potential reconciliation requirements between U.S. GAAP and IFRS upon a conversion to IFRS and a balancing of the benefit versus the burden associated with creating such a reconciliation.

Some of the corporations that report their inventories in total or in part using LIFO include Exxon Mobil Corporation, Chevron, Sherwin-Williams Company, Curtiss-Wright Corporation, Ford Motor Company, Conoco Phillips Co., Fortune Brands, Inc. and many other significant corporations.

Exxon Mobil Corporation stands out as a corporation that benefits from electing LIFO, since at December 31, 2009, its balance sheet indicates that deferred income tax liabilities exceed Twenty Three Billion (\$23B) Dollars.

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Another corporation with substantial inventories using the LIFO method is Chevron Corporation which reports that at December 31, 2009 its total inventories of crude oil and petroleum products and chemicals using a LIFO method, total Four Billion Sixty-Three Million (\$4.63B) Dollars. Many other corporations use LIFO either in total or in part in valuation of their inventories and determination of their LIFO reserves and deferred income tax liabilities.

Approximately 400 companies report a positive LIFO reserve, therefore, if only one of these companies, Exxon Mobil Corporation exceeds Twenty Three Billion (\$23B) Dollars, perhaps the One Hundred Billion (\$100B) Dollars total estimate is modest.

INDUSTRY SURVEY

The Construction Equipment Distributors Industry did a survey about the use of LIFO last year through information obtained from Associated Equipment Distributors.

The survey concluded that LIFO repeal would hit the numbers of the industry adversely. It confirmed prior analysis about the impact that repealing LIFO would have on the equipment industry. Consistent with previous surveys, thirty-three (33%) percent of respondents reported using LIFO to value their inventories (33% used FIFO, 26% used average cost, and 8% report using some other accounting method). Sixty (60%) percent of LIFO users have more than 100 employees and sixty-three (63%) percent have more than 75 million dollars in annual revenues. LIFO is a well-established accounting method in this industry. Seventy-seven (77%) percent of companies using LIFO have done so for more than 20 years, and forty-nine (49%) percent have used LIFO for more than 30 years.

The average reported LIFO reserve of survey respondents using LIFO was Fourteen Billion (\$14B) Dollars in early 2009. From this number, it was estimated that the members collectively have \$2.8 billion dollars in combined LIFO reserves and repeal would cost equipment distributors more than \$900 million dollars in retroactive tax liability as of early 2009. It can therefore be assumed that this figure would be close to One Billion (\$1B) Dollars by the end of 2010.

Finally, the survey in early 2009 also illustrates the wide-ranging impact LIFO repeal would have on distributors and their employees in this industry. Thirty-four (34%) percent of LIFO users said that they would have to lay off workers or eliminate positions, if LIFO were repealed; thirty-seven (37%) percent said that they would have to reduce benefits, including health insurance; fifty-four (54%) percent said they would be less likely to invest in new technology and equipment; sixty-nine (69%) percent said that they would be less likely to expand their rental fleets; and thirty-four (34%) percent said LIFO repeal would threaten their company's ability to survive in the current economic environment.

A survey by the American Institute of Certified Public Accountants (AICPA) in 2008 found 36% of U.S. firms use LIFO for at least some of their

inventory accounting. Many professionals and academics believe that LIFO offers a more accurate picture of profits by aligning costs with revenues. Subsequently, the AICPA IFRS Readiness Survey – May 2011 reports that: (1) familiarity with IFRS has remained stable since May 2010; (2) U.S. public companies have backed-off IFRS planning; (3) members support adoption of IFRS, although more convergence is desired first; (4) a majority of members are aware of FASB/IASB convergence projects.

CONTRACT CONSIDERATIONS

Drafting or reviewing contracts/agreements will now require attorneys to be certain that these documents contain accounting provisions which reflect circumstances where IFRS are at variance from GAAP. Attorneys will be obligated to consider the probability or potential that GAAP may no longer be the acceptable accounting method several years into the future.

Provisions in agreements that will be based on various accounting concepts currently being utilized and reflected in balance sheets, income statements, retained earnings statements, cash flow statements, and other financial reporting for specialized calculations such as earnings before interest, taxes, depreciation and amortization (EBITDA) may vary considerably under IFRS from the manner under which they currently apply using GAAP.

This may also be found in such documents as bonus plans, income-sharing agreements, earn-out calculations from business acquisitions or mergers, and other types of compensation agreements which may have to be modified accordingly, since the calculations under IFRS would be different than under GAAP. There are substantial numbers of differences that are currently being negotiated in the convergence process between the International Accounting Standards Board and the Financial Accounting Standards Board and, in addition, the potential legislation that may be required as a result of their negotiations in those topics that have statutory implications, such as the U.S. Internal Revenue Code provisions attributable to LIFO.

In a blog by Jeremy Michael, CPA, Manager-Assurance Services, he suggests that contractual provisions may be desirable in order to "freeze GAAP", where the accounting principles employed at the inception of the contract are preserved, for measurement purposes, throughout the term of the agreement. He further suggests that attorneys may also want to review existing agreements to analyze the impact of convergence with IFRS prior to the U.S. formally adopting these provisions.

CONCLUSION

Many persons have taken the position that of all of the issues that challenge the convergence of IFRS and GAAP, the fact that IFRS does not recognize the LIFO method is the most significant, since the prohibition of public companies from using LIFO creates both a financial statement and an income tax set of consequences which not only requires the approval and action of the

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Financial Accounting Standards Board (FASB) in the United States, but also changes in the U.S. tax law by Congress.

Unless the Internal Revenue Code is amended in several respects, these public companies could no longer use LIFO for U.S. income tax purposes. Potentially there would be a very large increase in income tax payments that are currently deferred.

In any event, the current law, permitting in many circumstances a four year allocation of the payment of deferred income tax liability, if the LIFO method were terminated, would necessitate being extended to possibly eight to ten years, if not longer, in order to realistically lighten the financial burden on companies making this change, since they most likely would not have the economic resources, particularly cash, available to meet their current working capital and property, plant and equipment replacement and expansion needs and also to fulfill the payment of deferred income tax liabilities.

Perhaps another solution to this conundrum might be to permit United States based corporations, at their discretion, to prepare financial statements using both GAAP and IFRS, with a reconciling schedule explaining the differences in various material accounts, and continue to use LIFO for GAAP and income tax purposes. Although this would be more costly to maintain and to audit, it may provide a resolution acceptable to those corporations who would be adversely impacted by the mandatory change, if LIFO were totally eliminated.

The New York Times, July 8, 2011 in an article entitled "Accounting That Comes in Flavors", Floyd Norris reported that instead of LIFO being terminated in the United States and Congress being asked to change the existing U.S. tax law, instead, it might be possible that the Securities and Exchange Commission would simply adopt IFRS with a provision allowing the use of LIFO accounting. Most countries that claim to be adhering to International Standards, have not acquiesced to all of them. Most countries have "carved out" those rules which have a major impact on businesses in their countries and have, in effect, established exceptions to the international standards accordingly, each country determining what special circumstances justify the positions they have taken for their exceptions to the general rules.

Mr. Norris also informs that Paul A. Beswick, the Deputy Chief Accountant of the Securities and Exchange Commission ("SEC"), has suggested the term "condorsement" as a term to be used as a combination of the words "endorsement" and "convergence", whereby the SEC would accept the international rules, but not adopt them, with the objective that the United States would move toward the international standards and, eventually, would be so similar to them that it would not matter. In effect, the United States position would then be similar to most other countries that have "carved out" those rules which have a major impact on particular businesses and industries in their countries that necessitate exceptions to international standards.

An example of the type of rule that has been adopted and as an exception would be permitting banks to avoid taking losses on loans and securities whose values have declined, so long as the bank establishes that they plan to hold the

loans and securities for a long period of time, perhaps to their maturity or other established timetable.

As stated hereinabove, LIFO accounting is suited to periods of inflation. If deflation should occur (which many economists and other financial authorities have been conjecturing in these difficult financial times), abolishing LIFO for companies that benefitted by it during the inflationary boom years, would actually enjoy a tax shield on future profits from the new accounting method that would replace LIFO. Such a policy outcome could be attributable to unintended consequences of terminating the LIFO method.

An article by Michael Rapoport entitled "Accounting Move Pits Big v. Small" in the July 8, 2011 Wall Street Journal identifies Ford Motor Company having taken significant steps toward adoption of IFRS including having a conference room converted and specially designated as "IFRS Energy Room".

By contrast, a small coal mining company, Hallador Energy Co., which has no international business operations and does none outside the United States, is strongly opposed to moving to international standards. The substantial differences between the rules-based GAAP U.S. standards under which companies must apply "detailed, bright-line rules" as compared to the IFRS "principles-based" less-detailed rules, where companies use judgment in applying a set of guidelines, is creating a large difference of opinion among corporate officers, professionals, and rules makers. Many state that the United States accounting rules are "the gold standard, and why would we want to lower our standards just to make the rest of the world happy?".

There have been some very strong arguments and statements that have been made in various business and professional publications by persons in executive and advisory capacities that reflect some of the very significant concerns of the convergence from GAAP to IFRS, particularly in regard to LIFO. A Toronto, Ontario, Canada based forensic accountant, Al Rosen, believes that IFRS is a major step back from Canadian GAAP. He believes it will permit unethical managers to hide, massage, and choose numbers to make their companies look good. "this is a Ponzi scheme in progress". He further states that "investors, who are supposed to benefit through increased comparability, could end up the victims of unfair accounting". These strong words are not inconsistent with other similar statements being made in many respected publications when arguing between the principals guiding IFRS are compared to the strong detailed rules that guide GAAP.

It is also argued that having two sets of accounting principles or standards, GAAP and IFRS, creates a healthy competitive global atmosphere, where each group is focused on what the other group is doing and this, in turn, can attain the best accounting rules, regulations, standards, and financial data presentation. Unifying all of the data into one system may dilute the benefits of competitive and comparative qualities.

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Therefore, whether the result of this process develops an acceptable system of convergence, condorsement or some other terminology, we are optimistic that global objectives can be favorably attained.

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MARK-TO-MARKET ACCOUNTING: FUEL FOR A FINANCIAL CRISIS?

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ABSTRACT: This paper examines mark to market accounting, its history, and current controversy. Many believe mark to market accounting fueled the financial crisis in the United States in the first decade of the 21st century. The article discusses positions taken by Financial Accounting Standards Board (FASB) and the U.S. Securities Exchange Commission (SEC) relative to mark to market accounting.

INTRODUCTION

Arguably, multiple and complex issues contributed to subprime meltdown, the credit crunch, bank failures, and the plunging stock market, yet many of the nation's top economic thinkers argue that fair value financial reporting is to blame. Rarely have such accounting, valuation, and financial reporting issues received so much attention from the public – the voices of politicians, specialists, and even columnists have come together to place focus on issues surrounding mark-to-market accounting rules (King, 2009). Accordingly, did the mark-to-market accounting rule fuel a financial crisis? To determine the extent of its impact on the financial system, it is necessary to study the role of the mark-to-market rule in economic history, its new definition under SFAS 157, and the unintended consequences of the rule upon financial markets and institutions today.

HISTORY AND FOUNDATION

Given recent congressional proposals and hearings by the Financial Accounting Standards Board (FASB) to adjust this rule, many have become aware of its effect on the current economic crisis. However, few are aware of its contribution to the exacerbation of banking crises in the past. Milton Friedman and Anna Schwartz wrote *A Monetary History of the United States* and reported mark-to-market accounting rules to be the cause of bank failures leading back to the Great Depression (Tyrrell, 2009). In the early-twentieth century, prior to the development of mandatory financial reporting standards found today within U.S. Generally Accepted Accounting Principles (GAAP) and FASB regulations, companies had significant autonomy in selecting their own accounting policies and practices. During this era preceding the Great Depression, there is evidence that the use of “current values” or “appraised values” for assets, and the recording of upward asset revaluations were the most common. In fact, prior to 1938, banking institutions were required to use market or fair value accounting for their investment securities portfolios (SEC, 2008).

In the 1930s, accountants and bank regulators recognized the rule's inherent weakness and attempted to mitigate its effects. They found no success

in reducing the impact of marking to market until the rule was finally repealed in 1938. It was then that the Federal Reserve accepted the need for change and recommended that the rules be updated and revised. Heeding their advice, Franklin D. Roosevelt called upon a commission to investigate the problem, subsequent to which, the Office of the Comptroller of the Currency suspended mark-to-market valuations in banking by stating, “Bank investments should be considered in the light of inherent soundness rather than on a basis of day-to-day market fluctuations” (Federal Reserve Bulletin, July 1938; Niculescu, 2009, p.8). One of the key contributors to this accounting change was also the Securities and Exchange Commission (SEC). Since its founding in 1934, the SEC has played a major role in the reevaluations and restatements of many established accounting policies (Zeff, 2007).

In the aftermath of the Great Depression, there was a general movement towards a more conservative approach including a transition from current value accounting to the use of historical cost accounting for long-lived assets (SEC, 2008). There are many advantages to this method of accounting as noted by the SEC: First, under the matching concept, the identification and recording of expenses associated with revenue earned and recognized during the same accounting period are required. Next, using the audit trail, historical costs can be traced to real rather than hypothetical, market transactions. The predictive value of past historical cost earnings are better indicators of bankruptcy, and overall, historical cost measurements are more accurate and consistent than its alternatives (Jensen, 2007). By 1940, the practice of the upward revaluation of fixed assets was virtually extinct from financial reporting (Zeff, 2007).

Prior to 1975, the nation was lacking consistency in accounting literature specifically with respect to marketable securities. Despite substantial declines in the market values of many securities during 1973 and 1974, such changes were not reflected in the financial reports of many firms. Upon the recovery of these market values in 1975, the accounting guidelines were unclear as to whether securities that had been written down could be written back up to previous carrying amounts (U.S. Securities and Exchange Commission, 2008). This resulted in the issuance of SFAS No. 12, “Accounting for Certain Marketable Securities”, in December 1975, requiring all marketable equity securities to be recorded at the lower of cost, or fair value (Financial Accounting Standards Board, 2009).

The challenges associated with historical cost accounting were seen during the savings and loan crisis of the 1980s. Historical cost accrual accounting assumes a going concern and in the case of financial assets and liabilities, historical costs may be meaningless relative to current values. It was then argued that this was one of the major reasons for the FASB’s push towards fair value accounting – this method immediately recognizes changes in credit risk while the historical method only recognizes such changes in the likelihood that actual default reaches a particular threshold (Jensen, 2007). Therefore, some companies, especially banks, that have a history of understating default risks in

their outstanding loan investments, would find it difficult to overvalue investments in cases of an increase in credit risk (Jensen, 2007).

However, for many years to follow, companies were able use the historic cost accounting model to show the cost of securities they owned on their balance sheet in accordance with GAAP that stated gains should never be anticipated until they are realized, while losses should be recognized as soon as possible (King, 2009). In this scenario, gains were hidden from shareholders and creditors while losses were recognized. Following this tactic, they would disclose the current market price(s) of their tradable securities as supplementary information to creditors, shareholders, and analysts to allow for evaluation of the company's true financial health. While at the same time, the company would be able to to avoid reporting gains and losses from potential changes in the market prices of securities until and if they were actually sold. Given the ease of balance sheet adjustments, there were very few objections to this approach from the firms involved or financial analysts. However, some academics and journalists did complain that the method allowed companies to "pick and choose" certain gains and losses, a practice referred to as "earnings management." The companies would be able to report an increase in income and earnings per share (EPS) by selling stock with built-in profits while having the option to offset the gain by selling securities that traded below the actual cost (King, 2009).

During the time of this dispute, the FASB began making radical changes in financial reporting through a new conceptual framework. It consisted of Statement of Financial Accounting Standards (SFAS) No. 107, "Disclosures about Fair Value of Financial Statements" enacted in December 1991, SFAS No. 115, "Accounting for Certain Investments in Debt and Equity Securities" implemented in May 1993, and SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities" issued in June 1998. Collectively, these statements extended the existing fair value accounting and reporting practices by requiring entities to disclose the fair value of almost all financial instruments in the statement of financial position, profit and loss statement, or equity section of the balance sheet, for which it is practicable to estimate fair value (FASB, 2009).

In September 2006, the Mark-to-Market Accounting rule was resurrected by the FASB through SFAS 157 to the approval of the Bush Administration, its Department of Treasury, and the SEC (Forbes, 2009). Effective for fiscal years beginning after November 15, 2007, this statement was intended to achieve increased consistency and comparability of fair value measurements while expanding disclosures and increasing transparency, thereby improving the quality of information provided to users of financial statements (FASB, 2009). The rule requires financial institutions to adjust, or mark, the value of their marketable securities to their current market value, or the value that represents what they would be paid if they were forced to liquidate those assets immediately (Klotz, 2008). Affected are mortgage-backed securities and related complex structured products such as collateralized debt obligations, and structured investment vehicles (Dzinkowski, 2008).

THE NEW DEFINITION OF FAIR VALUE

With SFAS 157 came a new definition of Fair Market Value (FMV) – one that is quite different from the single definition the accounting and business community have been in conformity with for almost 120 years. The standard definition of FMV is “the price for which property would exchange between a willing buyer and a willing seller, each having reasonable knowledge of all relevant facts, neither under compulsion to buy or sell, and with equity to both” (King, 2009, p.29). Under SFAS 157, Fair Value (FV) is “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date” (FASB, 2009, p.1).

The distinction between the two definitions can be understood best when applied to an actual scenario: Suppose there is an auction for fine and rare wines at Sotheby’s Auction House. The auctioneer begins the bidding for a bottle of 1982 Château Latour at \$2,000, and after six rounds of bidding the highest bid is \$3,000. Unexpectedly and out of the sudden, a woman bids \$4,000, and the bidding ceases. The auctioneer signifies the item as sold to the woman for a committed amount of \$4,000, disregarding applicable taxes and commissions. Given this situation, what is the fair market value of the Château Latour? Under the general definition of FMV, the item would be valued at \$4,000. This is the amount to be exchanged between the willing buyer and the willing seller; assuming each has reasonable knowledge of fine wines, the current selling prices for comparable wines, and both possess enough equity to complete the transaction. What is the fair value of Château Latour under SFAS 157? Under the FASB definition, the FV of the bottle is \$3,000. Here, the value is premised solely on an immediate sale to another “market participant.” From this perspective, the buyer suffers an immediate impairment loss of \$1,000 (King, 2009).

