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EMPLOYEE BENEFITS AND STOCK RETURNS: A LOOK AT HEALTH CARE BENEFITS

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ABSTRACT

This study finds firms that pay their employees' health-care premiums earn average positive risk premiums and positive risk-adjusted excess returns. The problem of the study is to analyze risk premiums and risk adjusted returns of an equal-weighted portfolio of firms that pay 100% of their employee's health-care premiums. The results show that the portfolio average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008). The portfolio average risk-adjusted excess returns are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period. The implication of this study is that it is important for firms to invest in their people in the form of competitive compensation package, and this investment will pay off in the long run as evidenced from the capital market.

JEL: G11, G12, G14

KEYWORDS: Risk premiums, Risk adjusted excess returns, Health-care premiums

INTRODUCTION

People, the key strategic assets that are valuable, rare, imperfectly imitable and unsubstitutable, are sustainable source of competitiveness (Barney & Wright, 1998; Gorman, Nelson, & Glassman, 2004; Lopez-Cabrales, Valle, & Herrero, 2006; Shee & Pathak, 2005; Wright, McMahan, & McWilliams, 1994). In the knowledge-based economy, companies are energized more than ever by their human resources to compete and generate sustained competitive advantage in the rapidly and dynamically changing market place because success of the firms is directly determined by the quality of their human resources. To strategically attract and retain key talent, firms need to offer competitive benefits in order to reduce turnover rates and increase their people's satisfaction so their superior performance can take place. On average, employees working for companies that offer competitive benefits should be more satisfied with their jobs and are more likely to perform better than those working for firms that do not offer competitive compensation package. Judge, Bono, Thoresen, and Patton (2001) reveal a qualitative and quantitative linkage between employees' satisfaction and job performance.

The current study is to provide empirical evidence from the capital market that firms operating in the knowledge-based economy should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation package. The problem of the study is to analyze risk premiums and risk adjusted returns of an equal-weighted portfolio of firms that pay 100% of their employee's health-care premiums. This study is unique due to the fact that no prior study in the current literature investigates this issue before. This study is also relevant and important in the asset pricing and valuation fields, which are ones of the most popularly researched fields in financial economics. This study furthers our understanding of the various factors affecting stock prices. The implication of this study is that it is better off for firms to invest in their people in the form of competitive compensation package, and this investment will pay off in the long run as evidenced from the capital market. This study also provides important information and implications to the pricing and valuing of assets. In an attempt to challenge the efficient market hypothesis, many researchers have compared the performance of a specialized portfolio to the market index (Anderson & Smith, 2006; Clayman, 1987; Lovisceka & Jordan, 2000; O'Neal, 2000; Staman, 2000; Sum, 2012). The paper is organized as follows.

The second section provides a review of the literature. The third section provides information about the method and data. The results and conclusion are discussed in the fourth and fifth sections, respectively.

LITERATURE REVIEW

Theoretical and empirical establishment in the strategic human resource management literature has put a spotlight on the role of human resources in generating sustained competitive advantage. The resource-based view of the firm (Barney, 1986) theorizes that firms can have sustained competitive advantage over their rivals by providing value-added products and services in a way that is rare and difficult to imitate. The resource-based view of the firm argues that other resources, except human resources, can be used by firms to generate sustained competitive advantage; however, these resources can be easily acquired by the competitors. In this case, it is important to create value by using resources that are rare and cannot be conveniently imitated by competitors are vital for firms. According to the resource-based view of firms, people (human resources) who are a repository of knowledge and skills can be utilized to create value in a way that is rare and hard for rivals to imitate (Barney, 1991). Human resources are the strategic assets for firms meaning that people are "difficult to trade and imitate, scarce, appropriable, and specialized resources and capabilities that bestow the firm's competitive advantage" (Amit & Shoemaker, 1993, p. 36). Finally, people a repository of knowledge and skills are the most valuable and key assets for any firm to compete and create sustained competitive advantage in the marketplace (Barney & Wright, 1998; Gorman, Nelson, & Glassman, 2004; Lopez-Cabrales, Valle, & Herrero, 2006; Shee & Pathak, 2005; Wright, McMahan, & McWilliams, 1994).

In the knowledge-based economy, firms depend more than ever on their people to compete and generate sustained competitive advantage in the market place with ever rapidly changing environment. Success of the firms is directly linked to and determined by the quality of their respective employees. To strategically attract and retain talented employees, firms need to have best work practices, policies and environment in place in order to improve their employees' attitudes and relations, lower turnover rates, and enhance their people's satisfaction. Firms that are successful in attracting and retaining their talented people should have superior benefits and performance, on average. Employee attitudes and relations are important factors for attracting, motivating, and retaining employees (Ostroff, 1992; Ostroff & Bowen, 2000). Judge, Bono, Thoresen, and Patton (2001) document a qualitative and quantitative association between employees' satisfaction and job performance. Fulmer, Gerhard, and Scott (2003) suggest that there is a relationship between firm performance and positive employee relations. Simon and DeVaro (2006) also show that the best companies to work for from 1994 to 2004 have higher customer satisfaction.

Many researchers have attempted to challenge the efficient market hypothesis by comparing the performance of a market portfolio to a specialized portfolio. For example, Lovisceka & Jordan (2000) show that the Morningstar's ten-year five-star general equity mutual funds outperform the S&P 500 in the 1990s. Clayman (1987) show 11 of the 29 companies ranked in the Search for Excellence beat to the S&P 500 index by 100 basis points per year from 1981 to 1985. In addition, a portfolio of the most admired companies in the United States significantly outgains the S&P 500 index from 1983 to 2004 (Anderson & Smith, 2006). O'Neal (2000) reveals that the intermediate-term top-performing sector funds outperform the S&P 500 index from 1989 to 1999. Staman (2000) also finds that a portfolio of socially responsible companies beats the S&P 500 index from 1990 to 1998.

DATA AND METHOD

A list of the best publicly traded companies in the United States that pay 100% of their employees' health premiums consecutively from 2007-2011 is obtained from the Fortune Magazine. The monthly return data are obtained from CRSP database maintained by the University of Chicago accessed through the Wharton

Research Data Services at the University of Pennsylvania. The monthly data related to risk-free rate, size, growth, and momentum factors are obtained from Kenneth R. French's data library located at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

This study constructs an equal-weighted portfolio of publicly-traded companies in the United States that pay 100% of their employee's health-care premiums from 2007 to 2011. Table 1 shows the names of the companies in the portfolio. To compare the portfolio risk premiums to the market risk premiums, equation (1) is used. The single-index model (2) (Sharpe, 1966) and four-factor model (3) (Carhart, 1997) are used to calculate risk-adjusted excess returns on the portfolio.

$$R_{pt} - R_{ft} = R_{mt} - R_{ft} = R_{S\&Pt} - R_{ft} \quad (1)$$

$$R_{pt} - R_{ft} = \alpha_1 + \beta_m(R_{mt} - R_{ft}) + \varepsilon_{t1} \quad (2)$$

$$R_{pt} - R_{ft} = \alpha_4 + \beta_m(R_{mt} - R_{ft}) + \beta_{smb}SMB + \beta_{hml}HML + \beta_{mom}MOM + + \varepsilon_{t4} \quad (3)$$

Where:

R_{pt} = the return on the equal-weighted portfolio in month *t*
R_{ft} = the return on a thirty day T-bill in month *t*
R_{mt} = the return on the CRSP value-weighted index in month *t*
$R_{S\&Pt}$ = the return on the S&P 500 index in month *t*
SMB = the difference between the return on a small-cap portfolio in month *t* and return on a large-cap portfolio in month *t*
HML= the difference between return on a high book-to-market (value-stock) portfolio in month *t* and return on a low book-to-market (growth-stock) portfolio in month *t*
MOM = the difference between return on portfolio with higher year (from month -12 to -2) return and return on portfolio with lower prior year (from month -12 to -2) return
α_1 = The risk-adjusted excess return on the equal-weighted portfolio from the single-index model
α_4= The risk-adjusted excess return on the equal-weighted portfolio from the four-factor model
β_m = the sensitivity of the excess return on the equal-weighted portfolio to the excess return on the CRSP value-weighted index
β_{smb} = the sensitivity of the excess return on the equal-weighted portfolio to a size factor
β_{hml} = the sensitivity of the excess return on the equal-weighted portfolio to a value factor
β_{mom} = the sensitivity of the excess return on the equal-weighted portfolio to a momentum (hot-hand) factor
e_{t1} = random error term: excess return on the equal-weighted portfolio in month *t* not explained by the single-index model
e_{t4} = random error term: excess return on the equal-weighted portfolio in month *t* not explained by the four-factor model

RESULTS

Table 1 shows the list of publicly traded companies in the United States that paid 100% of their employees' health-care premiums from 2007-2011; the list is obtained from the Fortune Magazine. An equal-weighted portfolio of these companies is formed for the analysis of risk premiums and risk adjusted excess returns reported this this study. Various descriptive statistics of the variables are reported in Table 2. Table 3 and 4 show the arithmetic and geometric average risk premiums of the portfolio, CRSP value-weighted index and S&P 500 index. In order to compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The

portfolio arithmetic and geometric average risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period) and 5-year-holding period intervals. Respective arithmetic and geometric average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 3, 4, and 5 of Table 3 and 4. The differences in arithmetic and geometric average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 6 and 7. As shown in Table 3 and 4, the results show that the portfolio arithmetic and geometric average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008).

Table 1: Companies in the United States Paying 100% of Their Employees' Health-Care Premiums from 2007-2011

Name of the Companies	Ticker	Industry
EOG Resources	EOG	Oil and Gas Operations
Microsoft	MSFT	Software and Programming
Qualcomm	QCOM	Communications Equipment
Whole Foods Market	WFM	Retail (Grocery)

This list of publicly traded companies that pay 100% of their employees' health-care premium from 2007-2011 is obtain from the Fortune Magazine. An equal-weighted portfolio of these companies is formed for the analysis of risk premiums and risk adjusted excess returns reported this this study.

Table 2: Descriptive Statistics

Variables	Mean	Standard Deviation	# of Obs
Equal-Weighted Portfolio Excess Return	0.01012	0.06701	60
CSCR Value-Weighted Excess Return	0.00082	0.05747	60
Size Factor (SMB)	0.00267	0.02409	60
Growth Factor (HML)	-0.00312	0.02889	60
Moment Factor (MOM)	-0.00161	0.06388	60

This table provides descriptive statistics for the variables used in this study.

Table 5 shows the portfolio average risk adjusted excess returns (alphas). To obtain the portfolio average risk adjusted excess returns (alphas), monthly return data are calculated using equation (2) and (3). The portfolio average risk adjusted excess returns are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period), 5-year-holding period intervals. The portfolio average risk adjusted excess returns from the single-index model are reported in column 3. The portfolio average risk adjusted excess returns from the four-factor model are reported in column 4. As shown in Table 5, the portfolio average risk-adjusted excess returns from the single-index model and factor-model are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period.

CONCLUSION

In the knowledge-based economy, companies are energized more than ever by their human resources to compete and generate sustained competitive advantage in the rapidly and dynamically changing market place because success of the firms is directly determined by the quality of their human resources. Firms, competing and operating in the knowledge-based economy, should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation

package. The current study is to provide empirical evidence from the capital market that firms operating in the knowledge-based economy should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation package. This study constructs an equal-weighted portfolio of publicly-traded companies in the United States that pay 100% of their employee's health-care premiums from 2007 to 2011. In addition to comparing the portfolio risk premiums to the market risk premiums, the single-index model and four-factor model are used to calculate risk-adjusted excess returns on the portfolio. The results show the portfolio average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008). The portfolio average risk-adjusted excess returns are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period.

Table 3: Portfolio Arithmetic Average Risk Premiums and Market Risk Premiums

Years	# of Months	$R_p - R_f$	$R_m - R_f$	$R_{S\&P} - R_f$	$(R_p - R_f) - (R_m - R_f)$	$(R_p - R_f) - (R_{S\&P} - R_f)$
2007	12	0.93%	0.25%	-0.06%	0.68%	0.99%
2008	12	-4.13%	-3.85%	-3.93%	-0.28%	-0.20%
2009	12	5.30%	2.49%	1.96%	2.81%	3.34%
2010	12	1.65%	0.05%	1.14%	1.60%	0.51%
2011	12	1.31%	0.02%	0.09%	1.29%	1.22%
2007-2009	36	0.70%	-0.37%	-0.67%	1.07%	1.37%
2010-2011	24	1.48%	0.77%	0.62%	0.72%	0.86%
2007-2011	60	1.10%	0.08%	-0.16%	1.02%	1.17%

This table shows arithmetic average and market risk premiums. To compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The portfolio arithmetic average risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1, 3 and 5-year-holding intervals (only 2 years of monthly data included in the calculation for the 2010-2011 period. Respective average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 2, 3, and 4. The differences in arithmetic averages risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 4 and 5. $R_i - R_f$ *= average risk premiums of the equal-weighted portfolio of best companies to work for;* $R_m - R_f$ *= CRSP value-weighted index average risk premiums;* $R_{S\&P} - R_f$ *= S&P 500 index average risk premiums.*

Table 4: Portfolio Geometric Average Risk Premiums and Market Risk Premiums

Years	# of Months	$R_p - R_f$	$R_m - R_f$	$R_{S\&P} - R_f$	$(R_p - R_f) - (R_m - R_f)$	$(R_p - R_f) - (R_{S\&P} - R_f)$
2007	12	0.80%	0.21%	-0.09%	0.59%	0.89%
2008	12	-4.33%	-4.07%	-4.11%	-0.26%	-0.22%
2009	12	5.11%	2.29%	1.76%	2.82%	3.35%
2010	12	1.43%	1.37%	1.00%	0.06%	0.43%
2011	12	1.17%	-0.09%	0.00%	1.26%	1.17%
2007-2009	36	0.45%	-0.56%	-0.84%	1.01%	1.29%
2010-2011	24	1.30%	.64%	0.50%	0.66%	-0.80%
2007-2011	60	0.79%	-0.08%	-0.31%	0.87%	1.10%

This table shows arithmetic average and market risk premiums. To compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The geometric average portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period) and 5-year-holding period intervals. Respective average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 2, 3, and 4. The differences in geometric averages risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 4 and 5. $R_i - R_f$ *= average risk premiums of the equal-weighted portfolio of best companies to work for;* $R_m - R_f$ *= CRSP value-weighted index average risk premiums;* $R_{S\&P} - R_f$ *= S&P 500 index average risk premiums.*

The implication of this study is that it is important for firms to invest in their people in the form of competitive compensation package. This investment will pay off in the long run as evidenced from the capital market. There are limitations in this paper. First, this study only uses 5 years of monthly data or 60 total observations. Another limitation is this study relies on the Fortune Magazine methodology to rank publicly traded companies that pay 100% of their employees' health insurance premiums consecutively from 2007 to 2011. Future research should replicate this study by using a richer dataset.

Table 5: Average Portfolio Risk Adjusted Excess Returns

Years	# of Months	Average Risk Adjusted Excess Returns (α_1) from the Single-Index Model	Average Risk Adjusted Excess Returns (α_4) from the Four-Factor Model
2007	12	0.61%*	-1.35%
2008	12	-1.24%	0.10%
2009	12	3.33%**	2.84%
2010	12	-0.08%	-0.38%
2011	12	1.29%*	1.25%
2007-2009	36	1.05%	0.96%
2010-2011	24	0.58%	0.66%
2007-2011	60	0.93%**	0.92%*

*This table shows average portfolio risk adjusted returns. To obtain the portfolio average risk adjusted excess returns (alphas), monthly return data are calculated using equation (2) and (3). The portfolio average risk adjusted excess returns are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period), 5-year-holding period intervals. The portfolio average risk adjusted excess returns from the single-index model are reported in column 2. The portfolio average risk adjusted excess returns from the four-factor model are reported in column 3. * Significant at 10% level; ** Significant at 5% level.*

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BIOGRAPHY

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THE RELATIONSHIP BETWEEN FINANCIAL COMMUNICATION AND FIRM PERFORMANCE: EVIDENCE FROM FRANCE

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ABSTRACT

This research identifies potential links between performance and the level of financial communication on the web. This study examines 216 firms quoted in 2010 on the Free Market of Paris. We use a content analysis of websites and scoring technique, to compute a score of financial communication for each firm. Based on mean scores, two groups are constructed. We measure performance for these two groups. The Probit model shows a negative relation between financial performance and the probability of having a higher score for virtual financial communication.

JEL: M15, G10, C50

KEYWORDS: Communication, Internet, Performance, Web

INTRODUCTION

Companies wishing to raise public money in France can choose between regulated and unregulated markets. Unregulated markets aim specifically at the small and medium-sized enterprises (SME), which, in most European countries, represent the major part of the economic landscape. There are 23 million SME in the EU representing 99% of businesses (http://ec.europa.eu/enterprise/policies/sme/). These unregulated markets include the Free market on which highly rated companies have only very few constraints, and no financial communication obligation. Any effort at financial communication on behalf of listed companies on the Free market is done voluntarily and not from a legal obligation.

This paper focus on 216 firms quoted on the Free Market of Paris in 2010. This market, to our knowledge, has not yet been the topic of such a research project. We want to identify the voluntary effort towards virtual financial communication on 216 websites of firms quoted on the French Free Market. The web site was chosen here as a privileged vector of financial communication between the listed company and its investors (and potential investors). This vector of communication is more and more widely used (Léger, 2008) and the Internet becomes a real management tool for investor relations within companies (Barredy and Darras, 2008; Almillia and Budisusetyo, 2008).

We also highlight the link between these communication efforts and firm performance. The performance is a recurrent determinant of on-line presentation by companies informing their investors (Xiao and al., 2004; Menses-da-Silva and Christensen, 2004; Debreceny and Rahman, 2005; Paturel and al, 2006; Arnone and al., 2010; Pozniak, 2010). The influence of performance on the level of disclosure of financial information on the web is still ambiguous. There is no consensus in the literature on this issue. This paper provides a unique perspective to this issue. The remainder of the paper is organized as follows. In the first section we provide a literature review. We will summarize the relation between performance and communication and we highlight the principles of financial communication on the web. These elements help us build our website analysis grid. The second section presents our methodology and data. The results are discussed in the third section. The paper closes with some concluding comments

LITERATURE REVIEW

The signal theory explains the influence of performance on financial information disclosure. Managers of successful companies are likely to reveal more financial information to the public with the aim of ensuring their position within the company (Wallace & al., 1994; Inchausti, 1997) and reducing the risk of a bad company valuation (Grossman & Hart, 1980). So this theory argues for a positive relation between the performance of the listed company and the intensity of financial information disclosure. However, this positive influence is not validated empirically (Xiao & al., on 2004; Mendès da silva & Christensen, 2004; etc.). Some studies show a negative influence of performance on the level of voluntary disclosure of information on the web (Paturel & al., 2006; Pozniak, 2010; Amal & Faten, 2010). The main argument explaining this negative relation is the protection of the company against its competitors. The link between performance and the voluntary disclosure of information through the web is thus ambiguous. The first studies to examine voluntary disclosure of financial information on the web, are those of Ashbaugh & al. (1999) for the American market and Craven & Marston (1999) for the British market. Since the publication of these works, other authors have examined this problem and tried to identify determinants of voluntary financial information disclosure on the web. Debreceny & al. (2002) as well as Ettredge & al. (2002) are two pioneering studies in this field.

The literature continues to be enriched by works concerning the identification of determinants of voluntary financial information disclosure on the web (Pozniak, 2010; Amal & Faten, 2010; etc.). In these studies, performance is often used as a variable of control in explanatory models (Ettredge & al., 2002; Xiao & al., 2004; Andrikopoulos & al. 2009; etc.). However, results concerning the influence of performance on the effort of financial information voluntary disclosure on the web remain statistically insignificant (Debreceny & al., 2002). Xiao & al. (2004) demonstrate the statistical irrelevance of the performance variable ROA on the score of financial communication on the web for 300 large Chinese companies. The results are the same for Mendès-da-silva & Christensen (2004) who analyzed the determinants of voluntary disclosure of financial information on the web of 291 non-financial companies listed on the Sao Paulo stock exchange in 2002. These authors measure performance by means of the ROA. Andrikopoulos & al. (2009) found the same results in their study of 140 companies listed on the Cyprus stock exchange in March 2007. Their criteria of performance were the ROA and the after tax result. On the other hand, Debreceny & Rahman (2005) confirm the negative influence of the performance measure ROE on the frequency of information disclosure on the website of 334 companies on the Morgan Stanley Capital Index in 2002. This result was also highlighted by Pozniak (2010) who studied the impact of performance, measured by ROA and ROE, on the financial communication score on the website of 37 companies listed on the unregulated Belgian markets. This negative influence is also validated by the conclusions of Paturel & al. (2006) for the British companies quoted on the FTSE 100. Nevertheless, the conclusions show that performance measured by means of ROE has a positive impact on the score of web information disclosure for French companies on the SBF 120 Index.

To estimate the intensity of the voluntary effort of website financial communication by listed companies on the French Free Market, an analysis grid of web sites was constructed. This analysis grid is based on the most important principles of financial disclosure on the web identified by the literature. According to Almilia and Budisusetyo (2008), the company has to give investors a certain amount of financial information, such as the annual accounts, on its web site. The traditional paper reports are not sufficient anymore. The importance of the firm's official web site is identified by Léger (2008) as well as its appropriateness to the firm's global strategy of communication.

Some authors examine elements which must be on the web site of the company, such as the annual report (Léger, 2008 ; Dutta & Bose, 2007 ; Pervan, 2006 ; Euronext, 2006 ; Barredy & Darras, 2008), audit report and financial ratio (Dutta & Bose, 2007), mean key figures (Euronext 2006), history of share prices (Léger, 2008 ; Barredy & Darras, 2008 ; Dutta & Bose, 2007 ; Pervan, 2006), prospectus of IPO (Léger,

2008 ; Euronext, 2006), shareholder structure (Léger, 2008 ; Barredy & Darras, 2008 ; Dutta & Bose, 2007 ; Euronext, 2006) and the organization chart (Léger, 2008 ; Dutta & Bose, 2007 ; Pervan, 2006 ; Euronext, 2006). Previous studies show that a special space dedicated to investors on the company website facilitates a relation with them (Barredy & Darras, 2008; Pervan, 2006). This information includes an address, telephone and/or an email of a specific contact (Léger, 2008; Barredy & Darras, 2008; Dutta & Bose, 2007; Pervan, 2006; Euronext, 2006). It sometimes offers the possibility of subscribing to a newsletter (Dutta & Bose, 2007; Euronext, 2006), answering FAQ's (Léger, 2008; Dutta & Bose, 2007) as well as by giving the schedule of the shareholders meetings or the calendar of the financial communication (Léger, 2008; Barredy & Darras, 2008; Dutta & Bose, 2007; Euronext, 2006).

METHODOLOGY AND DATA

In this section we present the data and methodology used in the paper. First, based on the above literature we develop our analysis grid. The analysis grid appears in Table 1.

Table 1: The Analysis Grid of Web Sites

Financial Information	Corporate governance information
Summary of Financial data	Organization chart
Last quarterly report	Firm's history
Quarterly report of previous years	Board of directors
Last annual report	Staff
Annual report of previous years	Firm's activities
Forecast of future results	Shareholder structure
Current share prices	Website's ergonomics
History of share prices	Download annual reports in PDF, HTLM, Excel
Investors relations	Videos
Specific webpage for investors	Map of website
Download documents	Research engine
Prospectus of IPO	Explanation of special financial words
Specific telephone number for investors	Other languages
Specific email or address for investors	
FAQ	
Shareholders' schedule	
Specific contact for investors	
Newsletter	

This table shows the analysis grid of web sites. It was built thanks to the literature review and was used to analyze each web sites of our sample.

The aim of this study is to identify the link between performance and virtual financial score of firms quoted on the Free Market of Paris in 2010. Using the analysis grid presented above, we analyzed the websites of 216 firms. For each item present on the web site, we gave a point to the firm. In this way, we create a communication score for each firm. We present the items in relative values. The respective score for each of four categories was divided by the total number of items in the categories. The total score is divided by the total number of items presented in the analysis grid of contents.

The literature retains several variables of performance. Return on Assets (ROA) and the Return on Equity (ROE) are often used to measure the economic and financial performance of companies (Ettredge et al., 2002; Xiao et al., 2004; Mendès-da-Silva & Christensen, 2004; Andrikopoulos et al., 2009; Pozniak, 2010; etc.). We also use these two criteria to measure the performance of companies quoted on the Free Market of Paris. ROA is measured by the relation between net profit and total assets. ROE is measured by the relationship between EBITDA and total stockholders' equity. We also test the stock-exchange performance of companies, by means of the average market capitalization calculated over the year 2010. Because some information were not available for all 216 firms, the second part of the study concerns 100 firms quoted on the Free Market of Paris in 2010. Table 2 and Table 3 present some statistics about the 100 firms studied.

Table 2: Sample Statistics

	Mean	Std. Dev.	Min	Max
Size approached by number of workers	210	392	4	1999
Number of years since IPO	11.14	21.57	1	115
Number of shareholders	5	8.99	1	79
Solvability ratio	45.81	25.70	0	100

This table shows some statistics of our sample.

Table 3: Sample Activity Sector

Activity Sector	Number of Firms
Oil & Gas	2
Basic Materials	6
Industrials	25
Consumer Goods	11
Consumer Services	6
Health Care	14
Utilities	6
Financials	4
IT (Technology + Telecommunication)	26
Total	100

This table shows the number of firms in each activity sector.

EMPIRICAL RESULTS

Table 4 indicates the distribution of the average score for financial communication obtained via the web sites for 216 listed companies on the Free Market of Paris, according to four categories of items on the analysis grid.

Table 4: Distribution of the Score of Financial Communication on the Web According to Four Categories

Categories	Average Score (Standard Error)
Financial Information	16.03% (21.36%)
Investors relations	30.45% (9.45%)
Corporate governance information	40.59% (13.01%)
Website's ergonomics	30.32% (14.10%)

This table shows the distribution of the score of financial communication on the web according to four categories.

We notice the highest average score occurs for the category "Corporate governance information." The lowest average score is obtained for the category "Financial Information ". The average score of the two other information categories seems relatively close. Table 4 also shows that the total average score is relatively low. Indeed, out of 29 items contained in the analysis grid, only 28.54 % of these items are on average available on the web sites of companies quoted on the Free Market of Paris.