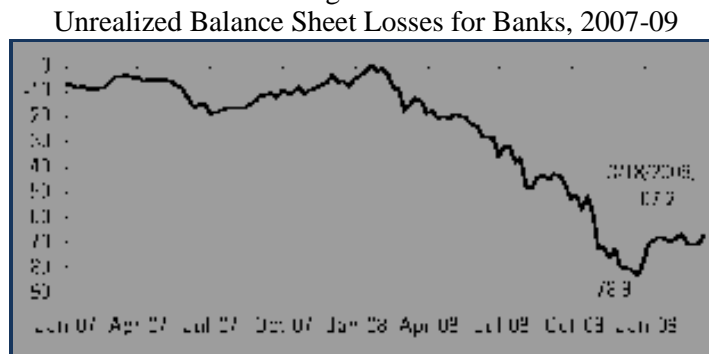
This scenario is a representation of the SFAS 157 requirement that mandates banks and other investors to estimate the current market value, or fair value, of mortgage-backed and other related securities. The chart below represents the projected cumulative credit losses on these securities from 2007 to 2013. In times of highly distressed markets, the resulted write-downs have led to massive declines in capital which helped to spawn one liquidity emergency after another and the failure of some of America’s largest financial institutions (Dzinkowski, 2008). William Isaac, past chairman of the U.S. Federal Deposit Insurance Corporation (FDIC), described the effects of the new fair value accounting rule and its contribution to the financial crises in the December 2008 issue of Accountancy Magazine. He stated, “hundreds of billions of dollars have been lost because of these rules...the U.S Treasury can also be blamed for handing out capital while the SEC and FASB are destroying it by means of, paper losses, not real losses...the rule doesn’t correctly reflect the business model of many financial institutions since it presumes a sale when in many cases; those assets are intended to be held over time” (Dzinkowski, 2008, p.1-2).

Figures 1-A and B below, from Citi Research (using data from The Federal Reserve System) depict the unforeseen damage caused by the strict

application of SFAS 157. They show the change in the banking industry's unrealized equity losses (classified as "other comprehensive income", or OCI) in the billions of dollars. In the first chart (1-A), it can be seen that for most of the past 12 years, the aggregate losses vary between unrealized gains of \$20 billion to losses of \$20 billion. Upon the issuance of the new definition of fair value, the essentially flat number plunged to a staggering \$80 billion in unrealized losses. The second chart provides a more detailed view of the period beginning in January 2007 to show the dramatic and abrupt changes that took place within the balance sheets of many major financial companies (Holmes, 2009).



Figure 1-A



Source: Holmes(2009) The Federal Reserve System(2009)

Figure 1-B

THE CURRENT ECONOMIC CRISIS

Fair value accounting is currently being blamed for much of the current economic crises. In reality, its origins can be traced back to numerous mortgage brokers, the pioneers of synthetic financial derivatives, regulators, rating agencies, and certainly accountants as well (Dzinkowski, 2008). The demise secretly began in the early 1990s with investment bankers taking advantage of an opportunity to step into the real estate market. It was then that mortgages grew to become a part of the larger evolution of asset-backed securities. "Specifically, they came to the marketplace with a profitable new idea that converted the

commercial mortgage asset class from a hold-to-term investment with value based on performance, to a trading investment with value based on the market...their idea was to sell a product with promised liquidity and a high percentage of investment-grade ratings, allowing investors an easy investment opportunity into this asset class. These two fundamental characteristics converted a class of investments from whole loans to securities” (Padilla, 2009, p.20). From the investor's perspective, all they had to do was buy; others would perform the underwriting and due diligence while credit rating agencies were ready to go for approval. For financial institutions, these assets filled an investment need for long-term, fixed returns.

As the years passed, the economy grew weaker and individual borrowers became reluctant or incapable to meet monthly mortgage payments. To trivialize the pain, mark-to-market accounting rules were issued through SFAS 157. Those investors holding a portfolio of well-underwritten performing mortgages treated under hold-to-term valuation rules now received commercial mortgage-backed securities (CMBS) requiring the new fair value accounting treatment (Padilla, 2009). Losses began to cascade through the system very quickly and many major financial institutions including Lehman Brothers, Merrill Lynch, and Bear Stearns found themselves holding massive amounts of securities on their books. Under GAAP, auditors and corporate management were required to test the carrying values of the securities for potential impairment losses. Trading securities were to be marked to market every financial period, keeping in mind that securities being held to maturity were to be written down only if the current market price decline can be classified as “other than temporary” (King, 2009). As the prices for subprime securities fell lower and lower, it became difficult to categorize the market decline as temporary. One after another, companies all over the nation reported losses due to the declining market value of assets. The pressure to obtain new capital and to sell the potentially unsalable securities grew significantly – the market now held within it more sellers than buyers. Overall, it has been described as a perfect storm – “it was a lack of regulation, it was greed and creativity in the financial industry, and it was an American dream that got off track” (Tanneeru, 2009, p.2).

As the economic devastation continues to spread, the search for causes, culprits, and cures has been ensued – the case against mark-to-market valuation is growing rapidly through the media. Financial analysts, economists, and accountants are taking sides on the issue, some justifying the rule based upon the need for greater price transparency in the banking industry, while others take into account the rule's intensification of the nation's credit crisis. According to Aaron Elstein, banks including Citigroup and Morgan Stanley are watching their shares tumble and have found a novel way to put an end to them – “they are asking permission for their accountants to put on their rose-colored glasses” (Elstein, 2008, p.1). They hope this will help in lobbying the SEC and others into suspending the mark-to-market rule that was a key factor in the recent billions of dollars in losses reported by Wachovia, Merrill Lynch, IBM, and other major firms nationwide (Elstein, 2008). George Sutton, a former Utah

commissioner of financial institutions, predicts that repealing the mark-to-market accounting rule for income-producing assets would not only boost the financial system and the stock market by 20% to 25%, but would also reverse most of the losses reported by banks in recent months and restore the nation's banks to nearly normal overnight (Sutton, 2009). Even prominent figures such as Steve Forbes and Newt Gingrich argue against fair value accounting by suggesting that the elimination of the rule would free up the balance sheets of many suffering financial institutions (Lichtenfeld & Denholm, 2009). Overall, those opposing mark-to-market valuation rules agree that during a severe downturn, this method can only accelerate the deterioration of markets – companies' balance sheets will reflect worsening conditions as more and more assets become distressed (Lichtenfeld & Denholm, 2009). On the other hand, some contenders support fair value accounting practices by arguing that this compromise, even with full disclosure, would allow banks to value assets as they see fit and hide future errors in judgment from investors to exacerbate the key problem in the current crisis – the loss of faith held by investors (Elstein, 2008). Further, the mark-to-market rules are signified as “reality-based accounting” rules that are imperative to the health of financial institutions and the economy as a whole.

RECENT DEVELOPMENTS

In response to growing concerns over mark-to-market valuation, the SEC and FASB issued a joint clarification on September 30, 2008 in regards to the implementation of the rule in the case of markets that are disorderly or inactive (Spinogatti & McGrail, 2008). The SEC clarified that there is no rule that in fact requires companies to mark down assets to the latest transaction prices, especially in distressed market conditions. This led to the issuance of FASB Staff Position (FSP) 157-3 on October 10, 2008, which serves to clarify, “the application of FASB Statement No. 157, *Fair Value Measurements*, in a market that is not active and provides an example to illustrate key considerations in determining the fair value of a financial asset when the market for that financial asset is not active” (FASB, 2008, p.1). The SEC roundtable meeting also exposed the divergent views held by members on the benefits and drawbacks of the mark-to-market accounting rule. In addition, although the SEC seemed appreciative of and receptive to these opinions, its representatives provided no clear indication of a new interpretation of SFAS 157 (Spinogatti & McGrail, 2008). During this period of uncertainty, market disarray, and continuing professional debate, the nation was looking forward to hopeful changes beginning with the election of President Barack Obama.

After taking office, President Obama followed through with all aspects of the Emergency Economic Stabilization Act of 2008, signed into law by President Bush in October 2008. Under section 133 of this act, the SEC is required to conduct an investigation of Mark-to-Market or Fair-Value accounting rules in consultation with the Secretary of Treasury and the Board of Governors of the Federal Reserve System (Spinogatti & McGrail, 2008). This report, delivered on December 30, 2008, considered (1) The effects of such accounting

standards on a financial institution's balance sheet, (2) The impacts of such accounting on bank failures in 2008; (3) The impact of such standards on the quality of financial information available to investors; (4) The process used by the FASB in developing accounting standards; (5) The advisability and feasibility of modifications to such standards; and (6) Alternative accounting standards to those provided in such Statement Number 157 (U.S. Securities and Exchange Commission, 2008). The SEC made the recommendations and observations shown below, as included in the final section of the United States Securities and Exchange Commission's Report and Recommendations Pursuant to Section 133 of the Emergency Economic Stabilization Act of 2008: Study on Mark-To-Market Accounting. The table below, provides an executive summary of the recommendations based upon the observations of the study:

Recommendations for Change

<p>Recommendation #1: <i>SFAS No. 157 should be improved, but not suspended.</i></p>	<p>The guidance in SFAS No. 157 does not determine when fair value should be applied; it only provides a common definition of fair value and a common framework for its application. Suspending SFAS No. 157 itself would only revert practice to inconsistent and sometimes conflicting guidance on fair value measurements.</p>
<p>Recommendation #2: <i>Existing fair value and mark-to-market requirements should not be suspended.</i></p>	<p>Fair value and mark-to-market accounting has been in place for years and abruptly removing it would erode investor confidence in financial statements. Fair value and mark-to-market accounting do not appear to be the "cause" of bank and other financial institution failures. Investors generally agree that fair value accounting provides meaningful and transparent financial information, though improvements are desirable.</p>
<p>Recommendation #3 <i>Additional measures should be taken to improve the application and practice related to existing fair value requirements.</i></p>	<p>Fair value requirements should be improved through development of application and best practices guidance for determining fair value in illiquid or inactive markets. Existing disclosure and presentation requirements related to the effect of fair value in the financial statements should be enhanced. FASB should assess whether the incorporation of changes in credit risk in the measurement of liabilities provides useful information to investors, including whether sufficient transparency is provided.</p>

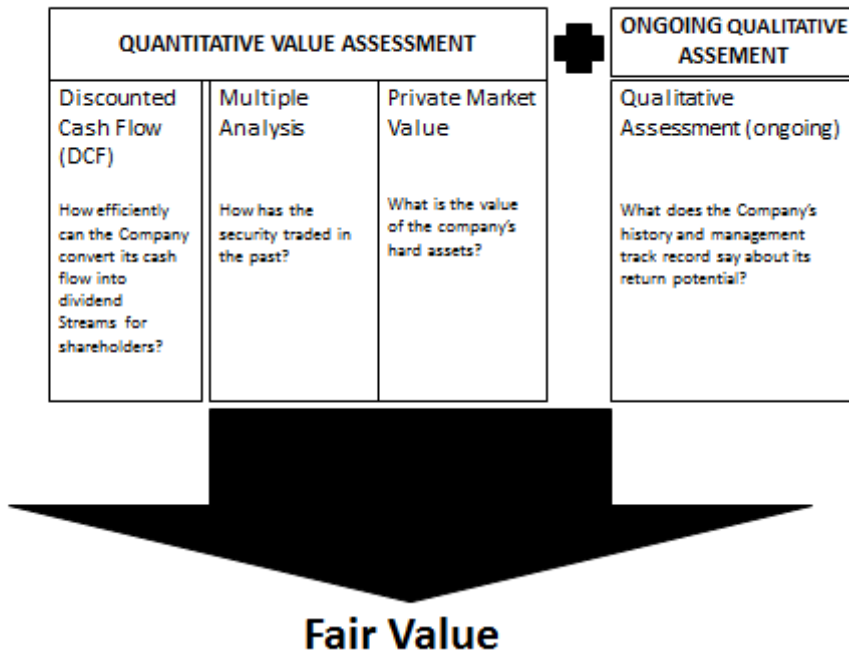
<p>Recommendation #4</p> <p><i>The accounting for financial asset impairments should be readdressed.</i></p>	<p>U.S. GAAP does not provide a uniform model for assessing impairments.</p> <p>The prominence of the measure “OCI,” could be enhanced by requiring its display on the income statement.</p> <p>Current impairment standards generally preclude income recognition when securities prices recover until investments are sold.</p>
<p>Recommendation #5</p> <p><i>Implement further guidance to foster the use of sound judgment.</i></p>	<p>SFAS No. 157 is an objectives-based accounting standard that relies on sound, reasoned judgment in its application.</p> <p>Sound judgment is a platform from which to foster the neutral and unbiased measures of fair value desired by investors.</p> <p>Requests have been made for the Commission and PCAOB to emphasize their support for sound judgment in the application of accounting and auditing standards.</p>
<p>Recommendation #6</p> <p><i>Accounting standards should continue to be established to meet the needs of investors.</i></p>	<p>Investors, and most others, agree that financial reporting’s primary purpose is to meet the information needs of investors.</p> <p>Most appear to agree that fair value measurements provide useful information to investors, meeting their information needs.</p>
<p>Recommendation #7</p> <p><i>Additional formal measures to address the operation of existing accounting standards in practice should be established.</i></p>	<p>While the existing FASB process works well, steps could be taken to enhance the process.</p> <p>After adoption of new accounting standards, unforeseen implementation issues often may arise.</p> <p>An independent accounting standard-setter is best equipped to address broadly effective implementation issues that arise from the adoption of a new accounting standard.</p>
<p>Recommendation #8</p> <p><i>Address the need to simplify the accounting for investments in financial assets.</i></p>	<p>The prominence of OCI could be enhanced by requiring its display on the income statement.</p> <p>While a move to require fair value measurement for all financial instruments would likely reduce the operational complexity of U.S. GAAP, the use of fair value measurements should not be significantly expanded until obstacles related to such reporting are further addressed.</p>

Source: U.S. Securities and Exchange Commission, 2008

Figure 2

Upon completion of the SEC’s study on mark-to-market accounting, social and political pressure began to mount upon the members of the FASB to reflect and decide upon the recommendations and suggestions for change. Members of the FASB came together in the beginning of April 2009 to complete changes in these accounting rules with the overall goal of reducing the losses banks have been forced to report as the values of their mortgage-backed securities fell (Norris, 2009). The proposed rule interpretations dealt with two issues in asset valuation: “Banks are required to show some assets at market value, and report profits or losses based on changes in that value. Other assets may be reported at original cost, but if their value deteriorates, they must be written down to market value if there is an *other than temporary impairment* in value” (Norris, 2009, p.1). On April 9, 2009, the FASB confirmed these changes to provide financial institutions more flexibility in valuing assets through the issuance of three additional FASB Staff Positions (FSPs) with the same overall objective of FSP 157-3 – to clarify the application of SFAS No. 157 when the volume and level of activity for the asset or liability have significantly decreased. This quantitative value assessment of fair value is depicted on the following page (figure 3):

Determining Fair Value Under FSP FAS 157-4



Source: Financial Accounting Standard Board, 2009

Figure 3

These clarifications in financial reporting will be effective for periods ending after June 15, 2009, with early application permitted for periods ending after March 15, 2009. Retrospective application will not be permitted under this

proposal. The objective of a fair-value measurement in an inactive market under SFAS 157 still requires the holders of financial assets to classify the measurements into three levels of assumptions, but now depending on how *observable* the information is (Financial Accounting Standard Board, 2009). Critics supporting fair value accounting rules argue that by relaxing mark-to-market rules, the U.S. has switched off its financial crisis “early warning system” (Yousfi, 2008). According to Jennifer Yousfi, this system alerted investors of the current credit crisis and kept it from turning into a global meltdown. “Mark-to-market accounting standards kicked off a round of write-downs at global financial firms that highlighted the overexposure of many to these risky securities...without such standards, investors would have been unaware of the coming credit crunch” (Yousfi, 2008, p.3). On the other hand, supporters of the SEC and FASB’s decision agree that the pendulum has swung too far the other way with the current mark-to-market rules and this move is a necessary step towards rational regulation.

CONCLUSION

Over the past few years, the economy has faced challenging economic conditions effecting both financial and non-financial institutions. During some point, much of the crisis was isolated in the subprime mortgage sector but has now encompassed the entire global economy through contributing factors that include, but are not limited to, low interest rates, alternative mortgage products, lenient underwriting standards, rapid housing appreciation, increased leverage, and insufficient regulation. Financial institutions are facing numerous losses, liquidity issues, bank failures, housing foreclosures, mortgage defaults and perhaps worst of all, lowered consumer confidence (SEC, 2008). The SEC’s study on mark-to-market accounting reflected that the rule played no apparent role in bank failures occurring in 2008: “Bank failures in the U.S. appeared to be the result of growing probable credit losses, concerns about asset quality, and, in certain cases, eroding lender and investor confidence” (U.S. Securities and Exchange Commission, 2008, p.14).

However, the preceding research suggest varying opinions regarding the role of mark-to-market and fair value accounting practices in fueling this financial and economic crisis. Provided the rule’s contribution to the exacerbation of banking crises in the past and its role in accelerating the deterioration of markets today, it can be concluded that further changes in mark-to-market accounting rules are necessary for the nation to move towards progressive institutional improvement and market growth. The suspension of fair value accounting rules to return to historical cost-based measures would likely increase investor uncertainty and continue the cycle of repeating regulatory misjudgments of the past. Therefore, supervisory bodies of the financial system must continue to reassess and issue clarifications for the existing rules, and consider possible alternatives such as a mixed-attribute model in which some items are measured at historical cost (or cost-based variations), while other items are measured at current values (U.S. SEC, 2008). No matter what changes take

place in the future of accounting policies, agencies must continually incorporate the quality of information provided to users of financial statements in an effort to increase consumer and investor confidence in the nation's financial markets and institutions.