To discover the possible link between performance and the score for internet financial communication, we used the DIANE and OSIRIS databases jointly. The joint use of these databases did not allow us to obtain the information relative to the performance for 36 of the 216 companies of the initial database. Besides, eighty companies with a lack of available data for our indicators were deleted from the database. Consequently, the database on which we made the empirical tests contains 100 companies. Table 5 presents the average scores obtained for these 100 companies for each of the four main categories represented in the analysis grid as well as the average performances of these companies.

Table 5: Average Score of Financial Communication and Average Performance

	Average	Standard Error
Financial Communication Score		
Financial Information	20.88%	24.49%
Investor relations	32.22%	10.42%
Corporate governance information	40.83%	13.06%
Website ergonomics	32.17%	15.40%
Total Score	30.86%	13.07%
Performances		
Market capitalization 2010	28,746,381.22€	84,056,636.03€
ROE	-13.25%	69.05%
ROA	-2.50%	17.40%

This table shows the average score of financial communication according to four categories and the average performance for our database of 100 companies.

The remarks formulated previously also remain valid when the analysis concerns only 100 companies. Indeed, the categories "Corporate governance information" and "Financial Information" respectively remain the most and the least represented categories of items on the web sites of the companies of our database. The average performance expressed in terms of financial profitability and economic profitability is negative. The standard deviation of financial profitability is very large, which implies a strong heterogeneousness in the financial performances of our companies.

In order to identify a possible link between the financial communication score of companies quoted on the Free Market of Paris and their level of performance; two groups of companies are established. The first represents companies, which, on average, communicate most on the Internet. The second represents companies, which on average, communicate least on the Internet. The results are presented in Table 6.

Table 6: Average Score of Financial Communication and Average Performance

	Group 1 (48 Firms)		Group 2 (52 Firms)	
	Average	Standard Error	Average	Standard Error
Financial Communication Score				
Financial Information	41.15%	20.46%	2.22%	5.92%
Investor relations	39.35%	9.16%	25.64%	6.43%
Corporate Governance Information	46.18%	16.21%	35.90%	6.07%
Website ergonomics	42.01%	14.58%	23.08%	9.42%
Total Score	41.81%	10.45%	20.75%	3.77%
Performance				
Market capitalization	32,321,184.20€	84,753,.497€	25,446,563.12€	84,098,258.47€
ROE	-24.35%	92.78%	-3.01%	33.14%
ROA	-2.084%	17.43%	-2.88%	17.54%

This table shows the average score of financial communication according to four categories and the average performance for the two groups of our sample.

The results presented in Table 6 are interesting. First, it seems that the companies, which inform more than other firms (i.e. those, which have an above average score), have it in each category of the analysis grid. There is thus a positive correlation between the total score of financial communication and each of the intermediate scores relative to the four categories of the analysis grid. Indeed, the average scores of financial communication of 48 companies of the group are higher than these same average scores calculated for 100 companies of the database (see Table 5). On the other hand, those of the companies of group 2 are lower than the average scores calculated for the hundred companies of the database.

It seems that the companies of group 1 emphasize the first category of the analysis grid more than the companies of group 2. So, on average, more than 45% of the items of the category " financial Information " are found on the web site of group 1 companies compared to only 2.22 % for group 2.

The average market capitalization calculated over the year 2010 for the companies of group 1 is greater than the overall average of this criterion of performance (Table 6). On the other hand, the companies of group 2 present on average a lower market capitalization than the overall average.Companies separated into two groups present ratios rather close to the 2.50 % overall average. On the other hand, the companies of group 1 present an average financial level of performance considerably lower than the 13.25 % overall average. This average level of financial performance improves rather strongly in the case of the companies of group 2, even if it does remain negative. This implies that companies achieving less financial performances tend to inform more than the others do.

Next we develop an econometric plan to quantify the link of causality observed between performance and intensity of financial communication on the Internet. The "Total Score" variable was constructed to take the value 1(0) if the score of financial communication, expressed as a percentage of the total number of items, is higher (lower) than the average of this score calculated for all companies. By supposing a normal distribution of the residues, we used the Probit model. This model makes it possible to estimate the probability that the variable "Total Score" takes the value 1 according to a set of explanatory variables. The method of estimation of the parameters of the performance variables is maximum likelihood. The model takes the following shape:

$$\Pr (Y=1|X) = \Phi(X'\beta) \quad (1)$$

Y is the dependent variable, which takes the value 1 if the financial communication score is higher than the mean score of the sample and 0 in otherwise. Φ is the cumulative distribution function of the standard normal distribution. X is a vector of regressors, which represents the firm's performance (ROE, ROA and market capitalization)The best model considers only one of three explanatory variables integrated into the initial model. This variable is the measure of the financial performance of companies, the ROE. The results of this model are presented in Table 7.

Table 7: Results of the Probit Model

Dependent Variable : Total Score
Method : Maximum Likelihood-Binary Probit (Quadratic hill climbing)
Observations included : 100
Convergence achieved after 3 iterations
QML (Huber/White) standard error & covariance

Variables	**Coefficient**	**Std.Error**	**z-Statistic**
C	-0.0873	0.1288	-0.6776
ROE	*-0.0034*	*0.0016*	*-2.042***
Mean dependent variable	0.48	S.D. dependent variable	0.5021
S.E of regression	0.4991	Akaike info criterion	1.398
Sum squared resid	24.417	Schwarz criterion	1.450
Log likelihood	-67.914	Hannan-Quinn criterion	1.419
Rest.log likelihood	-69.235	Average log likelihood	-0.6791
LR statistic	*3.641****	McFadden R-squared	0.0191

*This table shows the results of the Probit model. ***, ** and * indicate the significance at the 1, 5 and 10 percent levels respectively.*

The results show the model is statistically significant at the 10% level. The variable ROE is statistically significant at the 5% level. It is not the numerical value of the coefficient that imports as its sign (Thomas, 2000). Indeed, according to Thomas (2000), the sign indicates if the estimated parameters influence positively or negatively the probability the dependent variable takes the value 1.

The variable ROE appears with a negative coefficient. This means that the greater the financial profitability of companies, the lower the probability these companies will present a good score for financial communication via the web. On the other hand, the lower the financial profitability of companies, the greater the probability these companies will present a good score for financial communication on the web. Therefore, the results seem to indicate that financial performance influences

negatively the score of financial communication on the internet of the 100 companies of the Free Market of Paris. These results confirm those of Debreceny and Rahman (2005) and Pozniak (2010). So, the most profitable companies of the Free Market of Paris inform less than less successful firms. This goes against the signal theory, which says that the most successful companies would tend to try to protect themselves from competitors and communicate less (Paturel et al., 2006; Pozniak, 2010; Amal & Faten, 2010). On the other hand, companies which have a less good financial performance tend to communicate more on their websites. It seems these companies try to reassure investors regarding their financial health. The results of this study also prove the statistical irrelevance of economic and stock exchange performance on the voluntary effort at financial communication on the web, as the research of Xiao et al. (2004); Mendès da Silva and Christensen (2004), of Andrikopoulos et al. (2009) showed.

CONCLUSION

The approach proposed within the framework of this study is exploratory because the link between the performance of listed companies and their efforts at financial communication is ambiguous. Two theories are used to explain the influence of performance on the intensity of financial communication. The signal theory says that successful firms will attract notice by means of a greater financial communication. The second theory argues that successful companies communicate less to protect themselves from competitors. The approach of this study was to identify the possible influence of company performance on the level of disclosure of website financial information. We chose to study listed companies in 2010 on the unregulated market of Paris. These companies are not subjected to obligations of financial communication. To define the effort of financial communication, a content analysis of websites was completed and a scoring technique was used. Using a Probit model, we highlight the possible link between this score and the performance of the company.

The content analysis of websites shows the highest average score is obtained for the category “Corporate governance information" and that the lowest average score is obtained by the category "Financial Information ". The total average score is relatively low (28.54 % of these items are available on the web sites of companies quoted on the Free Market of Paris). The estimation of a Probit model does not seem to validate the signal theory. Indeed, the variable ROE appears to be statistically significant and has a negative coefficient. This means that a firm with a higher level of profitability will tend to present less financial information on its website. This search can be improved on several levels. Although the analysis grid of websites was constructed according to the recommendations of the literature, it could have contained other variables such as adiscussion forum for investors, links towards the social networks, and other measures. Furthermore, future research might provide a more detailed analysis of the link between performance and financial communication on the internet. For example, a sample of companies quoted on the Free Market of Paris could be compared to a sample of similar but unquoted companies. In this way, the impact of the quotation on the intensity of the financial communication could be verified. Finally, interviews with the managers of listed companies on the Free Market of Paris could highlight the reasons which push successful firms not to develop their virtual financial communication.

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INTERNAL CONTROL AND FINANCIAL QUALITY: EVIDENCE FROM POST-SOX RESTATEMENT

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ABSTRACT

Studies of post-SOX restatements have examined the cause of the increase and have documented the association with internal controls in a negative light. In general, restatements result from internal control problems because internal controls are the first line of defense for financial statement quality. However, prior research ignores internal controls have different quality levels and may make various impacts on restating companies. Thus, this study examines the association between restatements and internal controls by examining whether and how internal control quality affects degree of restatement severity. Empirical results show that restatement severity increases in degree of internal control deficiency under among three definitions of internal control quality.

JEL: M41, G32, G24, K20

KEYWORDS: Internal control, Financial quality, Restatement

INTRODUCTION

Auditing Standard No. 2 points out that a restatement of previous financial statements to reflect error correction shows at least a significant deficiency and strongly indicates material weakness. Statement on Auditing Standards (SAS) No. 99 (AU 316) also points out that extent of auditing procedures must address identified risks of material misstatement resulting from fraud. In the post-Enron era, auditors face challenges identifying red flags because of the growing number of restatements, especially restatements have become much more common (Grothe, Pham and Saban, 2006 and Grothe, Saban, Plachecki, Lee and Post, 2007b). Previous research has suggested that restatements increase litigation risk (Palmrose and Scholz, 2004), and thus represent a higher risk to auditors because they make financial statement reliability questionable.

The Sarbanes-Oxley Act (hereafter called the SOX) of 2002 requires management and independent auditors to comply with Section 404 in assessing the effectiveness of company internal controls and to report their findings to investors. However, Section 404 does not require companies to keep enough internal control quality. Section 404 only requires management and auditors to test internal controls to see whether they are effective, and afterwards to inform investors of their effectiveness. Thus, regulators and the public have devoted considerable attention to whether internal controls are sufficient to ensure the accuracy of company financial statements, following the sharp increase in the number of restatements following SOX (Baldwin and Yoo, 2005, GAO, 2006, Grothe, Pham and Saban, 2006, Grothe, Goodwin, Iandera, Laurion and Freeland, 2007a, Grothe, Saban, Plachecki, Lee and Post, 2007b, Audit Analytics, 2007, PCAOB, 2007). The causes of restatements vary significantly among cases (Plumlee and Yohn, 2010, Scholz, 2008). However, restatements result from internal control problems because internal controls are the first line of defense for financial statement quality. Thus, I first focus on whether and how internal control quality is associated with restatement severity/restatement characteristics, because I argue that internal controls have different quality levels and may cause various influences on restatements.

The internal control system is supposed to improve financial reporting reliability and therefore should reduce the number of restatements (Plumlee and Yohn, 2010), but a restatement could signal a company lacks proper internal controls. In this study, I use three measurement methods to proxy for internal control

quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses and provide evidence suggesting that different levels of internal control deficiency can cause various degrees of severity on financial restatements.

LITERATURE REVIEW

Section 404 claims that effective internal controls assure investors that materially misstated financial statements are unlikely. Simply put, if internal controls are effective, the likelihood of intentional or unintentional errors being committed should be significantly reduced (DeFond and Jiambalvo, 1991). Therefore, internal control systems that companies establish over financial reporting should be designed to prevent or detect financial reporting misstatements (PCAOB, 2004). Thus, company internal control systems are important in error prevention and detection. Given poor internal control quality, subsequent restatements are highly likely. Some studies have demonstrated a link between internal control quality and the likelihood of subsequent financial restatements (Hammersley, Myers and Shakespeare, 2008, Plumlee and Yohn, 2010). Ashbaugh-Skaife, Collins and Kinney (2007), Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b) also indicate that companies with material weaknesses often find it necessary to restate earnings, and material weakness is often disclosed following restatement. This raises the question of whether and how weakness in material internal control affects company restatement severity.

This study focuses solely on restating companies as research samples to build on the earlier empirical findings, because restatements are of significant concern to investors, managers, regulators, issuers, auditors, boards of directors and academics, and their information content has not been fully explored. This study differs from previous studies, I attempt to examine the association between restatements and internal controls by examining whether and how internal control quality affects degree of restatement severity, because restatement severity matters to the market, and assessments of internal control quality can potentially provide useful and timely information to investors. For example, Li, Scholz and Wang (2006) indicates that investment reaction to restatements differs according to knowledge of company internal control quality. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study considers three measurement methods as proxies for internal control quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses to examine whether a positive relationship exists between internal control weaknesses and restatement severity. Further, I examine how internal control quality affects restatement characteristics.

DATA AND METHODOLOGY

This study first uses Compliance Week database to identify internal control weaknesses. And then, I cross-check internal control weaknesses by searching each SEC filing (e.g., 10-K, 10-K/A, etc.) to ensure disclose of any material weakness in internal control. Prior studies mostly focus on the existence of control weakness. However, different types of weakness have different effects. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study classifies various types of internal control weakness disclosure into two types: account-specific material weaknesses and company-level material weaknesses. This study hand-collects data on the dates of initial restatement announcements and restatement characteristics from the Lexis-Nexis News Library, which covers all interim and annual restatements announced from 2004 through 2005. Identifying precise announcement dates for restatements is challenging. This study thus only considers the first release of the restatement announcement of each company in a given year. Company-level accounting data are obtained from the Standard and Poor's Compustat Annual Industrial, Research, and Full Coverage files.

The sample consists of companies that announced restatements from 2004 to 2005. Table 1 explains the sample construction. As reported in Table 1, Panel A, companies are excluded from my sample for the following reasons. First, I exclude technical restatements for 33 companies. Second, I exclude 3 companies lacking identifying information, such as perm number, cusip, gvkey, or cnum. Third, I cannot find 8-K, 10-K/A, 10-Q/A or restatement data for 67 companies. Fourth, internal control data is missing for 199 companies and thus these companies are excluded. Fifth, 91 companies are excluded because of missing Compustat financial data. My final sample is composed of 403 restating companies.

Panel B provides the distribution of research samples by the year of announcement. The distribution shows a higher percentage of restatements announced in 2005, moreover, about 72.08% of the restatements in the internal control weakness subsample. Panel C details the industry composition of restatement companies. The industry that is most heavily represented (23.57% of sample companies) is retailing. Moreover, Panel C also shows that retailing and durable goods manufacturing industries have the highest percentages of restatements in the internal control weakness subsample (20.13% and 20.13%, respectively).

Table 1: Sample Selection

Panel A: Number of observations lost because of data requirements

Total number of restatements announced from 2004 to 2005		796
Less: Restatements of technical reasons	33	
Observations without perm number, cusip, gvkey, cnum, etc.	3	
Observations with missing restatement data	67	
Observations with missing internal control data	199	
Observations not on Compustat or with missing Compustat data	91	
		(393)
Final Sample		403

Panel B: Year of restatement announcement

	2004		2005		Total	
Year	Obs.	%	Obs.	%	Obs.	%
ICW [a]	43	39.81%	111	37.63%	154	38.21%
Non-ICW	65	60.19%	184	62.37%	249	61.79%
Total	108	100%	295	100%	403	100%

Panel C: Industry distribution of sample companies

	ICW		Non-ICW		Total	
Industry [b]	Obs.	%	Obs.	%	Obs.	%
Mining & construction	3	1.95%	5	2.01%	8	1.99%
Food	2	1.30%	1	0.40%	3	0.74%
Textiles & printing / publishing	5	3.25%	10	4.02%	15	3.72%
Chemicals	1	0.65%	2	0.80%	3	0.74%
Pharmaceuticals	7	4.55%	7	2.81%	14	3.47%
Extractive	1	0.65%	7	2.81%	8	1.99%
Durable manufacturers	31	20.13%	24	9.64%	55	13.65%
Transportation	8	5.19%	17	6.83%	25	6.20%
Utilities	3	1.95%	17	6.83%	20	4.96%
Retail	31	20.13%	64	25.70%	95	23.57%
Financial services	18	11.69%	47	18.88%	65	16.13%
Services	17	11.04%	24	9.64%	41	10.17%
Computers	27	17.53%	24	9.64%	51	12.66%
Total	154	100.00%	249	100.00%	403	100.00%

[a] *ICW and Non-ICW divide samples based on whether companies with internal control weaknesses or without internal control weaknesses.*

[b] *Industry membership is determined by SIC code as follows: mining and construction (1000-1999, excluding 1300-1399), food (2000-2111), textiles and printing/publishing (2200-2799), chemicals (2800-2824, 2840-2899), pharmaceuticals (2830-2836), extractive (1300-1399, 2900-2999), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), financial services (6000-6999), services (7000-8999, excluding 7370-7379), and computers (3570-3579, 3670-3679, 7370-7379).*

This study estimates equation (1) and equation (2) to test the relationship between restatement severity and internal control weakness. Specifically, this investigation not only includes four restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*), but also uses a composite measure (*SEVERITY*) that captures overall company restatement severity. Also, this study uses three measures of internal control weakness: (1) existence of internal control weakness; (2) type of internal control deficiencies; and (3) number of internal control deficiencies.

$$SEVERITY_{i,t} = \alpha_0 + \alpha_1 ICQUALITY_{i,t} + \alpha_2 BIGN_{i,t} + \alpha_3 DEBT_{i,t} + \alpha_4 SALEGRW_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 LOSS_{i,t} + \alpha_7 SIZE_{i,t} + \alpha_8 CEOTURN_{i,t} + \alpha_9 ATTAU_{i,t} + \alpha_{10} ATTSEC_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$RESTATEMENT\,CHARACTERISTICS_{i,t} = \alpha_0 + \alpha_1 ICQUALITY_{i,t} + \alpha_2 BIGN_{i,t} + \alpha_3 DEBT_{i,t} + \alpha_4 SALEGRW_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 LOSS_{i,t} + \alpha_7 SIZE_{i,t} + \alpha_8 CEOTURN_{i,t} + \alpha_9 ATTAU_{i,t} + \alpha_{10} ATTSEC_{i,t} + \varepsilon_{i,t} \quad (2)$$

($CORE / AMOUNT / ACCOUNTS / RYEARS$)

where

SEVERITY = Combines four characteristics of restatement severity (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) into a single comprehensive variable;

CORE = 1 if a restatement involves revenue, cost of sales or on-going operating expenses, and 0 otherwise;

AMOUNT = Restated income (loss) less originally reported income (loss) over the restated period, scaled by book value of assets reported at year end prior to the restatement announcement;

ACCOUNTS = Number of account groups affected in a restatement. The seven account groups include revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items;

RYEARS = Sum of years restated, where fiscal year = 1 and each additional quarter = 0.25;

ICQUALITY = Uses three measurement methods to proxy for the weakness of internal control,
(1) 1 if a company has weak internal control, and 0 otherwise;
(2) type of internal control weaknesses;
(3) number of internal control weaknesses;

BIGN = 1 if the company's auditor is a Big N firm at announcement year, and 0 otherwise;

DEBT = 1 if the company has notes payable, and 0 otherwise;

SALEGRW = One-year percentage change in sales reported at announcement year;

ROA = Net income divided by book value of total assets reported at announcement year;

LOSS = 1 if operating income is less than zero reported at announcement year, and 0 otherwise;

SIZE = Natural log of the book value of total assets reported at announcement year;

CEOTURN = 1 if the CEO leaves the company within 24 months around (6 months before and 18 months after) the restatement announcement, and 0 otherwise;

ATTAU = 1 if companies having restatements prompted by the auditor, and 0 otherwise;

ATTSEC = 1 if companies having restatements prompted by SEC, and 0 otherwise;

ε = the residual term.

The dependent variable of equation (1), *SEVERITY*, captures comprehensive restatement severity. The dependent variable of equation (2), *RESTATEMENT CHARACTERISTICS*, considers individual restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*). Meanwhile, the test variable, *ICQUALITY*, measures internal control quality. From a review of the literature (DeFond and Jiambalvo, 1991, Kinney and McDaniel, 1989, Palmrose, Richardson and Scholz, 2004), this study includes four control variables to control for company financial condition: *ROA*, *LOSS*, *DEBT*, and *SALEGRW*. Prior researches indicate that restatements prompted by external parties (SEC and auditors) are more severe (Palmrose, Richardson and Scholz, 2004, Desai, Hogan and Wilkins, 2006b), I control for external prompter effects (*ATTSEC*, *ATTAU*). Boards replace CEOs more often for financial reporting problems (Srinivasan, 2005), I control for CEO replace effect (denoted by *CEOTURN*). Consistent with Dechow, Sloan and Sweeney (1996), and Desai, Krishnamurthy and Venkataraman (2006a), this study controls for

the company size effect (denoted by *SIZE*). Additionally, Farber (2005) reports a smaller proportion of brand-name audit firms in fraud companies compared to control companies. This study thus includes Big N CPA firms (denoted by *BIGN*) to control for auditor industry leadership.

The variable, *ICQUALITY*, captures company internal control quality. This study uses three measurement methods to proxy for internal control quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study categorizes the disclosed internal control problems into two major deficiency types: account-specific and company-level. Account-specific material weaknesses relate to controls over specific account balances or transaction-level processes. Meanwhile, company-level material weaknesses relate to more macro-level controls such as control environment or overall financial reporting process. To understand degree of internal control deficiency, this study also considers number of internal control weaknesses disclosured in their Internal Control over Financial Reporting. The dependent variable, *SEVERITY*, captures overall corporate restatement severity by combining four characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) of restatement severity. The first restatement characteristic is an indicator variable for core-earnings (denoted by *CORE*), which equals one if a restatement involves core earnings and zero otherwise. According to Penman (2001), core earnings in an income statement include sales revenue, cost of sales, and on-going operating expenses. This study includes *CORE* as a restatement characteristic because previous investigations have demonstrated that market participants regard restatements of core earnings as more serious because of their potential litigations and react negatively (Palmrose and Scholz, 2004, Palmrose, Richardson and Scholz, 2004). The second restatement characteristic, *AMOUNT*, measures the size (magnitude) effect of a restatement on net income. Following Palmrose, Richardson and Scholz (2004), Srinivasan (2005) and Collins, Masli, Reitenga and Sanchez (2009), this study calculates *AMOUNT* as the restated income (loss) less originally reported income (loss), scaled by the book value of total assets at the end of the year immediately preceding the restatement announcement.

This study measures the number of account groups affected (denoted by *ACCOUNTS*) as the third restatement characteristic. This study follows Palmrose, Richardson and Scholz (2004) by focusing on seven account groups in the income statement (i.e., revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items) and expects *ACCOUNTS* (which can range from one to seven) to be positively associated with cost of debt capital. Additionally, *CORE* captures the overall impact of accounting numbers, whereas *ACCOUNTS* indicates whether market participants consider the detailed line items (within the income statement) involved in a restatement and reacts accordingly. The fourth restatement characteristic, *RYEARS*, is measured using the number of years financial statements that are restated in a single restatement (where a fiscal year = 1 and a quarter = 0.25). Therefore, *RYEARS* captures the "cumulative compromise" of financial reporting quality over a specific length of time.

RESULTS

Table 2 provides descriptive data on the sample companies, partitioned by two subsamples: restating companies with internal control weakness (n = 154), and restating companies without internal control weakness (n = 249). As such, comparing two subsamples provides evidence regarding whether internal control environment affects degree of restatement severity.

First, the mean (median) of *SEVERITY* reported in the ICW subsample is significantly larger than those reported in the non-ICW subsample at the 0.01 level for both tests. Second, with respect to restatement characteristics, the means (medians) of restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNT*, and *RYEARS*) reported in the ICW subsample are significantly larger than those reported in the non-ICW subsample. Univariate comparisons indicate that ICW companies have higher restatement severity than

non-ICW companies. Additionally, ICW restating companies are more likely to involve core-earnings, greater overstatement values, more account groups restated, and longer duration. Third, the mean (median) of *AUFEE* reported in the ICW subsample is significantly larger than those reported in the non-ICW subsample at the 0.01 level for both tests. This finding reveals that ICW companies have higher audit fees than non-ICW companies. Finally, ICW companies have higher CEO turnover rate (*CEOTURN*), receive more going-concern opinions (*GC*), have more notes payable (*DEBT*), perform worse (*ROA*) and suffer more losses (*LOSS*).

Table 2: Descriptive Statistics

	ICW [b] (n=154)		Non-ICW (n=249)		Differences [c]	
Variable [a]	**Mean**	**Median**	**Mean**	**Median**	***t* test**	***z* test**
SEVERITY	2.10	2.00	1.52	1.00	-4.92***	-4.69***
CORE	0.70	1.00	0.57	1.00	-2.78***	-2.71***
AMOUNT	-0.01	-0.00	-0.01	-0.00	1.59	4.05***
ACCOUNTS	1.20	1.00	1.12	1.00	-1.83*	-2.10**
RYEARS	2.15	1.75	1.55	1.00	-3.97***	-3.79***
BIGN	0.88	1.00	0.89	1.00	0.33	0.33
DEBT	0.38	0.00	0.29	0.00	-1.84*	-1.87*
SALEGRW	0.12	0.08	0.15	0.11	1.00	1.99**
ROA	-0.03	0.01	0.03	0.03	4.20***	6.07***
LOSS	0.42	0.00	0.18	0.00	-4.93***	-5.05***
SIZE	7.04	6.68	7.35	7.18	1.62	1.95*
CEOTURN	0.38	0.00	0.28	0.00	-2.10**	-2.13**
ATTAU	0.05	0.00	0.04	0.00	-0.56	-0.56
ATTSEC	0.03	0.00	0.04	0.00	0.20	0.20
AUFEE	14.72	14.56	14.33	14.14	-3.34***	-3.52***
TENURE	8.45	7.00	7.82	6.00	-1.06	-0.95
GC	0.56	1.00	0.34	0.00	-4.33***	-4.28***

[a] *The definitions of the variables reported in this table are: SEVERITY = Combines four restatement characteristics (CORE, AMOUNT, ACCOUNTS, RYEARS) into a single comprehensive variable; CORE = 1 if a restatement involves revenue, cost of sales or on-going operating expenses, and 0 otherwise; AMOUNT = Restated income (loss) less originally reported income (loss) over the restated period, scaled by book value of assets reported at year end prior to the restatement announcement; ACCOUNTS = Number of account groups affected in a restatement. The seven account groups are revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items; RYEARS = Sum of years restated, where a fiscal year = 1 and each additional quarter = 0.25; BIGN = 1 if the company's auditor is a Big N firm at announcement year, and 0 otherwise; DEBT = 1 if the company has notes payable, and 0 otherwise; SALEGRW = One-year percentage change in sales reported at announcement year; ROA = Net income divided by book value of total assets reported at announcement year; LOSS = 1 if operating income is less than zero reported at year end prior to restatement announcement, and 0 otherwise; SIZE = Natural log of book value of total assets reported at announcement year; CEOTURN = 1 if the CEO leaves the company within 24 months around (6 months before and 18 months after) the restatement announcement, and 0 otherwise; ATTAU = 1 if companies having restatements prompted by the auditor, and 0 otherwise; ATTSEC = 1 if companies having restatements prompted by SEC, and 0 otherwise. AUFEE = Natural log of audit fees; TENURE = the number of consecutive years that the company has retained the auditor; GC = 1 if the company receives a going concern opinion at announcement year, and 0 otherwise.*

[b] *ICW and Non-ICW divide samples based on whether companies with internal control weaknesses or without internal control weaknesses.*

[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

Table 3 reports the Pearson correlations for the dependent and test variables to be used in the research models. In my analyses, most explanatory variables are not significantly correlated with each other, suggesting that multicollinearity is not a problem. As depicted in this Table, correlations between restatement information (*SEVERITY*, *CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) and internal control weaknesses (*ICQUALITY(1)*, *ICQUALITY(2)*, *ICQUALITY(3)*) are in the predicted direction.