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AN ASSESSMENT OF THE QUALITY OF AUDITING CURRICULAR DESIGN

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ABSTRACT: Previous research (AICPA, 1978; Martin and Whisant, 1982; Kantor and Pitman, 1987) has indicated that dissatisfaction with auditing education on the part of practitioners may be due to conflicting education objectives between the practitioners and educators, differing perceptions of the purpose of undergraduate auditing, and changes taking place within the profession. The purpose of this research is to expand on the previous research by surveying both educators and practitioners and to provide critical feedback from the public accounting profession with respect to current auditing curriculum. More specifically, this paper assesses the quality of curriculum design with respect to auditing. This is accomplished by determining the relative importance of auditing-based topics within the auditing curricula for these two important stakeholders in auditing education—auditing educators and practicing CPAs—by surveying a nationwide sample of each to identify their assessments of the relative importance of 54 auditing topics in preparing students for entry-level work and career advancement. By focusing on quality of design, the goal is to provide a first step toward better understanding of the differing views on importance between these stakeholders and to facilitate auditing faculty in responding to the challenge of ensuring the relevance of auditing curriculum.

INTRODUCTION

University accounting curriculum provides students with an understanding of the accounting function and the activities of the accountant in order to prepare them to compete in the contemporary workplace. Within that curriculum auditing is viewed as a significant course for all accounting majors, whether or not they intend to sit for the CPA examination or pursue a career in public accounting, as more than 90 percent of accounting programs require an introductory financial auditing course at the undergraduate level (Auditing Section Education Committee, 2003). Unfortunately, the accounting literature reported that auditing practitioners were dissatisfied with university training of auditors. A 1978 survey of AICPA members (AICPA, 1978) found such dissatisfaction and concluded that the reason for this dissatisfaction was that the theory of auditing was not being related to its practical implementation. Martin and Whisant (1982) reasoned from their survey results of public accountants that practitioners had different perceptions than educators regarding the purpose of undergraduate auditing. Practitioners expected new accounting graduates to have a reasonable degree of practical skill in auditing while educators believed that it was the practitioners' responsibility to train their entry-level auditors how to

audit. In Kanter and Pitman's 1987 survey of certified public accountants, they found that the practitioners still felt that the current auditing component of the accounting curricula was inadequate. Kanter and Pitman (1987) reasoned that this dissatisfaction resulted from a combination of conflicting educational objectives on the part of educators and practitioners and the changes that have taken place within the profession.

During the 1990s the auditing profession experienced significant changes. Increasing global capital markets demanded more accurate and relevant performance data in real time. As a result, the scope of the financial audit and the role of independent auditors expanded to include consideration of the client's performance, validity, and risk management of business processes in assessing overall engagement risk (Elliott 1998). These changes, among others, prompted calls for significant change in accounting and auditing education from the accounting profession. Arthur Andersen et al. (1989), Accounting Education Change Commission (1990), Williams (1993), and Albrecht and Sack (2000) called for broad changes in the accounting curriculum so entry-level accountants would possess skills necessary to succeed in a changing accounting environment. However, the American Accounting Association 2000-2001 Auditing Section Education Committee (2003) surveyed syllabi of auditing and assurance courses in the US and other countries and found that change in auditing education was occurring more slowly and less comprehensively than the demands of academic reformers and events affecting the profession would dictate, indicating potential continued practitioner dissatisfaction with auditing education.

More recently Arens and Elder (2006), assessing the impact of passage of the 2002 Sarbanes-Oxley Act on auditing education, concluded the Act and the changing audit environment significantly impact certain aspects of the audit process and call for enhanced skills in several areas. In a similar, more comprehensive study, the US Department of the Treasury commissioned the first major study of the US auditing profession since passage of the 2002 Sarbanes-Oxley legislation. This study, published as the Final Report of the Advisory Committee on the Auditing Profession to the Department of the Treasury (2008), noted the need to increase the pace of curriculum changes in college and university accounting programs to more effectively match the increasing pace of changes in current auditing environments. Along with the proliferation of accounting and auditing standards, technology advancements have had a dramatic impact not only on the type of work performed by new staff auditors but also on how that work is performed. Together these changes have clearly increased the demands and challenges for current accounting graduates.

In the previous studies, time limitation appeared to be one reason for the conflicting educational objectives between auditing educators and practitioners. Given the limits of classroom time, educators focused more on the theoretical and conceptual topics of auditing that provide students with the foundation and critical understanding of the auditing process. Furthermore, this material is necessary for students to pass the auditing section of the CPA examination. Practitioners, on the other hand, wanted procedural and professional topics

emphasized so that the new staff auditors were ready to audit. Their concerns were that the new staff auditors did not possess adequate understanding of the mechanisms of an accounting system, and while they may have been well grounded on why to audit, they did not have the desired proficiency of how to audit. The challenge for accounting faculty is to reflect on the changing demands and the work environment of their graduates as well as the feedback they receive from practitioners, confront any conflicting educational objectives, examine the accounting curricula thoroughly, and take the necessary steps to enhance the curricula so as to ensure the quality of the accounting graduate.

Product quality is defined as conformance to customer expectations in terms of features and performance of the product (Morse, Roth & Poston, 1987). Therefore, quality is achieved when a product contains all of the features that a customer would expect and when the product performs in such a way that the customer is satisfied. In this context, two factors underlie the overall quality of a product. They are quality of design and quality of conformance. Quality of design is the degree to which the design specifications for a product meet customers' expectations. That is, a product has a high quality of design if it contains all the features and operates in the way that customers would expect it to operate. In sum, quality of design is a key consideration in measuring the overall quality of a product. If a product's design is such that its features and performance fail to meet customers' expectations, then the customers will be dissatisfied and simply turn elsewhere. For an accounting department, its curriculum represents its design for quality.

However, a product can have a high quality of design and still be low in overall quality if defects or other problems in the course of development cause it to fall short of what the designers intended. Quality of conformance is the degree to which the actual product that is delivered meets its design specifications and is free of defects or problems that might affect appearance or performance. Thus, curriculum performance is as important as curriculum design in providing a high quality accounting graduate. Just as businesses must be able to monitor their progress in achieving objectives for quality improvement and in maintaining quality levels so too must departments of accounting. Reporting and measuring quality performance is absolutely essential to the success of an ongoing quality improvement program.

The purpose of this study is to update the previous surveys that reported dissatisfaction with university auditing education on the part of auditing practitioners (AICPA, 1978; Martin and Whisart, 1982; Kantor and Pitman, 1987). The most recent study of auditing curriculum design was the survey of auditing syllabi, not practicing CPAs, by the American Accounting Association 2000-2001 Auditing Section Education Committee (2003). Therefore, the question that arises is whether this previously reported dissatisfaction resulted from a problem with quality of design or with quality of conformance? Since the findings of the previous surveys found conflicting educational objectives between auditing educators and practicing accountants, the focus of this research is directed narrowly toward quality of design. Therefore, the purpose of this

research is to provide an assessment of the quality of auditing curricular design. That is, to what degree do the auditing curricular design specifications favored by educators meet with practitioners' expectations? What are the specific differences between these two stakeholders with respect to design specifications? Unlike the previous surveys, this assessment is accomplished by surveying both auditing educators and practicing CPAs. The survey determines the relevance of auditing curricula by comparing the difference between the two stakeholders' assessments of the relative importance of 54 auditing topics within the auditing curriculum in preparing students for entry-level work and career advancement. The 54 auditing topics serve as a proxy for the design specifications for the accounting graduates' knowledge with respect to auditing. The results of this research will empirically identify specific auditing curricular design specifications for the accounting graduate that differ between auditing educators and CPA practitioners, help clarify why these differences exist, and bridge the communication gap between auditing educators and auditing practitioners by providing critical feedback from the public accounting profession with respect to the relative importance of individual auditing topics in preparing students for entry-level work and career advancement. Furthermore, the results should facilitate auditing faculty's response to the challenge of ensuring the relevance of auditing curricula.

METHOD

Previous research by Engle and Elam [1985] and Frakes [1987] found the content of the first auditing course to be highly textbook dependent. Thus, the survey questionnaire contains 54 individual auditing topics identified by reviewing the topical coverage in several popular auditing texts that span the offering in the undergraduate auditing-textbook market. The individual topics are listed in Table 1.

Samples: Questionnaires were mailed to a nationwide random sample of 518 public accounting offices and/or firms. The firms were randomly selected from a mailing list purchased from Accudata, Inc., a national provider of mailing lists, that included all U.S. public accounting firms/offices that had at least 50 professionals (2,590 firms/offices). The survey was addressed to practitioners that had responsibility for evaluating new hires, as they would be highly cognizant of the duties and responsibilities of new auditors. Those surveyed included senior staff-auditors, managers, and partners. In addition, questionnaires were mailed to a nationwide random sample of 310 auditing professors who were identified as teaching auditing at AACSB accredited business schools and who were members of the Auditing Section of the AAA. Both groups were mailed a cover letter describing the study, a questionnaire, and a postage-paid return envelope. A second request was sent four weeks after the original mailing. Responses were received from 141 public accounting offices and/or firms representing a 27.2% response rate and 101 professors responded for a 32.6% response rate.

Table 1
Auditing Topic

Id	Auditing Topic
1	Nature of the audit profession and how it differs from that of other practicing accountants
2	Generally Accepted Auditing Standards
3	Statements on Auditing Standards — their origin and use in audit practice
4	Quality Control Standards — their origin and use in audit practice
5	Auditor's decision process for issuance of an audit report
6	Detailed analysis of the unqualified audit report
7	Conditions requiring departure from the standard unqualified audit report
8	Materiality
9	Detailed analysis of the qualified audit opinion
10	Detailed analysis of an adverse audit opinion
11	Detailed analysis of a disclaimer of an audit opinion
12	Other audit engagements or limited assurance engagements
13	Attestation engagements
14	Auditor association with prospective financial statements
15	Reporting on internal control structure related to financial statements
16	Compilation services and reports
17	Review services and reports
18	Review of interim financial information
19	Business ethics and ethical dilemmas
20	Code of Professional Conduct, including concepts as independence, objectivity, confidentiality, etc.
21	Enforcement of Code of Professional Conduct
22	Definition of audit risk, business failure and audit failure
23	Legal concepts, terminology, and auditor liability to clients and third parties under common law
24	Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law
25	Nature of persuasive audit evidence
26	Types of audit evidence
27	Purpose and timing of analytical procedures
28	Working papers and documentation
29	Management's and auditor's responsibilities concerning financial statements
30	Planning the audit
31	Assessing business risk
32	Materiality and risk in preliminary phase of the audit
33	Internal control structure and components of strong versus weak control
34	Overview and understanding of internal control structure
35	Assessing control risks and testing of key controls
36	Audit objectives and tests related to accounting transactions
37	Design and use of audit program procedures related to tests of balances
38	Business functions — cycles (revenue, acquisition, inventory, etc.) and related

Table 1
Auditing Topic

Id	Auditing Topic
	records, transactions, and documents
39	Tests of internal controls and substantive tests of transactions for business functions
40	Evaluation and effects of results of tests of internal controls and substantive test of controls
41	Tests of details of account balances
42	Evaluation and effects of details of account balance tests
43	Statistical and nonstatistical sampling concepts
44	Attribute sampling and applications
45	Sampling for tests of details of balances — e.g. monetary unit sampling and variable sampling procedures
46	Analysis of statistical results and implication on audit procedures
47	Internal EDP controls
48	Use of computers in the audit of client records and financial statements
49	Contingent liabilities
50	Subsequent events review
51	Discovery of facts subsequent to issuance of audit report
52	Evaluation of results and communication of facts to audit committee and management
53	Internal auditing and various tasks performed by internal auditors
54	Governmental auditing and generally accepted government accounting principles

Each educator and CPA practitioner was asked to rate the relative importance of each auditing topic in the audit curricula in preparing students for entry level work and career advancement using a six-point Likert-type scale with the following values: Extremely Important (6), Very Important (5), Important (4), Moderately Important (3), Slightly Important (2), and Not Important (1). Demographic data are also collected and reported.

Demographics: The 141 responding firms consisted of 29 international firms (20.7%), 6 national firms (4.3%), 34 regional firms (24.3%), and 71 local firms (50.7%). The respondents were primarily partners (61.7%), followed by managers (31.2%). The remaining 7.1% were distributed across supervisor, human-resources director, or non-response. The number of years the respondent has spent with the firm ranged from 1 to 45 years with a median of 13.5 years. The respondents indicated that their major practice responsibilities were primarily auditing taking up an average 60% of their time followed by tax and consulting. The average number of accounting staff with less than three years of experience which they evaluate annually ranged from 1 to 80 with the average being 8.4 and the median number being 5.0.

Of the 101 faculty respondents, 99 completed the demographics section of the questionnaire. Seventy-one respondents were affiliated with public institutions of higher education and 28 were from private institutions. The number of professors responding was 38 while the number of associate and assistant professors were 29 and 32, respectively. Ninety respondents held a Ph.D. degree. Professional certification among the respondents included 61

CPAs, 11 CIAs, and 16 CMAs. Within their undergraduate accounting programs, 87 reported that they required only one auditing course. Three indicated that no auditing course was required, and 9 indicated that they required two or more auditing courses as part of their undergraduate accounting curriculum. Seventy-three respondents indicated that in addition to having AACSB business accreditation they also had AACSB accounting accreditation.

MANOVA Comparisons: Given that each respondent rated 54 different auditing topics, it is appropriate to employ multivariate analysis of variance tests (MANOVA) when determining whether any of the demographic variables had an impact on the importance-rating outcomes. One-way MANOVA tests were performed to determine whether type of school (public or private), rank of respondent (full, associate, or assistant professor), and AACSB accounting accreditation status (yes or no) influenced the mean responses. No statistically significant differences were found in any of these cases. In addition, no statistically significant difference was found when CPA certificate-holder responses were compared to non-CPA certificate holder responses using a one-way MANOVA test. This professional certification variable was used since nine of the 11 CIA-designation holders and 12 of the 16 CMAs were also CPAs.

The results of these statistical tests are shown in Table 2. Olson (1974) found that when performing MANOVA the test statistic based on Pillai's trace was the most robust and had adequate power to detect true differences under different conditions. Moreover, Pillai's trace can be transformed into an exact F-ratio and for the case when comparing two groups, Pillai's trace can be transformed into Hotelling's T or an exact F-ratio. Accordingly, the ratings on importance of the 54 auditing topics appear to be consistent among the responding accounting educators despite differing demographic variables as no significant differences were found with the MANOVA analysis.

Table 2
MANOVA Test Results

Variable	Pillai's Trace	Hotelling's T	F-value	Significance
Type of School (public or private)	0.753	3.048	1.129	0.396
Rank (full, assoc. or asst.)	1.437	-	0.944	0.602
AACSB Accounting	0.790	3.758	1.322	0.255
CPA vs. non CPA	0.776	3.474	1.287	0.272
Size of CPA Firm	0.996	-	1.195	0.165
Individual Auditing Topics (CPAs Vs Educators)	0.613	1.586	4.965	0.000

The dominant demographic for the CPAs appears to be firm size. When the CPA firms were placed into one of three groups [international/national (35), regional (34) and local (71)] and compared with the other similarly grouped demographics, significant chi-square statistics were found. When firm size was compared with partner vs. non-partner [$\chi^2 = 6.17$; $p = .046$], the smaller the firm

the more likely a partner was the respondent. When firm size was compared with the percent of time spent auditing [$\chi^2 = 48.6$; $p = .000$], the larger the firm the greater the percent of time spent auditing. When firm size was compared with the number of accounting staff with less than three years' experience [$\chi^2 = 57.0$; $p = .000$], the larger the firm the greater the number of accounting staff with less than three years' experience. The only demographic that did not have a significant chi-square when compared with firm size was number of years spent with the firm [$\chi^2 = 9.45$; $p = .150$]. Thus, it is appropriate to determine whether firm size has an impact on the respondents' ratings. Again, when employing MANOVA analysis to determine whether firm size had an impact on the importance-rating outcomes, no statistically significant difference was found. The result of this statistical test is shown in Table 2. Accordingly, the ratings on importance of the 54 auditing topics appear to be consistent among the responding public accounting practitioners despite working for firms of differing size as no significant difference was found with the MANOVA analysis.

Survey Bias Considerations: The potential for nonresponse bias is present in every mail survey due to the inability to obtain responses from all elements of the original sample. Research has found that those subjects who respond less readily are more like the nonrespondents, and that average responses from successive mailings can be used to estimate the potential responses of nonrespondents (Armstrong & Overton, 1977). Accordingly, we compared the mean responses between the first and second mailings for each of the 54 auditing topics for both survey groups. A Student's *t*-test was calculated for each auditing topic to test for a significant difference. The results for the CPAs showed that 51 of the tests failed to achieve a significance level (alpha) of 0.05 or less. The results for educators showed that 53 of the tests failed to achieve a significance level (alpha) of 0.05 or less. Furthermore, examination of the *t*-value signs for both the CPA practitioners and educators did not indicate the presence of subtle bias. For the CPAs, 34 of the signs were positive and 20 of the signs were negative. For the educators 30 of the signs were positive and 24 were negative. Inasmuch as 108 individual *t*-tests were conducted, the four significant *t*-tests could be the result of chance. Accordingly, the foregoing tests indicate the lack of material nonresponse bias.

RESULTS

Table 3 presents the mean importance ratings for the 54 auditing topics for both stakeholder groups, where the topics are ranked by the CPA importance mean. The CPAs had one topic with a mean significantly greater than 5.0 (Very Important) and 31 other topics with a mean significantly greater than 4.0 (Important). In Table 3, the topic means that are significantly greater than 5.0 (Very Important) are indicated with two asterisks, and those significantly greater than 4.0 (Important) are indicated with one asterisk. The top three topics, *Generally Accepted Auditing Standards* (2), *Planning the Audit* (30), and *Materiality* (8), are clearly important to CPAs. [The numbers in parentheses are the auditing topic's ID number.] This is not surprising considering they represent

the foundation for audit practice. The remaining topics with means significantly greater than 4.0 focus on key elements of audit practice—internal control structure and assessment, analytical procedures, assessing audit and business risks, audit evidence, and the design and performance of audit tests. Knowledge and understanding of these topics is essential for implementing efficient and effective auditing. Thus, it is understandable that practicing CPAs place a high level of importance on these topics. For example, the topics dealing with internal control structure (33 & 34), audit risk (22 & 32), business risk (22 & 31), and assessing control risk (35) support the concern of the practice of auditing to maximize audit efficiency while maintaining a high level of audit effectiveness. These areas afford the auditor the maximum assurance that year-end financial statements are fairly presented, without requiring extensive and generally costly year-end substantive tests of account balances. These topics also provide the understanding of the audit process. Moreover, these topics represent the areas that the newly-hired accounting graduates would be expected to spend a significant amount of time during the early years of their audit career.

Educators, on the other hand, rated eight topics significantly greater than 5.0 and 30 additional topics significantly greater than 4.0. For 28 of the 32 topics (87.5%) that the CPAs rated significantly greater than 5.0 or 4.0, the auditing educators had similar ratings. Thus, there appears to be a high degree of agreement for these clearly important auditing topics. However, a more comprehensive measure of the degree of agreement on the relative importance for all the topics is the Pearson correlation coefficient between the 54 mean ratings of the individual auditing topics. A statistically significant correlation coefficient ($r = 0.816$, $p = 0.000$) indicates that the auditing curriculum has a high degree of quality of design with both practitioners and educators seeing eye to eye on the relative importance of a great number of design (knowledge) specifications for the accounting graduate. However, the dissatisfaction expressed on the part of practitioners is due not to the commonality with respect to auditing educational objectives but due to their differences.

The four topics that the educators did not find significantly greater than 4.0 (Important) but the CPAs did were *Planning the audit* (30), *Review services and reports* (17), *Quality Control Standards—their origin and use in audit practice* (4), and *Discovery of facts subsequent to issuance of audit report* (51). These topics clearly have more of a practical than theoretical orientation lending support to the supposition that practitioners favor more of a practical orientation to auditing education than do educators. In addition to the 28 auditing topics mentioned above, the auditing educators rated an additional ten topics as significantly greater than 4.0. Three of the ten topics, *Statistical and nonstatistical sampling concepts* (43), *Attribute sampling and applications* (44), and *Analysis of statistical results and implication on audit procedures* (46), relate to statistical analysis. Two topics, *Legal concepts, terminology, and auditor liability to clients and third parties under common law* (23) and *Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law* (24), are concerned with legal liability. Another two topics,

Detailed analysis of the unqualified audit report (6) and Detailed analysis of the qualified audit opinion (9), deal directly with opinion decision analysis while topic (47) Internal EDP controls deals with EDP. The remaining two topics are Nature of the audit profession and how it differs from that of other practicing accountants (1) and Evaluation of results and communication of facts to audit committee (52). These ten topics, not surprisingly, all have more of a theoretical orientation.

Table 3
Auditing Topics Ranked by CPA Importance Means

ID	Auditing Topic	CPA Mean	Educator Mean
2	Generally Accepted Auditing Standards	5.25**	5.36**
30	Planning the audit	5.04*	4.11
8	Materiality	5.01*	5.35**
26	Types of audit evidence	4.99*	5.06*
27	Purpose and timing of analytical procedures	4.99*	5.17*
34	Overview and understanding of internal control structure	4.97*	5.35**
25	Nature of persuasive audit evidence	4.95*	5.28**
33	Internal control structure and components of strong versus weak control	4.91*	5.41**
20	Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.	4.90*	4.80*
36	Audit objectives and tests related to accounting transactions	4.83*	5.06*
22	Definition of audit risk, business failure and audit failure	4.81*	5.33**
32	Materiality and risk in preliminary phase of the audit	4.80*	5.27**
28	Working papers and documentation	4.75*	5.16*
35	Assessing control risks and testing of key controls	4.74*	5.37**
31	Assessing business risk	4.72*	4.85*
37	Design and use of audit program procedures related to tests of balances	4.72*	4.77*
3	Statements on Auditing Standards—their origin and use in audit practice.	4.68*	4.59*
38	Business functions—cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents	4.66*	4.56*
29	Management's and auditor's responsibilities concerning financial statements	4.65*	5.09*
5	Auditor's decision process for issuance of an audit report	4.63*	5.19*
39	Tests of internal controls and substantive tests of transactions for business functions	4.63*	4.86*
19	Business ethics and ethical dilemmas	4.62*	4.98*
41	Tests of details of account balances	4.61*	4.95*
40	Evaluation and effects of results of tests of internal controls and substantive test of controls	4.60*	5.02*

Table 3
Auditing Topics Ranked by CPA Importance Means

ID	Auditing Topic	CPA Mean	Educator Mean
50	Subsequent events review	4.60*	4.70*
42	Evaluation and effects of details of account balance tests	4.57*	4.78*
7	Conditions requiring departure from the standard unqualified audit report	4.51*	5.01*
49	Contingent liabilities	4.51*	4.53*
48	Use of computers in the audit of client records and financial statements	4.49*	4.55*
17	Review services and reports	4.33*	4.16
4	Quality Control Standards—their origin and use in audit practice	4.30*	3.86
51	Discovery of facts subsequent to issuance of audit report	4.22*	4.14
16	Compilation services and reports	4.13	4.07
23	Legal concepts, terminology, and auditor liability to clients and third parties under common law	4.13	4.69*
15	Reporting on internal control structure related to financial statements	4.10	4.11
43	Statistical and nonstatistical sampling concepts	4.05	4.47*
1	Nature of the audit profession and how it differs from that of other practicing accountants	4.04	4.32*
47	Internal EDP controls	4.04	4.35*
52	Evaluation of results and communication of facts to audit committee and management	4.04	4.32*
6	Detailed analysis of the unqualified audit report	3.97	4.68*
21	Enforcement of Code of Professional Conduct	3.95	3.83
12	Other audit engagements or limited assurance engagements	3.87	4.15
46	Analysis of statistical results and implication on audit procedures	3.86	4.58*
13	Attestation engagements	3.85	4.20
44	Attribute sampling and applications	3.83	4.40*
9	Detailed analysis of the qualified audit opinion	3.76	4.41*
45	Sampling for tests of details of balances—e.g., monetary unit sampling and variable sampling procedures	3.73	4.18
11	Detailed analysis of a disclaimer of an audit opinion	3.71	4.07
10	Detailed analysis of an adverse audit opinion	3.64	3.93
54	Governmental auditing and generally accepted government accounting principles	3.51	2.93
18	Review of interim financial information	3.49	3.42
24	Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law	3.48	4.34*
14	Auditor association with prospective financial statements	3.46	3.53

Table 3
Auditing Topics Ranked by CPA Importance Means

ID	Auditing Topic	CPA Mean	Educator Mean
53	Internal auditing and various tasks performed by internal auditors	3.31	3.74

However, before identifying these topics as obvious differences, we must recognize that the overall higher mean ratings for the educators vis-a-vis the practitioners suggests a possible importance bias on the part of the educators. The grand-mean response for all 54 auditing topics is 4.58 for the auditing educators and 4.35 for the CPA practitioners. Comparison of these grand means via a *t*-test shows that overall the auditing educators rated the 54 auditing topics as being more important than the auditing practitioners (*t*-statistic =2.678, *p* = 0.008). It is not surprising to find the educators rating the auditing topics higher on importance given that this represents a greater proportion of their job, educating students about auditing, than it would be for the practitioners. A measurement limitation of this research is that it does not permit an absolute measure of importance. At best the results are limited to relative and subjective assessments of importance by the auditing educators and practitioners. With auditing educators exhibiting a distinct upward bias on importance, the observed values were adjusted before any statistical comparisons were made between the two key stakeholders. More specifically, the respective grand mean for each class of respondents was subtracted from each individual's importance rating thus anchoring their relative level of importance to the overall level of importance assigned to the auditing topics by their respective group.

Employing these adjusted values, the ratings of the individual auditing topics for the two stakeholder groups were statistically compared using MANOVA. A significant difference was found between the two stakeholders and the results of this test are shown at the bottom of Table 2. A post-hoc follow-up to determine which auditing topics were causing this difference between the two groups is reported in Table 4. A total of 17 of the 54 auditing topics (31.5%) showed a statistically significant difference between the two stakeholders. The first eight topics listed in Table 4 had the practitioners rating the auditing topic higher in terms of relative importance and the last nine topics had educators rating the topic higher in terms of relative importance.

The eight topics rated statistically higher by the CPA practitioners included the four aforementioned topics that the CPAs found significantly greater than 4.0 but the educators did not. Also in this group were three topics that both stakeholders found significantly greater than 4.0, but after adjustment the CPA rating was statistically higher. They were *Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.* (20), *Business functions—cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents* (38), and *Statements on Auditing Standards--their origin and use in audit practice* (3). The final topic that CPAs

Table 4
MANOVA Post-Hoc Test Results - Individual Auditing Topics

ID	Auditing Topic	CPA Adjusted Mean	Educator Adjusted Mean	F-Value	Signifi- cance
30	Planning the audit	0.693	-0.463	57.313	0.000
4	Quality Control Standards—their origin and use in audit practice.	-0.049	-0.713	15.220	0.000
54	Governmental auditing and generally accepted government accounting principles	-0.843	-1.644	14.708	0.000
20	Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.	0.554	0.219	6.202	0.013
17	Review services and reports	-0.020	-0.417	6.045	0.015
38	Business functions—cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents	0.311	-0.020	5.730	0.018
3	Statements on Auditing Standards—their origin and use in audit practice.	0.326	0.015	4.269	0.040
51	Discovery of facts subsequent to issuance of audit report	-0.130	-0.440	3.985	0.047
22	Definition of audit risk, business failure and audit failure	0.458	0.753	4.955	0.027
5	Auditor's decision process for issuance of an audit report	0.281	0.617	5.303	0.022
33	Internal control structure and components of strong versus weak control	0.561	0.833	5.606	0.019
9	Detailed analysis of the qualified audit opinion	-0.593	-0.167	6.114	0.014
44	Attribute sampling and applications	-0.520	-0.179	6.273	0.013
6	Detailed analysis of the unqualified audit report	-0.380	0.105	7.836	0.006
46	Analysis of statistical results and implication on audit procedures	-0.491	0.003	9.706	0.002
35	Assessing control risks and testing of key controls	0.384	0.799	10.871	0.001
24	Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law	-0.873	-0.235	12.116	0.001

rated more highly on importance than educators is *Governmental auditing and generally accepted government accounting principles* (54), which neither group rated greater than 4.0. Clearly these eight topics have a more practical and professional orientation.

Of the ten topics that educators rated significantly greater than 4.0 but CPAs did not, only five, *Detailed analysis of the qualified audit opinion* (9), *Detailed analysis of the unqualified audit report* (6), *Attribute sampling and applications* (44), *Analysis of statistical results and implication on audit procedures* (46), and *Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law* (24), were significantly higher rated topics by educators after the adjusting for the potential upward rating bias on the part of the educators. The remaining topics rated higher on importance by educators, *Auditor's decision process for issuance of an audit report* (5), *Definition of audit risk, business failure and audit failure* (22), *Internal control structure and components of strong versus weak control* (33), and *Assessing control risks and testing of key controls* (35), were all topics that both stakeholders rated significantly greater than 4.0. An obvious theoretical orientation is present with these nine topics. Topics five, six, and nine deal with opinion decision analysis and are important to passing the auditing section of the CPA exam, but in practice they would be more the domain of the audit managers and partners than entry-level auditors. Likewise, topics 44 and 46, dealing with statistical analysis, and topic 24, dealing with legal liability, are theoretical oriented as these are topics covered on the CPA exam. The remaining three topics (22, 33, & 35) deal with the assessment of risks and internal controls that are typically handled by more senior people on the audit staff and are more theory based and have a greater probability of being on the CPA exam.

CONCLUSIONS

For accounting educators, the accounting curriculum represents the design for quality. To help facilitate the improvement of the quality of accounting graduates, this paper undertakes an assessment of the quality of auditing curricular design to assess the status of previously reported conflict in education objectives between auditing educators and practicing CPAs that had been cited to explain why CPAs were dissatisfied with university training of auditors. This is accomplished by determining the relative importance of auditing-based topics within the auditing curriculum for two key stakeholders of auditing education—auditing educators and CPA practitioners. The 54 auditing-based topics serve as a proxy for the design specifications for the accounting graduate's knowledge with respect to auditing. Overall, a high level of design quality is indicated by the high degree of correlation ($r = 0.816$, $p = 0.000$) exhibited between the ratings on importance by the two stakeholders. The educators and practitioners demonstrate a high level of congruence on the relative importance of a great number of design (knowledge) specifications for the accounting graduate. This is not what one would expect if there were a high level of dissatisfaction with the product.

However, previous research in explaining expressed dissatisfaction with auditing education on the part of practitioners focused not on the areas of agreement but on those where there was relative disagreement. Our findings show that almost one-third, 17 of the 54 topics, have statistically significant differences in their importance ratings between the two groups. The eight topics that CPAs rate significantly higher than educators definitely have a more practical and professional orientation, and the nine topics rated higher by the educators have a more theoretical orientation and are more likely to appear on the CPA exam. Thus, these results support the previous research indicating that the conflicting relative emphasis on educational objectives between the educators and practitioners, namely theory versus practice, continues. Moreover, with only one exception, these differences are for topics that either one or both of the stakeholders rated as being significantly greater than 4.0 (Important). With the relative differences of these educational objectives occurring among the more important topics within the auditing curriculum, one can understand why these differences were cited as the reason of expressed dissatisfaction with the auditing education. More importantly, however, this feedback from the public accounting profession is significant as it demonstrates a continuing, but differing importance placed on these educational objectives by the profession. If accounting educators are to improve the quality of design of the auditing curriculum, they will need to address these continuing differences.

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**AN HISTORICAL REVIEW OF TRANSFER PRICING THEORIES
PRIOR TO THE TAX REFORM ACT OF 1986: GOAL CONGRUENCE
AND ALIGNMENT WITH ORGANIZATIONAL STRATEGY**

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ABSTRACT: This paper provides an historical treatise of five approaches to transfer pricing that evolved over time to address organizational strategy and goal congruence from a perspective of profit maximization within an organization. The five approaches include: economic theory, mathematical programming, accounting theory, organizational behavior theory and strategic management theory. The economic, mathematical programming and accounting models sought to maximize profits through determination of an optimal transfer price. The organizational behavior and strategic management models provided theoretical approaches as to how the organization might resolve conflict to negotiate a satisfactory transfer price and bring about goal congruence. In addition, organizational behavior literature provided direction using the motivational aspects of profits.

INTRODUCTION

The Tax Reform Act of 1986 required that one of three transfer pricing methods be used for intercompany sales of goods and services (Schindler, 1988). These three pricing comparability methods were required to be applied in the order of: a comparable controlled price, a reasonable price, or a cost-plus percentage. The passing of this tax reform changed the landscape of the transfer pricing debate from one of a choice of best methods to motivate employees toward goal congruence to a mandated structure. Since that time most, if not all, of the transfer pricing literature has focused on the international tax implications.

This paper focuses specifically on tracing the historical evolution of transfer pricing policies on divisional profitability, achieving goal congruence and alignment with organizational strategy prior to the Tax Reform Act of 1986. The intent of this paper is to chronicle the evolution of transfer pricing theories from purely mathematical approaches to the recognition of the importance of the motivational effects and support of organizational strategy. Owners and top level managers of corporations wish to maximize the long-term health and profitability of the organization. To do this, they set goals, plan and strategize how they might achieve these goals. Thus, organizational strategies evolve. In order for organizational strategies to be effective however, middle level managers must be motivated to make decisions that achieve the desired results. To motivate these managers, the concept of evaluating performance and distributing rewards based on divisional profitability developed over time.

As transfer prices affect divisional profits, and divisional managers each maximize their division's profits, conflicts may arise. The strategic objectives of the organization which top management was trying to motivate managers to achieve may be forgotten in lieu of these individual profits. This goal incongruence is a problem cited historically throughout the transfer pricing literature.

In a review of the transfer pricing literature, an evolution of five distinct categories or streams of literature emerge. Those are transfer pricing approaches based on:

- 1) Economic Theory
- 2) Mathematical Programming
- 3) Accounting Theory
- 4) Organizational Behavior Theory
- 5) Strategic Management Theory

The first three categories represent a quantitative focus which attempt to solve for an optimal transfer price that will be the basis of divisional managers' choices that will maximize firm profits. The last two categories primarily represent a qualitative focus in which the transfer pricing problem is viewed from the perspectives of conflict/negotiation and administrative processes. It is from that final category, Strategic Management Theory that goal congruence and strategic alignment could theoretically occur both of which are particularly relevant in the current globally competitive marketplace.

ECONOMIC THEORY

In the transfer pricing approaches based on economic theory, the firm is viewed as a mini-economy in which scarce resources need to be allocated. Just as in the general economy, prices are a mechanism to allocate these scarce resources. The objective of the economic theory based approaches is to find the transfer price that will lead the divisions, both buying and selling, to choose production levels which maximize total firm profits (Eccles, 1985). Persons within the organization are viewed as rational utility maximizers (Simon, 1978). Therefore, they hypothetically will not exhibit dysfunctional behaviors that would lead to a misallocation of the scarce resources.

The literature in the economic theory based approach to transfer pricing is built upon the Hirshleifer (1956) model. This was the first formal treatment of the transfer pricing issue from the economics viewpoint (Eccles, 1985; Grabski, 1985). This model assumed two profit centers: one was a manufacturing division and the other a distribution division. The manufacturing division had no external market for its product, whereas the distribution division had a competitive external market. Hirshleifer (1956) then analyzed the problem under varying demand conditions and concluded that when a perfectly competitive market exists for the intermediate product, it should be transferred at the market price. Otherwise, the basic conclusion yielded was to price along the marginal cost curve for intracompany transfers. This conclusion held even when the assumption of no external market for the intermediate product was relaxed. This

market was then examined under situations of both perfect and imperfect competition (Eccles, 1985; Grabski, 1985).

To reach the same figures for the optimal output of each division, yet retain their autonomies, Hirshleifer (1956) suggested that the manufacturing division supply the distribution division with the quantities to be produced at specified prices. When divisional managers are evaluated based upon their divisional profits, as is often the case, the temptation frequently would exist not to supply truthful, relevant information. Thus, gaming is a possibility inherent in Hirshleifer's model (Grabski, 1985). Also, the assumptions of technological independence between the divisions are frequently not reflective of reality (Eccles, 1985).

Hirshleifer's (1956) model does have utility, however, in those situations, though they are few, where a highly competitive (nearly perfectly competitive) market exists for the intermediate product (Kaplan, 1982). Kanodia (1979) developed a proof to illustrate that Hirshleifer's analysis, in situations of perfect competition for the intermediate product, was correct. Kanodia (1979) adapted Hirshleifer's economic model, with a certain external market, to a mathematical programming approach, and then adapted the Hirshleifer model, which assumed certainty in the environment, to conditions of uncertainty. In the Kanodia model, central management is assumed to run the linear program based upon honest reports of the manufacturing and distribution divisions. From this the author obtained an ideal transfer price which they imposed on these divisions. This situation provided no incentive to report honestly; therefore, as with the Hirshleifer (1956) model, misrepresentation by management may be expected to occur.