Table 3: Pearson Correlation Coefficients

Variable [a] [b]	*SEVERITY*	*CORE*	*AMOUNT*	*ACCOUNTS*	*RYEARS*	*ICQUALITY(1)*	*ICQUALITY(2)*
SEVERITY							
CORE	0.71**						
AMOUNT	-0.16**	-0.05					
ACCOUNTS	0.51**	0.29**	-0.15**				
RYEARS	0.53**	0.16**	-0.00	0.09			
ICQUALITY(1)	0.24**	0.14**	-0.08	0.09	0.20**		
ICQUALITY(2)	0.22**	0.11**	-0.10	0.10**	0.22**	0.94**	
ICQUALITY(3)	0.18**	0.05	-0.17	0.19**	0.17**	0.61**	0.69**

[a] *Please refer to table 2 for variable definitions.*

[b] *Asterisks ** indicate two-tailed significance at the 0.05.*

To examine the association between restatement severity and internal control quality, I estimate equation (1) using a composite index that combines four restatement characteristics into a single comprehensive variable (*SEVERITY*) that captures the company's overall restatement severity. I regress internal control variables and control variables on restatement severity using the ordered probit model. Table 4 presents estimates from the regression of equation (1).

Table 4: Restatement Severity and Internal Control

Variable [a]	Model 1 [c]	Model 2	Model 3
ICQUALITY [b]	0.54***	0.29***	0.09***
BIGN	0.14	0.17	0.17
DEBT	-0.15	-0.14	-0.14
SALEGRW	-0.40*	-0.42**	-0.44**
ROA	0.59	0.61	0.63
LOSS	-0.05	-0.03	-0.04
SIZE	-0.09***	-0.09***	-0.09***
CEOTURN	0.17	0.17	0.16
ATTAU	0.07	0.04	-0.08
ATTSEC	0.71**	0.66**	0.73**
Pseudo-R^2	3.98%	3.70%	3.56%
n	403	403	403

[a] *Please refer to table 2 for variable definitions.*
[b] *Model 1 measures ICQUALITY by (1) 1 if a company has weak internal control, and 0 otherwise, model 2 measures ICQUALITY by (2) type of internal control weaknesses, and model 3 measures ICQUALITY by (3) number of internal control weaknesses.*
[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

Consistent with my prediction, in Model (1), the coefficient on *ICQUALITY* is 0.54 (significant at $p < 0.01$), suggesting that restating companies with internal control weaknesses may suffer higher restatement severity. In Model (2), the coefficient on *ICQUALITY* is 0.29 (significant at $p < 0.01$), suggesting that restating companies involve company-level material weaknesses may have higher restatement severity. In Model (3), the coefficient on *ICQUALITY* is 0.09 (significant at $p < 0.01$), suggesting that restatement severity increases in number of internal control weaknesses. Also, among the control variables, performance (*SALEGRW*), company size (*SIZE*), and SEC-prompted restatements (*ATTSEC*) are significantly correlated with restatement severity.

To further examine the association between restatement characteristics and internal control quality, I consider four restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*), and then estimate equation (2). As shown in Table 5, restating companies with internal control weaknesses are more likely to involve core-earnings accounts (*CORE*), downward restatements (*AMOUNT*), more account groups (*ACCOUNTS*), and longer duration (*RYEARS*) than restating companies without internal control weaknesses.

Overall, results suggest that different levels of internal control deficiency can cause various degrees of restatement severity. Specifically, companies with company-level material weaknesses are more likely to suffer higher restatement severity than those companies with account-specific material weaknesses.

This section examines the sensitivity of the reported empirical results by exploring whether the evidence persists for a series of variables, sample re-specifications and alternate estimation techniques. First, following Hribar and Jenkins (2004), I re-define *CORE* as equal to one if the restatement is categorized as affecting revenue recognition, cost of sales, operating expenses, or loan-loss provisions, and zero otherwise. The results and conclusions remain unchanged. Second, I exclude companies in the financial services industry because their financial ratios differ from other companies, and their corporate governance is subject to different regulatory oversight. The empirical results are similar to those reported in previous sections.

Table 5: Restatement Characteristics and Internal Control

		CORE			***AMOUNT***	
Variable [a]	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Intercept [b]	1.06***	1.07***	1.16***	-0.02	-0.01	-0.02
ICQUALITY	0.45***	0.20**	0.04	-0.01*	-0.01**	-0.01***
BIGN	0.14	0.16	0.16	-0.00	-0.00	-0.00
DEBT	-0.38**	-0.36**	-0.34**	0.01	0.01	0.01
SALEGRW	-0.87***	-0.88***	-0.87***	-0.02*	-0.02*	-0.01*
ROA	0.45	0.46	0.43	-0.00	-0.00	-0.01
LOSS	-0.20	-0.17	-0.15	0.00	0.00	0.00
SIZE	-0.11***	-0.11***	-0.11***	0.00	0.00	0.00
CEOTURN	0.06	0.07	0.07	0.01	0.01	0.01
ATTAU	-0.04	-0.05	-0.10	0.01	0.01	0.02
ATTSEC	0.73*	0.71*	0.76*	0.00	0.00	0.00
Pseudo-R^2	8.07%	7.39%	6.68%	2.82%	3.29%	3.31%
n	403	403	403	403	403	403
		ACCOUNTS			***RYEARS***	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Intercept [b]	1.20***	1.19***	1.20***	1.07***	1.02***	1.23***
ICQUALITY	0.07*	0.04*	0.03***	0.68***	0.42***	0.11***
BIGN	-0.00	0.00	0.00	0.03	0.07	0.07
DEBT	-0.02	-0.02	-0.03	-0.14	-0.14	-0.12
SALEGRW	-0.05	-0.05	-0.06	-0.17	-0.19	-0.22
ROA	-0.03	-0.02	0.02	0.77	0.84	0.82
LOSS	0.00	0.00	-0.01	-0.17	-0.16	-0.14
SIZE	-0.01	-0.01	-0.01	0.05	0.06	0.05
CEOTURN	0.01	0.01	-0.00	0.34**	0.33**	0.33**
ATTAU	-0.05	-0.05	-0.11	0.04	-0.00	-0.13
ATTSEC	0.06	0.06	0.07	0.39	0.32	0.44
Pseudo-R^2	1.52%	1.59%	1.96%	5.42%	6.15%	4.03%
n	403	403	403	403	403	403

[a] *Please refer to table 2 for variable definitions.*
[b] *Model 1 measures ICQUALITY by (1) 1 if a company has weak internal control, and 0 otherwise, model 2 measures ICQUALITY by (2) type of internal control weaknesses, and model 3 measures ICQUALITY by (3) number of internal control weaknesses.*
[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

CONCLUDING COMMENTS

In this study, I examine whether and how internal control quality is associated with restatement severity/restatement characteristics, because I argue that internal controls have different quality levels and may cause various influences on restatements. By using 403 restating companies during 2004-2005, I employed an ordered probit model and found that restatement severity increases for companies with improper internal controls, moreover, companies with company-level material weaknesses are more likely to suffer higher restatement severity than those companies with account-specific material weaknesses. One major limitation of my study is that my sample includes data for two year. A potentially interesting line of future research is whether post-SOX restating companies improve their earnings quality or internal control quality in the post-restatement era. From a positive thinking perspective, this raises an important question of whether post-SOX restatements provide a good opportunity for restating companies to improve the future quality of their financial reporting. I believe that after SOX restating companies may have stronger incentives than non-restating companies to improve financial reporting quality and restore market confidence, because restatements incur higher costs and considerable public criticism.

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STOCK MARKET AND TAX REVENUE COLLECTION IN MALAYSIA: EVIDENCE FROM COINTEGRATION AND CAUSALITY TESTS

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ABSTRACT

This study empirically examined the relationship between stock market performance and taxation in Malaysia over the period 1980 to 2008. The Gregory Hansen methodology was utilized to examine which tax collected by Malaysia's Government most impacted stock market performance in Malaysia. The results show that stock market performance contributes most to the changes in company tax revenue as compared to personal taxes and real property gain taxes. In addition, the analysis detects a significance break, which impacts the nature of the relationship between variables. This finding indicates that stock market performance in Malaysia was influenced by strong growth of company tax revenue collection. Thus, fiscal policy authorities in Malaysia should enhance efforts to promote stock market activities, which will subsequently increase the tax revenue collection.

JEL: F3, G1, H2, O2

KEYWORDS: Company tax, Personal tax, Stock market, Structural break

INTRODUCTION

Taxes have an important role in the economic and social policy of any government. Tax policies in Malaysia normally contribute to the overall economic development in two major ways :i) ensuring stable growth in revenue to finance the annual budget; and ii) providing incentives within the tax system to promote growth, especially in the private sector (Singh, 2005) . Therefore,the efficiency and effectiveness of the tax system formulation are crucial to ensure that the government is able to collect the sources for development purposes. Such development, in return, will help to encourage more investment flow in the country. Thus, taxation in terms of policies is well known as being able to promote economic activities, such as investment, manufacturing, tourism and agriculture by offering incentives, which, in return, contribute towards a more balanced growth. Therefore, this paper presents the existence of the relationship between tax revenue and the stock market in Malaysia for the period of 1980 to 2008.

In Malaysia, capital market activities have shown tremendous growth following the Government's efforts to improve the facilities and infrastructure for the investment activities. However, the booming of Malaysia's stock market began after the Asian financial crisis in 1997.This crisis has led to a fundamental change in the Malaysian financial system from bank lending to non-bank market orientation (Zhang, 2009) . This created rapid growth in the stock and corporate bond markets in Malaysia, which opened an opportunity for investment, specifically in the capital market activities. As a result, the capital market in Malaysia has increased significantly, where, in 1999, the funds raised in the capital market amounted to RM17.2 billion compared to RM7.5 billion per annum for the 30 year period from 1962-1992. The remarkable growth of Malaysia's capital market has directly and indirectly impacted the trend of tax revenue collection. Year-to-year the tax revenue collection has increased consistently. Furthermore, the Government's decision to change the method of tax collection from the Official Assessment System to the Self Assessment System in 2001 and 2004 for companies and individuals, respectively, has contributed to an increase in the tax revenue collection (Malaysia, 2004) . In addition, the government also encouraged investment activities through the announcement of incentives granted to the taxpayer to reduce their tax burden. This will further help to promote the investment activities.

Therefore, a combination of strong financial system development and solid fiscal policy is also a prominent tool to spur growth. Despite the importance of these measures, understanding of the relationship between the fiscal policy and financial system are far from complete. Although previous studies (Darrat, 1988, Darrat, 1990, Ardagna, 2009, Laopodis, 2009) have documented the relationship between the financial market and fiscal policy, no insights on particular fiscal policy tools, such as taxation instruments, which could cause a negative or positive market response, are offered in the literature devoted to developing countries. In developed country studies, the relationship is mainly analyzed using cross-sectional(Arin et al., 2009, Aarle et al., 2003) and panel analysis(Akitoby and Stratmann, 2008, Ardagna, 2009, Hung and Lee, 2010) .

The earlier studies mentioned broadly document the relationship between fiscal policy and financial markets. However, none of these studies focused on analyzing the impact of financial market activities on generating tax revenue, which is also important in analyzing the economic performance of the country. Boyd (2009) discussed the situation when the state runs out of money, which affects the budget allocation. In addition, he emphasized the significant impact of recession (specifically on the downturn in an investment on capital market) on tax revenue collection. Therefore, as fiscal policy has a pivotal role in influencing the investment performance, so does the role of investment in determining the trend of revenue collection. Realizing this, Taha et al. (2010) analyzed the role of the financial market on generating tax revenue in Malaysia. The results show that while direct tax revenue has a significant effect on the stock market and bond market activities, both financial market instruments play a pivotal role in determining the revenue collection. However, in this study the relation has been analyzed at an aggregate level, and there is no identification on which particular tax instruments are most impacted from financial market activities. Therefore, the actual causal effect of financial market activities on specific tax revenue is largely unresolved. In addition, this study did not consider the occurrence of a potential break, which might change the nature of the relationship existing between variables.

Therefore, the purpose of this paper is to examine the relationship between the stock market and tax return in Malaysia by focusing on personal tax and company tax revenue considering the pivotal role of such revenue in Malaysia's economy. In addition, this issue is of interest due to recent gyrations of the stock market due to global economic imbalance. Plummeting stock prices can cast a dark cloud over the financial position of all parties – individuals, companies and the government. However, there is a lack of discussion devoted to the effect of increasing stock market activities on the tax revenue collection. Most of the studies focused on analyzing the nexus between tax and the stock market with the aim of analyzing the effect of changes in tax burden on stock market activities. Furthermore, previous studies also aim to investigate the impact of tax on investment activities while neglecting other important components of the financial system. Based on the results, it can be concluded that a long-term relationship exists between company tax revenue and the stock market implying that taxation plays an important role in encouraging investment activities. This result is of particular importance as it offers the important determinants of capital market activities, specifically in Malaysia.

The contribution of this study is two-fold. First, this paper studies the impact of the stock market on both personal tax and company tax in Malaysia. Second, the recent analyses that cater for the existence of a break, which take into consideration all the economic events occurring during the study period were utilized. The results suggest that the stock market contributes to the strong growth in company tax revenue collection. However, there is no significant impact of stock market on personal tax revenue.

The structure of this paper is as follows: Section 2 surveys the literature, Section 3 presents the data used and the discussion of the empirical methodology. Section 4 presents the results of this study. The paper concludes with a brief summary and a discussion of the implications of the findings in Section 5.

LITERATURE REVIEW

As we are aware, the financial system and taxation are linked in many ways. Consider, for example, that a government's choice of tax instruments may have a significant influence on financial system activities. The effect of fiscal policy is transmitted in several ways, one of which is through the financial market (Arin et al., 2009) . As it is clear that a significant link does exist between the financial system and taxation, the question to be addressed is whether taxation has an impact on financial system activities, or, whether financial system activities contribute to the changes in taxation, or, if the impact is mutual. In theory, "a high (low) effective tax rate on domestic source income could be expected to discourage (encourage) domestic investment by resident investors, as well as inbound foreign investment" (Clark, 2007 pp. 247) . Assuming that financial system activities have the same impact as investment activities, where any increase in tax rate will distort the financial system development, the question remains as to whether the same result occurs in the relationship between the financial system and tax revenue.

A selective review of the literature on the financial system and taxation suggests that a relationship indeed exists; however, the results vary according to the measurement of the variables examined, different countries' characteristics, and different methodologies used. The earlier wave of research in this area focuses on the discussion of the implications between tax policy and investment. In this context, researchers used investment variables as a proxy for the non-banking financial system, and the tax rate as taxation variables and support that the increase (decrease) in tax rate will decrease (increase) the investment activities. The research examining the effect of tax policy on investment is large and diverse, with notable studies including Summers (1981) , Desai and Goolsbee (2004) , Hsieh and Parker (2007) , and Clark (2007) .

Summers (1981) discusses the relationship between tax policy and corporate investment and emphasizes the issue of how tax can affect investment. This study suggests that the decline in investment in the United States in the period 1951-1979 was caused by an increase in corporate tax rate. An announcement of changes in tax policy will impact on investment in the short-run, while the long-term effect of taxation on investment is based on the immediate changes in taxation policy that affect the investment activities (Summers, 1981) . It is most likely that any increase in tax rate will reduce the investment due to the price impact on the market. Therefore, policymakers should consider the impact of any tax changes on the financial market to ensure the stability of the market. The results found by Hsieh and Parker (2007) , and Clark (2007) emphasize the significant role of tax in determining the investment performance. They point out the importance of having an appropriate tax strategy since tax policy may negatively or positively influence economic growth as well as revenue collection regardless of individual or cross-country analysis. Kirkbride (2008) , who examined the growth of private equity, supported these findings inasmuch as the increase in tax rate negatively affects financial market development by driving investors out of the market. This further reduces the competitiveness and attractiveness of the private equity business.

Furthermore, Mannaro, Marchesi and Setzu (2008) , while studying the relationship between tax and the financial market, used foreign exchange and stock market variables as financial marketproxies. Their study examined the market conditions with and without tax using an artificial stock market. They found that the increase in tax rate heavily impacts on market behavior because it increases price volatility and reduces trading volumes. They also established the relationship between these two variables by focusing on the impact of taxation in determining the price of financial market instruments. It is believed that any taxation imposed on financial market activities will make the market less volatile as speculators leave the market due to the changes taking place. Thus, the levy of a small tax on financial system activities, specifically, stock exchange activities, could contribute to the reduction of instability in the domestic stock market.

As the majority of studies support the pivotal role of tax rate on investment performance, Desai and Goolsbee (2004) questioned the failure of tax cuts to boost investments employing the Tobin's Q (1969) model. This model studies the ratio between two valuations of the market value of a company's stock relative to the value of a company's equity book value. The results of the model suggest the low impact of changes (either increase or decrease) in tax policy on the desired increase in investment. They argue that the effectiveness of tax policy to stimulate investment depends on the type of tax changes and incentives provided to the taxpayer. Their study rules out the impact of tax rate on the investment market. However, this argument is questionable due to the lack of empirical evidence to support it.

As Laopodis (2009) explains, past budget deficits also affect current stock returns in a negative and significant manner. However, one might argue that budget deficits are not a fiscal policy issue. The argument made by Laopodis is that budget deficits influence the decisions in future policy. Therefore, the negative effect reported in the study by Laopodis suggests that the market is inefficient with respect to the available information about future fiscal policy action, but what the market considers most is important news about monetary policy.

While a massive amount of research in this area has been conducted in the developed country context, one ponders the lack of interest in the developing country context given the economic growth rates of several developing countries over the past decade. It is believed that the non-availability of long time-series data has been a common problem for empirical research for developing countries. Although time-series data have become available on most macroeconomic variables, at least since the early 1970s, for the developing countries this is not always the case. Meticulous searching in most databases provide the macroeconomic variables data backdated for the past ten years, which means it is possible to investigate the key economic relations using modern statistical techniques, specifically, the time series method. Trying to fill the gap, a study by Hsieh and Parker (2007) represents the developing country context. In line with the theory, Hsieh and Parker show how corporate tax cuts in Chile led to an investment boom and strong economic performance. One general point they make in the case of Chile's tax reform is that in countries with poorly developed financial markets, taxation of profits from investment activities may have a significant effect on corporate savings, and, therefore, can be particularly harmful for growth.

A second body of literature relating to the impact of tax policy on financial market variables, other than investments, advocated the use of tax revenue as a proxy for tax policy. This is because, in reality, frequent changes of tax policy are not feasible, specifically, to the studies that utilize time series analysis. The work of Bohn (1990) suggests a positive relationship between tax revenue and financial market, which contradicts the theoretical arguments that taxation will distort financial market activities. This difference might be due to the use of tax revenue as a proxy for tax rate as compared to other studies. The accuracy of the result can be argued, since Alesina, Ardagna, Perotti and Schiantarelli (2002) used the same measurement and also identified a result that contradicted the theory. In addition, Alesina et al. (2002) also explored the role of tax in motivating the growth of financial markets, as measured by changes in securities, including Treasury bill yields, Treasury bonds, nominal stock returns, foreign exchange rate, money market yields, and long-term government bond yields. This implies that a government could improve the taxation system to foster more growth in the financial market. The study, however, only focused on the role of the government in economic development, ignoring the role of the private sector. They argue that fiscal expansion slows down economic activity. This is in line with the non-Keynesian effects where fiscal policy contraction in government income (tax revenue) has been associated with higher growth even in the short-run. Specifically, one can expect that fiscal policy expansion will impede innovative activity and slow economic growth.

In reality, the impact of tax rates or tax revenues on financial activities varies. In focusing on the nexus of financial system and various types of taxation, the discussion now stresses that the impact of taxation on the financial market depends on the different taxes imposed on each financial system activity. For

instance, the policy changes relating to the income tax does not have a direct influence on the business activities. Prominent studies by Arin and Koray (2006) , and Arin et al. (2009) show that different fiscal shocks have different offsetting effects on the economy, and using different tax revenue measurements may conceal the effects of fiscal policy. Consistent results are reported for a panel of G3 countries and analysis of Canada where different tax policy changes produce different financial responses. It is proven that the financial system is affected by tax changes. However, in relation to tax revenue, the question is whether the level of performance of financial market activities will influence revenue collection. Focusing on this, Taha et al. (2010) examined whether tax revenue had a major effect on financial activities in Malaysia. The results support that the financial system, as proxied by monthly Malaysian data on direct taxation, the Kuala Lumpur Composite Index, loans from investment banks to the private sector, loans from Commercial Bank to the private sector and the bond market, positively influences the tax revenue collection, while in the case of tax revenue, it only has a significant impact on the stock market and investment bank activity.

DATA AND METHODOLOGY

Monthly figures for tax variable revenue, including company tax (total company tax revenue collection) and personal tax (total personal tax revenue collection) were gathered fromthe Inland Revenue Board (Malaysia) . Data for the stock market (Kuala Lumpur Composite Index) was obtained from DataStream. All data was converted into natural logs prior to the analysis. The data period under study, between January 1980 and December 2008, covers a few recession periods, of which the most significant is the 1997 Asian Financial Crisis. The summary statistics of the data are as per Table 1. All taxation variables were found to be negatively skewed. Since the sign of the kurtosis statistic is positive, the distribution of all variables is leptokurtic.

Table 1: Descriptive Analysis of Data

Variables	Company tax	Personal tax	Stock market
Mean	8.64	9.06	4.16
Median	8.58	8.92	4.13
Min	7.74	7.60	3.58
Max	9.25	9.77	4.52
Standard Deviation	8.50	9.01	3.83
Skewness	0.03	0.16	-0.36
Kurtosis	0.09	0.27	0.03

This table shows the summary statistic of company tax, personal tax and stock market for the period of 1980 to 2008. All data are in natural logarithm form.

The problem with the models containing non-stationary variables is that they will often lead to a problem of spurious regressions. In other words, the results show that there are statistically significant relationship exists between the examined variables. To avoid this problem this study used the augmented Dickey-Fuller (1981) test (ADF) and Kwiatkowski, Phillips, Schmidt, and Shin (1992) test (KPSS) to determine whether series or residuals of the regressions are stationary. In determining the optimal lag structure in ADF and KPSS testing procedure this study relies on the model selection criterions of Akaike Information Criterion (AIC) and Newey-West Bandwidth, respectively.

As mentioned earlier, the data period under study covers a few recession periods, which might have a significant effect on the direction of the relationship. In his seminal paper, Perron (1989) argues that failing to account for at least one structural break may lead the researcher not to reject the null hypothesis of unit root, when, in fact, the series are stationary around a one-time structural break. The conventional approach of the unit root test (ADF and KPSS) used above favors the null of unit root when a structural break exists, which, in other words,means it failed to capture the existence of the break. Therefore, in order to capture the effect of any possible structural shift over the estimation period, the unit root test (ZA

test) of Zivot and Andrews (1992) is employed. The test treats the presence of any structural break in the series under observation as endogenous. The proposed test utilizes the following equations.

$$\Delta y_t = c + \alpha y_{t-1} + \beta_t + \gamma DU_t + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \quad \text{(Model A)}$$

$$\Delta y_t = c + \alpha y_{t-1} + \beta_t + \theta DT_t + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \quad \text{(Model B)}$$

$$\Delta y_t = c + \alpha y_{t-1} + \beta_t + \theta DU_t + \gamma DT_t + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \quad \text{(Model C)}$$

Model A allows for a one-time change in the level of the series, Model B permits for a one-time change in the slope of the trend function, and Model C combines one-time changes in the level and the slope of the trend function of the series. In the model DU_t is an indicator dummy variable for a mean shift occurring at each possible break-date (TB) while DT_t is a corresponding trend shift variable. Formally,

DU_t= 1….if t>TB and 0….otherwise

DT_t= t-TB….if t>TB; 0….otherwise

The null hypothesis in all three models is α=0, thereby implying that the series y_t contains a unit root with a drift that excludes any potential structural break, while the alternative hypothesis α<0, implying that the series is a trend-stationary process with a one-time break occurring at an unknown point in time. The break years are the years corresponding to the minimum *t*-statistics. If the *t*-statistics are higher than the critical values (in absolute values) of Zivot and Andrews (1992) , one can reject the null hypothesis of non-stationary.

The standard cointegration test may not, however, be appropriate in the presence of structural breaks. Thus, the Gregory and Hansen (1996) (GH tests) will be used. However, prior to this test the potential break that might exist needs to be identified. To capture the timing of unknown structural breaks the Quandt-Andrews breakpoint test is employed. This approach tests for one or more unknown structural breakpoints in the sample for a specified equation, where a single Chow breakpoint test is performed at every observation between two dates. From each individual Chow breakpoint test, two statistics are retained, namely, the Likelihood Ratio *F*-statistic and the Wald *F*-statistic. The Likelihood Ratio *F*-statistic is based on the comparison of the restricted and unrestricted sums of squared residuals. The Wald *F*-statistic is computed from a standard Wald test of the restriction that the coefficients on the equation parameters are the same in all sub-samples. The individual test statistics can be summarized into three different statistics, namely, the Sup or Maximum statistic, the Exp Statistic and the Ave Statistic (Andrews, 1993, Andrews and Ploberger, 1994) , as follows:

$$MaxF = \max_{\tau_1 \le \tau \le \tau_2} \left(F(\tau)\right); \quad ExpF = \ln\left(\frac{1}{k}\sum_{\tau_1}^{\tau_2} exp\left[\frac{1}{2}F(\tau)\right]\right); \quad \text{AveF} = \frac{1}{\text{k}}\sum_{\tau_1}^{\tau_2} F(\tau) \qquad (2)$$

where τ is a potential breakpoint test that should be considered for the structural break, and τ_1 and $\tau_2$are

the starting and ending time points that should be considered for the structural break. *k* is the number of breaks compared. Assigning a specific interval for the test determines the number of structural breaks that the test examines.