Kanodia's (1979) then changed his model for uncertainty. The distribution division then faced a vector of market prices and probabilities for the final product. Along with uncertainty, central management added an incentive scheme where division managers receive a percentage of division profits. This situation reflected only the risk attitudes in the distribution division. The allocation of rewards would not be *pareto optimal* and maximization of the overall objective of the firm is not guaranteed.

Kanodia (1979) then introduced risk sharing by the divisions (both local and global) by imposing a vector of values for the transfer price and making it conditional on the final price. In the local risk sharing scheme, the transfer price was attained by forcing a separation between divisional managers' risk aversions. A linear program was run to find the transfer price that would be imposed on the divisions. The interactions of the divisions will produce the distribution of total firm profits. Pareto optimality is achieved for the manufacturing and distribution divisions. In the global risk sharing scheme, the linear program solves for total firm optimality. Corporate objectives are considered equally with divisional managers' risk aversions and an imposed transfer price is determined. Both risk sharing schemes, local and global, are assumed to motivate management to want to increase profits.

Both Eccles (1985) and Grabski (1985) criticized Kanodia's (1979) scheme as not being incentive compatible. The approach relies on truthful communication of information between divisions, but does not provide motivation for this communication. Transfer prices impact divisional profits. Since performance evaluations are based on these divisional profits, managers would have greater incentive to favorably impact these profits. Therefore, they would be more likely to misrepresent information (Eccles, 1985; Grabski, 1985).

The economic models discussed above share the criticism of not being incentive compatible. Because transfer prices are mandated, managers would have little autonomy in setting them. As previous studies have pointed out (Jennergren, 1977; Ismail, 1982; Kaplan, 1982; Eccles, 1985; Grabski, 1985) models which rely on transfer prices being mandated by central management, could even be criticized for breaking down the concept of the decentralized firm. Yet, managers are being evaluated on divisional performance as if completely autonomous decision making had existed. Thus, their perceptions of fairness would be distorted and dysfunctional behavior would result and they therefore would not be goal congruent (Eccles, 1985).

Another criticism cited regarding the economic theory approaches is that they ignored strategy. The question of what business the company is in and how it chooses to compete was not addressed (Eccles, 1985). Divisions in newer product technologies would have different cost structures and would face different environmental conditions than older, established lines. The strategic decisions made by management, of what divisions to nurture by supporting greater production and experimentation, versus what divisions to phase out or maintain at current levels, are virtually ignored. The economic models focus on profit maximization in the current term, without regard for these longer term strategic decisions (Eccles, 1985). Thus, the economic models have been criticized for only being applied in conceptually simple cases (Grabski, 1985).

MATHEMATICAL PROGRAMMING

As in the economic theory approach, the objective of the mathematical programming approaches was to determine the transfer price which yielded the best results for the firm as a whole. The procedures in this approach introduced a pricing mechanism that determined the allocation of resources when constraints on capacity exist or when multiple buying divisions exist (Eccles, 1985).

Most of the linear programming approaches to transfer pricing solved for profit maximization as the primary constraint. Conversely, Harris, Kriebel and Raviv (1982) viewed cost minimization as the vehicle to profit maximization. By using cost minimization under varying levels of information, the authors proposed a scheme that would penalize divisions for being efficient. This scheme created a situation in which transfer prices increase as divisions become more efficient forcing the divisions to cut costs to maximize profits. Unfortunately, the authors did not consider what that might do to product quality, nor did they consider what type of work climate this would create. Harris, et al. (1982) also assumed the development of realistic budgets as a prerequisite of

their approach. Central management would, therefore, have to elicit truthful, relevant information to be used as the basis of these budgets from divisional managers. Once again, with performance evaluations based on divisional profits, little incentive would exist for the divisional managers to share this factual information. Gaming would again be the most likely result. Therefore, it is doubtful that the objective of long run profit maximization of the corporation would be enhanced under this scheme.

Burton and Obel (1980) simulated the behavior of planning approaches using decomposed mathematical programming models. Five different *a priori* levels of information were used under three different approaches to determine which combination performed best. The levels of *a priori* information were as follows:

- (i) No *a priori* information;
- (ii) High initial transfer price and equal resource sharing;
- (iii) Market based transfer prices;
- (iv) Equal resources sharing and production capacity constraints;
- (v) Historical prices and budgets.

The three approaches were: a price-driven algorithm, a mixed approach and a resource approach. The authors found that more *a priori* information yielded better results and that historical information became less relevant as the environment became more random. Also, they found that the price-driven algorithm performed best. Therefore, they concluded that more information available for planning in an uncertain environment enhances the planning process. However, several questions remain regarding their data. This data consisted of random numbers combined with actual price fluctuations, over a purported relevant range, in the meat industry. The demands for the product were also fluctuated over this same range. It is not clear whether these amounts replicated actual market conditions, whether they pertain to a specific firm or the industry as a whole, or even to a group of firms in the industry. Do these fluctuations represent seasonal fluctuations? Because of these unanswered questions, caution should be exercised when relying upon these conclusions.

The mathematical programming approaches, in general, fell under similar criticisms like the economic approaches. First, centralization of decision making, via mandating of transfer prices, was viewed as a threat to divisional autonomy (Ismail, 1982; Kaplan, 1982; Eccles, 1985; Grabski, 1985). Second, gaming by divisional management was encouraged due to the performance evaluation factor. Because these methods relied on conveyance of truthful information by divisional managers, they would have been difficult to implement in practice (Kaplan, 1977; Eccles, 1985; Grabski, 1985).

Ismail (1982) recognized these problems inherent in the mathematical programming approach. He therefore developed a decision rule, with fewer input requirements, to illustrate the achievement of overall optimality of divisional

results. Divisional autonomy was preserved while allowing for demand uncertainty. This was done by using a stochastic model for the selling division because it would be more reflective of the uncertainty of demand in the external environment. A deterministic model was used for the purchasing division. He then developed a decision rule to “maximize the product of the amount of goods transferred multiplied by the difference between the bid and asked transfer prices,” (Grabski, 1985, p. 41). The transfer price set was a combination of the price that the purchasing division was willing to pay and the price that the selling division was willing to accept.

In summary, the mathematical programming approaches provided a means of maximizing total firm profits based on inputs from divisional managers. They required a less restrictive set of assumptions than the economic theory approaches (Eccles, 1985). However, the mathematical programming approaches ignored the firm strategy, the extant administrative processes and individual perceptions of fairness regarding performance measurement, evaluation and reward. Thus, motivation and goal congruence were also ignored in the mathematical programming approaches.

ACCOUNTING THEORY

The transfer pricing approaches based on accounting theory had the same objective as the economic theory and mathematical programming approaches: they sought to find the transfer price that would motivate divisional managers to make decisions that benefited the firm as a whole. The accounting theory approaches also used the same assumptions about individual motivation and incentives as the preceding approaches. The primary focus of this stream of literature was whether market price or some form of standard variable cost should be used (Eccles, 1985).

The first effort to apply Hirshleifer’s (1956) theory to accounting was made by Solomons (1965). The author prescribed five different transfer prices applicable to five different environmental conditions (external markets and extent of internal transfers). The first of these prescriptions was that market price was applicable when the external market was highly competitive. Kaplan (1982) later agreed. The next four were for situations when the external market was not highly competitive. They were for varying forms of cost, dependent upon how important the transfer price issue was to the organization. The final prescription was for the situation when there was no competitive external market for the product. Solomons recommended mathematical programming to solve this situation because the producing division was assumed to be operating under capacity constraints. Also, it was assumed that most of the producing department’s goods were transferred to other departments. Kaplan (1982) would have categorized this department as a cost center.

Solomons (1965) recognized the effect of transfer pricing on performance evaluation and the problems thus caused regarding goal congruence (Eccles, 1985). However, he chose to focus solely on the transfer price as a

method of resource allocation. He also implicitly assumed that the buying division was forced to source internally (Eccles, 1985). Benke and Edwards (1980) built upon Solomons' (1965) model; however they were willing to forfeit the objective of profit maximization for performance evaluation. The authors tested this general rule in various economic situations ranging from perfectly competitive external markets to no external markets (Eccles, 1985; Grabski, 1985). They established a general rule for transfer pricing that prescribed standard variable cost plus lost contribution margin for most situations.

Anthony and Deardon (1980) departed somewhat from Solomons (1965) and Benke and Edwards' (1980) prescriptions for varying forms of standard cost in less-than-competitive markets by suggesting that firms use the market price whenever it is available. They reasoned that market price would force the selling division to constantly review its make-or-buy decisions; therefore, it would produce only what it could produce profitably. Further, Anthony and Deardon (1980) suggested three cost-based methods, but recommended they be used when neither market nor "rough estimates" of market were available. These three cost based methods were: standard variable cost plus a monthly charge for fixed costs, standard variable cost plus a portion of the contribution earned, and dual pricing where the selling division receives an approximation of the outside sales price minus a discount and the buying division pays standard variable cost.

Like Anthony and Deardon (1980), Kaplan (1982) recommended market price when the external market is highly competitive. When external markets are not perfectly competitive, Kaplan (1982), like Solomons (1965), suggested marginal cost. Due to the limitations associated with marginal cost, particularly the lack of profit, thus lack of incentive to the supplying division, the author suggested a two-part transfer price. This two-part price was to be used only when the transfer is not a major portion of the supplying division's output. Kaplan (1982) held that when the transferred product represents a major portion of the output, the division should be classified as a cost center. Kaplan (1982) also recognized the performance evaluation problem and suggested that negotiated market-based prices could be used when a perfectly competitive market does not exist. However, the author mentioned that the use of this method would depend upon the sharing of information among negotiators. This problem arose due to the fact that Kaplan (1982), like other accounting theorists writing on the transfer pricing issue, assumed that performance evaluations are to be based on divisional profits without consideration of each division's strategic situation.

The accounting theorists, like the economic theorists and mathematical programmers, focused on how transfer prices affect economic decisions (Eccles, 1985). These decisions, made by the division managers, regarding how much to produce based upon the transfer price, were a short-term aspect of corporate performance. Because of the performance evaluation and reward system, managers were making decisions for the short-term: that is because the quantitative methods ignored strategy and goal congruence in their transfer pricing models. Also, the performance evaluation system assumed in the models

ignored strategic decisions. These strategic decisions may cause divisions to operate under different objectives and constraints.

ORGANIZATIONAL BEHAVIOR THEORY

Grabski (1985) noted how unusual it is that only a minor amount of research focusing on organizational behavior theory and transfer prices had been published by the mid-eighties. The author stated that it is probably because the transfer pricing technique needs to be in place before the impact of the method on an individual and an organization can be addressed. Unfortunately, it appears that this viewpoint was quite prevalent because very little research had been done in this area. Yet, most of the problems pointed out in the complex mathematical models cited the inability to obtain fully truthful information from divisional managers because their compensation schemes are tied to divisional profits (Kanodia, 1979; Harris, et al., 1982; Ismail, 1982). Therefore, the technical transfer pricing schemes could not work unless they fit the organization, and are accepted by the managers as fair and neutral. Also, for these models to work, divisional profits must be seen as an appropriate evaluator for performance. The organizational behavior articles, in general, view individuals as profit “satisfiers,” rather than the profit “maximizer” view of the quantitative stream of literature. From the viewpoint of the impact on individuals, Earnest (1979) used transfer pricing as an example of how the expectancy theory of motivation might be used to evaluate alternative accounting procedures. The author set up a hypothetical situation comparing the incremental cost, opportunity cost, and market price methods of transfer pricing via the expectancy theory equation. Earnest (1979) concluded that market price transfers result in increased performance as evidenced by profits. Several versions of expectancy theory have been formulated, but in general “expectancy theory states that motivation is a combined function of the individual’s perception that effort will lead to performance and of perceived desirability of outcomes that may result from performance,” (Steers and Porter, 1983, p. 55). Thus, motivation was considered to be a result of both intrinsically and extrinsically motivating factors. Intrinsic rewards come from within: they are feelings of satisfaction, accomplishment, enjoyment of one’s work. Extrinsic rewards come from outside of the individual and consist of things like pay, promotion and peer recognition (Earnest, 1979). When Earnest (1979) illustrated how transfer pricing alternatives might be chosen, the author ignored the fact that a component of the expectancy theory equation is intrinsic reward (Deci, 1975), and thus assumed that divisional profits are the only motivational force.

Ackelsberg and Yukl (1979) questioned how defining divisional profits as the motivational force in decentralized organizations affects the decision making of persons who are to be motivated by those profits. They used a business game with students as the participants to determine how smoothly the decision making process flowed with variations in the emphasis on profits. When corporate profits were emphasized, transfer pricing decisions flowed more smoothly, more integrative problem solving occurred and less aggressive,

competitive behavior was exhibited. When divisional profits were emphasized, the opposite occurred. Although external validity may be questioned, due to the use of students as decision makers, the results seem to indicate that the proper focus for optimal results is the financial health of the organization, not the health of the divisions alone.

In summary, the organizational behavior literature on transfer pricing focused on the impact of various transfer pricing approaches on divisional profits and consequently on motivation. Also, the problems of using divisional profits, as opposed to overall corporate profitability, as the key criterion for performance evaluation were discussed. The primary theme of this stream of literature was managing conflict and the decision making process. Economic decisions and corporate performance were virtually ignored, as was determining the optimal transfer pricing scheme to achieve goal congruence. Finally, the macro perspective of strategic management was entirely absent from this stream of literature.

STRATEGIC MANAGEMENT THEORY

The perspective of the whole organization was taken by Swieringa and Waterhouse (1982). The authors reviewed four models of the organization from organizational theory and attempted to explain how these organization types would handle the transfer pricing problem. The four organizational models discussed are:

The Behavioral Model—Cyert and March (1963)

The Garbage Can Model—Cohen and March (1974)

The Organizing Model—Weick (1973)

The Markets & Hierarchies Model—Williamson (1975)

The organization seen by Cyert and March (1963) focuses on goals, expectations and choices. Goals emerge as a set of constraints which define acceptable performance. These goals are arrived at by a bargaining process which mixes expectations and demands. Organizations are also viewed as negotiating an environment to deal with uncertainty. In this negotiated environment, the actions of participants are “regularized” as well. Thus the organization learns and adapts over time as a result of experiences and negotiating/bargaining activities. The transfer pricing scheme was thought to evolve through this organizational learning cycle. Division managers negotiated acceptable transfer pricing rules which resulted from the goals of cost savings, reinforcing the decentralized system, etc. (Swieringa and Waterhouse, 1982).

Cohen and March’s (1963) garbage can model viewed organizations as negotiating to solve problems, but being constrained by the collection of choices available. The nature of the choices made depended upon a somewhat complicated intermeshing of a mix of all choices and solutions available, all problems of the organization faces, and all outside demands. The process of transfer price choice would reflect this complicated intermeshing. The resultant transfer price scheme would reflect that problems were worked on in the context

of choice. What was chosen is what would be best for the situation selected from what happens to be available.

Weick's (1973) organizing model was a fluid, dynamic model of change. The organizing process was viewed as cyclical. Members of the organization were seen as creating, or enacting, the environment to which they adapt. This is because retained interpretations largely determined what actions are responded to and what meanings are given to those actions. Therefore, the choice of a transfer pricing rule would be seen as a means of legitimizing past actions, as individuals only have their retained interpretations by which shape their choices.

The last organizing model reviewed by Swieringa and Waterhouse (1982) is Williamson's (1975) markets and hierarchies model. Williamson saw two separate models of achieving cooperation in organizations. The first is the markets model in which exchanges are achieved by negotiating and contracting. Bounded rationality (limited observational, language and computation abilities of individuals) precludes individuals from foreseeing or anticipating all possible courses of action and their contract implications. Williamson discussed how individuals may create problems in this process due to self-interest, therefore may make false claims. This has been evidenced in the economic and mathematical programming literature on transfer pricing. Managers had a disincentive to reveal truthful information because they would later be evaluated on that information. Thus the negotiation process of determining a transfer pricing scheme in a markets model organization could be costly due to time consumed with negotiation. The hierarchies model also highlighted organizations which economize on transactions costs by replacing a series of "market contracts" with a single incomplete employment contract and common resource ownership. Cooperation is encouraged in this model. Thus in a hierarchy, the best result for the organization as a whole would be reflected in the transfer price scheme chosen (or in the decision to purchase the products externally, if that happened to be the best result).

Swieringa and Waterhouse (1982) found that each model led to different definitions of the problem, asked different questions to analyze the problem and resulted in different answers to the transfer pricing problem. These models suggest that the process of devising a transfer pricing scheme is not a straightforward one. Forces of change and the negotiation process may conflict with pressures for organizational stability and control. Choices are not always apparent as factions' perceptions may differ; therefore, the solution may not be an optimal one as suggested in the more mathematical approaches. This is organizational reality. Differences of opinions and perceptions often blur the view of what is best for the organization. Swieringa and Waterhouse (1982) concluded that these conceptual viewpoints were complementary. All four models could be used to view the problem. They provided more of a description of, rather than a prescription for, the alternative processes of making complicated transfer pricing decisions. Swieringa and Waterhouse (1982) did, however, succeed in showing that "the choice and process of choice cannot be conveniently abstracted from the complications of the context," (p. 162). Like

Swieringa and Waterhouse (1982), Bower and Doz (1979) focused on the rules and procedures when analyzing the transfer pricing issue from a business policy perspective. They concluded that these processes, rules and procedures may be as important as the prices themselves (Bower and Doz, 1979; Eccles, 1985). However, this conclusion did not result in a solution to the dilemma.

The issue of organizational unity and goal congruence was addressed by Eccles in 1983; the author stressed that it is the business strategy which determines the appropriate transfer pricing scheme.

[T]he key to the transfer pricing problem is strategy. Transfer pricing schemes are a means of generating information and control for implementing corporate, business unit and product strategies (Eccles, 1983, p. 151).