As mentioned earlier after determining the integration level of variables, the analysis will continue with the cointegration test, which, in this study,is the Gregory and Hansen (1996) (GH tests) in the presence of structural break. The GH test was utilized instead of the conventional approach since the conventional approach assumes that the cointegration relation is constant during the period of study. However, in the case of a sample period that is long with few economic events taking place, the results from conventional cointegration can be misleading, as such an approach neglects the potential break, which may exist during the period of study. The GH test has a null hypothesis of no cointegration and its alternative hypothesis suggests cointegration with one structural break. The cointegration between variables exists when the null hypothesis is rejected by the GH test. In this test, three models are created as follows:

Level shift: $y_t = \delta_0 + \delta_1(\phi_t) + \propto (x_t) + v_t$
Level Shift with trend: $y_t = \delta_0 + \delta_1(\phi_t) + \beta(t) + \propto (x_t) + w_t$
Regime Shift: $y_t = \delta_0 + \delta_1(\phi_t) + \propto_1 (x_t) + \propto_2 (x_t \emptyset_t) + z_t$

where the structural shift in each equation is shown by a dummy variable ϕ and defined as:

$$\phi_t = \begin{cases} 1{:}\ldots.\text{if } :t>\tau \\ 0{:}\ldots.\text{otherwise} \end{cases}$$

with τ denoting the point in the sample at which a break occurs.

RESULTS

As mentioned earlier the analysis began by examining the order of integration of variables to identify the time series characteristics of the data set. The results of the ADF and KPSS unit root test are reported in Table 2. The null hypothesis tested is that the variable under investigation has a unit root against the stationary alternative. Based on the unit root result the null hypothesis that each variable is integrated of order one*I* (1) except for personal tax revenue was maintained.

Table 2: Stationary Tests

	ADF Test		KPSS Test	
Variables	**Level**	**1st Differences**	**Level**	**1st Differences**
Company tax	-2.41	-6.54***	0.15	0.08***
Personal tax	-2.43	-10.91***	0.30	0.31
Stock market	-2.88	-5.76***	0.18	0.06***

Note: Asterisks (*) and (**) denote statistically significant at 1% and 5% significance levels, respectively.

However, since the data set used in this study covers the recession period the conventional unit root test above may produce spurious results. Therefore, the analysis proceeded with the ZA test as explained, in as much as this test is used to determine whether any possible break point in the series changes the stationary results or not. In this paper, the models of ZA are estimated over the period from 1980 to 2008. The results of unit root test together with the break-date for each series are presented in Table 2. These results suggest that the null of the unit root for company tax and personal tax can be rejected at the 1% significance level, while the result failed to reject the unit root hypothesis for stock market.

This result clearly contradicts the results obtained from the unit root test without structural break for these series. The result shows that the year 1992 emerges as the most significant break-year for company tax.

This can be associated with the introduction of tax incentives for research and development activities as well as the improvement of Bursa Malaysia trading for that particular year. With the introduction of such incentives it can help to woo the investors since the investment in these activities received incentives, which can reduce the burden in terms of paying tax. In addition the improvement of Bursa Malaysia's system also increase the company tax revenue collection, as the investors are more confident of making the investment. The break year for personal tax in 2002 resulted from the introduction of the self-assessment system (SAS) in 2001 for personal taxpayers. With the introduction of SAS the burden of assessing tax liability has shifted from the shoulders of tax assessors to the taxpayers. Thus, the taxpayers are more aware of how to comply with the tax system to avoid the penalty imposed.

Table 3: Results of Zivot and Andrews One-break Test

Variables	K	t-statistic	Break year
Company tax	4	-12.68***	1992 M01
Personal tax	4	-9.65***	2002 M01
Stock market	4	-3.91	1997 M08

Note: Asterisks (*) and (**) denote statistically significant at 1% and 5% significance levels, respectively.

For identifying this specific break Quandt Andrew Breakpoint Test were employed. As reported in Table 4, the breakpoint identified is for 1997M08 for both relationships between company tax – stock market and personal tax – stock market, respectively. This breakpoint is consistent with the 1997 Asian Financial Crisis that impacted the whole Asia.

Table 4: Quandt Andrew Breakpoint Test

	CT – SM	IT – SM
DATE	1997M08	1997M08

This data show the result for Quant Andrew Test, which is the test to identify the potential from the time series data utilized in this study.

Based on the breakpoint identified from the Quandt Andrew Breakpoint test the GH test for both relationshipsis conducted. The results are as reported in Table 5.

Table 5: Gregory Hansen Results

	CT - SM	IT – SM
	Constant	**Constant**
GH1	-4.94**	-3.26
GH2	-3.05	-3.56
GH3	-5.00**	-3.26
	Constant + trend	**Constant + trend**
GH1	-4.97**	-3.28
GH2	-3.05	-3.56
GH3	-5.04**	-3.27
	None	**None**
GH1	-4.94**	-3.26
GH2	-3.06	-3.56
GH3	-5.00**	-3.26

Note: (1) Asterisks (*) and (**) denote statistically significant at 1% and 5% significance levels, respectively. (2)Gregory Hansen Models: [GH1: break for the model with an intercept], [GH2: break for the model with a trend] and [GH3: break for the model with regime shift]. (3)The critical values are taken fromGregory and Hansen (1996) . The critical values for 1%, 5% and 10%: GH1: -5.13, -4.61, and -4.34; GH2: -5.45, -4.99, and -4.72; and GH3: -5.47, -4.95 and -4.68, respectively.

The results suggest that company tax and stock market are cointegrated in the presence of a structural break in the data. In other words the results suggest a long-run equilibrium relation. However,the results failed to identify any relationship between personal tax revenue and stock market. Therefore, there is no evidence of a long-run relationship between individual tax and economic growth. These results imply that

the performance of the stock market does not affect individual tax revenue collection in the long-run. What can be concluded from such results is that the stock market is more crucial for determining the increase in the company tax revenue collection rather than individual tax. This might be because the major contributor of the investment activities, specifically in the stock market, is coming from a corporate source.

CONCLUDING COMMENTS

This paper uses monthly data to determine endogenously the most important years when structural breaks occurred, and, simultaneously, test for the unit root hypothesis in the presence of these breaks in company tax revenue, personal tax revenue and stock market in Malaysia. To show the difference between the conventional approach, which, according to Perron(1989) , normally neglects the existence of the potential break, the ADF and KPSS unit root tests were utilized for which the results show that the series contains unit root at first difference.

Furthermore, this study utilized the test developed by Zivot and Andrews in which the results show contradictory results to the conventional approach, which has been utilized previously. The results show the potential break of 1992 and 2001 for company tax revenue and personal tax revenue, respectively. Having identified the potential breaks that exist from ZA, the unit root test and the analysis for cointegration is conducted by utilizing the Gregory Hansen approach. By employing the Gregory Hansen test this study also reveals that there exists a cointegrating relationship between company tax and stock market after allowing for structural breaks but not for the personal tax and stock market. However, of the three possible structural breaks, the one with an intercept shift and regime yields meaningful cointegrating coefficients. These results imply that there exists a long run relationship between company tax and the stock market in Malaysia. This result is consistent with Malaysia's economic situation as well as the trend of tax revenue collection in which the major contributions of the economic development come from the private sector. Therefore, the government should focus on formulating the policy, which can woo investment in the stock market as well in other financial market activities to increase the revenue collection, which can help to encourage the development of the country. In addition, even though this study failed to identify the existence of any significant relationship between personal tax revenue, the government should still put full effort in promoting investment activities among individuals to support economic development.

However, there is limitation in the analysis. The data coverage in this chapter was only from 1980 to 2008, and, hence, it would have been worthwhile if the data being examined could utilize data up to 2010. However, to date there is no official data available from the Inland Revenue Board. Thus, this study can be extended in several directions. First, a natural extension of this study would include other types of tax revenue data. Another possible extension of this study would be the analysis of the full impact of fiscal policy on the stock markets. To do that, research should include the expenditure variables in the analysis.

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SHARE REPURCHASES ANNOUNCEMENT EFFECT ON EARNINGS: EVIDENCE FROM SOUTH AFRICA

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ABSTRACT

This study investigates the effect share repurchases announcements have on earnings of companies listed on the Johannesburg Stock Exchange over a period of 8 years from 2001 to 2008. The study investigates 27 companies listed in the middle capitalization and large capitalization stocks of the Johannesburg Stock Exchange. The study measured earnings by 1) earnings per share percentage change, 2) dividend per share percentage change and 3) cash flow per share percentage change. These variables were investigated over a period of 6 years, 3 years pre- and 3 years post-announcement of share repurchase. The data was analyzed and tested using the T-test and the Wilcoxon parametric paired test.

JEL: G14

KEYWORDS: Stock buy-back, share repurchases, repurchase announcement, earnings

INTRODUCTION

Since 1 July 1999, South African companies have been allowed by law to repurchase their own shares. This was enacted by the amendment of the Companies Act, Act 61 of 1973 (RSA, 1973) to make provision for companies to acquire their own shares. The Act imposes various restrictive regulations on repurchase activities, mainly to guard against liquidity and solvency being compromised. According to Bester et al (2010), the repurchase of shares has been limited. The uncertainty about tax laws and the inconsistency between the Companies Act and the Johannesburg Stock Exchange (JSE) listing requirements were the main reasons for the slow pace. Once these were clarified, the number of companies making repurchase announcements grew from a mere 45 in 2001 to about 121 JSE listed companies in June 2007, making 312 repurchase announcements (Bester, 2008). Unlike the American markets, that have extensive databases to use for repurchase research, South Africa is faced by a lack of comprehensive share repurchase databases. Share buyback is a decision taken by management to repurchase the company shares in the market place, reducing its number of issued shares.

Many public listed companies in different markets have started using share repurchases as an additional form of cash distribution to shareholders. Companies are faced with strategic decision of allocating surplus capital, either through investing in line with business objectives or to return cash to debt holders and shareholders. An investigation of the open market share repurchases by Ikenberry, Lakonishok, and Vermealen (1995) found that stocks of companies making repurchases experience an immediate 3.5% average abnormal return, as well as a 12% average abnormal return during the longer term period of four years following the announcement date.In South Africa, Daly (2002) and Bhana (2007) have gone to great length in proving the immediate and long-term impact of share repurchase on company share prices. If future earnings of the company were to become negatively affected by the repurchase of its shares, then the firm's ability to make other distributions could become negatively impacted. This could lead to the reduction or elimination of other distributions to owners, such as dividends on various classes of shares issued by companies.The primary objective of our study was to test whether companies that announced buybacks of their own common stocks had an observable difference in earnings returns following such an announcement. Share buybacks have implications for affordability. If companies announce their intention to complete the repurchase with internal funds, this implies that earnings will not be negatively affected by the repurchase irrespective of the number of shares targeted for the repurchase.

The remainder of this paper is organized as follows: A section on literature review giving the background to the study, then a methodology section, followed by results and a concluding section.

LITERATURE REVIEW

There is no limit to the number of shares that can be bought back under specific authority in terms of the JSE Listing requirements; however, companies are required to repurchase a maximum of 20% of their issued shares in a financial year (JSE, 2008). In South Africa share repurchase intentions are announced through the JSE SENS. Once companies have acquired accumulative 3% of their initial number of issued shares and any other 3% thereafter, the announcement must be made to the SENS (RSA, 1999). Company's management communicates their intentions with investors and general public through the announcement of repurchase plans. Although disclosure of share repurchase is required by the JSE, these are conducted quietly and at the sole discretion of the company, without further announcements, as long as the repurchase is within the required limits. It is for the reason of flexibility that most literature studied on share repurchases covers announcement rather than actual repurchase transactions; therefore this study treated announcements as a proxy for an actual repurchase. Kelly (2008) used companies listed in the S&P 500 and investigated the impact of their share repurchase on earnings and common stocks return. She used six years data, three years pre-announcement and three post-announcement. Four variables were used to measure earnings. This study revealed a significant relationship between pre-announcement means of these variables and the post-announcement means.

Managers of companies would often signal to investors that their shares are undervalued. Investors would believe the announcement and buy the share as they believe management has inside information or they could ignore the announcement due to a belief that management is too optimistic. Numerous studies on share repurchase have shown that repurchases happen more often among value shares than growth shares. Grullon (2000) shows two forms of signaling explanation on share repurchase: Repurchases convey management's optimism about the company's future earnings and cash flow. In this form, the company uses repurchases to correct its inability to communicate convincingly its prospects to the market.

Management expresses its disagreement with how the market is pricing their company's shares. In this form, the market fails to reflect publicly available information in the price of the share, resulting in market inefficiency.Because of information asymmetry, management's belief that the share trades at a discount to its intrinsic value results in a decision to repurchase, benefiting long-term shareholders when the price recovers. There is extensive literature demonstrating that the company's decision to repurchase is influenced by a perceived undervaluation. Dittmar (2008) found that about 86% of CFOs agreed an undervalued stock was the most dominant reason for share repurchases. The Barth and Kasznik (1999) study suggested that the intangible assets were significantly positively related to share repurchases. The findings on asymmetric information are also supported by Sanders and Carpenter (2003).

Literature reveals that many empirical studies report that open market repurchases are associated with significant negative performance prior to the announcement and followed consistently by positive stock market reactions associated with the signal of a company's intent to repurchase its own shares (Ikenberry et al (1995); Bhana, 2007; Lin et al (2011). An investigation of the open market share repurchases by Ikenberry et al (1995) found that stocks of companies making repurchases experience an immediate 3.5% average abnormal return, as well as a 12% average abnormal return during the longer period of 4 years following the announcement date. Lin et al (2011) found that different industries in the Taiwan market responded differently to announcements; some were more sensitive than others.

Bhana (2007) noted an abnormal return of 4.38%, which is an initial market reaction to repurchases on the JSE. Using a buy and hold strategy, the three year abnormal performance following the announcement was 14.35%. Bhana further looked at companies in the JSE that showed a high book to

value (undervalued), and in a three year period these companies showed a 32.78% abnormal return. Bens et al (2003) are of the view that share repurchases are used strategically to increase reported EPS. There is however, very little evidence that repurchases are used to boost reported EPS.

SAMPLE SELECTION, DATA SOUCE AND METHODOLOGY

The study's sample consisted of companies that made share repurchase announcements in the years 2001 through 2008. A sample of 27 companies was selected from the Top 40 and mid cap stocks. The following criteria were used to select the 27 stocks:Each company was a designated middle capitalization or large capitalization ranked firm at the time of the study (not time of announcement). These companies must have at least made one repurchase announcement between 2001 and 2008.Small capitalization companies are excluded purely because of poor data availability; they could be repurchasing their shares as a major shareholding transaction. Companies that do not have a 3 year data pre-announcement year and 3 year data post-announcement year were excluded.The average proportion of shares to be repurchased by firms in the study was approximately 4.57% and the literature revealed an average repurchase target of 7% (Stephens & Weisbach, 1998).This study did not examine the determinants of alternative distributions, as it only focused on the effect on earnings from a repurchase announcement, with the announcement a proxy for the actual repurchase of shares. The data on announcements for this study was obtained from the JSE SENS, the company's website (or the companies' websites) and Standard Bank online trading.

Research Question: Do companies that announce a repurchase of their own shares demonstrate a post-announcement change on earnings? Earnings returns were measured by the following financial instruments:Percentage change in cash flow per share from the prior year (CFPSP), Percentage change in earnings per share from the prior year (EPSP), Percentage change in dividend per share from the prior year (DPSP)

Hypotheses To Be Tested: The research hypotheses: There is a significant difference between pre- and post-announcement values for earnings when earnings are measured by CFPSP, EPSP, and DPSP.

Statistical Procedures And Limitations: This study utilized the Wilcoxon signed-rank test as a supplement to the t-test. The Wilcoxon test can be useful when the distribution may not be normal, but the sample is believed to be symmetrical with the same mean and median. The statistical tests were conducted using Microsoft Excel

ANALYSIS AND PRESENTATION OF RESULTS

The study focused on investigating the effect an announcement has on earnings of a company in a three year period after the announcement. The financial characteristics of each firm were examined for a period of six fiscal year ends, with 3 years occurring in the pre-announcement period and 3 years occurring in the post- announcement period.

Table 1: Summary Statistics of the Data Sample over an 8 Year Period from 2001 to 2008

Financial Metrics for Target Repurchase and Earnings		Minimum of Metric	Maximum of Metric	Mean of Metrics	Standard Deviation of Metrics
Target shares %		0.02	16.76	4.57	5.00
EPSP	*Pre*	-2960.00	2442.11	42.74	326.24
	Post	-96.81	3130.00	62.82	201.43
DPSP	*Pre*	-100.00	718.18	47.85	57.78
	Post	-100.00	640.74	13.41	48.67
CFPSP	*Pre*	-1100.00	397.13	23.24	103.72
	Post	-1428.57	1181.82	10.12	155.96

Table 1 gives a summary of the main statistic values for target shares, EPSP, DPSP and CFPSP; the latter three variables are used to measure earnings. Both the pre-announcement values and the post-announcement values of the earnings variables are summarized into minimum, maximum, mean and standard deviation values. This table shows "targeted shares" as the first metrics, which gives the proportion of shares target. This variable had a range of 0.02% to 16.76% for the sample size of 27 announcements. The sample had an average repurchase target of 4.57% and a median of 2.83%.

It was expected that the means of the three financial variables would show a significant difference between the pre- and post-announcement values. As shown in Table 1, there seemed to be a bigger difference between the pre-announcement mean values and post-announcement mean values for all three metrics. The post-announcement mean for the EPSP was larger than the pre-announcement mean value, while for both DPSP and CFPSP the post-announcement mean was smaller than the pre-announcement, which suggests a smaller degree of change in earnings after a repurchase announcement was made than before an announcement.

Table 2: Mean Comparison of the Pre-announcement and Post-announcement on the Variables Using the t-Test

Metrics for Earnings	Mean Difference	Std. Deviation	Std. Error	t-Test	df	Sign Test (2-tailed)
EPSP	20.08	481.75	92.71	0.22	26.00	0.83
DPSP	-34.44	79.01	15.20	-2.27**	26.00	0.03**
CFPSP	-13.12	153.77	29.59	-0.44	26.00	0.66

*Table 2 shows the estimated results from a difference in means of pre- announcement and post announcement. The study looked at the standard deviation, standard error of all three metrics for earnings (EPSP, DPSP and CFPSP) and calculates the t-test and identifies its level of significance. The t-test refers to the t-value of the standardized-residual cross-section. Sign test refers to the nonparametric test. ***, ** and * indicate significance at the 1, 5 and 10 percent levels, respectively.*

The differences in the means were not significant for two of the three metrics; this implies that there was no statistically significant difference between pre and post announcement financial figures for EPSP and CFPSP. Only the DPSP showed a significant difference at 95% confidence level. Two of the values in the last column of Table 2 are larger than 0.10, indicating that the differences in means for pre- and post-announcement values were not significant for these variables at a minimum acceptable confidence level of 90%. The findings of this study using a t-test were contrary to the expectations of the study. The study expected the earnings to change significantly once a company announces a share buyback plan or strategy. It is very possible that the sample of 27 firms was very small and not normally distributed, hence no insignificant difference for some of the variables between pre- and post-announcement means. The significant change in divided could be an indication that these companies are starting to use both dividend and repurchase as a payout strategy to shareholders instead of only using dividend.The Wilcoxon test was conducted to address this shortfall and its findings are presented in Table 3 below.

Table 3: Mean Comparison of the Pre-announcement and Post-announcement on the Variables using the Wilcoxon test

Financial Metric for Earnings	Z-score	Sign Test (2-tailed)
EPSP	-1.16	0.25
DPSP	-2.34	0.02**
CFPSP	-1.80	0.07*

*This table shows the z-score from calculating the mean differences between the pre-announcement and post-announcement values using the Wilcoxon format. The z-score is then calculated from the standard deviation of the difference and the difference sample mean. The corresponding significance level to the z-score is identified from the normal distribution table. Sign test refers to the nonparametric test. These tests examine the significant levels of mean differences. ***, ** and * indicate significance at the 1, 5 and 10 percent levels, respectively.*

The Wilcoxon test can be useful if the sample size is considered small and/or if the distribution of values is far from normal. The results in Table 3 show the observed significance values for two of the three variables, DPSP and CFPSP, which are less than 0.05 and 0.1 respectively. A significant difference between the means of pre- and post-announcement on DPSP (p=.02) and CFPSP (p=.07) was found. Therefore the announcement to repurchase shares had a significant effect on earnings change after the announcement date. The results from the Wilcoxon test are not consistent with the null hypothesis for two of the three variables. This test supports the hypothesis that announcing a share buy-back has an effect on the company's earnings in the three years after the announcement. The findings in Table 3 indicate that earnings can change in either a favorable or unfavorable direction after a repurchase announcement, but

the study did not predict the direction. Looking at Table 1, it is obvious that the repurchase announcement led to a reduction in the mean of DPSP and CFPSP post the announcement.

CONCLUSION

The primary objective of our study was to test whether companies that announced buybacks of their own common stocks had an observable difference in earnings returns following such an announcement. This study attempts to investigate the effect share repurchases announcements have on earnings of companies listed on the Johannesburg Stock Exchange (JSE) in South Africa. Over a period of 8 years from 2001 to 2008, the study explores the statistical significance of the impact the shares targeted for buyback have on earnings. These earnings are examined through the use of three financial metrics. 1) Percentage change in cash flow per share from the prior year (CFPSP), 2) Percentage change in earnings per share from the prior year (HEPSP), and 3) Percentage change in dividend per share from the prior year (DPSP). Share buyback announcement was used a proxy for actual repurchase and the financial characteristics of each company were examined for a period of six fiscal year ends, with 3 years occurring in the pre-announcement period, and 3 years occurring in the post- announcement period. The null hypothesis of this study was that, there is no significant difference between the pre- and post-announcement values for earnings when earnings are measured by CFPSP, EPSP, and DPSP.

The first set of results showed a contrary output to predictions of this study. The t-tests revealed that only DPDP showed a significant difference between pre- and post-announcement earnings as measured by the matrices described above. Some reasons for results contrary to predictions may be that certain characteristics of the sample influenced these findings. The study did not distinguish a firm that makes repeated announcements from a firm making its first repurchase announcement nor did the study consider the market risk factors of a firm and any effect this may have on a repurchase target.

A non-parametric Wilcoxon test was then used. Considering that the number of companies investigated was only 27 which is a small sample, the Wilcoxon test is usually more effective with small samples and also useful if the distribution of values is not normal. The results indicated that there exist significant differences between the means of pre- and post- announcement of these two financial metrics DPSP ($p=0.02$) and CFPSP ($p=0.7$), which suggest that the announcement to repurchase shares had a significant effect on earnings change after the announcement date.

Consistent with expectations were findings that post-announcement earnings differed significantly from pre-announcement earnings for two of the three metrics with the Wilcoxon test. This finding led to the rejection of the null hypothesis. Some limitations of the study included the exclusion of companies that started making repurchase announcement in 2008. These companies were excluded as they lack three years post announcement financial information. Their three year financial information will only be realized at the end of 2011 which is the year of this research. Metropolitan which has been one of the companies that actively used share repurchase as a distributing strategy to shareholders was also excluded. This is because it was difficult to get information due to its recent merger with momentum to form MMI. This study provides some evidence that South African business leaders are becoming more receptive to the use of share repurchases as and additional form to dividend of distributing earnings. The positive impact repurchase announcement has had over share prices with the impact they have on earnings post the announcement is an evidence of a paradigm shift. Further research may reveal the extent to which companies in South Africa substitute share repurchases for dividend. Further work in this area can also include looking at the significant impact the proportion of shares repurchased has on earnings.

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THE IMPACT OF OWNERSHIP STRUCTURE ON VOLUNTARY CORPORATE DISCLOSURE IN ANNUAL REPORTS: EVIDENCE FROM FIJI

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ABSTRACT

The extent of voluntary corporate disclosure by companies in annual reports in recent years has increased due to various factors. A number of prior studies examined the relationship between ownership concentration and voluntary corporate disclosure. Their findings suggest there is less voluntary corporate disclosure in family owned and high shareholder concentrated firms. On the other hand, companies with low shareholder concentration are likely to have more voluntary corporate disclosure because of the principal to agent relationship. Though studies have examined the impact of ownership structure on the extent of voluntary disclosure, there is still a need to investigate the issue in the Pacific Island countries, such as Fiji. The ownership structure of the companies in Fiji is highly concentrated. This paper examines the relationship between ownership structure and the extent of voluntary corporate disclosure in annual reports of listed companies in Fiji. A content analysis approach suggests how the ownership structure affects the extent of voluntary corporate disclosure in Fiji.

JEL: M14, M41

KEYWORDS: Ownership Structure, Voluntary Corporate Disclosure

INTRODUCTION

Voluntary corporate disclosures have received considerable attention following the recent corporate collapses, business scandals and emerging issue concerning the protection of minority shareholders. Annual reports are a primary medium various stakeholders rely on for making decisions. Thus management, responsible for preparing the annual reports, is accountable to all the stakeholders. As a result, they should disclose all relevant information in the annual reports for stakeholders to make efficient economic decisions. In addition, increased disclosures of information, apart from the ones required by the standards and the regulators are important. These additional disclosures protect the interest of minority shareholders and ensure transparency of company's information to its interested parties. Meek, et al. (1995) define voluntary corporate disclosure as "*disclosures in excess of requirements in annual reports and other media as deemed relevant by the company management for an effective decision-making by the users of the financial reports."* However, due to the separation of ownership and control the incentive for the management to provide additional disclosures decreases.

Prior studies have examined the impact of ownership structure on voluntary corporate disclosures in countries such as US, UK, Continental European countries, Australia, New Zealand and in the Asian markets (see, Cooke ,1991; Frost & Pownall,1994; Gray, et al.,1995; Meek, et al.,1995; Turpin & Dezoort ,1998; Hossain, et al., 1994; and Chau & Gray, 2002). Two of these studies found that in concentrated companies there were less voluntary corporate disclosures compared to dispersed companies (Chau and Gray, 2002; Hossain, et al., 1994). These studies found a positive association between wider share ownership and voluntary corporate disclosures by firms.

In a more recent study, Samaha and Dahawy (2011), note that few studies examine the disclosure practices of companies in developing economies. The current paper examines the level of voluntary corporate disclosures done by listed firms in Fiji. The South Pacific Stock Exchange (SPSE), currently highly inactive with only 16 firms listed on the exchange, is responsible for monitoring these listed firms in Fiji. These listed firms have high shareholder concentration that could have a considerable influence on the level of voluntary corporate disclosures the firms make.

The controlling shareholders in these concentrated companies mostly maximize their self-interest rather than that of the minority shareholders. Thus, there is increased emphasis on the need to ensure the protection of the interests of minority shareholders. Minority shareholders are entitled to receive all relevant information to make an informed judgment on the performance of the company. Disclosure of less voluntary information to the minority shareholders is one way controlling shareholders expropriate minority shareholders.

A major contribution of this paper to the existing literature is an examination of the extent of voluntary corporate disclosures in an economy where listed firms mainly have a highly concentrated ownership structure. The paper provides insight on the differences that exist in voluntary corporate disclosures among the shareholder concentrated companies. Overall, we find in highly concentrated companies listed on the SPSE, the level of voluntary corporate disclosures is low.

The sections that follow discuss the literature and the research methodology. The fourth section sheds light on the results and discussions. The final section concludes the paper, with the limitations of the current study and provides recommendations for future research.

LITERATURE REVIEW

Agency theory assumes a separation of ownership from control would lead to agency problems, as the agents, managers, will not always maximize the shareholder value. Agency problems theoretically arise due to divergence of interest and asymmetric information (Chrisman et al., 2004). Managers have incentives to pursue their own self-interests at the shareholder's expense (Agrawal & Knoeber, 1996). Thus, a complete contract could avert any moral hazard problems, if costless perfect information flow had existed. In that case, violation of the contract due to opportunistic behavior, would lead to severe consequences for the agent. Since a perfect complete contract is not feasible, the principal uses various incentives, punishments, bonding and the managerial processes to align the interest and the actions of management (Chrisman et al., 2004).

Consequently, to minimize the agency problems, firms incur agency costs. Fama & Jensen (1983) define agency costs as the costs of all the activities and operating systems designed to align the interests or actions of the managers with the interest of the owners. It includes the costs of structuring, monitoring and bonding a set of contracts among agents with conflicting interests (Fama & Jensen, 1983). The shareholders incur agency costs if the manager owns less than 100 percent of the equity due to management shirking and perquisite consumption (Ang et al., 2000). The managers have incentives to use the finance and other assets of the firm for their own benefit.

Monitoring costs are expenditures incurred by the principal to measure, observe and control the agent's behavior. Examples are mandatory audit costs, costs to establish management compensation plans, budget restrictions and operating rules. However, these costs are not borne by the principal and are accounted in the agent's remunerations. Poor or uncertain managers will face higher levels of monitoring compared to managers with a good reputation. Thus, as the cost of monitoring increases, the manager's remunerations decrease. Bonding also controls the agency problem. Since the agents ultimately bear the

monitoring costs associated with the contracts, they will establish mechanisms to assure that they behave in the interest of the principal. Jensen & Meckling (1976) define bonding costs as the costs of establishing and complying with these mechanisms, which includes the costs of preparation of financial reports.

Consequently, agency problems can also be rooted from differences in shareholder concentration. The concentrated shareholders provide extensive monitoring over the management, as their benefits outweigh the costs of monitoring, allowing these shareholders to recoup their investment (Gillian & Starks, 2000; Shleifer & Vishny, 1986). Large controlling shareholders in companies with concentrated ownership have more voting rights and larger incentives to monitor management than the shareholders in firms with disperse ownership. Thus, monitoring efforts by the firms with concentrated ownership would reduce the principal–agent problem between the shareholders and managers (Shleifer & Vishny, 1997). Since effective monitoring activities lead to lower levels of accountability to provide various disclosures to these shareholders, less voluntary corporate disclosure is expected.

Conversely, the cost of monitoring compared to the benefits of monitoring is high for the shareholders in dispersedly owned firms. Shleifer & Vishny (1986) state that dispersed shareholders lack incentives to monitor management due to free rider problem. Thus, voluntary corporate disclosure would be higher in firms with dispersed ownership so that the principals can ensure optimization of their economic interests by effectively monitoring the agent's behavior (Chau & Gray, 2002). Hence, as dispersed shareholders do not extensively monitor the agents behavior it is expected that the managers would hold greater accountability to shareholders and would therefore provide more voluntary disclosures on the performance of the management and the business.

A number of studies show that agency costs decrease when the owner is actively involved in the daily activities. See, for example, Chrisman et al., (2004); Young et al., (2008); Hu et al., (2009); Jensen & Meckling (1976); Fama & Jensen (1983); Ang, et al., (2000).

Ownership structure is defined by block holder ownership, managerial ownership, state ownership, legal-person ownership and foreign listing/shares ownership (Huafang & Jianguo, 2007). The two types of ownership structure are shareholder concentration and dispersed ownership. Shareholder concentration occurs when a single largest shareholder owns majority of the shares while many dispersed investors own the rest. This structure is common in Continental European and emerging and developing economies such as China (Xu & Wang, 1999; Chen et al., 2005), India (Selarka, E., 2005) and Fiji (Naidu & Patel, 2009; Dharwadkar et al., 2000). On the other hand, dispersed ownership relates to many shareholders holding small proportion of shares (La Porta et al., 1999). Dispersed ownership structure is common in organizations in developed economies such as United States and United Kingdom.

Ownership structure influences the extent of voluntary corporate disclosure. The ownership structure of an organization determines the level of monitoring and thus affects the extent of voluntary disclosures (Samaha & Dahawy, 2011). To measure ownership structure, this study uses 'block holder ownership', which is the percentage of ordinary shares held by substantial shareholders. Atmaja (2009) categorized firms as closely held (concentrated) or widely held (dispersed) based on whether a single shareholder controls more than 20% of the equity in a company. Twenty percent of shareholding is sufficient for effective control and decision-making. Prior studies such as Faccio et al., (2001) and La Porta et al., (1999) also used this definition. Hence, for the current study a company is considered concentrated company if the controlling shareholder in the company holds more than twenty percent of the shares.

Managerial ownership, measured by the percentage of ordinary shares held by the CEO and Executive Directors, also influences the level of voluntary disclosure (Samaha and Dahawy, 2011). According to the entrenchment theory, higher managerial ownership would lead to lower voluntary disclosure (Fan and

Wong, 2002; Morck et al., 2005). On the other hand, greater agency problems exist when managerial ownership is low simply because the executives have higher incentives to consume the bonuses and less incentive to maximize job performance (Samaha and Dahawy, 2011). Hence, voluntary disclosure by management might increase to reduce the firm's cost of monitoring by the controlling shareholders. Samaha and Dahawy (2011) suggest that the level of voluntary disclosure will increase with the decrease in managerial ownership

Previous studies have indicated there is a negative relationship between block-holder ownership and the level of voluntary disclosure (McKinnon & Dalimunthe, 1993; Mitchell et al., 1995). Firms with concentrated ownership structure may have less voluntary corporate disclosure for various reasons. Firstly, the controlling shareholders are able to monitor the behavior of management and have access to all the relevant information and thus do not necessitate additional disclosures. Secondly, the major shareholders in concentrated firms have greater incentives to monitor the behavior of management, implying less principal to agent problem, and consequently less need for voluntary corporate disclosures. In addition, controlling shareholders can effectively decide on the accounting reporting policies adopted by the business (Fan & Wong, 2002). This implies lower voluntary disclosure because the controlling shareholders do not have incentives to act in the interest of minority shareholders.

The type of controlling shareholders also influences the voluntary disclosures. Concentrated family owned firms would have less voluntary disclosures to ensure that the outside stakeholders do not have access to company information. In addition, firms having institutions as the controlling shareholders, have less incentive for voluntary disclosure. Institutions, as major financiers, are able to access the relevant information, while the other stakeholders are unable to demand additional information. However, we expect that voluntary disclosures will be higher in institutionally owned firms when compared to family owned firms, as institutions are not directly involved in the daily operations.

Board independence also has an impact on the level of voluntary corporate disclosure. Gul & Leung (2004) found a significant positive association between voluntary segment disclosure and board independence for firms with less than 25 percent director ownership. This implies that greater board independence would lead to higher voluntary disclosures. A number of prior studies have also examined the association between corporate governance attributes and voluntary disclosures. Studies that examined the impact of corporate governance attributes on voluntary disclosures in developing countries include the work of Barako et al., (2006), Cheng & Courtenay (2006), Chau & Gray (2002), Eng & Mak (2003), Haniffa & Cooke (2002) and Ho and Wong (2001). This paper, therefore, specifically considers one key corporate governance attribute, the shareholder concentration and its association with voluntary corporate disclosure.

Another type of ownership structure is government ownership. Firms owned by governments are likely to have less voluntary disclosure because of the presence of extensive government monitoring. On the other hand, government owned corporations might have more voluntary disclosures to attract more potential investors.

It follows from the above discussions that low levels of voluntary corporate disclosure occurs in a country where the listed companies are highly concentrated. As all the companies in the South Pacific Stock Exchange are highly concentrated, this study provides insight into how the controlling shareholders in concentrated firms are able to influence the level of voluntary corporate disclosure in annual reports. The unique ownership structure in Fiji itself gives us a motivation to investigate this issue by considering the disclosures in the annual reports. Thus, the research question that the current study addresses is:

"How is the level of voluntary corporate disclosure influenced in highly concentrated firms?"

RESEARCH METHODOLOGY

This study aims to investigate the level of voluntary corporate disclosures done by the firms listed on the South Pacific Stock Exchange (SPSE), by taking a content analysis approach. Content Analysis provides an opportunity to gauge better and detailed information about the types of disclosures provided in annual reports. While previous studies examined the level of voluntary disclosures empirically, this method would not be appropriate in this study due to the small sample of listed firms in Fiji.

The Capital Markets Development Authority (CMDA) Corporate Governance Code introduced in Fiji, in the year 2008, requires all the listed companies and financial intermediaries to adhere to the principles and recommendations provided in the code on a 'if not, why not' approach. The reporting requirement in this code applies to firms with the first financial year commencing after 1st January, 2009. Hence, to carry out the content analysis we focused on 2009 and 2010 annual reports, years subsequent to the implementation of the code. The two-year period analysis would also provide insight on whether the code has any impact on the level of voluntary corporate disclosure.

This study adopts a two-tier analysis. In the first analysis, we consider 14 out of the 16 companies listed on the SPSE with the exclusion of the two international companies. The results of this study provide an overview of the companies that provide voluntary corporate disclosures in their annual reports. We classified corporate disclosures under four categories, namely, Strategic Information, Corporate Social Responsibility, other Non-Financial Information and Financial Information. In the second analysis, we examine the impact of ownership type on the level of voluntary corporate disclosures by selecting three family owned firms and three institutional owned firms. This study uses the 'number of sentences disclosed' as a measure to determine the level of voluntary corporate disclosure under each category.

RESULTS AND DISCUSSION

Table 1 below shows that the voluntary corporate disclosure by the listed firms in Fiji is very low. The analysis shows that only 6 out of 14 companies provide disclosures on strategic information and corporate social reporting (CSR). Specifically, the results indicate that only 46% of the listed companies provide strategic information and only 15% of the listed companies disclose CSR information in their annual reports. This implies that the companies do not consider it necessary to disclose information concerning the company's goals and objectives and the social and environmental practices. The companies that disclose CSR information mainly consists of institutionally owned companies. In addition, the table reveals that while companies do provide some general information about the board of directors, very few (maximum of 8) companies disclose information on the different aspects such Board of Directors (BOD) qualifications, other corporate governance practices, board committees and key executives. Moreover, the results indicate that comparatively, from the year 2009 to year 2010, the number of companies that provided voluntary corporate disclosure had increased. This increase may be due to the introduction of the CMDA code of corporate governance in 2008.

Companies do not find it necessary to disclose additional financial information in their annual reports. As shown in the table, approximately 60% of the companies disclose financial performance history and only a maximum of 46% of the companies provide financial analysis with the use of graphs and tables. Finally, the results also reveal that most of the companies that provide voluntary corporate disclosures are institutional owned. Since most listed companies in Fiji are family and institutional owned, the results in Table 1, provides the basis to analyze and compare the actual level of voluntary corporate disclosures in the annual reports of the family and institutional owned firms.

Table 1: Voluntary Corporate Disclosure in Annual Reports by Listed Firms in Fiji

Information Type	2009		2010	
	Number of Companies	Percentage of Companies	Number of Companies	Percentage of Companies
STRATEGIC INFORMATION				
General corporate information	3	23	4	31
Corporate strategy	5	38	4	31
Future prospects	6	46	4	31
CORPORATE SOCIAL REPORTING				
Environmental Information	2	15	3	20
Charitable/ Community programs	1	8	1	8
Marketplace	1	8	1	8
OTHER NON - FINANCIAL INFORMATION				
General information about BOD	14	100	14	100
BOD Qualification	2	15	2	15
Board Committees	3	23	8	62
Other Corporate governance practices	1	8	7	54
Key Executive/employee information	7	54	5	38
FINANCIAL INFORMATION				
Financial history	5	38	8	62
Financial analysis (graphs/tables)	6	46	6	46

This table shows the voluntary corporate disclosure by the 14 listed firms in Fiji, under the four categories. It shows the number of companies, which provide disclosures under the respective category and sub-categories for the two years, with the respective percentages of companies disclosing under each sub-categories.

Type of Ownership and Number of Sentences Disclosed

Tables 2-5 consider the impact of ownership type on the level of voluntary corporate disclosure classified in four categories namely strategic information, corporate social reporting, other non-financial information such as board of directors and corporate governance mechanisms and the voluntary financial information. The results from Table 2 show that the selected companies provide few sentences about their strategic information. This information is important for existing and potential shareholders to determine the company's goals, objectives and future prospects. The result could provide suggestions that the companies do not want to disclose their corporate objectives and future goals to minority stakeholders.

Table 2: Strategic Information

Firms	Number of Sentences					
	General Corporate Information		Corporate Strategy		Future Prospects	
	2009	2010	2009	2010	2009	2010
FAMILY OWNERSHIP						
1	0	0	0	0	0	0
2	0	0	0	0	1	0
3	0	0	9	9	0	0
INSTITUTIONAL OWNERSHIP						
1	2	2	4	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	3	3

This table shows the level of strategic information disclosed by the selected companies is low irrespective of the ownership type. From the firms selected for analysis two family-owned and two institutional-owned firms had provided some strategic information particularly focusing on the corporate strategy. Firms disclosed a maximum of nine sentences with respect to the strategic information.

The results on corporate social responsibility in Table 3 show that the companies place less emphasis on the CSR reporting. The companies only disclosed positive CSR information. The result implies that the companies do not consider that CSR reporting is important for the stakeholders.

Table 3: Corporate Social Reporting

Firms	Number of Sentences of Voluntary Information Disclosed			
	Social/Community Program		Environment	
	2009	2010	2009	2010
FAMILY OWNERSHIP				
1	0	0	0	0
2	0	0	0	0
3	3	1	2	2
INSTITUTIONAL OWNERSHIP				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

This table shows the number of sentences disclosed by each firm with respect to the corporate social reporting. The level of CSR information in the annual reports is extremely low, as only one out of the six firms selected had disclosed two sentences regarding CSR. The firm that had disclosed this information was family owned.

Table 4, shows the institutional owned firms disclose more sentences regarding corporate governance than the family owned firms. The first column shows the firms that disclosed the highest number of sentences regarding the board of director's composition, responsibilities and duties. However, the institutional owned firms provided more information as evidenced by more sentences disclosed with respect to the board of directors, other sub committees and other corporate governance mechanisms. The number of sentences disclosed were higher in the year 2010 compared to year 2009. This shows that introduction of the code influenced the companies to provide higher level of disclosure to ensure compliance with the code. Furthermore, there is a lack of information regarding the board of director qualification, board committees and other corporate governance mechanisms. This raises the question about the effectiveness of the corporate governance in these firms.

Table 4: Other Non-Financial Information

Firms	Number of Sentences of Voluntary Information Disclosed											
	BOD General		BOD Qualification		Board Committees		Other CG Mechanisms		Employees		Total Number of Sentences Disclosed	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
FAMILY OWNERSHIP												
1	1	13	0	0	0	9	0	18	0	0	28	22
2	1	1	0	0	0	0	0	0	2	0	3	1
3	2	4	0	0	2	2	0	0	4	3	8	9
INSTITUTIONAL OWNERSHIP												
1	23	23	36	0	12	13	0	15	5	0	76	54
2	11	12	0	0	0	20	0	26	0	0	11	58
3	1	1	0	0	0	0	0	17	0	0	1	18

This table shows the number of sentences of voluntary information disclosed in the annual reports with respect to the board of directors and the other corporate governance mechanisms.

Moreover, the listed companies also disclose very limited voluntary financial information in their annual reports as indicated in Table 5. This may imply that the companies do not want the minority shareholders and other stakeholders to know the financial performance of the company over the years.

Table 5: Financial Information

Firms	Number of Pages of Voluntary Information Disclosed			
	Financial History		Financial Analysis (Graphs and Tables)	
	2009	2010	2009	2010
FAMILY OWNERSHIP				
1	0	2	0	0
2	0	0	0	0
3	1	1	1	1
INSTITUTIONAL OWNERSHIP				
1	1	2	2	2
2	0	0	0	0
3	1	1	1	1

This table shows that the selected companies mainly provided information on financial history over a ten-year period and financial analysis of the year with the use of graphs and tables. Two of the family owned firms and two of the institutional owned firms had provided the voluntary financial information for a maximum of two pages.

Finally, Table 6 shows the level of voluntary corporate disclosures had slightly increased from 2009 to 2010. On average family owned firms disclosed nine sentences of non-financial information in 2009 and about ¾ page of voluntary financial information. In 2010 it increased to 21 sentences and 1.3 pages respectively. On the other hand, institutional owned firms had disclosed 33 sentences of non-financial information and 1.7 pages of voluntary financial information while it increased to 45 sentences and 2 pages respectively.

Table 6: Number of Sentences and Pages of all the Categories of Voluntary Disclosures

Firm Type	Number of Sentences of Non-Financial Information (Strategic, CSR, & Other Non-Financial)		Number of Pages of Voluntary Financial Information (Financial History & Analysis)	
	2009	2010	2009	2010
FAMILY OWNERSHIP				
1	1	40	0	2
2	4	1	0	0
3	22	21	2	2
Average Sentences	***9***	***21***	***0.7***	***1.3***
INSTITUTIONAL OWNERSHIP				
1	82	56	3	4
2	11	58	0	0
3	4	21	2	2
Average sentences	***33***	***45***	***1.7***	***2***

This table shows that institutional owned firms disclosed higher level of voluntary information compared to family owned firms.

DISCUSSION

Voluntary corporate information serves as an important basis for the various stakeholders to make decisions. For example, shareholders rely on the additional information to make future investment decisions. Voluntary corporate information is also important for minority shareholders in highly concentrated firms. The availability of voluntary corporate information about the company leads to less expropriation of the minority shareholders by the controlling shareholders.

The level of voluntary corporate information in the annual reports is low as shown by the results in this study. The companies place more emphasis on providing information related to the board of director's roles and responsibilities as recommended by the CMDA code of conduct. Furthermore, firms provide less information regarding their CSR practices. The firms that that do provide CSR information only provide positive information. The reason for the firms to provide only positive information is to gain and maintain legitimacy of their operations.

The level of voluntary information increased from year 2009 to 2010. This may have been due to the implementation of the CMDA code of conduct that became effective for annual reports after 2009.

CONCLUSION AND FUTURE RESEARCH

This study examined the impact of high shareholder concentration on the level of voluntary corporate disclosure. The introduction of the corporate governance code served as the basis for selecting two years of annual reports for analysis. The results of the paper support the prior evidence that there will be lower voluntary corporate disclosure in highly concentrated firms. In addition, we found that institutional owned concentrated firms provided increased voluntary disclosures compared to family owned firms. The results also indicate companies that disclosed the highest number of sentences regarding the board of directors and other corporate governance attributes.

This study provides a major contribution to the literature by providing insights on disclosure practices when there are differences in ownership structure of listed firms. The results of this paper provide implications on management's stewardship, responsibility and accountability held towards all stakeholders. There needs to be information transparency between firms and stakeholders to ensure that minority shareholders are being informed and protected. This is an emerging issue especially in concentrated firms as revealed in the ADB report (1999). Thus, the prevalence of high shareholder concentration in Fiji, calls for enhancing the transparency of information between the principal and agent. Moreover, the results show that the introduction of the CMDA Corporate Governance Code slightly increased their level of voluntary disclosures made by these listed firms in Fiji.

This study has limitations as it only examines annual reports. Future research could incorporate other mediums of reporting to substantiate the results obtained in this study on the link between ownership structure and voluntary disclosures. An interview or questionnaire approach would provide greater insight. Since this paper was only based on the content analysis of the annual reports, future studies can consider an interview and questionnaire approach to get the response of the prepares of the annual reports. In addition, an interview of the controlling shareholders and minority shareholders would also provide their perceptions regarding voluntary disclosure practices. Future researchers could also consider the level of voluntary corporate disclosure in state owned enterprises and private enterprises. Studies can also consider voluntary corporate disclosure in other media such as the company's web sites.

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MANAGERIAL OWNERSHIP, LEVERAGE AND AUDIT QUALITY IMPACT ON FIRM PERFORMANCE: EVIDENCE FROM THE MALAYSIAN ACE MARKET

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ABSTRACT

This paper extends the agency cost literature by examining whether managerial ownership, leverage and audit quality are associated with higher performance of companies traded on the Malaysian ACE (Access, Certainty, Efficiency) Market. The sample consists of 82 companies listed on the Malaysian ACE Market for the period from 2007 to 2009. Analyses of descriptive statistics, correlation analysis, and multiple regressions are used to address the research hypotheses. The descriptive statistics analysis reveals that ACE Market companies do not perform better for the three year test period. This result may explain why the number of listed stocks on the ACE Market decreased from 2006 to 2009. Contrary to the proposed hypotheses, this study finds that audit quality has a statistically significant negative effect on firm performance. The empirical results suggest that higher audit fees received by auditors may create bonding between client and auditors.

JEL: G15, G32, M41

KEYWORDS: Managerial ownership; Leverage; Audit quality; Governance mechanisms; ACE market

INTRODUCTION

A firm's performance represents how effectively managers operate a company and thereby enhance the value of the firm to their shareholders. The relationship between managers and shareholders has raised the issue of a conflict of interest when managers use discretionary power to act in their personal best interest (Jensen & Meckling 1976). To safeguard against such behavior by managers firms need to have control mechanisms to ensure that shareholders' funds are not misappropriated or used for unprofitable activities. That is, firms need to insure that agency costs are minimized.

The relationship between managerial ownership and firm performance proposes that management's ownership in the company would motivate them to act in the best interest of shareholders and thereby reduce agency costs. Leverage can also reduce agency costs since debt holders monitor managers' actions to encourage optimal financial performance. In addition, higher audit fees paid to auditors can either strengthen the economic bond between management and auditors and impair auditor independence resulting in sub-optimal firm performance or increase the level and quality of corporate governance which can enhance the quality of financial statements and increase the efficacy of internal control systems.

A number of studies have examined the relationship between managerial ownership and firm performance, as well as leverage and audit quality and firm performance. These studies have generally focused on firms listed on established exchanges and have found positive relationships exist between managerial ownership, leverage and audit quality with firm performance. In this study we investigate the relationship of managerial ownership, leverage and audit quality on firm performance for firms in the

relatively new and substantially smaller ACE exchange located in Malaysia. The remainder of the paper is organized as follows. Section 2 provides a review of the relevant literature. In section 3 a description of data and methodology are presented. Section 4 provides the results and a discussion of the analysis and Section 5 contains concluding comments.

LITERATURE REVIEW

According to Jensen and Meckling (1976) and Demsetz and Lehn (1985) a high level of managerial ownership may motivate managers to act in the best interest of shareholders and may serve as a positive monitoring substitute to reduce agency conflicts and costs. O'Sullivan and Diacon (2003) looked at board composition and ownership on audit quality for British insurance companies and found the proportion of non-executives directors has a positive impact on audit quality while no relationship was found between Board Chairmen and CEOs ownership and audit quality. Other studies have suggested additional factors that can help explain the relationship between managerial ownership and firm performance including Cui and Mak (2002) who find that industry effects are a factor in the relationship for high R & D firms. In Malaysia, owner-managed companies are common among publicly listed companies.

According to Claessens, *et al.* (2000), at the 20% cut-off of control, about 85% of Malaysian listed companies have owner managers. Leverage is one of the external mechanisms which decision makers believe to be a useful tool to reduce agency costs. Debt holders such as financial institutions and banks will monitor managers' actions to encourage that managers' optimize the financial performance of the firm, Sanda, *et al.* (2005). This external monitoring will allow debt holders to evaluate the eligibility of the firm to receive loans and honor any debt agreements and covenants. In particular, financial leverage will reduce agency costs to shareholders and other stakeholders by having a large creditor monitor managers' performance. Large creditors are normally financial institutions which are stakeholders of the firm in that they have a vested interest in the ability of the firm to continue to make interest payments and repay the loan principal.Financial leverage providers will have an incentive to see that managers take performance-improving measures, Sanda, *et al.* (2005). Thus, as suggested by Jensen (1986) it can be argued that high financial leverage reduces agency costs and improves a firm's financial performance. Several empirical studies support Jensen's assertion. Jensen (1986) highlights the importance of debt in limiting managerial discretion over the use of free cash flow. Sanda, *et al.* (2005) finds that financial leverage has a significant positive influence on overall firm performance in Nigeria, indicating the tendency for firms with higher levels of debt as a proportion of equity to perform better.