Eccles (1983) looked at various transfer pricing schemes employed by thirteen different companies. The author performed a content analysis of approximately 150 interviews of executives and the results of this analysis enabled the author to develop a categorization of organization type and transfer pricing methods used. Four categories of organization types resulted: competitive, cooperative, collaborative and collective. The collective organization does not have transfer pricing because there is no interdivisional movement of products. The competitive organization is highly diversified and has little vertical integration, such as a conglomerate or a holding company. The criteria for performance in these organizations stress business unit (divisional) performance as compared to a budget, other business units or competitors. The business units depend on each other little, if at all. Two different methods of transfer pricing were found to be used: market-based pricing and dual pricing. Because the business units are essentially independent companies in the competitive organization, the philosophy of selling at market as if the products must be acquired externally was used.

Both of these transfer pricing schemes were aligned with strategy because in a conglomerate different business units may operate under different competitive strategies. Therefore, market or some version thereof would be the only fair and neutral price (Eccles 1983, 1985). Also, different transfer prices may apply to the separate divisions because of the various strategies employed. Market-based pricing was in agreement with Kaplan's (1982) recommendation of the market as a transfer price if there is a competitive market for the product. Divisions operated as if they were separate entities, so the pricing reflected the distinctness of the units. In cooperative organizations business units are interdependent and cooperation is emphasized. This type of company is usually vertically integrated and most of the divisions operate as cost centers. Control is achieved through the organizational structure. Decisions are made at the top and managers' evaluations and divisional budgets are based on total corporate performance (Eccles, 1983, 1985). The transfer pricing schemes in this type of organization are naturally some form of cost. Eccles (1983, 1985) found three types used: actual full cost, standard full cost and cost plus investment. Performance was evaluated in this type of company by determining what the

business unit contributed to total corporate performance rather than on divisional performance alone (Eccles, 1983, 1985).

Collaborative organizations are a combination of the competitive and cooperative organizations. They have individual, competitive profit centers, yet are interdependent. There is an emphasis on measuring quantitative results for performance evaluation combined with, (due to the interdependence), the need to be concerned about other units and total corporate performance (Eccles, 1983). These companies are usually matrix organizations organized both around product groupings and functional areas. This mixed focus was evident in the setting of transfer prices; both cost-based and market-based transfer pricing schemes were emphasized. It is extremely difficult, if not impossible to find a transfer pricing scheme which satisfies top management's need for control. Usually, the transfer price was set by negotiation. Conflict, therefore, was commonplace in this sort of organization. However, because the transfer price was negotiated, management theoretically perceived the transfer price and the reward system to be fair. Eccles' (1983) article was important because of its focus on the strategy of the organization guiding the transfer pricing policy, performance evaluation and reward, thus aligning organizational goals with those of management.

In the current globally competitive marketplace, companies have become more decentralized and thus have a flatter organizational structure (Martinson and McKee, 2001). Gox (2010) found that operating these divisions as responsibility centers, rather than as investment centers, has provided a greater advantage in inducing goal congruent decisions. In these globally competitive organizations, transfer pricing can play an important role in achieving the corporate goal of maximizing corporate profits, and simultaneously inducing goal congruent decisions. To be effective, the transfer pricing scheme should improve both the division's profits and the company's profits. Within the IRS regulations and the laws in the countries in which the company is doing business, an organization can use the transfer pricing systems to competitively price their products in specific markets (Martinson and McKee, 2001). With products competitively priced, sales in those targeted areas can be increased impacting both the division's profits and profits of the organization as a whole.

SUMMARY

This paper sought to provide an historical review of transfer pricing theories and models prior to The Tax Reform Act of 1986. The Tax Act, itself, mandated the transfer pricing structure to be used prospectively, thereby disallowing previous options utilized by organizations to increase goal congruence within the culture. Five approaches to transfer pricing have been discussed from an historical perspective: economic theory, mathematical programming, accounting theory, organizational behavior theory and strategic management theory. The strengths and weaknesses of each approach as a mechanism to motivate, evaluate and distribute rewards to managers responsible for divisional growth and profitability have been discussed as they evolved historically over time. Though each approach suffered weaknesses and tax law

now governs transfer pricing, perhaps as accounting theory has continued to evolve, a reassessment of transfer pricing alternatives by both tax law and bodies responsible for the development and promulgation of accounting concepts might be warranted. For example, Eccles (1983, 1985) held that if there is a proper fit of the organizational strategy, organizational structure and transfer pricing scheme used, then managers perceive the performance evaluation and reward systems to be fair. Eccles was writing just prior to the 1986 tax act, thus allowing for little assimilation time for the incorporation of such insights into practice. If managers perceive these systems to be fair, they will be motivated to achieve corporate goals because they will be rewarded for such action. Managerial gaming would end and goal congruence would exist. In the current globally competitive marketplace, transfer pricing can play an important role in achieving the corporate goal of maximizing corporate profits, and simultaneously inducing goal congruent decisions.

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**DOES CONSERVATISM AFFECT THE VALUE RELEVANCE OF
DISCRETIONARY ACCOUNTING DISCLOSURES?**

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ABSTRACT: This paper tests the impact of conservatism using Feltham and Ohlson's (1995) valuation model. Previous research indicates that managers will expand voluntary disclosures if their firms are undervalued by market investors. This paper predicts that accounting conservatism will provide more credibility to market investors, and the impact of voluntary disclosures on firm value will be greater in comparison to firms with aggressive accounting. The empirical evidence in this paper supports the hypothesis. Results support that accounting conservatism affects the association between voluntary disclosures and the value-relevance of accounting information such that the market reaction to voluntary disclosures is greater for the firms that market investors perceive as conservative. Also, the managers of firms undervalued by market investors tend to expand voluntary disclosures to correct market undervaluation.

INTRODUCTION

Healy et al. (1999) examined the manager's motivation to expand voluntary disclosures, and the effects of voluntary disclosures on equity market value. However, they did not address the question of whether the market responds differently to voluntary disclosures in different accounting and economic circumstances. This paper extends Healy et al. (1999) by investigating the effect of accounting conservatism on the relationship between voluntary disclosures and the value-relevance of accounting information, evaluating both earnings and book value. An evaluation of the benefits, as well as costs, associated with expanded disclosures can be important in making changes to mandated reporting requirements. The study of voluntary disclosures can also be important from a valuation perspective, if they have an impact on the market's perceived expectations of firm performance.

Furthermore, the study of conservatism is important because managers have considerable discretion in measuring firms' economic events, as allowed within those accounting regulations. A firm's accounting policy in reporting its financial performance is one of the governance mechanisms that enable privately informed and self-interested managers to credibly communicate their private, value-relevant information to market investors (Lobo et al. 2006). Therefore, voluntary disclosures and accounting conservatism can provide value-relevant information that has not yet been captured in bottom-line numbers.

Using the Feltham and Olson's (1995) valuation model (FO 1995, hereafter), this paper examines whether the effect of voluntary disclosures on firm value is associated with accounting conservatism. If a firm employs conservatism in its accounting measurements, that firm is predicted to have more credibility than firms which are less conservative. While a firm's credibility will impact the reliability of all information that it provides, the impact on the reliability of voluntary disclosures is especially important, as they are not audited like financial statements. Therefore, the value-relevance of voluntary disclosures will be greater for conservative firms relative to the voluntary disclosures of less conservative firms. The empirical evidence in this paper supports this prediction. The managers of firms that are undervalued by market investors tend to expand voluntary disclosures to correct the market's undervaluation. Accounting conservatism affects the association between voluntary disclosures and the value-relevance of accounting information such that the market reaction to voluntary disclosures is greater for the firms which market investors perceive as conservative. This paper also provides evidence on the extent to which FO 1995 fits data such as abnormal earnings and net operating assets in the context developed in this paper. Such evidence is important because this paper analyzes the hypotheses under the assumption that FO 1995 is descriptively valid. The results show that the model is consistent with the data analyzed in this paper.

LITERATURE REVIEW

Under information asymmetry regarding firm valuation, managers often possess private knowledge about a firm's operations and asset values that market investors do not have (Trueman, 1986). If management benefits including compensation are linked to the accounting numbers, then managers have incentive to withhold from those accounting numbers any information that would adversely affect their benefits, or manipulate those accounting numbers in management's favor. In addition, the arbitrariness of many accounting measurements and valuation techniques within Generally Accepted Accounting Principles (GAAP) can provide opportunities for managers to alter reported numbers and adversely affect the quality of accounting information (Lev, 1989). By using conservative accounting, managers can assure market investors that they are not overstating earnings or net assets (Devine, 1963), thereby increasing the credibility of accounting information conveyed by earnings or net assets. Therefore, it is an interesting question as to whether accounting conservatism enhances or adversely affects the value-relevance of accounting numbers.

While fundamental accounting data in financial statements are a comprehensive summarization of a firm's value, they are lagged and provide a minimum level of disclosure as required by accounting standard setters and capital market regulators. Also, managers have discretion in determining what information is actually provided beyond those minimum disclosure requirements. Therefore, managers have an incentive to disclose good news so as to distinguish themselves from the "lemons" in the market place that have no good news to disclose (Akerlof, 1970). But discretionary signaling of good news to the market

takes place only when the benefits from disclosure exceed the costs of voluntary disclosures such as proprietary costs, litigation costs, or information gathering/dissemination costs (Verrecchia, 1983).

FO 1995 shows firm value as a linear function of earnings, book value, and other information. Ohlson (2001) and Bryan and Tiras (2007) presume that analyst forecasts convey information to the market beyond that reflected by the financial accounting fundamentals of earnings and book value. They indicate that under information asymmetry, the market tends to focus less on financial accounting information and more on other relevant information beyond that reflected by the accounting fundamentals.

There has been large volume of research focused on the manager's motivation underlying voluntary disclosure. Healy et al. (1999) indicate the importance of discretionary disclosures in the undervaluation hypothesis. The hypothesis predicted that management would attempt to correct any market mispricing by expanding voluntary disclosures. By doing so, management would alleviate any information asymmetry by sharing their proprietary knowledge about the firm's future prospects. Ballow et al. (2004) found that only 35% of a firm's market value can be attributed to accounting fundamentals with the remaining 65% based on an assessment of firm value created by other relevant information. While this additional voluntary information could be useful for market investors, it is a question as to how reliable these disclosures could be. Because this information has not been subjected to an external audit by an independent third party, the credibility of management could be vital in determining how value-relevant the disclosures will actually be.

This paper examines the effects of voluntary disclosures on the relation between a firm's stock price and both earnings and book value using FO 1995. FO 1995 has the following desirable features for the empirical tests in this paper: (i) it provides a theoretical framework for the relation between stock price and abnormal earnings, which shows the persistence of investors' wealth creation; (ii) it includes net operating assets in the model, which controls for the relation between stock price and the book value of operating assets and represents the investors' perception about a firm's practice of conservatism; (iii) it allows the effects of voluntary disclosures to be explicitly added to the model in order to reflect the effects of information revealed voluntarily on a firm's stock price.

HYPOTHESES

Verrecchia (1983) analyzes a manager's incentive for voluntary disclosure when there are the costs associated with the disclosure of accounting information. He shows that a manager's decision to release or withhold his private information about firm value depends on the effect of that decision on the stock price. He suggests that a manager, whose objective is to maximize firm value, will voluntarily convey private information to market investors whenever the firm is undervalued by the market.

This undervaluation hypothesis is tested empirically by Healy et al. (1999) using an Earnings Response Coefficient (ERC) model to compare a test sample of firms that substantially increased voluntary disclosures with other firms. They find that increased voluntary disclosure appears to be effective in reducing undervaluation. By dividing the sample into EXPANDED, UNCHANGED and REDUCED firms, this paper examines the economic consequences for firms that reduce voluntary disclosures, as well as firms that expand voluntary disclosures.

In FO 1995, accounting earnings and operating assets are components which determine the firm value. If current operating assets are understated through conservatism, future expected earnings will be higher to reflect the reversal of the understatement, and the normal earnings will be lower (see Feltham and Ohlson, 1995). Therefore, managers are expected to reveal information concerning operating assets if they believe that market investors have undervalued the value-relevance of operating assets. Therefore, it is hypothesized that the managers of firms which are undervalued by market investors tend to expand voluntary disclosures. It is also hypothesized that the managers of firms which are overvalued by market investors would have a tendency to reduce voluntary disclosures in order to not reveal the market's mispricing.

H1: *If the value-relevance of abnormal earnings or operating assets is undervalued (overvalued) by market investors, then managers will expand (reduce) voluntary disclosures.*

When market investors receive value-relevant accounting information, they will revise not only their beliefs about estimates of firm value but also their beliefs concerning the credibility of the firm's information. If market investors rationally anticipate the manager's choice of reporting strategy as conservative (aggressive) based on the footnotes, supplementary information reported in the financial statements, or other sources, it is expected that investors will (i) estimate the extent to which firm value has been understated (overstated), (ii) revise their beliefs concerning the credibility of a firm's accounting information upward (downward), (iii) revise their beliefs concerning the credibility of the voluntary disclosures upward (downward), and (iv) evaluate the firm value upward (downward) accordingly, leading to a positive (negative) market impact.

Since the extent of accounting manipulation is unlikely to be known, there is uncertainty about firm value among market investors. The second hypothesis predicts that accounting conservatism is expected to eliminate significant uncertainty about the distortion in accounting and non-accounting information reported in voluntary disclosures, resulting in more credible and value-relevant disclosures. This will lead to enhanced market reaction to the voluntary disclosures.

H2: *The firms which investors perceive as conservative will have a larger market reaction to voluntary disclosures than the firms which investors perceive as aggressive.*

This paper uses the following FO 1995 models to test the hypotheses.

$$ox_{it+1}^a = w_0 + w_1 ox_{it}^a + w_2 oa_{it} + \varepsilon_{it+1} \text{ (Linear Information Model)}$$

$$g_{it} = \alpha_0 + \alpha_1 ox_{it}^a + \alpha_2 oa_{it} + \varepsilon_{it} \text{ (Linear Valuation Model)}$$

where:

g_{it} = unrecorded goodwill per share, defined as the difference between stock price and book value of firm i in year t ,

ox_{it}^a = abnormal operating earnings per share of firm i in year t ,

oa_{it} = net operating assets per share of firm i in year t ,

w_1 = marginal persistence in abnormal operating earnings per share,

w_2 = accounting conservatism in operating assets per share, and

ε_{it} = random error term.

In equation (1), the expected future abnormal earnings are assumed to be affected by both current abnormal earnings and operating assets. The coefficients of the variables ox_{it}^a and oa_{it} indicate the persistence of abnormal earnings and the conservatism of operating assets, respectively (FO 1995). FO 1995 is examined for all sample firms in order to compare the results with earlier work of Ahmed et al. (2000).

This paper estimates equation (2) using panel data for the EXPANDED, UNCHANGED, and REDUCED firms over each of the individual years of the test period, as well as during the pre-and post-disclosure periods. Consistent with Healy et al.'s (1995) undervaluation hypothesis, it is predicted that the coefficients on the abnormal earnings and net operating assets will be higher for the firms that expanded disclosures. Market investors may interpret a reduction in voluntary disclosures as a sign that managers are trying to hide bad news, and investors may adjust their overvaluation (Akerlof, 1970). Therefore, it is predicted that the coefficients on the abnormal earnings and net operating assets will be lower for the firms that reduced disclosures.

To examine the effect of conservatism on the market reaction to valuation multiples, the sample is divided into "CONSERVATIVE" and "AGGRESSIVE" strata by calculating the firm-specific average estimates of conservatism from the equation (1) relation between future expected abnormal earnings and current abnormal earnings and current operating assets over a four-year period preceding the event year. The firm-specific average estimate of conservatism is compared with the industry average estimate from equation (1) using all other firms with the same four-digit SIC code as the target firm. If the firm-specific average conservatism coefficient is greater than the industry average coefficient, then the sample firm is categorized as "CONSERVATIVE," otherwise "AGGRESSIVE."

Finally, to test the effects of changes in the voluntary disclosure between the post-disclosure change period and pre-disclosure change period on the

relation between equity value and accounting numbers (i.e., ox_{it}^a and oa_{it}) in the context of conservatism, this paper operationalizes the FO 1995 model as follows:

$$g_{it} = \alpha_{0kd} + \alpha_{1kd} ox_{it}^a + \alpha_{2kd} oa_{it} + \beta_{0kd} D_b + \beta_{1kd} D_b ox_{it}^a + \beta_{2kd} D_b oa_{it} + \varepsilon_{it}$$

where $k = c$ for CONSERVATIVE firms, and a for AGGRESSIVE firms, $d = e$ for EXPANDED firms, u for UNCHANGED firms and r for REDUCED firms, and D_b = dummy variable which is 1 for the pre-disclosure change period and 0 otherwise.

The pooled cross-sectional and time-series regression model is formulated as above in order to permit the intercept and coefficients to vary across the different years before and after the change in voluntary disclosures. In equation (3), α_{0kd} , α_{1kd} and α_{2kd} represent the intercept, persistence coefficient and conservatism coefficient, respectively, for the post-disclosure change period. For the pre-disclosure change period, the intercept, the persistence, and conservatism coefficients are $\alpha_{0kd} + \beta_{0kd}$, $\alpha_{1kd} + \beta_{1kd}$, and $\alpha_{2kd} + \beta_{2kd}$, respectively. Hence, β_{0kd} , β_{1kd} and β_{2kd} represent the differences in the intercepts and coefficients between the post-disclosure and pre-disclosure change periods.

According to the second research hypothesis, the change in persistence and conservatism coefficients for the CONSERVATIVE stratum is expected to be greater than the multiples for the AGGRESSIVE stratum. Consistent with the second research hypothesis, the predictions are as follows in alternative form:

$$\mathbf{H2a: } |\beta_{1ce}| > |\beta_{1ae}|$$

The adjustment of investors' overvaluation for the conservative REDUCED firms may be smaller than that for the aggressive firms. Therefore, the prediction for REDUCED firms is as follows in alternative form:

$$\mathbf{H2b: } |\beta_{1cr}| < |\beta_{1ar}|$$

All of the variables are deflated by the number of common shares outstanding to remove scale differences and reduce heteroskedasticity. Because of the inclusion of abnormal earnings and operating assets in the same equation, multicollinearity is tested with the condition index suggested by Belsley, Kuh and Welsch (1980).