Prior studies that looked at the relationship between audit fees and firm performance have shown that higher fees paid to auditors will strengthen the economic bond between management and auditors and impair auditor independence [Ashbaugh, *et al.* (2003), Boylan (2004), and Steven (2007)]. Frankel, *et al. (2002)* provides evidence that the non-audit fees to total fees is positively associated with small earnings surprises and with the magnitude of discretionary accruals while Johnson, Khurana and Reynolds (2002) find that short audit firm tenures are associated with lower quality financial reports. On the other hand, Kinney and Libby (2002) argue that total fees paid to an auditor may increase the economic bond to a client and reduce earnings management by managers. Griffin, *et al.* (2008) examine the audit fee-increasing relationship since auditing services provide one means to increase the level and quality of corporate governance. The authors find that there is a positive relationship between audit fees and the level and quality of corporate governance. This is consistent with the Sarbanes-Oxley (SOX) legislation, which imposed incentives on many companies to strengthen corporate governance, including increased auditing and internal control spending. Hence, even though better corporate governance, including auditing is costly, increased corporate governance may enhance the quality of financial statements and increase the efficacy of internal control systems. This will eventually result in better financial performance of the firm.

DATA AND METHODOLOGY

In this paper we extend the literature by examining whether managerial ownership and audit quality are associated with higher performance of companies traded on the Malaysian ACE (Access, Certainty, Efficiency) market. The establishment of the MESDAQ Market, which changed to the ACE Market in 2009, was to encourage the development of technology based and high growth companies in Malaysia. Companies listed on the ACE Market grew through 2006 but have decreased in 2007 and 2008. Wan Mahmood, *et al.* (2008) suggest that this decrease in listings may be due to investors' perception of the inability of ACE market to perform in the long run which would make it difficult to attract more potential investors Wan Mahmood, *et al*. (2008) find that some ACE firms are under investigation for non-compliance with rules and procedures imposed by Securities Commission. Table 1 presents the total number of listed companies in the Main Market (formerly known as Second and Main Board of Bursa Malaysia) and the ACE Market from years 2002 to 2008. Listings on the Main Board and in the ACE Market rose to a peak in 2006 and fell each subsequent year. .

Table 1: Total Number of Listed Companies in Malaysian Markets

Year	Main Board	Second Board	ACE Market	Total
2008	634	221	122	977
2007	636	227	124	987
2006	649	250	128	1027
2005	646	268	107	1021
2004	622	278	63	963
2003	598	276	32	906
2002	562	294	12	868

The table displays the number of companies listed on the Main Board, Second Board and Ace Market through the years 2002 to 2008. Data was obtained from Bursa Malaysia (As of 21 July 2009).

Table 2 shows the listing requirement changes for the MESDAQ Market and the ACE Market. Listing requirements for the ACE Market are more liberal to attract a broader array of companies. Others reasons forwarded to explain investors leaving the ACE Market include (1.) the belief that the volatile trend of the ACE Market will remain for a period of time unless there are some new regulations by the government to alter the market environment and (2.) the nature of stocks in ACE Market is deemed to be too speculative and high risk. Companies listed on the ACE Market have a higher percentage of civil suits and financial fraud cases compared to companies listed on the Main Market. Clearly this is an indication of poor governance practiced by companies listed on the ACE Market. Motivated by this situation, the current study investigates the relationship between established control mechanisms and performance of companies listed on the ACE Market. This study will focus on established governing mechanisms: managerial ownership, financial leverage, and audit quality, as tools to mitigate agency conflicts.

Table 2: Comparison of the MESDAQ and ACE Markets

Comparing the Old and the New Market	
MESDAQ Market	**ACE Market**
Confined to high-growth or technology-based companies	Allows eligible corporations from all economic sectors
Disallowed if offered for sale	No minimum requirements on operating history, size and track-record
Minimum issue price of 50 cents	No minimum issue price
Other listings – structured warrants allowed	Other listings – structured warrants, SPACS or incubators are not allowed

The table displays the requirements for firms listed on the MESDAQ and Ace Markets. The requirements were obtained from Bursa Malaysia (As of 22nd July 2009). Note: SPACs – Special Purpose Acquisition Companies

The objective of this paper is to examine the relationship between managerial ownership, leverage, and audit quality on firm performance for companies listed on the ACE Market. This study is expected to provide empirical results that will be useful to for regulators such as the Securities Commission, the Bursa Malaysia, and other professional bodies. Regulators and professional bodies may highlight some areas for

improvement and appropriate action should be taken to enhance the quality of governance among the ACE Market companies. Managerial ownership is one of internal mechanisms that govern firm performance. A high level of managerial ownership may motivate managers to act in the best interest of shareholders and may serve as a positive monitoring substitute to reduce agency conflicts and costs, Jensen and Meckling (1976) and Demsetz and Lehn (1985).

Consistent with the above arguments, it is expected that higher managerial ownership levels are associated with better firm performance. Therefore, the following hypothesis will be tested:

$H_{1:}$ There is positive relationship between managerial (insider) ownership and firm performance

Consistent with Jensen (1986), it can be argued that high financial leverage reduces agency costs and improves a firm's financial performance Therefore; the following hypothesis will be tested:

H_2: There is positive relationship between financial leverage and firm performance.

Consistent with the literature on audit quality and firm performance the following hypothesis is tested:

H_3: There is positive relationship between audit quality and firm performance.

Initially, the sample for this study was comprised of all companies listed on the ACE Market of Bursa Malaysia from January 2006 to December 2009. A list of companies listed on the ACE Market was obtained from Bursa Malaysia website (http://www.bursamalaysia.com). Of the 122 companies listed on the ACE Market, 83 companies were initially included in the sample. The remaining listed companies did not provide all of the financial information required for the study. In addition, after the normality of the data had been tested, one company was excluded due to outliers. Therefore, only 82 companies were included in the final sample. This study used two data sources for information. First, the Datastream database was used to provide all types of financial data, assets, and liabilities. Second, data on managerial ownership structure, types of auditor, and audit fees were retrieved from individual company annual reports available through the Bursa Malaysia website. All the annual reports are downloaded through (http://announcements.bursamalaysia.com). Finally, all the necessary data was analyzed using correlation and regression analysis to determine the efficacy of the proposed hypotheses

The analysis uses Tobin's Q (Q-Ratio) as a measure of firm performance. Tobin's Q for the combined market value of all the companies on the stock market should be about equal to their replacement costs, Lindenberg and Ross (1981). In other words, Tobin's Q measures firm performance based on market-value. Following Zunaidah and Fauzias (2008), this study has uses the modified version of Tobin's q ratio as a measure of firm value, calculated as the ratio of sum of market value of equity plus total debt to book value of total assets. In measuring managerial ownership, past research has addressed the agency theory problem concerning the use of managerial (insider) shareholdings [McConnell and Servaes (1990, Yeboah-Duah (1993), Loderer and Martin (1997), Chen, *et al.* (2003), and Florackis, *et al*. (2007)]. However, the empirical results are mixed. In particular, McConnell and Servaes (1990) find a significant curvilinear relationship between insider ownership and firm performance. Loderer and Martin (1997) find no statistically significant relationship between insider ownership and performance. Florackis, *et al.* (2007) report a non-linear relationship between managerial ownership and corporate performance by using a semi-parametric estimation approach, drawing conclusions contrary to those of Yeboah-Duah (1993). In this study, managerial ownership is measured as the total percentage of shares directly held by non-independent executive directors in the company. Following Nazli and Weetman (2006) and Zunaidah and Fauzias (2008), this study does not include shares held by independent non-executive

(outside) directors because the outside directors are expected to play a monitoring role and limit managerial opportunism. Leverage is defined as debt owed to large creditors such as financial institutions.

Leverage has been shown to be a useful tool for mitigating the agency problem. Jensen and Meckling (1976) have identified that financial leverage has a significant impact on financial performance. Financial leverage influences firm performance through monitoring activities by debt holders. Problems of agency theory arise when there is a conflict between the interests of shareholders and the interests of debt holders. Such problems start when the company needs to honor the loan agreement with the debt holder even when the company is not performing well. However, if the company is performing very well, then the shareholders will reap the incremental benefits. Thus, shareholders receive greater benefits than debt holders during period of good financial performance. This study uses total debt divided by total assets to measure financial leverage.The demand for auditing arises as a result from the auditor's monitoring role in the principal-agent relationship, Eilifsen and Messier (2000). Financial reporting or disclosure quality had been measured as one of the mechanism in assessing the corporate governance of a firm, Mitton (2002) and Coles, *et al.* (2001). Auditing is necessary to ensure the financial transparency that provides depositors, creditors and shareholders with credible assurances that the corporate managers will not engage in fraudulent activities. On the other hand, the role of statutory auditors and the demand for audit quality are influenced by corporate governance characteristics and the legal system of investor protection, Piot (2001). As summarized in De Fond (1992), past studies have shown that the demand for audit quality is a function of the agency conflict caused by the disparity between management and ownership incentives. Thus, this study will use audit fees as a proxy for audit quality.

Audit fees are defined as the sum of all fees including audit fees and non-audit fees paid to the auditor, Hoistash, *et al*. (2007). Fees include costs for professional audit services as well as non-audit fees charged by the auditor to the client. This approach to measuring audit fees is in accordance with the standards published by the Public Company Accounting Oversight Board, which states that fees for professional services are necessary to perform an audit or review including services rendered for the audit of the company's annual financial statements. This clause extends to the services incurred with rendering an opinion under Section 404 of the Sarbanes-Oxley Act of 2002 and with the review of quarterly financial statements. In addition to the amendments of Corporate Governance, the Securities Commission of Malaysia issues new regulations to all listed companies to disclose audit fees in their annual reports.

In this paper firm size is used as a control variable because empirical studies have shown that firm size is a determinant of firm financial performance. Normally, larger firms are perceived differently by shareholders. For example, there is an assumption that larger firms may pay higher dividends and may have larger boards. This hypothesis supported by Short and Keasey (1999), who report that firm size has a statistically significantly positive effect on financial performance, since larger firms have the potential to access funds with greater ease, both internally and externally. Larger companies also may have better growth opportunities and access to additional financing opportunities. Larger companies are also likely to have greater analyst following, have more information available which reduces information asymmetry, and have wider share ownership and a more extensive ownership profile. Given this, the natural logarithm of the firm's total assets is used to indicate firm size. This measure is consistent with studies which have used total assets to measure firm size, Abdussalam (2006).

Profitability is also used as a control variable. In this study earnings per share (EPS) is used as a measure of a firm's profitability which is consistent with Kumar and Sopariwala (1992), Ahmed and Khababa (1999), Kaufmann, *et al.* (2000), and Al-Malkawi (2005). EPS is considered to be "the market's pre-eminent measure of firm performance," Kaufmann, *et al.* (2000, page 219).Table 3 summarizes the variables used in this study.

Table 3: Summary of Variables and Their Predicted Direction in Relation to Firm Performance

Variable	Measurement	Predicted direction
Dependent Variable		
• Tobin Q (Q-ratio)	$Q_{ratio} = \frac{MVE + TDEBT}{TOTAL\ ASSETS}$	
Independent Variable		
Governance Mechanisms		
• Managerial ownership (MO)	Total percentage of shares directly held by non-independent directors of the company	+
• Leverage (Lev)	Total Debt / Total Assets	+
• Audit Quality (AQ)	The sum of all audit fees paid to the auditor	+
Control Variables		
• Firm size	Natural log of total assets ln(Total Assets)	
• Profitability	Earnings per share (EPS)	

This table shows the dependent and independent variables and how they were measured. The table also displays the predicted direction of the independent variable in relation to the dependent variable.

Consistent with Coakes, Steed and Ong (2009) some variables were transformed to achieve normality. Transformed variables included the Q-ratio, managerial ownership, leverage, total audit fees, and firm size. The remaining variable, profitability, did not need to be transformed.

RESULTS AND DISCUSSION

Table 4 shows the descriptive statistics of the sample selected for the three consecutive years, 2006 to 2008. The sample data were collected for 82 companies listed on the ACE Market. The outliers' consist of data where the log Tobin-Q Ratio is more than 1.2. All of the other variables are in the range of 0.2 to 0.9. Finally, the total number of datum (N) is 246 which are 82 companies over three year.

Table 4: Descriptive Statistics

Statistic	*Tobin-Q Ratio*	*Managerial Ownership*	*Leverage*	*Audit Quality*	*Firm Size*	*Profitability*
Min	0.050	0.000	0.000	0.700	3.420	-0.290
Max	0.880	0.830	0.710	3.110	5.750	0.529
Mean	0.380	0.438	0.252	1.668	4.610	0.005
Median	0.363	0.451	0.248	1.623	4.620	0.007
SD	0.152	0.234	0.189	0.361	0.369	0.066
Skewness	0.513	-0.237	0.318	0.645	0.119	1.433
Kurtosis	0.251	-1.144	-0.903	1.203	1.509	21.083
Number	=	246				

The table shows the descriptive statistics for variables used in this study.

Table 5 shows the correlation coefficients between all of the independent variables and dependent variable and Table 6 summarizes the correlation analysis. Managerial ownership, leverage, total audit fees, and firm size are positively correlated with Q-ratio at significant level of 0.05 for managerial ownership and the rest has significant level of 0.01. On the other hand, there is no significant correlation between the profitability and Q-ratio.

Table 5: Correlation Coefficients

N=246	Q-Ratio	Managerial Ownership	Lev	Tot Audit Fees	Firm Size	Profitability
Q-Ratio	-	0.122*	0.170**	0.268**	0.162**	-0.061
Managerial Ownership		-	0.035	-0.128*	-0.032	-0.045
Leverage			-	0.167**	0.248**	-0.040
Total Audit Fees				-	0.521**	0.109*
Firm Size					-	0.279**
Profitability						-

*The table displays the correlation analysis between variables used in this study and shows a significant relationship between managerial ownership, leverage, audit fees and firm size with Tobin-Q. The asterisks in the table, ** and *, denotes correlation is significant at 0.01 and 0.05 levels (1-tailed), respectively.*

Table 6: Summary Results of Correlation Analysis for Tobin-Q Measurement

Research Hypotheses	Prediction	Result	Hypotheses
There is positive relationship between managerial (insider) ownership and firm performance	Positive	Significant (Positive)	Supported
There is positive relationship between leverage and firm performance	Positive	Significant (Positive)	Supported
There is positive relationship between audit quality and firm performance	Positive	Significant (Positive)	Supported

The table lists the research hypotheses, the prediction of the dependent variable, the results of the correlation and whether the hypotheses were supported.

Multiple regression analysis is one of the parametric techniques that can be applied if the data is assumed to be normally distributed. However, regression analysis is fairly robust for validity against non-normality. Pallant (2007) argues that with a sample size greater than 30, the violation of the normality assumption should not cause any major problems. Based on this argument, a multiple regression analysis as an extension of the correlation is conducted. The main difference between correlation analysis and regression analysis is that, in bivariate correlation, the relationship is only tested between one independent variable and one dependent variable whereas, in multiple regression analysis, more than two independent variables will be tested for their explanatory power against one dependent variable. The regression model is estimated based on three (2) models as follow:

Model 1: Regression analysis of internal governance (managerial ownership)

$$\text{Firm Performance} = \alpha + \beta 1 \text{ Managerial ownership} + € \quad (1)$$

Where: α = intercept term, β_1 = regression coefficient, € = standard error

Model 2: Regression analysis between internal governance and external governance (managerial ownership, leverage, and audit quality)

$$\text{Firm Performance} = \alpha + \beta_1 \text{ Managerial ownership} + \beta_2 \text{ Leverage} + \beta_3 \text{ Audit Quality} + € \quad (2)$$

Where: α = intercept term, β_1 until β_3= regression coefficient, € = standard error

For Model (1), the equation indicates the contribution that internal governance measured by managerial ownership has on firm performance, measured by the Q-ratio. Model (2) measures the contribution that the internal governance variables measured by managerial ownership and external governance measured by financial leverage and audit quality make to the prediction of firm financial performance measured by the Q-ratio. Table 7 reports the hierarchical regression results for managerial ownership, leverage, and audit quality on firm financial performance (Q-ratio) after controlling for the effect of firm size and profitability. Model (1) shows the impact of the internal control mechanism, which is managerial

ownership on firm financial performance. The regression coefficient for firm size is statistically significant at the 1% level and is negative. The regression coefficient for profitability and managerial ownership are not statistically significant. The adjusted in R^2 for the regression is 4.68% and the F-statistic is 4.951 and is statistically significant at the 5% level. This means that 4.68% of the variation in firm's performance is explained by the variation of managerial ownership after controlling for the effect of firm size and profitability, taking into account the sample size and the number of independent variables. Meanwhile, for Model (2), the adjusted in R^2 is 8.1% meaning that 8.1% of the variation of firm financial performance is explained by the internal mechanism, i.e. managerial ownership, and the two external mechanisms, i.e. financial leverage and audit quality, after controlling the effect of firm size and profitability, taking into account the sample size and the number of independent variables.

Table 7: Results of Hierarchical Regression Analyses Examining the Impact of Managerial Ownership, Leverage and Audit Quality on Firm Performance

	DV: Q-Ratio			
Independent Variables	Model 1		Model 2	
	β	*S.E*	*β*	*S.E*
Intercept	1.198***	0.108	1.129***	0.109
Control variable:				
Firm Size	-0.075***	0.023	-0.026	0.027
Profitability	0.196	0.129	0.167	0.128
Internal Mechanisms:				
Managerial Ownership	-0.085	0.042	-0.105	0.041
External Mechanisms:				
Leverage			-.0029	0.044
Audit Quality			-0.087***	0.027
R^2	0.058		0.100	
Adjusted R^2	0.046		0.081	
Change R^2	0.058		0.042	
F-Statistics	4.951**		5.327**	
Df	242, 3		240, 2	

*The table shows that for Model (1) the impact of the internal control mechanism, which is managerial ownership, on firm financial performance. The regression coefficient for firm size is statistically significant at the 1% level and is negative. In Model (2), the regression coefficient for audit quality is statistically significant at the 1% level and is negative. This means that there is a negative relationship between audit quality and firm financial performance for firms listed on the ACE market. Note: The asterisks ***, **, and * denotes significant at 1 per cent (p<0.01), 5 per cent (p<0.05), and 10 per cent (p<0.1) confidence levels, respectively.*

As shown in Model (2), the regression coefficient for audit quality is statistically significant at the 1% level and is negative. This means that there is a negative relationship between audit quality and firm financial performance for firms listed on the ACE market. This is probably due to higher audit fees received by auditors which may create a bonding between clients and auditors. This empirical result is consistent with the empirical results of Hoitash, *et al.* (2007) who finds that economic bonding is a determinant of auditor behavior rather than auditor reputational concerns. However, the regression coefficients for managerial ownership and financial leverage are not statistically significant.

CONCLUDING COMMENTS

In this study we examined the relationship between corporate governance mechanisms such as managerial ownership, leverage, and audit quality and firm financial performance using a sample of 82 companies listed on the ACE Market in Malaysia for the period of 2006, 2007, and 2008. The statistically significant and positive correlation between the three independent variables, managerial ownership, leverage, and audit quality, indicates the importance and impact of these corporate governance mechanisms on firm financial performance. The study provides empirical results that are useful to regulators such as financial institutions, the Securities Commission, and the Bursa Malaysia. Regulators and professional bodies may highlight some areas of improvements and appropriate actions that should be taken in order to enhance the quality of corporate governance mechanisms among ACE market companies. In addition, the Securities Commission can use the empirical results of the current study to develop mechanisms to

facilitate the regulation of corporate managers as a part of the Securities Commission's regulatory responsibilities. For example, the Securities Commission may tighten the regulation of applications for financial sources from the Ministry of Finance, so that if financial assistance is given to a company the money will not be used for the self-interest of management. Furthermore, the current study highlights some of the recommendations to financial institutions for new regulations of the ACE Market.

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GENERATIONAL DIFFERENCES IN ATTITUDES TOWARD DEFICIT REDUCTION POLICY

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ABSTRACT

In an effort to understand the "generation gap" as it is manifested in attitudes toward current tax policy, this study compares survey responses from experienced tax professionals and inexperienced undergraduate tax students applied to the most effective tax and budgetary changes to reduce the federal deficit. The authors created the survey from tax students' suggestions after a semester (Spring 2011) of reading tax-related articles in an international business journal. At the end of that semester, the authors requested suggestions from students for changes to the federal tax code (revenue) and budget (spending) and incorporated them into a survey to which students during that semester and the next two semesters responded. In July 2012, the authors asked a group of experienced tax professionals to respond to the survey. The authors found significant variation in a few predictable areas. Results include findings that the Millennial generation is less conservative on social issues, and favors Social Security reform and reduced defense spending.

JEL: H60; H62

KEYWORDS: Federal Tax Policy, Age Gap, Generation Gap, Millennials, Tax Code, Federal Budget

INTRODUCTION

For many years, the term "generation gap" has referred to the difference in values and attitudes of younger individuals and those of their elders. First used in popular culture during the 1960s, the term came to recognize the differences between Baby Boomers who came of age in the 1960s and 1970s, and their parents, who were either members of the "Silent" generation (those currently 65 – 83 years of age) or members of "The Greatest Generation" (those currently over 83 years of age) who came of age during the Depression and the Second World War. The generation gap is attributable to rapid cultural change in the postmodern world, and continues to be responsible for generational differences in matters of musical tastes, fashion, culture and politics in profound ways (Fullerton & Dixon, 2010).

According to a recent Pew Research study (2011), the "generation gap," or "age gap," revealed little difference in terms of voting preferences of younger and older Americans for most of the past four decades. As recently as the 2000 election, presidential voting preferences were indistinguishable. As recently as the 1992 election, younger voters were less likely to vote Democratic than their seniors. The 1972 matchup between George McGovern and Richard Nixon was the last time that age correlated as strongly with Democratic voting by younger voters as it has recently. In the 1972 election, 18-to-29 year old voters were 16 points more likely to back the Democratic candidate than older voters (Pew, 2011).
This "age gap," represented by differences in political attitudes and driven by broad social and political trends, began to open in the 2004 election and became a major factor in the 2008 election with Barack Obama's victory over John McCain; and although Obama's support has slipped across all generations since that election, the age gap has not narrowed. Obama continues to hold a substantial edge among 18-to-29 year olds, while voters over 65 years of age favor Romney by a slightly larger margin than they supported McCain (Pew, 2011).

To understand the "age gap" as manifested in attitudes toward federal tax policy and perceptions regarding reduction of the federal deficit, this study compares survey responses from experienced tax professionals and inexperienced undergraduate tax students at a northeastern U.S. state university. The authors created the survey from tax students' suggestions after a semester (Spring 2011) of reading tax-related articles in an international business journal and blogging their critical opinions. Suggestions from the students for changes to the federal tax code (revenue) and budget (spending) at the end of that semester were incorporated into a survey to which students responded during the three semesters from Spring 2011 through Spring 2012. Then, in July 2012, the authors asked a group of experienced tax professionals made up of primarily CPAs and enrolled agents to respond to the survey. The results of the study indicate that the students, primarily the Millennial generation, and tax practitioners, who are mostly Boomers, have differing attitudes regarding the best measures to reduce the federal deficit particularly in the areas of social issues, Social Security reform, tax increases, and defense spending. The study's findings contribute to the literature on generational political attitudes and provide further support to Fisher's (2008[1]) findings.

The remainder of the paper is as follows: The Literature Review provides background on the generation gaps' attitudes, the changing political environment, and motivation for the study. Data and Methodology presents the Research Method and Participants, followed by Results and Discussion, and Concluding Comments.

LITERATURE REVIEW

Cohorts and Attitudes

The values and priorities of individuals are shaped by the socio-economic conditions in place during our formative years of adolescence and early adulthood known as the "critical period" (Fisher, 2008[1]; Schuman & Corning, 2006). Mannheim (1952 [1923], p. 290) addressed the importance of generations, referred to as cohorts today, as positions in the social structure: "Individuals who belong to the same generation who share the same year of birth are endowed, to that extent, with a common location in the historical dimension of the social process." These cohort members frequently share policy attitudes attributable to shared social bonds, historical experiences or values (Fullerton & Dixon, 2010). Mannheim concluded, as have later writers, "late adolescence and early adulthood are the formative years during which a distinctive personal outlook on politics emerges" (Rintala, 1968, p. 93).

Further, discrete generations not only have distinct political leanings; they tend to maintain those leanings for the remainder of their lives (Fisher, 2008[1]). Since socio-economic conditions change over time, discrete generations are shaped by dissimilar societal experiences, thus they develop dissimilar political values. Whereas some generations will tend to lean Republican, others will lean Democratic based upon the political climate in place during the formative years of that generation (Fisher, 2008[1]), resulting in what is referred to as a 'generation gap'.

Although those who focus on generational change generally portray the youngest cohorts as the most liberal, this is not necessarily the case. At times younger voters tend to be even more likely to support conservative candidates than older voters. If we look at voters in cohorts by age group, younger voters in some elections voted differently from the rest of the population. Of the elections from 1976 – 2004, the under-30 cohort voted the most democratic in four elections (Carter – 1976, Reagan – 1980, Clinton - 1996 and Bush "43" - 2004), but in the other four elections (Reagan – 1984, Bush "41" – 1988, Clinton – 1992, and Bush "43"- 2000), 18 – 29 year olds voted very similarly to other age cohorts (Fisher, 2010). The result is that despite the stereotype that younger voters tend to be more liberal than older voters, in some years younger voters have been more conservative than older voters (Fisher, 2008[1]).

Data shows that the age gap in 2008 grew considerably larger than in previous elections. Obama won the under-30 vote by a surprising 66 – 32% margin, whereas the over-30 vote was basically even (50 – 49% for Obama). The age gap in 2008 was evident prior to the election. During the 2008 presidential nomination process, the age gap between Barack Obama and Hillary Clinton was one of the largest age gaps in U.S. electoral history, suggesting that Obama's success in the general election was due in part to his appeal with younger voters. However, part of the age gap was also due to the unpopularity of the G. W. Bush ("Bush 43") administration, whose second term in office was the most unpopular presidential term since Richard Nixon. Bush's unpopularity, with approval ratings in the low 20s as he left office, undoubtedly influenced younger Americans who were just becoming politically aware and entering the electorate (Fisher, 2010).

According to Pew (2011, p. 1), "[o]ne of the largest factors driving the current generation gap is the arrival of diverse and Democratic-oriented "Millennials," individuals born from 1981 to 1993 who are now under 30. Shaped by the politics and conditions of the Bill Clinton and George W. Bush presidencies, this group holds liberal attitudes on most social and governmental issues." Millennial attitudes and voting choices are driven by "three broad social and political trends" according to Pew (2011, p. 13). First is the racial and ethnic diversity of the country, which reflects a rising percentage of non-whites among younger cohorts. Second is the political environment experienced by successive generations as they come of age politically. The relative popularity of the president, as well as each of the two major political parties at the time an individual reaches voting age, has an impact on future voting preferences. Third, the broader societal changes occurring within a generation's life cycle will have a larger impact on the political views of younger people who are still forming opinions (Pew, 2011).

The Changing Political Environment

After enactment of the Budget and Accounting Act of 1921, Congress delegated much of its budgetary powers to the president. Since then the president, elected from a national constituency, has been the dominant force in determining federal tax policy. The result has been that national public opinion has a significant role in determining budget priorities, including federal income tax rates (Wlezien, 2004; Gilens, 2001; Fisher, 2008[1]) and there is a significant connection between taxpayer sentiment and the nature of periodic adjustments to the tax code. In this way, government revenues and expenditures are responsive to the wishes of taxpayers (Fisher, 2008[1]).

Historically, the public has held each president responsible for the economic performance of the nation and for the size of the deficit while absolving Congress, regardless of economic conditions. As a result, the size of the deficit will have an important impact on which measures the president proposes, especially regarding tax policy. In other words, "not only does presidential tax policy affect the size of the deficit, but the size of the deficit also affects presidential tax policy" (Fisher, 2008[1], p. 215). Prior to Reagan's election, Republicans historically pushed for tax cuts, but not in the face of large budget deficits. Balanced budgets generally had primacy over tax cuts. From 1977 – 1981 the Republican Party advocated large across-the-board tax cuts. Analysis seems to indicate that this was at the behest of party elites, but nonetheless "the Reagan tax cuts were in tune with public opinion of the time" (Fisher, 2008[1], p. 216). The resulting budget deficits, which were the highest in American history as of that time, were politically problematic. However, since polling data during this time indicated strong support for tax cuts, regardless of deficit levels, it seems that the Reagan policy was reasonably in agreement with the preferences of the public (White & Wildavsky, 1989; Fisher, 2008[1]).

President Reagan's popularity seems not to have suffered for large federal deficits, and Reagan continues to enjoy public popularity. According to a Pew Research Poll, more respondents in the Silent (born 1928 – 1945) and Boomer (born 1946 – 1964) generation named Ronald Reagan as the best president of their lifetime, and he loses by only a small margin to Bill Clinton (34% to 38%) among the Gen X (born 1965 -

1980) group. Although deficits multiplied during his presidency, Reagan was able to win reelection in a landslide. "While a large majority of citizens may have favored a balanced budget in the abstract, they did not want higher taxes and they did not want to cut spending for most programs" (Fisher, 2008[1], p. 217; Wildavsky & Caiden, 2001).

The early 1980s taught Republicans "opposing taxes was good politics, but assailing popular domestic programs was not" (Jacobson, 1993; Fisher, 2008[1], p. 217). Deficit levels became too large for many Republicans, however, and George H.W. Bush ("Bush 41") had to deal with the issue. Although he had campaigned on a pledge of "no new taxes", he reluctantly agreed to the Budget Enforcement Act of 1990, a deficit reduction package that would raise taxes and impose user fees in return for entitlement cuts. After compromising on policy he lost ground in public opinion polls and ultimately lost re-election (Pious, 1999; Fisher, 2008[1]). "The budgetary lesson of 1990, therefore, was that raising taxes, even with record deficit levels, was a hard sell politically" (Fisher, 2008[1], p. 218).

Shortly after his inauguration in 1992, Bill Clinton proposed a deficit-reduction package, half of which came from spending reductions with the other half from tax increases. Most new revenues would be raised with higher taxes on upper-income individuals and corporations, with more than half of new taxes falling on families with annual income above $200,000 per year. The plan, titled The Omnibus Budget Reconciliation Act, passed with no votes to spare. (Vice-President Al Gore cast the tie-breaking vote.) After the Act became law, the deficit went down every year until 1998 and in 2000; the federal government experienced a surplus of $236 billion. The economy flourished each year and the federal budget picture improved; however, Clinton received no credit for this even though the tax measures he proposed went a long way to help reduce the deficit (Fisher, 2008[1]).

It is important to note that, for the most part, increases in revenues were due to increases in 1993 of the top income tax rates and the fact that the public sentiment did not support reduction of taxes for those in the top income brackets. As a result, public opinion with regard to taxing the wealthy during the later years of the Clinton presidency may have helped to facilitate the production of balanced budgets (Fisher, 2008[1]).

Due to the budgetary surpluses that existed when Bush came into office, he was able to reduce income taxes significantly and he consistently made tax cuts a major priority of his presidency. The largest portion of the tax cuts came from changes in the federal income tax rates. The rates in place since 1993, which topped out at 39.6 percent, were replaced by rates that topped out at 35 percent. Although Republicans advocated tax cuts since the election of Bush "43", it did not seem that grass roots support existed for the concept at the time. For instance, only 36 percent of Americans polled said they preferred cutting taxes rather than funding new retirement savings accounts and increased spending on education, defense, Medicare and other programs (Fisher, 2008[1]). Once large deficits returned during the second Bush "43" term, Americans were asked which should have priority – tax cuts or reducing the deficit. Respondents, by a 67 to 28 percent margin, stated that reducing the deficit should be the priority, which indicates that the Bush tax initiatives were not responsive to public demand (Fisher, 2008[1]).

A number of perceived policy failures marked the Bush "43" administration. In his Presidential memoir "Decision Points," George W. Bush talks about what he considers the two largest failures of his presidency and two issues that continue in our public discourse: Social Security reform and immigration reform. "The collapse of Social Security reform is one of the greatest disappointments of my presidency. Despite our efforts, the government ended up doing exactly what I had warned against: we kicked the problem down the road to the next generation" (Bush, 2010, p. 300). The impact of this political failure was significant: "When Social Security failed, it widened the partisan divide and made immigration reform tougher" (Bush, 2010, p. 306).

In addition to the political failings of the Bush presidency, annual Gross Domestic Production (GDP) during that time was one of the slowest since the Hoover administration and new college graduates saw real wages (adjusted for inflation) drop. The unilateral nature of the Iraq War and foreign policy during the Bush administration was generally unpopular among younger Americans (Fisher, 2010). Adding to this, the Republican Party was increasingly identified with conservative Christian ideals during this period, while younger Americans were becoming more secular and socially liberal. Younger Americans are more culturally tolerant and put less emphasis on "traditional values" and as a result, they have moved toward the Democrats as part of a larger cultural divide. In fact, a "2007 *New York Times* poll found that by a 52 – 36% margin young Americans say that Democrats rather than Republicans come closer to sharing their moral values" (Fisher, 2010, p. 299). Resulting from the unpopularity of the Bush "43" administration and Obama's appeal with younger voters, there seems to be an overwhelmingly Democratic age cohort that is as strong as any since the Johnson administration. As this under-30 cohort matures, it has the potential of dominating the next era of U.S. politics (Fisher, 2010).

Based on analysis by Schuman and Corning, the national and world events with greatest impact to university students today, most of whom are 25 or younger (born in 1987 or later), are (i) the September 11, 2001 terrorist attacks, (ii) the Iraq War which started in 2003, (iii) the Financial Crisis of 2007, and (iv) the election of President Obama (Schuman & Corning, 2006).

Generational Differences on Certain Policy Issues

The relationship between attitudes and common, age-based, interests is an important consideration, since people over the age of 65 are a growing number (Fullerton & Dixon, 2010). Those over the age of 65 comprised 13 percent of the American population in 2007 but are estimated to comprise over 20 percent of the population by 2030 (U.S. Census Bureau, 2008, Fullerton & Dixon 2010). Furthermore, people over the age of 65 are more likely to vote (Fullerton & Dixon, 2010). For that reason, scholars have renewed attention in this subject by conducting empirical analyses on the effect of age especially on age-related issues, such as education, health care, and Social Security (Day, 1990; MacManus 1995, 1996; Hamil-Luker 2001; Plutzer & Berkman, 2005; Rhodebeck, 1993; Street & Cossman, 2006; Fullerton & Dixon, 2010).

The three most often studied generational differences focusing on the impact of age and cohort on policy attitudes are education, health, and Social Security funding. Concerning the issue of education spending, the difference in policy views has been labeled the "gray peril hypothesis," which suggests that elderly individuals are less likely to support education spending because they and their children are already educated (Rosenbaum & Button, 1989). Further, this theory supposes that the elderly are more likely to support spending on health care and Social Security, which benefits their current and future circumstances (Campbell, 1971; Campbell & Strate, 1981).

Voters over 65 and childless voters have been found to be less likely to support public school spending. This is buttressed by data showing that education spending on a per-child basis is significantly lower in states with a greater proportion of over-65 voters. This is especially true in states with a significant population of older individuals who are a different ethnic or racial group than the school-aged population, whereas younger voters tend to be more supportive of spending for public schools (Poterba, 1997; Fisher, 2008[2]). Importantly, the elderly are as equally likely to support education as younger generations when the elderly feel attached to their community, particularly through homeownership (Berkman & Plutzer, 2004; Plutzer & Berkman, 2005; Fullerton & Dixon, 2010).

It is commonly believed that support for Social Security and Medicare lead the elderly to support Democratic candidates, but this is not necessarily the case. As the Greatest generation (which was overwhelmingly Democratic) dies off, the over-65 cohort has become more Republican. The declining

loyalty of older voters to Democrats may be attributed, ironically, to the success of New Deal safety-net programs. Whereas in the 1930s seniors were the most likely group to live in poverty, today they are the age group *least* likely to live in poverty and overall are the wealthiest age group. With their relative affluence, their concerns have more to do with taxes and inheritance rules; issues that may encourage the over-65 cohort to support Republicans (Binstock, 2006; Fisher, 2008[2]).

Data supports that younger Americans have historically expressed support for Social Security spending and that their support has been as strong as that by elderly citizens (Street & Cossman 2006; Fisher, 2008[2]). The American National Elections Studies (ANES) found in 2004 that 64% of those younger than 65 years favored increasing spending for Social Security compared to only 47% of those over 65 years. However, while younger Americans support increased spending for Social Security, they also tend to be more supportive of Social Security reform. Americans under 30 were substantially more likely than other age groups to favor President Bush's proposal to create private accounts in the Social Security system. Seniors, on the other hand, tend to be much more skeptical than younger generations of attempts to reform Social Security and the elderly are overwhelmingly hostile to plans to privatize Social Security (Fisher, 2008[2]).

"Contrary to conventional wisdom, younger Americans have historically been more likely to be supportive of what the president is doing in a time of war, as they were in Korea and Vietnam" (Fisher, 2008[2], p. 507). This has proven to be the case with Iraq as well: a *New York Times* poll conducted in 2007 found that young Americans (by a 51% to 45% margin) were more likely to believe the war in Iraq was heading to a successful conclusion than other age cohorts. Similarly, a Gallup 2007 poll found that older Americans were more likely than younger Americans to believe that the war in Iraq was a mistake. As a result, on the Iraq war, young Americans tended to be ideologically to the right of the country as a whole (Fisher, 2008[2]). Young Americans tend to be more supportive of reducing defense spending and of increasing foreign aid. Whereas 22% of those aged 18 – 34 favored decreasing defense spending, the figure was 16% for those aged 35 – 64 and 11% for those 65 and older. In regards to foreign aid, younger Americans were at least twice as likely to favor increasing foreign aid compared to other age cohorts (Fisher, 2008[2]). Fisher (2008[2], p. 508) concludes that "[t]his indicates that Americans under 35 are possibly more sensitive to criticism of US foreign policy that has often been levied against it by the rest of the world."

On the basis of cited research, it seems appropriate to believe that university students today, as part of the Millennial (under-30) generation, and tax professionals, who are Boomers for the most part, will have differing attitudes regarding the best measures to reduce the federal deficit. These differences may be significant, due to a "generation gap," driven by rapid cultural change, and are expected to impact the upcoming 2012 elections. However, there is a lack of empirical evidence comparing the tax attitudes of accounting students and tax professionals. In this study, we test for differences among accounting students' and tax professionals' perceptions of the best tax and budgetary initiatives to reduce the federal deficit and offer some insight into the possible causes of these differences.

DATA AND METHODOLOGY

Research Method

The survey instrument was developed from a student blogging assignment. The survey was originally created from tax students' suggestions after a semester (Spring 2011) of reading tax-related articles in an international business journal and blogging their critical opinions. Suggestions from the students for changes to the federal tax code (revenue) and budget (spending) at the end of that semester were incorporated into a survey to which students responded during the three semesters from Spring 2011 through Spring 2012. Additionally, students read an official summary of the President's proposed budget

and make recommendations for two changes to the tax code (revenue) and two changes to budget (spending), that in their opinion would help to reduce the Federal deficit.

The authors created a survey based upon the students' fifteen most frequently suggested revenue and expenditure changes (see Figure 1). For each revenue or spending suggestion in the survey, the authors asked participants to assess the degree to which each suggestion would help to decrease the federal deficit. Responses were on a five-point Likert scale, ranging from one to five, with one labeled "Very Harmful" and five labeled "Very Helpful." The "Very Harmful" scale refers to a materially counter-productive measure, in the participant's opinion. The "Very Helpful" scale indicates a measure that, in the participant's opinion, would materially contribute to reduction of the federal deficit.

Figure 1: Students' 15 Most Frequently Suggested Revenue and Expense Changes

Panel A: Tax Code (Revenue) Recommendations	
Q1A	Lower corporate income tax rates from the present 35% to a lower level comparable to the rates in other countries (e.g., 25 - 30%) and eliminate special tax benefits (loopholes) and credits to corporations.
Q1B	Reduce corporate tax rates to no more than 25% for small businesses with 500 employees or less.
Q1C	Legalize and tax the cultivation and sale of marijuana.
Q1D	Broaden the tax base by changing the tax rate tables to include more people in lower income levels.
Q1E	Raise tax rates on capital gains and dividends.
Q1F	Raise all tax rates, especially to the wealthiest 2% of Americans.
Q1G	Reduce subsidies and tax breaks to oil companies
Q1H	Raise the ceiling on social security wages to $250,000 or remove the ceiling entirely; raise the retirement age for social security.
Q1I	Require all employers to use E-Verify, whereby employee's identity is verified to work legally in the U.S., thereby eliminating illegal aliens from being paid under the table (and therefore not paying U.S. taxes).
Q1J	Raise tariffs on imports
Q1K	Reduce the cap on home mortgage interest deduction) home mortgage interest is presently deductible on the first $1.1M).
Q1L	Enact a Federal sales tax.
Q1M	Enact a federal sales tax on all internet sales of about 3% on all sales of $100 or more; allow an itemized deduction for online sales tax paid.
Q1N	Allow employees who do not have medical coverage through their employers to use their medical expenses as a deduction for AGI as opposed to a deduction from AGI, much in the way that self-employed taxpayers are allowed to do.
Q1O	Privatize social security (allow a fixed percentage of about 3%) to be set up on private investment accounts in lieu of collecting social security tax.
Panel B: Budgetary (Expense) Recommendations	
Q2A	Reduce our defense budget, as it currently occupies approximately 19% of the budget and represents approximately 50% of our discretionary spending.
Q2B	Increase focus on developing clean sustainable sources of energy.
Q2C	Allocate a larger share of the budget to innovation (e.g., research and experimentation).
Q2D	Cut back on funding overseas (foreign) aid, especially to countries with corrupt governments.
Q2E	Allocate a larger share of the budget to education and job training.
Q2F	Reduce waste and abuse on Medicare expenditures.
Q2G	Have employers shoulder a larger share of unemployment costs.
Q2H	Invest more in public transportation and infrastructure.
Q2I	Invest more to reduce illegal immigration.
Q2J	Revamp rules for unemployment compensation, welfare and food stamps to reduce the amount collected and length of time that individuals are on these programs.
Q2K	Allow younger people to opt out of social security.
Q2L	Phase out social security benefits above a certain income level, since social security is meant to ensure against poverty in old age.
Q2M	Reduce subsidies to special groups and industries.
Q2N	Reduce or eliminate Economic Recovery Payments and Making Work Pay Tax Credit.
Q2O	Eliminate the exemption of home mortgage debt forgiveness.

Figure 1 Panel A shows the students' fifteen most frequently suggested tax code (revenue) recommendations. Panel B show the students' fifteen most frequently suggested budgetary (expense) recommendations.

Participants

The survey was exempted from review by the university's Human Studies Council and was administered online through SelectSurvey.net over a period of three semesters to students enrolled in an introductory tax course and a partnership tax course. All of the students were from a northeast state university. In total, 144 participants participated in the survey. Table 1 presents the demographic data for the students. Ninety-nine percent of the students had junior class standing or above. Eighty percent of the students were under 35 years old while fourteen percent were over 35 years. Six percent of the students did not disclose their age group.

Table 1: Demographics for Students

Gender	Males	73
	Females	66
	Not disclosed	5
Class	Junior	35%
	Senior	60%
	Graduate	4%
	Not disclosed	1%
Age Group	18 - 25 years	61%
	26 - 30 years	13%
	31 - 35 years	6%
	Over 35	14%
	Not disclosed	6%

Table 1 shows the demographics for the 144 students in the survey sample. Ninety-nine percent of the students had junior class standing or above. Eighty-percent of the students were under 35 years old while fourteen percent were over 35 years. Six percent of the students did not disclose their age group.

The authors administered the same survey in paper form to tax professionals during a tax seminar sponsored by the Connecticut Society of Certified Public Accountants (CTCPA), Connecticut Society of Enrolled Agents, and Connecticut Department of Revenue Services. A total of eighty-four professionals participated in the survey. Seventeen of the 84 professionals did not completely respond to the tax code and budgetary suggestions and therefore were excluded from the sample. The final tax professional sample was 66. Table 2 presents the demographic data related to the tax professional. The average years of experience were just over 27 years. Seventy-six percent of the sample were CPAs, with a wide range of job responsibilities (based on titles). Due to the disparity in the initial sample sizes (students, n=144 and tax professionals, n=66), a random sample of 66 was selected from the initial sample of 144 (using SPSS). T-tests were performed on the 30 recommendations comparing the tax professionals' means to the students' means.

Table 2: Demographics of Tax Professionals

Gender	**Males**	**33**
	Females	29
	Not disclosed	4
CPA		76%
Highest degree level		
	Bachelors	65%
	Masters	33%
	Business School	2%
Job Title	Tax Accountant	32%
	Accountant	29%
	Manager/Director/Controller	10%
	Vice President/Corporate Officer/ Executive Officer/ Partner	17%
	Owner/Self-employed/Consultant	7%
	Credit Underwriter/Enrolled Agent	5%

Table 2 presents the demographic data related to the tax professionals. The average years of experience were just over 27 years. Seventy six percent of the sample were CPAs, with a wide range of job responsibilities.

RESULTS AND DISCUSSION

Table 3 presents the descriptive statistics and t-test results for comparison of the means between students and tax professionals' opinions on the tax code (revenue) recommendations to reduce the budget deficit.

Table 3: Descriptive Statistics and T-tests for Tax Code Recommendations

(n = 66)		Mean	Std. Dev.	Sig.	
Q1A	Tax Professional	4.14	0.762	0.3654	
	Student	4.26	0.771		
Q1B	Tax Professional	4.03	0.911	0.4789	
	Student	4.14	0.802		
Q1C	Tax Professional	2.95	1.270	0.0003	**
	Student	3.79	1.283		
Q1D	Tax Professional	3.24	1.096	0.1861	
	Student	3.52	1.256		
Q1E	Tax Professional	3.24	1.348	0.0867	
	Student	3.64	1.273		
Q1F	Tax Professional	3.29	1.310	0.0435	**
	Student	3.76	1.337		
Q1G	Tax Professional	4.24	1.009	0.0720	
	Student	3.89	1.191		
Q1H	Tax Professional	3.52	1.361	0.0624	
	Student	3.92	1.127		
Q1I	Tax Professional	4.20	0.769	0.1663	
	Student	3.97	1.081		
Q1J	Tax Professional	3.44	1.040	0.7555	
	Student	3.38	1.187		
Q1K	Tax Professional	3.15	1.099	0.0029	**
	Student	3.70	0.960		
Q1L	Tax Professional	2.59	1.312	0.0120	**
	Student	3.17	1.284		
Q1M	Tax Professional	3.12	1.387	0.0715	
	Student	3.53	1.193		
Q1N	Tax Professional	3.94	0.926	0.3209	
	Student	4.09	0.818		
Q1O	Tax Professional	2.79	1.342	0.0000	**
	Student	3.80	1.126		

** Significant at .05

Table 3 presents the descriptive statistics and t-test results for comparison of the means between students and tax professionals' opinions on the tax code (revenue) recommendations to reduce the budget deficit. Five of 15 recommendations were statistically significant at a 95% confidence interval level. The recommendations that were significant include: Legalize and taxation of the cultivation and sale of marijuana, raise all tax rates, reduce the cap on home mortgage interest deduction, enact a federal sales tax, and privatize social security.

Five of the 15 recommendations were statistically significant at a 95% confidence interval level. The five recommendations that were significant and reflected a difference in the attitudes of the two groups were:

1. Q1C Legalize and tax the cultivation and sale of marijuana.
2. Q1F Raise all tax rates, especially to the wealthiest 2% of Americans.
3. Q1K Reduce the cap on home mortgage interest deduction (home mortgage interest is presently deductible on the first $1.1M).
4. Q1L Enact a Federal sales tax.
5. Q1O Privatize social security (allow a fixed percentage of about 3%) to be set up on private investment accounts in lieu of collecting social security tax.

Students tended to support the legalization and taxation of the cultivation and sale of marijuana (3.79 Student mean compared to 2.95 Tax Professional). Younger Americans are more tolerant and less conservative on social issues (Fisher, 2008[1]). Given that 80% of the Student sample was under the age of 35 and the Tax Professional sample had on average 27 years of experience, the results tend to support Fisher's (2008[1]) findings that young Americans split clearly against social conservatism relative to other generations.

Q1F, Q1K, and Q1L relate to raising tax rates or reducing tax deductions. The Student sample supported increasing tax rates to the wealthy, reducing home mortgage interest deduction, and enacting a federal sales tax. The Student sample means compared to the Tax Professional sample means were 3.76 vs. 3.29, 3.79 vs. 3.15, and 3.17 vs. 2.59, respectively. Based on the 27 average years of experience for the Tax Professionals, it is likely they have mortgages and pay taxes in a higher tax bracket. They may also have clients who are benefitting from the current tax policy. Based on the 27 years of average experience for the Tax Professional sample most of the sample were influenced and developed their political leanings during the Reagan and Bush 41 years. Public opinion during these presidencies favored tax cuts. Students supported privatizing Social Security, 3.80 Student sample mean compared to 2.79 for the Tax Professional sample. This result is consistent with young Americans preference for President Bush's proposal to create private accounts in the Social Security program (Fisher, 2008 [1]).Tables 4 presents the descriptive statistics and t-test results for comparison of the means between students and tax professionals' opinions on the budget (expense) recommendations to reduce the budget deficit.

The Student sample strongly favored reducing the defense budget compared to the Tax Professional sample, 4.26 Student sample mean vs. 3.20 Tax Professional sample mean. This supports Fisher's (2008 [1]) finding that young Americans are more inclined to support the reduction of defense spending. Students also favored allocating a larger share of the budget to education and job training, 4.27 Student sample mean compared to 3.94 Tax Professional sample mean. This result is not surprising given most students in the sample come from middle class families; and, the students are likely bearing the brunt of their own educational expenses. Fisher's findings (2008[1]) also show that overall younger Americans tend to be more supportive of education spending.

Students preferred strongly to have employers shoulder a larger share of unemployment costs, 3.52 Student sample mean compared to 2.80 Tax Professional sample mean. Given that this measure would place a larger burden on businesses, particularly small businesses, it is understandable that Tax Professionals would not be as supportive of this recommendation.

Investing more to reduce illegal immigration was one of two recommendations that the Tax Professionals (4.08 mean) supported more than the Students (3.62). This is not surprising. As noted above, younger Americans are more tolerant and less conservative on social issues including immigration (Fisher, 2008[1]).

Q2K and Q2L both address Social Security and both were more favored by the Students than the Tax Professionals. Students strongly supported allowing younger people to opt out of Social Security with a 3.47 Student sample mean compared to 2.53 Tax Professional sample mean. The Students also supported phasing out Social Security benefits above a certain income level. As mentioned above, younger Americans favor Social Security reform (Fisher, 2008[1]).

Table 4: Descriptive Statistics and T-tests for Tax Code Recommendations

(n = 66)		Mean	Std. Dev.	Sig.	
Q2A	Tax Professional	3.20	1.205	0.0000	**
	Student	4.26	0.982		
Q2B	Tax Professional	4.11	0.879	0.4913	
	Student	4.21	0.886		
Q2C	Tax Professional	3.77	0.740	0.5252	
	Student	3.86	0.892		
Q2D	Tax Professional	4.42	0.878	0.4716	
	Student	4.53	0.808		
Q2E	Tax Professional	3.94	0.721	0.0153	**
	Student	4.27	0.833		
Q2F	Tax Professional	4.53	0.533	0.1248	
	Student	4.35	0.794		
Q2G	Tax Professional	2.80	1.084	0.0005	**
	Student	3.52	1.206		
Q2H	Tax Professional	4.03	0.656	0.3204	
	Student	3.88	1.045		
Q2I	Tax Professional	4.08	0.730	0.0046	**
	Student	3.62	1.049		
Q2J	Tax Professional	4.15	0.932	0.5220	
	Student	4.26	0.966		
Q2K	Tax Professional	2.53	1.459	0.0001	**
	Student	3.47	1.280		
Q2L	Tax Professional	3.65	1.283	0.0246	**
	Student	4.11	0.994		
Q2M	Tax Professional	4.26	0.917	0.0081	**
	Student	3.82	0.959		
Q2N	Tax Professional	3.88	0.937	0.2398	
	Student	3.68	0.979		
Q2O	Tax Professional	2.94	1.226	0.0104	**
	Student	3.47	1.112		

** Significant at .05

Table 4 presents the descriptive statistics and t-test results for comparison of the means between students and tax professionals' opinions on the budget (expense) recommendations to reduce the budget deficit. Eight of the 15 recommendations were statistically significant at a 95% confidence interval. Eight of the 15 recommendations that were significant and indicate a difference in attitudes between the two groups were: Reduce the defense budget, allocate a larger share of the budget to education and job training, employers shoulder a larger share of unemployment costs, invest more to reduce illegal immigration, allow younger people to opt out of social security, phase out social security benefits above a certain income level, reduce subsidies to special groups and industries, eliminate the exemption of home mortgage debt forgiveness.