SAMPLE MEASUREMENTS

In this paper, the proxies for the informativeness of voluntary disclosures are based on analysts' evaluation scores published in the FAF reports utilized by Healy et al. (1999). The FAF reports are prepared by industry-specific analyst subcommittees on an annual basis, and contain evaluations of the adequacy of firms' voluntary disclosures beyond the mandatory disclosures required by accounting regulations. Each industry committee prepares a list of important

aspects of disclosure weighted to reflect information requirements unique to the industry, and assigns a score to each firm. Since the evaluation scorings in FAF reports are usually reported with different scales or different analyst subcommittees over time for different industries, the raw scores should be standardized to provide meaningful proxies for voluntary disclosure informativeness. This paper uses *Relative Industry Rankings* (RIR) for each firm and each year in the test period (Healy et al., 1999; Lang and Lundholm, 1993). The RIR for firm i in year t is defined as follows:

$$RIR_{it} = \frac{N_{it} - R_{it}}{N_{it} - 1} * 100$$

where N_{it} is the number of firms in firm i 's industry in year t , and R_{it} is the rank of firm i 's disclosure score in year t .

Since this paper investigates the effects of different levels of voluntary disclosures over the test period, it is important to identify firms that have had a large and sustained change in their disclosure levels. To identify those firms with a large sustained increase or decrease in its RIR, this paper utilizes the *Changes in Relative Ranking* (CRR) during a test period. The CRR is computed with average changes rather than absolute changes to reduce the measurement error as follows:

$$CRR_{it} = \frac{1}{z} \sum_{\tau=t}^{t+2} RIR_{i\tau} - \frac{1}{2} \sum_{\tau=t-1}^{t-2} RIR_{i\tau}$$

where t is the event year on which a firm increases disclosure, and z is the period during which the disclosure increase is measured, similar to Healy et al. (1999).

To test the empirical model in this paper, sample firm-years are selected from the FAF reports during 1982 through 1993 that satisfy the following sampling criteria:

- (1) To measure the relative industry rankings (RIR_{it}), each sample firm has to have individual scores over the sample period. FAF industries must also have at least five firms to minimize measurement error from small absolute changes.
- (2) To measure the change in average relative rankings (CRR_{it}), sample firms have to be evaluated consecutively at least five years by FAF subcommittees.
- (3) The sample firms are categorized into "EXPANDED", "UNCHANGED", and "REDUCED" with the top two, middle two, and bottom two deciles based on the CRR_{it} in each year over the sample period.
- (4) Sample firms should have the requisite accounting data and stock price data available on either COMPUSTAT PC Plus Active or Research data sets.

After applying the above criteria, 713 firm-years remain available for the hypothesis tests. Table 1 shows the sample selection criteria across the three disclosure strata of sample firm-years.

Table 1
Sample Firms

Firm Characteristics	Number of firm-years			Total
	EXPANDED	MIDDLE	REDUCED	
Individual scores	---	---	---	1627
Consecutive scores	---	---	---	1492
Top, middle or bottom 2 deciles	299	298	298	895
Compustat data	277	281	275	833
Non-financial firms	247	250	242	739
Non-outliers	238	244	231	713

The variables used in the analysis are defined as follows:

Stock price (p) is determined as of three months following a firm's fiscal year end, assuming that all relevant information would be reflected in the price.

Unrecorded goodwill (g) is defined as stock price minus book value of equity.

Operating assets (oa) are defined as the book value of equity minus cash and marketable securities, and other investments and advances plus short term debt, long term debt, preferred stock, and minority interest.

Operating earnings (ox) are defined as income before extraordinary items minus interest income plus interest expense, preferred dividends, and minority interest income.

Abnormal operating earnings (ox^a) are defined as the difference between operating earnings (ox) and normal earnings, as measured by the product of beginning-of-period operating assets and the cost of capital.

DESCRIPTIVE STATISTICS

Table 2 shows how the variables defined above change when the sample firms expand, reduce, or do not change the level of their voluntary disclosures. The EXPANDED firms show an increase in stock price, unrecorded goodwill and abnormal earnings, but a decrease in book value and operating assets after the disclosure change. The UNCHANGED firms show an increase in stock price, unrecorded goodwill, book value, and operating assets, but a decrease in abnormal earnings. The REDUCED firms show an increase in stock price, unrecorded goodwill, book value, and operating assets, but a decrease in abnormal earnings.

Table 2 Descriptive Statistics
Panel A: EXPANDED firm-years

	Variable	Price	BV	G	OXA	OA	TA
Post- (n=714)	Mean	25.627	12.401	13.226	0.400	18.887	32.203
	Median	21.219	10.579	9.405	0.434	14.866	23.738
Pre- (n=476)	Mean	23.581	13.531	10.050	0.062	22.099	38.674
	Median	21.875	11.728	8.219	0.278	20.746	35.207

Panel B: UNCHANGED firm-years

	Variable	Price	BV	G	OXA	OA	TA
Post- (n=732)	Mean	28.271	14.241	14.030	0.334	23.950	39.983
	Median	24.542	10.819	11.248	0.478	18.804	30.142
Pre- (n=488)	Mean	24.421	12.855	11.567	0.422	20.481	34.309
	Median	19.511	9.631	8.326	0.389	14.997	24.139

Panel C: REDUCED firm-years

	Variable	Price	BV	G	OXA	OA	TA
Post- (n=693)	Mean	26.900	15.413	11.487	-0.434	25.787	46.308
	Median	24.812	12.695	9.649	0.188	20.426	35.366
Pre- (n=462)	Mean	25.279	15.342	9.937	0.021	23.560	41.355
	Median	24.250	12.638	8.238	0.309	19.495	31.790

The results of abnormal earnings reflect different results across the disclosure strata such that EXPANDED and UNCHANGED firms (REDUCED firms) earn higher (lower) abnormal earnings during the post-disclosure change period relative to the pre-disclosure period. This paper assumes that the firm managers have more precise information than the market investors about abnormal earnings, which is the wealth-creating factor. Therefore, if investors do not adjust their perceptions of firm value appropriately, firm managers are expected to reveal the value-relevant information (i.e., good news about abnormal earnings) voluntarily. On the other hand, the firms which earn lower abnormal earnings are expected to hide or reduce information related to abnormal earnings.

The results of operating assets show a decrease for EXPANDED firms and an increase in UNCHANGED and REDUCED firms after the year of change, year 0. Even though the measures of operating assets for EXPANDED firms decrease after voluntary disclosures are expanded, the market investors may perceive the quality of accounting numbers differently based on other information related to the conservatism used in generating those numbers. This implies that the firms can be motivated to increase voluntary disclosures if investors undervalue the quality of accounting numbers if the market investors do not perceive the understatement to be due to conservative accounting practice. Alternatively, if investors overvalue the quality of accounting numbers due to undetected aggressive accounting, then the firms may attempt to hide or reduce the information related to their accounting procedures. In either case, the relation between the change in operating assets and the corresponding change in

investors' perceptions reflected on the stock price are expected to affect the firms' voluntary disclosure strategies.

Table 3
Persistence, Conservatism, and Valuation Multiples

Panel A : Estimation of persistence and conservatism

	Mean	Std. Dev.
OXA_t	0.133	2.145
OXA_{t-1}	0.117	2.114
OA_{t-1}	21.199	18.538

Coeff.	Estimate	Std. Error	t-statistic	p value	Adj. R2
w_0	0.696	0.048	14.535	0.000	0.246
w_1	0.401	0.015	26.908	0.000	
w_2	-0.029	0.002	-16.934	0.000	

Panel B : Estimation of valuation multiples

	Mean	Std. Dev.
G_t	11.976	15.495
OXA_t	0.133	2.145
OA_t	22.521	19.288

$$G_t = a_0 + a_1 OXA_t + a_2 OA_t + e_t$$

Coeff.	Estimate	Std. Error	t-statistic	p value	Adj. R2
a_0	9.945	0.358	27.808	0.000	0.218
a_1	3.416	0.108	31.505	0.000	
a_2	0.070	0.012	5.807	0.000	

G_t : Unrecorded goodwill per share at the 3 months after the balance sheet date t .

OXA_t : Abnormal operating earnings per share at the balance sheet date t .

OA_t : Operating assets per share at the balance sheet date t .

t -statistics are tested at the significance level of 0.05 using two-tailed tests.

Table 3 shows summary statistics for the FO valuation model. The results report the relation between the unrecorded goodwill and the abnormal earnings and operating assets for the overall sample firms. The average multiple on abnormal earnings, α_1 , is 3.416 which is similar to 5.215 in Ahmed et al. (1997). The average coefficient on operating assets, α_2 , is 0.07 which is smaller than Ahmed et al.'s (1996) 0.41. This suggests that the market investors perceive that operating assets are conservatively reported, on average, and compensate for the understatement of operating assets from conservative accounting. Furthermore, these findings suggest that the sample examined in this study has similar characteristics to samples examined in other studies.

RESULTS

To test the first hypothesis, this paper partitions the sample firms into three groups (i.e., EXPANDED, UNCHANGED, and REDUCED) based on average changes in disclosure score, CRR_{it} . For the EXPANDED, UNCHANGED, and REDUCED disclosure strata, table 4 presents the results of estimating the FO model using pooled data (i) over each relative year (-2 through 2), (ii) between the pre-disclosure change period (-2 through -1) and the post-disclosure change period (0 through 2), and (iii) for overall disclosure period. The results are reported in Table 4.

Table 4
Regression Results
 $G_t = a_0 + a_1 OXA_t + a_2 OA_t + e_t$

	EXPANDED		UNCHANGED		REDUCED	
	Est. (n=714)	P	Est. (n=732)	p	Est. (n=693)	p
Post-Disclosure Period						
<i>a0</i>	9.39	0.00	7.23	0.00	13.37	0.00
<i>a1</i>	4.91	0.00	6.47	0.00	1.70	0.00
<i>a2</i>	0.12	0.00	0.19	0.00	-0.04	0.09
Pre-Disclosure Period						
<i>a0</i>	10.53	0.00	6.97	0.00	10.05	0.00
<i>a1</i>	1.55	0.00	6.02	0.00	1.22	0.00
<i>a2</i>	-0.09	0.01	0.10	0.01	-0.01	0.45

G_t: Unrecorded goodwill per share at the 3 months after the balance sheet date *t*.

OXA_t: Abnormal operating earnings per share at the balance sheet date *t*.

OA_t: Operating assets per share at the balance sheet date *t*.

t-statistics are tested at the significance level of 0.05 using two-tailed tests.

For the pre-disclosure change period (-2 through -1), the average multiple on abnormal earnings is 1.55 for EXPANDED, 6.02 for UNCHANGED, and 1.22 for REDUCED firms. These estimated coefficients are all significantly different from zero. In statistical terms, the estimated persistence multiple for EXPANDED is significantly lower than that of UNCHANGED firms. Therefore, prior to the disclosure increase, the market investors price abnormal earnings at a lower persistence for the EXPANDED firms than for the UNCHANGED firms, indicating that market investors undervalue the EXPANDED firms' earnings.

After the EXPANDED firms increase their voluntary disclosures, the market investors shift their perception of earnings persistence significantly higher than before the disclosure increase. Also, the estimated coefficients of abnormal earnings continue to increase significantly along with the sustained increase in voluntary disclosures. In comparison to UNCHANGED firms, the degree of undervaluation decreases substantially after voluntary disclosures are expanded. In table 2, descriptive statistics do not show any significant improvement in

abnormal earnings after the increase in disclosures, indicating that the changes in market perception of the earnings persistence are mainly due to the increase of value-relevant disclosures. These findings indicate that managers tend to reveal the voluntary disclosures relevant to the earnings persistence when they realize that the market has undervalued the reported results. Therefore, the results support the hypothesis one for the EXPANDED firms.

For the UNCHANGED firms, the market investors do not show any significant shift in the perception of the value-relevance of abnormal earnings between pre- and post-disclosure periods. In table 4, the estimated coefficients of abnormal earnings are not significantly different over the relative years, and in table 2, descriptive statistics do not show any significant improvement in the amount of abnormal earnings between pre- and post-disclosure periods. These results suggest that the market investors perceive the earnings persistence constantly if there are no significant changes in voluntary disclosure strategy and in abnormal earnings. These results add validity in using UNCHANGED firms as a benchmark to examine the effect of voluntary disclosure changes.

For the REDUCED firms, the value-relevance of abnormal earnings is perceived at a lower level than that of UNCHANGED firms. However, the abnormal earnings coefficient increases significantly after the disclosure decrease even though the descriptive statistics in Table 2 show a significant decrease in abnormal earnings after voluntary disclosures have been reduced. There are some possible explanations for this result. One is that managers believe the value-relevant information is adequately conveyed by the reported accounting numbers such as abnormal earnings and operating assets. Therefore, voluntary disclosures would not be providing any benefit to the market investors, so the managers act efficiently in reducing the level of voluntary disclosures. The adjusted R^2 , which shows the explanatory power of abnormal earnings and net operating assets for the unrecorded goodwill variation, increases after voluntary disclosure is reduced. This provides some evidence as to the improved information content of the reported accounting numbers of these firms.

Although REDUCED firms do show some increase in the value-relevance of abnormal earnings during the post-disclosure period, the value-relevance of abnormal earnings is significantly smaller than that of EXPANDED firms' abnormal earnings in the post-disclosure period. The results of the conservatism multiples of net operating assets are generally consistent with those of the persistence multiples. In summary, if managers believe that their firms are undervalued by market investors, they will expand their voluntary disclosure levels, and in turn, market investors will revise their perception of the value-relevance of abnormal earnings or net operating assets positively.

To test the second hypothesis, the sample that met the data requirements is divided into "CONSERVATIVE" and "AGGRESSIVE" strata by comparing the firm-specific estimates of conservatism with the industry average estimate from equation (1). The test results are shown in table 5.

Table 5
Regression Results

$$G_t = a_0 + a_1 OXA_t + a_2 OA_t + b_0 + b_1 D_b^* OXA_t + b_2 D_b^* OA_t + e_t$$

	EXPANDED (n=238)				REDUCED (n=231)		
	Coeff.	Est.	P	Adj. R ²	Est.	P	Adj. R ²
CONSERVATIVE	a ₀	6.52	0.00	0.41	14.62	0.00	0.16
n=650	a ₁	7.13	0.00		1.58	0.00	
	a ₂	0.26	0.00		-0.09	0.00	
	b ₀	3.27	0.07		-4.55	0.00	
	b ₁	-4.47	0.00		-0.47	0.14	
	b ₂	-0.28	0.00		0.56	0.14	
	AGGRESSIVE	a ₀	12.88	0.00	0.20	11.55	0.00
n=540	a ₁	1.71	0.00		1.64	0.00	
	a ₂	-0.03	0.26		0.02	0.48	
	b ₀	-3.08	0.01		-1.68	0.31	
	b ₁	-0.96	0.01		-0.02	0.96	
	b ₂	-0.10	0.02		0.02	0.72	

t-statistics are tested at the significance level of 0.05 using two-tailed tests.

The results show that the marginal effects of the EXPANDED/CONSERVATIVE stratum and EXPANDED/AGGRESSIVE stratum are significantly negative in the pre-disclosure change period, indicating that the firms are undervalued. These results are consistent with hypothesis one for both strata. On the other hand, EXPANDED/CONSERVATIVE firms show a significantly greater marginal effect of voluntary disclosures relative to the EXPANDED/AGGRESSIVE firms on the coefficients of the abnormal earnings and operating assets. This means that if market investors perceive a firm as conservative, they place more credibility on the accounting information reported to them than information from aggressive firms. Therefore, the effect of expanded voluntary disclosures on the valuation multiples is greater for the CONSERVATIVE firms than the AGGRESSIVE firms. This result supports the second hypothesis. For the REDUCED/CONSERVATIVE stratum and REDUCED/AGGRESSIVE stratum, the marginal effect on the valuation multiples across the periods is not significant. The REDUCED category does not provide support for the second hypothesis.

CONCLUSIONS

This paper tests the effect of conservatism on firm valuation using Feltham and Ohlson's (1995) valuation model which incorporates both earnings and net assets. Our findings suggest that the managers of firms undervalued by market investors tend to expand voluntary disclosures to correct for the market's undervaluation. In addition, the market reaction to an increase in disclosure levels is greater when the market perceives the firm's management as conservative. A secondary finding was that for firms which significantly reduced their voluntary disclosures, the market gave a significant increase in the valuation

multiple of their abnormal earnings, while firms that did not change their disclosure levels had no significant change. Therefore, in both cases when management changed its disclosure levels, management's decision led to a higher market multiple on the firm's abnormal earnings.

This paper is intended to contribute to the continuing policy debate between regulators and managers. Accounting standard setters have attempted to persuade managers to expand voluntary disclosures which are expected to reduce the cost of capital, and to benefit investors (Botosan, 1997). Managers claim that the expanded disclosures put them at a disadvantage by revealing proprietary information (Healy et al., 1999). The results from this paper provide additional information to policy makers about the importance of credibility when examining the effects of disclosure policy changes. This paper had some interesting findings that should also stimulate new research ideas. One area that requires additional exploration is a better understanding of the motivations of management to have a sustained decrease in its level of voluntary disclosures. Another area of future research is the examination of other benefits associated with expanded disclosures, and whether the realization of those benefits is predicated on the perception that the firm's management is conservative.

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**A STUDY OF ACCOUNTING STUDENTS' PERCEPTION OF CHANGES
IN REQUIREMENTS FOR CERTIFIED PUBLIC ACCOUNTANT (CPA)
LICENSURE IN NEW YORK STATE**

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ABSTRACT: Changes in New York State's requirements for obtaining a CPA license have brought change to many accountancy departments. This study questioned how students planned to meet the 150-hour (credit) requirement for CPA licensure. In addition, this study addressed the question of how students planned to obtain the one year experience requirement. The results showed that most students plan to go to graduate school. Many students will also have 150 credits when completing their accounting studies and will not have need for additional education. Furthermore, the students surveyed took a departure from the traditional approach of public accounting, or more specifically audit, as satisfying the one year experience requirement towards licensure.

BACKGROUND

The expression "here come the auditors" has been heard at least once if people are or were auditors in public practice. However, what if this expression is replaced with, "hey... what happened to those auditors?" Both these statements reflect this study into the recent changes for CPA licensure in New York State. "On January 27, 2009, Governor David A. Paterson signed into law a sweeping reform to the law regulating the CPA profession in the state of New York" ("The Long Arm of the Law: The Regulatory Reach of New York's Accountancy Reform," 2009). This new law provides for a variety of changes to New York State Licensed CPAs including:

Defining the scope of services covered for the practice of public accountancy in New York State. The essence of subdivision three of Section 7401 of the New York State Education Department's Public Accountancy Law expands the scope of practice to beyond attest and/or compilation services to "services including, but not limited to, accounting, management advisory, financial advisory, and tax."

Expanding the registration of CPA's. This now includes any New York State licensed CPA using those skills and competencies in areas such as public accounting, private industry, government, non-profit, or academe.

Continuing Professional Education requirements (CPE). All CPA's are now required to obtain forty hours of CPE in general studies or twenty-four hours in a concentrated area such as accounting, auditing, taxation, or industry specific. These requirements need to be completed by active status members by December 31st of each year.

Experience requirements. Acceptable experience in the practice of public accountancy is limited to experience in providing accounting services or advice involving the use of accounting, attest, compilation, management

advisory, financial advisory, tax or consulting skills under the supervision of a certified public accountant licensed in the United States or a public accountant licensed in New York.

Acceptable experience in the practice of public accountancy can be earned through employment in public practice, government, private industry or an educational institution. If the experience was earned more than 10 years after an applicant passed the CPA exam, a license will not be issued until the applicant completes a satisfactory amount of continuing professional education, as is deemed appropriate by the State Board for Public Accountancy. (New York State Society of Certified Public Accountants, 2009, p.11)

It is the experience requirements of this new law which serves as one focus for this study. Prior to the passage of this new law, the experience requirement was achieved by the candidate demonstrating the application of generally accepted accounting principles and generally accepted auditing standards in the practice of public accountancy for a minimum of two years unless a graduate degree was obtained, in which case the period was reduced to one. This has now been reduced to only one year of full-time employment for those candidates completing the 150-hour requirement after August 1, 2009. Those candidates completing 120-hours prior to August 1, 2009 must still work full-time for two years. However, by allowing CPA candidates these more diverse choices, has New York State possibly created the "opportunity" for there to be a lack of potential candidates in the audit and attestation function?

After considering these challenges facing the general audit working environment, a possible concern is created regarding the new accountancy law impacting students' decisions to go into public accounting. Cynthia Krom, accounting professor and former chair of the New York State Society of CPA's Higher Education Committee commented that:

Many [students] have indicated [that] they will still try to obtain the auditing experience necessary to do attestation-a more traditional approach. A few, however, are really excited to have other career paths that still permit them to become licensed as a CPA in New York. They feel less obligated to tread water at a big accounting firm when what they really want to do is work in industry or. do taxes." (New York State Society of Certified Public Accountants, 2009, p.11).

Even some potential employers are recommending that students not start their careers in public accounting. According to a recent study, "when asked what area of specialization they would recommend for newly minted graduates, the majority of CFOs (60 percent) said general accounting ("Think Small," 2010)."

While the new Accountancy Reform Law has made enormous strides to regulate the profession and bring more consistency, the question now arises of

whether or not it will have an impact and create a potential shortfall in the recruitment of potential auditors?

PROBLEM STATEMENT

With the advent of the 150 credit rule many colleges expanded or initiated masters' programs in accounting. Some colleges expanded their undergraduate accounting programs to require 150 credits. Still, others gave students the option to add a second major to their undergraduate education and graduate with 150 credits. The colleges expected these programs to grow significantly after July 31, 2009, the date upon which the 150-hour rule became effective. Anecdotal evidence, however, suggests that this has not happened.

Therefore, the following questions are posed: Where have all the accounting students gone or where are they going? How do they expect to complete the 150-hour requirement? In what field of accounting do they expect to complete their one year of full-time experience requirement? What are the long term student career goals?

RESEARCH QUESTIONS

The research poses the following questions:

- Q1: What are the students' plans for meeting the 150-hour requirement?
- Q2: In what field of accounting does the student expect to work during their one-year of full-time experience requirement?
- Q3: In what field of accounting does the student expect to work for the remainder of their career?

Due to the fact that this research is exploratory in nature, we have not formed any hypotheses.

RESEARCH METHODS

This research uses the survey research method. A survey instrument was prepared using the methods described by Dillman and Salant (Dillman, 2000; Salant & Dillman, 1994).

RESULTS

The data collected was treated and analyzed using the SPSS statistical software package. Descriptive statistics follow.

Demographics. 85 students participated in the survey consisting of 49 male and 36 female students. The mean age of these students was 25.99 years ($SD=5.391$). The age was bimodal at 22 and 24. Only forty-three students (50.6%) reported that English is their native language with the remainder having English as a second language. This was not an unexpected finding as anecdotal evidence in classrooms suggests that a preponderance of students are not natives.

GPA. The mean Grade Point Average (GPA) of these students is 3.144 ($n=82$, $SD=.5631$). The mean number of credits completed to date was 125.11 ($n=81$, $SD=19.995$). The dispersion of credits completed is very interesting. There was a minimum of 78 and a maximum of 180.

CPA examination and other professional licensure. Eighty students (94.1%) reported that they plan to take the Uniform CPA Examination. Thirty-three students (38.8%) indicated that they plan to take the CPA examination after completing 120 credits but before completing 150 credits. Forty eight students (56.5%) indicated that they plan to take the examination after completing 150 credits. Ten (11.8%) said they plan to take the Certified Management Accountant (CMA) examination; seven (8.2%) plan to take the Certified Forensic Examiner (CFE) examination; eight (9.4%) plan to take the Certified Internal Auditor (CIA) examination; seven (8.2%) plan to obtain some type of licensure form the Securities and Exchange Commission (SEC); three (3.5%) plan to obtain licensure related to insurance product sales; and eight (9.4%) expect to obtain some other type of professional licensure. Anecdotal evidences suggest that there is a heightened interest in fraud and forensic accounting.

Choices for completing the 150 hour (credit) requirement. Students also responded as to how they would complete their 150 credit requirement. Unfortunately the results from this question are not entirely usable. The question was structured so that the student should have chosen only one of the choices. To our chagrin, some students chose more than one option and some did not choose any option. The results we did get are found in Table 1.

Table 1: Choices for completing the 150 hour requirement

Education option	n	% of 85
Plans for graduate study	33	38.8
No further education	21	24.7
150 undergraduate credits without second major	10	11.8
150 undergraduate credits with second major	19	22.4
Will have 150 undergraduate credits when completing this major	22	25.9
Total	<u>105</u>	<u>123.6*</u>

*Some students checked more than one choice.

Even though the largest plurality intend to go to graduate school, only five (5.9%) had taken the GMATs. Forty-three (50.6%) did not answer the question.

Students also responded as to their preferences for times and places of learning. Within the City University of New York (CUNY) system, and academe in general, there is much debate about the value of on-line learning. Also, many schools are experiencing capacity issues. One way to deal with this issue is creative scheduling.

Students overwhelmingly prefer night classes. Web-enhanced study is only ‘most preferred’ by 17.6% (n=15) of the students. Two methods of study

were equally ‘least preferred’ by students: early morning classes and on-line learning (n=32, 37.6%).

Students were also asked how many graduate schools they planned to apply to.

Career Preferences. Three questions were posed to students regarding their career preferences: type of entity, expected practice area at their first job (to satisfy the CPA licensure requirements), and their overall preferred career practice area. We provided a list of choices and asked them to rank the choices by preference. Table 2 is a presentation of their type of entity preference.

Table 2: Type of Entity

	Large Firm	Medium Firm	Small Firm	Government	Industry
Does not want to	22 (25.9%)	14 (16.5%)	15 (17.6%)	17 (20%)	12 (14.1%)
Little expectation	11 (12.9%)	21 (24.7%)	8 (9.4%)	7 (8.2%)	13 (15.3%)
Middle expectation	13 (15.3%)	15 (17.6%)	19 (29.2%)	10 (11.8%)	6 (7.1%)
Some expectation	6 (7.1%)	15 (17.6%)	8 (9.4%)	12 (14.1%)	21 (24.7%)
Highest expectation	14 (16.5%)	6 (7.1%)	14 (16.5%)	18 (21.2%)	14 (16.5%)
Sub-total	66	71	64	64	66
Missing	19	14	21	21	19
Total	85	85	85	85	85

We similarly asked students which practice area they expected to work in at their first job. Table 3 is a presentation of responses to questions about expected practice areas at their first job for satisfaction of the full-time work experience requirements for CPA licensure.

Table 3: Expected area of practice at their first job

	Audit	General Accounting	Tax	Financial Planning	Consulting	Forensics	Other
No expectation	18 (21.2%)	27 (31.8%)	14 (16.5%)	3 (3.5%)	2 (2.4%)	4 (4.7%)	1 (1.2%)
Level 1 expectation	10 (11.8%)	12 (14.1%)	17 (20%)	6 (7.1%)	4 (4.7%)	3 (3.5%)	1 (1.2%)
Level 2 expectation	9 (10.6%)	12 (14.1%)	10 (11.8%)	17 (20%)	4 (4.7%)	7 (8.2%)	1 (1.2%)
Level 3 expectation	14 (16.5%)	5 (5.9%)	5 (5.9%)	22 (25.9%)	14 (16.5%)	7 (8.2%)	1 (1.2%)
Level 4 expectation	5 (5.9%)	4 (4.7%)	9 (10.6%)	5 (5.9%)	22 (25.9%)	18 (21.2%)	2 (2.4%)
Level 5 expectation	4 (4.7%)	5 (5.9%)	5 (5.9%)	13 (15.3%)	13 (15.3%)	22 (25.9%)	2 (2.4%)
Level 6 expectation	4 (4.7%)	5 (5.9%)	3 (3.5%)	1 (1.2%)	5 (5.9%)	3 (3.5%)	16 (18.8%)
Highest expectation	6 (7.1%)	7 (8.2%)	8 (9.4%)	1 (1.2%)	2 (2.4%)	3 (3.5%)	2 (2.4%)
Sub-total	70	77	71	68	66	67	25
Missing	15	8	14	17	19	18	60
Total	85	85	85	85	85	85	85

Students were also asked what practice area they would like to work as their long term career. Table 4 is a summary of their responses.

Table 4: Long term career desires

	Audit	General Accounting	Tax	Financial Planning	Consulting	Forensics	Other
No expectation	18 (21.2%)	22 (25.9%)	12 (14.1%)	6 (7.1%)	5 (5.9%)	7 (8.2%)	3 (3.5%)
Level 2 expectation	9 (10.6%)	8 (9.4%)	10 (11.8%)	12 (14.1%)	7 (8.2%)	7 (8.2%)	5 (5.9%)
Level 3 expectation	8 (9.4%)	13 (15.3%)	12 (14.1%)	9 (10.6%)	9 (10.6%)	3 (3.5%)	0
Level 4 expectation	11 (12.9%)	5 (5.9%)	8 (9.4%)	13 (15.3%)	13 (15.3%)	10 (11.8%)	1 (1.2%)
Level 5 expectation	12 (14.1%)	7 (8.2%)	9 (10.6%)	12 (14.1%)	13 (15.3%)	10 (11.8%)	1 (1.2%)
Level 6 expectation	6 (7.1%)	3 (3.5%)	4 (4.7%)	13 (15.3%)	16 (18.8%)	23 (27.2%)	1 (1.2%)
Level 7 expectation	4 (4.7%)	7 (8.2%)	8 (9.4%)	2 (2.4%)	1 (1.2%)	4 (4.7%)	15 (17.6%)
Highest expectation	4 (4.7%)	8 (9.4%)	8 (9.4%)	0	5 (5.9%)	3 (3.5%)	0
Sub-total	72	73	71	67	69	67	26
Missing	13	12	14	18	16	18	59
Total	85	85	85	85	85	85	85

RELATIONSHIPS

We did not form any hypotheses for this study. Still, we thought it would be interesting to explore various relationships based on anecdotal evidence and our analysis of student responses.

Plans for taking the CPA examination. Our first research question asked about when the students plan to take the CPA examination. We regressed certain demographic variables against the various options for taking the CPA examination and plans for graduate school. The results appear in Table 5. None of the regression models was significant. However, the number of credits completed to date stands out. This is the one variable that has any significance on when a student plans to take the exam or whether they are planning to attend graduate school.

Table 5: Plans for taking the CPA examination

	Plan to take CPA exam	CPA exam between 120 and 150 credits	CPA exam after 150	Plans for graduate study
Constant	.535 (2.064)*	1.435 (2.665)**	-.405 (-.755)	1.305 (2.347)*
Gender	-.098 (-1.725)	.026 (.226)	-.054 (-.461)	-.113 (-.934)
Age	-.001 (-.221)	.009 (.226)	-.011 (-1.015)	-.004 (-.345)
English	.006 (.115)	-.012 (-.110)	.031 (.279)	-.050 (-.431)
Credits	.002 (1.647)	-.009 (-3.284)**	.009 (3.090)**	-.008 (-2.661)**
GPA	.060 (1.228)	-.032 (-3.284)	.064 (.633)	.083 (.791)
N	79	74	74	73
Adjusted R ²	.038	.083	.079	.038

* p<.05; **p<.01; ***p,<.001

Expected first practice area for fulfillment of licensure requirement.

We asked which practice area they expected to work in upon completion of studies. We regressed certain demographic data against the various choices. The results are presented in Table 6.

Table 6: Predictors of expected initial practice area

	Audit	General Accounting	Tax	Financial Planning	Consulting	Forensics	Other Practice Area
Constant	7.183 (2.665)**	5.621 (2.006)*	4.953 (1.778)	3.385 (1.744)	2.842 (1.548)	3.930 (1.907)	-1.467 (-.319)
Gender	.230 (.364)	.787 (1.314)	-.358 (-.573)	.471 (1.079)	-.252 (-.598)	-1.167 (-2.475)*	-.166 (-.216)
Age	-.011 (-.183)	-.021 (-.320)	.127 (1.509)	.052 (.912)	.087 (1.601)	-.013 (-.215)	-.150 (-1.681)
English	-.756 (-1.272)	-.916 (-1.598)	.337 (.562)	.044 (.108)	.294 (.748)	-.268 (-.612)	-.057 (-.072)
Credits	-.012 (-.763)	.001 (.099)	-.034 (-2.013)*	-.004 (-.331)	.009 (.761)	.001 (.079)	.043 (2.098)
GPA	-.480 (-.993)	-.619 (-1.253)	-.032 (-.065)	-.148 (-.439)	-.392 (-1.208)	.541 (1.482)	1.835 (1.7680)
N	64	71	65	63	60	61	22
Adjusted R ²	.015	.024	.014	-.044	.050	.045	.188

* p<.05; **p<.01; ***p<.001

When regressing demographic data against the practice area that students expected to work in initially none of the regression models was significant. However, the number of credits was significantly correlated with an expectation of working in tax. Additionally, gender was significantly correlated with an expectation of working in forensics, with women more likely to anticipate working on forensics.

Desired career practice area. The students were surveyed which practice area they desired to work in for the balance of their career. We regressed certain demographic data against the various choices. The results are presented in Table 7.

Table 7: Desired career practice area

	Audit	General Accounting	Tax	Financial Planning	Consulting	Forensics	Other Practice Area
Constant	6.126 (2.338)*	6.717 (2.287)	8.095 (2.857)**	.937 (.415)	-1.006 (-.464)	3.547 (1.445)	2.194 (.379)
Gender	.568 (.953)	.438 (.662)	-.399 (-.617)	.572 (1.086)	.695 (1.356)	-.191 (-.333)	-1.022 (-.976)
Age	-.027 (-.503)	-.046 (-.593)	.025 (.315)	.034 (.557)	.125 (2.264)*	.017 (.253)	-.236 (-1.898)
English	-.077 (-.133)	-.220 (-.346)	.704 (1.132)	.073 (.146)	-.049 (-.101)	-.437 (-.808)	-1.492 (-1.405)
Credits	.004 (.242)	.003 (.199)	-.028 (-1.669)	.013 (.932)	.019 (1.508)	.005 (.330)	.026 (.894)
GPA	-.783 (-1.674)	-.790 (-1.466)	-.394 (-.782)	.052 (.130)	-.089 (-.225)	.108 (.247)	1.999 (1.631)
N	66	67	65	61	63	61	23
Adjusted R ²	-.021	-.034	.030	-.040	.083	-.067	.139

* p<.05; **p<.01; ***p<.001

CONCLUSION AND SUMMARY

The purpose of this study was to determine how students planned to meet the 150 credit requirement for CPA licensure and their plans for meeting the full-time experience requirement. Additionally, students were surveyed to as to their long-term career goals.

This study revealed that most students plan to go to graduate school to obtain the additional credits beyond the 120 required for a bachelors' degree. However, enrollments in the graduate program in accounting are down. Further study is needed to determine why enrollments in the graduate program are down when most students expect to go to graduate school. Students may be going to other graduate programs or there may be a lag between receiving the bachelors' degree and starting graduate school.

The second most popular choice for completing the 150 credit requirement is that additional schooling is not needed since the students will have 150 or more credits when they complete their accounting program. Anecdotal evidence suggests that this is because Brooklyn College has many students that have transferred from other schools and may already have a first bachelors' degree. Credits from prior schooling, that have not been accepted for transfer to Brooklyn College, may still be accepted by the New York State Board of Accountancy for satisfying the 150-credit requirement.

Most students reported an expectation of working in forensic accounting as their first job (fulfilling the experience requirement) as well their long-term career choice. We believe this is not unexpected but also somewhat unrealistic. Forensics has become an enticing practice area since it is still relatively new and is constantly developing. Students believe that it is very exciting, which it can be. However, it has been our academic experience that most forensic accountants started out as auditors and then used their audit skills as a basis for their forensic skills.

This study had started answering some questions about accounting students post-graduate learning and career choices. More study is needed to determine the motivations for their choice. However, the study shown thus far does seem to demonstrate a potential decline in future auditors if students now have a variety of choices for satisfying their one year experience requirement.

POLICY IMPLICATIONS

There are several policy implications associated with this study:

How should academic institutions structure their accounting programs to meet the 150-credit requirement, given the fact that graduate enrollment figures are declining? Should there be more of an emphasis on graduate or undergraduate studies?

Is there a concern that the auditing field (in both the short as well as long term) may suffer since students now have a choice to complete their one year experience requirement in any accounting relating field? Are employers in the auditing field going to have to reassess their various compensation, benefit, and workplace environment in order to attract students?

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