Eight of the 15 recommendations were statistically significant at a 95% confidence interval. The eight recommendations that were significant and indicate a difference in attitudes between the two groups were:

1. Q2A Reduce our defense budget, as it currently occupies approximately 19% of the budget and represents approximately 50% of our discretionary spending.
2. Q2E Allocate a larger share of the budget to education and job training
3. Q2G Have employers shoulder a larger share of unemployment costs.
4. Q2I Invest more to reduce illegal immigration.
5. Q2K Allow younger people to opt out of social security.
6. Q2L Phase out social security benefits above a certain income level, since social security is meant to ensure against poverty in old age.
7. Q2M Reduce subsidies to special groups and industries
8. Q2O Eliminate the exemption of home mortgage debt forgiveness.

Tax Professionals strongly preferred reducing subsidies to special groups and industries Tax Professionals' mean compared to Students' mean were 4.26 and 3.82, respectively. The Tax Professionals, given their years of experience most likely are more conservative while the Students tend not to be socially conservative.

Students approved eliminating the tax exemption of home mortgage debt forgiveness compared to the Tax Professionals, means were 3.47 and 2.94, respectively. Tax Professionals are more likely to have experience with individuals who are in need of mortgage debt forgiveness and see it as a greater social cause.

CONCLUDING COMMENTS

The purpose of this study was to compare opinions on student recommended deficit reduction changes to the federal tax code (revenue) and budget (spending) from experienced tax professionals to inexperienced undergraduate tax students. Of the 15 student recommended changes to the federal tax code (revenue) differences in five recommendations were statistically significant. Of the 15 student recommended changes to the budget (expense), differences in eight of the recommendations were statistically significant. These findings indicate that the students, primarily the Millennial generation, and tax practitioners, who are Boomers for the most part, will have differing attitudes regarding the best measures to reduce the federal deficit. These differences may be significant, due to a "generation gap" or "age gap," driven by rapid cultural change, and are expected to impact the upcoming 2012 and subsequent elections.

The study's findings contribute to the literature on generational political attitudes and provide further support to Fisher's (2008[1]) findings. Overall, the results support that the Millennial generation is more tolerant and less conservative on social issues, support raising taxes, are in favor of Social Security reform, and reducing defense spending. It will be interesting to watch if this generation impacts the upcoming presidential election and if public opinion, driven by the Millennial generation continues play a significantly role in setting tax policies and Social Security reforms. Political attitudes may also influence healthcare reform.

One of the important limitations was that the survey questions were developed by the students and attitudes on healthcare spending were not included. Another limitation was that the student sample was generated from students attending a state university. Future research could extend the study to private universities and compare gender and ethnic differences.

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INDIRECT LABOR COSTS AND IMPLICATIONS FOR OVERHEAD ALLOCATION

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ABSTRACT

Cost accounting typically allocates indirect labor cost to cost object based on direct labor hours. The allocation process implicitly assumes that indirect labor costs vary proportionally with direct labor hours. The assumption of a linear relationship between indirect and direct labor is particularly suspicious at low production volume levels because there tends to be a fixed component in indirect labor. The linearity assumption is also challenged by recent increasing complexity of indirect labor tasks. As automation technology replaces some work of the of traditional labor, the cost of non-production workers becomes an important element of manufacturing overhead and it may not be related to labor hours in a simple linear manner. A model is derived to show the relationship between indirect labor overhead and direct labor hours under different conditions. The implication for the allocation of indirect labor overhead is also discussed.

JEL: J3, M2

KEYWORDS: Indirect Labor Cost, Labor Cost, Overhead Allocation, Cost Accounting, Indirect Labor Cost Allocation

INTRODUCTION

One of the critical roles of cost accounting is to estimate the cost of product or services. All costing models are trying to find the "true" cost of a particular cost object such as product, service, segment, and department. Traditional costing approach allocates overhead by using volume-driven measure such as unit produced to first estimate a predetermined overhead rate then allocate overhead by applying this average overhead rate to the cost object. Application of such models is valid for facilities producing products with less diversity. However, as product diversity increases, the broad averaging process leads to serious cost distortion (Johnson and Kaplan, 1987, Cooper and Kaplan, 1988).

A more sophisticated overhead allocation method such as Activity Based Costing (ABC) intends to reduce these cost measurement distortions by creating multiple cost pools and allocation bases to allocate overhead to product or service in two stages allocation process (Cooper, 1987a, 1987b, 1988). One issue that relates to the ABC system is that the allocation process assumes a strict proportional relationship between activity and cost. Noreen and Soderstrom (1994) challenge this linear proportional assumption by examining the hospital's time-series behavior of overhead costs and activities. The results show that the proportionality hypothesis can be rejected for most of the overhead accounts. On average across the accounts, the average cost per unit of activity overstates marginal cost by about 40% and in some departments by over 100%. Another study conducted by Noreen and Soderstrom (1997) suggests that costing systems, which assume costs are strictly proportional to activity, grossly overstate the impact of changes in activity on cost. Kim and Hon (2008) comments that when cost behavior shows a nonlinear pattern, conventional ABC may distort product costs. Noreen (1991) develops a mathematical model to demonstrate the conditions under which ABC systems provide relevant costs. One of the conditions that ABC would provide relevant information is that the cost in each cost pool is strictly proportional to its activity.

The assumption of a linear relationship between activity and costs creates a challenge to accurately estimate the product cost. The purpose of this paper is to present a model that shows the relationship between indirect labor overhead and cost drivers such as direct labor hours under different conditions followed by a discussion of the implication for the allocation of indirect labor overhead.

LITERATURE REVIEW

Decisions are often taken assuming linear models for the purpose of simplicity. Cost accounting typically allocates indirect labor costs to products or services (cost object) based on direct labor hours. Traditional cost allocation methods presume a linear relationship between the costs and cost allocation base. This linearity assumption is problematic for allocating overhead when there are various product lines and each of which demands diverse amount of resources (Garrison et al., 2012). The average allocation rate assumes that each unit of product/service consumes the resources at a constant rate. This allocation process will not be able to capture the resource consumption when product/service diversity exists. Balakrishnan et al. (2012) comment that traditional costing, ABC or other costing systems currently do not seem to offer an effective way to estimate product/service cost and suggest a blended model that accommodates nonlinearity. Ramani et al. (2010) presents a case study to emphasize the importance of the use of more accurate models to account for nonlinearity. McNair (2007) suggests that it is necessary to apply a non-linear modeling approach to capture cost dynamics and relationships.

Take the labor and indirect labor costs as an example. Labor is direct when their work and wages can be identified with specific costing units such as departments, products or sales contracts (Horngren et al., 2012). All other employees that cannot be directly traced to the costing units are indirect. From the perspective of manufacturing, wages that directly relate to production are considered as direct labor costs; other work that is performed on the production floor but not on producing the products is considered as indirect labor costs. In accounting, trace direct labor costs is straight forward because there are payroll records to directly connect the direct labor costs to the products. On the other hand, the indirect labor costs requires allocation process, because it cannot be directly traced in an economically way (Horngren et al., 2012). The allocation process will have to first estimate an allocation rate by taking a total indirect labor costs divided by selected allocation basis. This allocation process perceives that labor-related overhead behaves proportionally to direct labor hours. That is, the average indirect labor overhead per direct labor hour is the same as marginal indirect labor overhead per direct labor hour given all other conditions remain the same. This allocation process implicitly assumes that indirect labor hours should vary proportionally with direct man hours. These average allocation rates are useful guides with the relevant range of fluctuation in direct labor, but they cease to be satisfactory when large changes in the direct labor base occur.

The assumption of a linear relationship between indirect and direct labor is particularly suspicious at low production volume levels because there tends to be a fixed component in indirect labor. When a decline in direct labor activity is expected to be short in duration, this fixed component of the indirect work force usually remains intact, because management retains experienced supervisors and others not readily replaceable when needed again. When activity is expected to remain low for an extended period or costs must be reduced to protect the company's financial resources, cuts are made in some organizations at the management's discretion. The number of indirect labor required for the coming budget year also can be determined by analysis of the work to be done. This procedure usually is followed in companies that have little or no direct labor variable with short term production volume. Under this condition, a functional linear relationship between direct and indirect labor is questionable.

The linearity assumption is also criticized by recent increasing complexity of indirect labor tasks. As automation technology replaces some work of traditional labor, the cost of non-production workers becomes an important element of manufacturing overhead and it may not be related to labor hours in a

simple linear manner. Many studies discuss the value of non-production workers such as production supervisors, quality control staff, production managers and on-site tooling engineers to a manufacturing plant's productivity (Gunasekaran et al, 1994; Kang & Hong, 2002; Krajewski and Ritzman, 2004). Studies also find a significant effect of non-production labor on a manufacturing plant's productivity (Gray and Jurison, 1995; Wacker et al., 2006). As the indirect labor takes a more essential role in manufacturing plants than it has previously and indirect labor cost may not be linearly related to direct labor hours, the averaging process of allocating overhead would produce misleading cost estimates. As a result, it is essential to conduct a preliminary examination on the nature of indirect costs before allocating them as overhead.

DATA AND METHODOLOGY

Define the Nature of Types of Indirect Labor Overhead

Overhead is ongoing costs of a business which cannot be attributed to any specific cost object. To narrow the analysis focus, this study attempts to build a model that represents one of the overhead items - indirect labor costs that are commonly seen on the production floor or service setting. In general, according to the complexity of the work nature, indirect labor can be broadly categorized into three types of indirect labor according to task complexity and job nature. The first type of indirect labor is the labor force who performs routine tasks such as maintaining, and cleaning the working facility. The second type of indirect labor directly oversees the production lines or service processes and performs higher level of work than the first type of indirect labor. First line supervisors or on-site tooling and equipment engineers are examples of the second type of indirect labor. The third type of indirect labor, for example, a production manager, conducts overall supervision, coordinates all production lines, schedules production runs and communicates with the upper management. In general, considering the overtime paid, fringe benefits, incentive plans and bonus provided to manager or supervisors, these three types of labor costs are not fixed costs even some of them may be on salary basis. The research question that this paper attempts to explore is whether these three types of indirect labor costs change proportionally (linear) or non-proportionally (non-linear) to the total production which is assumed to be directly related to direct labor hours. The following discussion uses production line as an example to develop a model that demonstrates three scenarios of the behavior of indirect labor costs.

Model the Indirect Labor Costs

Based on the nature of indirect labor's tasks, the general three types of indirect labor are defined as follows:

x — front line direct production labor hours

$y = f(x)$ — labor related overhead (indirect labor costs) generated from the production floor. y is expressed as a function of x because the indirect labor costs are generated and built upon the direct labor. The more direct labor force, the more indirect labor efforts are involved in the function of supervision, coordination and scheduling.

$\frac{dy}{dx}$ — represents front line supervisor overhead at a certain number of direct labors supervised. The cost of supervisors is based on the numbers of direct labor (represents by x) they supervise. The first order derivative captures the dynamics of impact on overall production cost due to more or less supervision. For instance, at a certain point, the more supervision involved in the production

process, the labor obtains more on-site assistance resulting in less errors, material waste and scrap which may decrease overall manufacturing cost.

$x\frac{dy}{dx}$ stands for total costs of front line supervisors. $x\frac{dy}{dx}$ represents the "true" total cost of front line supervisors that incorporates the increasing or decreasing rate of efficiency (rate of returns) of hiring a supervisor for a certain number of direct labor force. The x is actual numbers of front line production labor supervised.

$\frac{d}{dx}\left(\frac{dy}{dx}\right) = \frac{d^2y}{dx^2}$ is the next level of supervision which can be represented by production manager. The production manager's cost is the second order differential relationship to the x. The second order of derivatives intends to capture the overall impact on the total manufacturing costs by adding this level of supervision and management.

$x * x\frac{d^2y}{dx^2}$ represents the total "true" cost of production manager who coordinates all production lines, maintains scheduling, manages material movements, monitors the flow of manufacturing process, and communicates with upper management. Therefore, $x * x$ is the weight for the more complex level of supervision.

If there are n layers of supervision (supervisors or managers) in the production plant factory, the total indirect labor overhead costs can be captured in the following equation:

$$a_n x^n \frac{d^n y}{dx^n} + a_{n-1}x_{n-1}\frac{d^{n-1}y}{dx^{n-1}} + \ldots\ldots + a_1 x\frac{dy}{dx} + a_0 y = g(x)$$

This paper will narrow the analysis focus specifically on three types of indirect labor as explained in the previous section. The total indirect labor costs from production floor can be represented by a Cauchy-Euler Equation (Rabenstein, 1975):

$a_2x^2\frac{d^2y}{dx^2} + a_1x\frac{dy}{dx} + a_0y = g(x)$, the total indirect labor cost is expressed in a brief form of the Cauchy-Euler Equation

(let $a = a_2$, $b = a_1$ and $c = a_0$)

For the purpose of discussion, we confine our analysis to solving the homogeneous second-order equation

$$ax^2\frac{d^2y}{dx^2} + bx\frac{dy}{dx} + cy = 0 \qquad (1)$$

For $y = f(x)$, indirect labor cost is the function of direct labor hours, we can assume that $y = x^m$ is a general solution of (1), where m is to be determined. The first and second derivatives are, respectively,

$\frac{dy}{dx} = mx^{m-1}$ and $\frac{d^2y}{dx^2} = m(m-1)x^{m-2}$

Consequently the differential equation (1) becomes

$$ax^2\frac{d^2y}{dx^2} + bx\frac{dy}{dx} + cy = ax^2 * m(m-1)x^{m-2} + bx * mx^{m-1} + cx^m$$

$$= am(m-1)x^m + bmx^m + cx^m$$

$$= x^m(am(m-1) + bm + c)$$

Thus $y = x^m$ is a solution of the differential equation whenever m is a solution of the trivial equation (2).

$$am(m-1) + bm + c = 0 \text{ or } am^2 + (b-a)m + c = 0 \quad (2)$$

There are three different cases to be considered, depending on the whether the roots of this quadratic equation are real and distinct, real and equal, or complex conjugate.
[Basic solutions of quadratic equation]:

$$Am^2 + Bm + C = 0$$

$$m = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A} \quad (3)$$

Scenario 1:

$B^2 - 4AC > 0$: Two distinct real roots

Let $m_1$and m_2 denote the real roots of (2) and $m_1 \neq m_2$. Then

$y_1 = x^{m_1}$ and $y_2 = x^{m_2}$

Hence the general solution is

$$y = c_1x^{m_1} + c_2x^{m_2} \quad (4)$$

Scenario 2:

$B^2 - 4AC = 0$: Repeated real roots

If the roots of (2) are repeated, that is, $m_1 = m_2$ then we obtain only one solution, namely, $y = x^{m_1}$. From the quadratic formula, the root must be $m_1 = -(b-a)/2a$.

To solve for a second solution y_2, divide the brief form of the Cauchy-Euler equation (1) by ax^2 to obtain the following form

$\frac{d^2y}{dx^2} + \frac{b}{ax}\frac{dy}{dx} + \frac{c}{ax^2}y = 0$ Thus (see appendix for supplemental derivation),

$$y_2 = x^{m_1}\int \frac{e^{-\int(b/ax)dx}}{(x^{m_1})^2}dx$$

$$= x^{m_1}\int \frac{e^{-\int(b/a)lnx}}{x^{2m_1}}\text{dx}$$

$= x^{m_1} \int x^{-b/a} * x^{(b-a)/a} dx$

$= x^{m_1} \int \frac{dx}{x} = x^{m_1} lnx$

The general solution is then

$$y = c_1 x^{m_1} + c_2 x^{m_1} lnx \quad (5)$$

Scenario 3:

$B^2 - 4AC < 0$: Conjugate complex roots

If the roots of (2) are the conjugate pair
$m_1 = \propto + i\beta, m_2 = \propto - i\beta$ (i: imaginary number)
where $\propto$ and β are real numbers, then a solution is

$y = c_1 x^{\propto + i\beta} + c_2 x^{\propto - i\beta}$

As in the case of the equation with constant coefficients, when the roots of equation (2) are complex, the solution will be expressed in terms of real numbers only. Note the identity $[e^{i\theta} = \cos\theta + i\sin\theta\,]$

$x^{i\beta} = (e^{lnx})^{i\beta} = e^{i\beta lnx}$

$x^{i\beta} = \cos(\beta lnx) + i\sin(\beta lnx)$

Similarly,

$x^{-i\beta} = \cos(\beta lnx) - i\sin(\beta lnx)$

Adding and subtracting the last two results yield, respectively,

$x^{i\beta} + x^{-i\beta} = 2\cos(\beta lnx)$ and

$x^{i\beta} - x^{-i\beta} = 2i\sin(\beta lnx)$

From the fact that $y = c_1 x^{\propto + i\beta} + c_2 x^{\propto - i\beta}$ is a solution of $ax^2 y'' + bxy' + cy = 0$

for any values of the constants c_1 and c_2 we see that

$y_1 = x^{\propto}\left(x^{i\beta} + x^{-i\beta}\right), (c_1 = c_2 = 1)$

$y_2 = x^{\propto}\left(x^{i\beta} - x^{-i\beta}\right), (c_1 = 1, c_2 = -1)$ or

$y_1 = 2x^{\propto}(\cos(\beta lnx))$

$y_2 = 2i\, x^{\propto}(\sin(\beta lnx))$

Hence, the general solution is

$$y = x^{\propto}[c_1 \cos(\beta lnx) + c_2 \sin(\beta lnx)] \quad (6)$$

where $\propto = \frac{m_1 + m_2}{2}$, $\beta = \frac{m_1 - m_2}{2i}$

Example:

The model can also be applied to a service context. Following is an example of airline carriers. This example uses American Airlines and United Airlines because of their similar operating scale evidenced by the closeness of the costs of Aircraft and Traffic Servicing Labor ($106,418 ≈ $104,150). Cost of labor inputs of these two airline carriers are used to illustrate the second scenario repeated real roots where $B^2 - 4AC = 0$.

Table 1: Inputs Labor Costs by Category (Means in Thousands)

Carrier	Aircraft & Traffic Servicing Labor	Promotions & Sales Labor	Flying Operations Labor	Passenger Service Labor	General Overhead
American Airlines	106,418	112,297	98,098	52,685	135,352
United Airlines	104,150	122,467	141,899	80,965	143,744

Data source: The labor inputs costs are partially adopted from the data used in Banker and Johnson (1993).

Using this model, we can insert the relative value of labor costs of two airline carriers into equation 1, Cauchy-Euler homogeneous second-order equation:

$$ax^2 \frac{d^2y}{dx^2} + bx \frac{dy}{dx} + cy = 0 \quad (1)$$

The Promotion & Sales labor category gives us the 1.09 relative value of United Airlines and American Airlines (the division of 122,467 by 112,297). Applying this relative value to equation (1) yields equation (1.1):

$$a * 1.09^2 y'' + b * 1.09 y' + cy = 0 \quad (1.1)$$

To simplify equation (1.1) for trivial solutions, let $a = {}^1/_{1.09^2} = 0.842$ and $b = {}^1/_{1.09} = 0.917$

As previously defined, A= $a = 0.842$ and B = (b-a) = (0.917- 0.842) = 0.075

Solve the roots by following $m = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$

Under Scenario 2, m = -B/2A= -0.045

According to the general solution for the repeated real roots, $y = c_1 x^{m_1} + c_2 x^{m_1} lnx$ (equation 5), the equation becomes

$$y = c_1 x^{-0.045} + c_2 x^{-0.045} lnx$$

The general relative solutions for Flying Operation Labor and Passenger Service Labor can be solved in the same calculation process:

$$y = c_1 x^{-0.215} + c_2 x^{-0.215} lnx$$

$y = c_1x^{-0.27} + c_2x^{-0.27}lnx$

The Passenger Service Labor is considered as direct labor. The general solution for the Passenger Service Labor is $y = c_1x^{-0.27} + c_2x^{-0.27}lnx$ which indicates that the relationship between indirect labor costs and direct labor activity is not linear. For example,

when x = 1,000

$y = c_1x^{-0.27} + c_2x^{-0.27}lnx = c_1 1{,}000^{-0.27} + c_2 1{,}000^{-0.27}\ln(1{,}000)$
$= 0.155c_1 + 1.074c_2$

If x increases 10 times to 10,000, y increases in different magnitude as follows:

$y = c_1x^{-0.27} + c_2x^{-0.27}lnx = c_1 10{,}000^{-0.27} + c_2 10{,}000^{-0.27}\ln(10{,}000)$
$= 0.083c_1 + 0.764c_2$

It is noted that when the relative direct labor value of the two airlines increases 10 times, the relative indirect labor costs do not increase proportionally. In fact, in this specific example, when the direct labor activities increase 10 times, the resulting relative indirect labor weights decrease from 0.155 to 0.083 and from 1.074 to 0.764.

RESULTS

As shown in the cost model, the diversity of indirect labor overhead was captured by incorporating weights to each type of labor in the model. When we limit the types of indirect labor to three general types, the equation that captures total "true cost" of indirect labor is simplified to the second order of equation: $ax^2\frac{d^2y}{dx^2} + bx\frac{dy}{dx} + cy = 0$. When the indirect labor costs were incurred in a small, simple business environment, the coefficients of a and b become zero and the second order equation becomes a linear function ($cy = 0$). Note that y is a function of x and can be represented by $y = c_1x + c_0$. The relationship between y (indirect labor cost) and x (direct labor hours) is linear and is identified by the coefficients c_1 and c_0. This happens when there is only one line of variable indirect labor whose working hours are driven by direct labor hours (i.e., quality control operator) or when there is no indirect labor at all, the labor overhead is simply the wages paid to the direct labor for working overtime.

In another case that cost of a first line supervisor or manager does not add additional value or contribution such as improving productivity or saving production costs (when the production floor is indifferent to the additional supervision), the term $\frac{dy}{dx}$ also becomes 0. When $\frac{dy}{dx}$ is equal to zero, the equation is a linear function ($cy = 0$). Therefore, in a simple context with less diversity of indirect labor or where the function of supervision does not add value to the production, the cost function approaches linear where indirect labor cost is proportionally related to direct labor hours. This represents a perfect context to allocate overhead by calculating the average predetermined overhead rate based on direct labor hour.

Depending on the supervision layers, management style and diversity of supervising tasks, there are three possible solutions to the equations where total indirect labor overhead can be $y = c_1x^{m_1} + c_2x^{m_2}$ (see equation 4), or $y = c_1x^{m_1} + c_2x^{m_1}lnx$ (equation 5), or $y = x^{\propto}[c_1\cos(\beta lnx) + c_2\sin(\beta lnx)]$ (equation 6). These solutions demonstrate that the effect of indirect labor on overhead is so dynamic that the indirect labor costs and direct labor hours are not linearly related and can be specified by three

different non-linear forms as demonstrated above. The effect of change in direct labor hours on indirect labor costs cannot be captured by a simple linear coefficient but rather can be expressed by several non-linear forms. There tends to be a fixed portion of indirect labor when increase in direct labor activity is expected to be short in duration; this fixed portion of the indirect work force usually remains the same without hiring additional staff. This is accomplished by upgrading certain positions. A higher graded indirect labor (for example, supervisors or production managers) should be able to handle an additional workload, thereby absorbing any additional work to accommodate the extra demand. The total production increases even though the total indirect labor cost remains the same. The change in the mix of the authorized positions can be one of the reasons that the cost function is not purely linear to direct labor hours. Another reason that contributes to the non-linear relationship is the variability of indirect labor which reflects management policy to control or not to control the amount of indirect labor. For example, a maintenance crew of a given size may be kept in readiness at all times, or the number of maintenance employees may be varied with current work load by various means such as hiring outside contractors. Given those facts, direct labor hours do not proportionally drive the labor-related overhead. The model can also apply to the service context. Airline carriers are used as an example to demonstrate the second scenario of repeated real roots where B^2-4AC = 0.). This example also shows that the changes in indirect labor costs are not proportional to the changes in the direct labor costs.

CONCLUDING COMMENTS

The purpose of this paper is to present a model that shows the relationship between indirect labor overhead and cost drivers such as direct labor hours under different conditions. This paper explores the nature of overhead, specifically examining the linearity of indirect labor costs.

According to the model, indirect labor costs relate to direct labor hours in different ways which may not be fully captured by using predetermined average rates to allocate the overhead. It is in a special condition that indirect labor overhead will demonstrate linear relationship to the labor hours. Under that condition, the traditional process or the ABC approach will provide appropriate overhead estimates. However, indirect labor variety and variability lead to indirect labor costs not purely proportional to direct labor hours. If indirect labor cost functions appear to be non-linear after preliminary analysis, caution should be exercised when determining how to allocate the overhead.

It is suggested that costs be further classified into variable and fixed costs. The variable portion can be allocated based on direct labor hours or other appropriate measures to the product. However, the fixed portion should not be allocated down to the product level. Instead, fixed portion can be included in the overall profitability analysis and considered as a share of total cost that should be covered by the revenue. The example shows two airlines' relative costs for demonstration and if labor costs for four or more consecutive years are available, an exact solution of second order differential equation (1) can be solved by using Cauchy-Euler and Runge-Kutta methods. Therefore, future costs and profits can be predicted more accurately.

This study is subject to a few limitations. First, three types of indirect labor costs were used to derive the model and second, the Cauchy-Euler homogeneous second-order equation may not fully capture the magnitude of nonlinear relationship if there were more indirect costs elements incorporated into the model.

Two possible lines of research could be conducted to further explore the nature of overhead. First, models can be established to closely investigate other types of overhead; second, the model in this paper attempts to generally describe the behavior of overhead for a short-run time frame. The model could be

further refined by incorporating other conditions or macro factors such as labor contracts and size of segment to extend the model that might assist in a company's long term planning and controlling.

APPENDIX

To derive from $\frac{d^2y}{dx^2}+\frac{b}{ax}\frac{dy}{dx}+\frac{c}{ax^2}=0$ to $y2=x^{m_1}\int\frac{e^{-\int(b/ax)dx}}{(x^{m_1})^2}dx$

$$y^{"}+P(x)y'+Q(x)y=0 \qquad \text{(a)}$$

where $P(x)=\frac{b}{ax}$ and $Q(x)=\frac{c}{ax^2}$

Assume that $y_1(x)$ is a solution of (a) and that $y_1(x)$ ≠0. If we define y = u(x) $y_1(x)$, it follows that

$y'=uy'_1+y_1u'$

$y^{"}=uy"_1+2y'_1u'+y_1u"$

$y^{"}+Py'+Qy=y_1u"+(2y'_1+Py_1)u'+[y"_1+Py'_1+Qy_1]u=0$

From equation (a), $[y"_1+Py'_1+Qy_1]u=0$, we have

$y_1u"+(2y'_1+Py_1)u'=0$ or

$y_1w'+\left(2y'_1+Py_1\right)w=0$

Where we have let $w=u'$, we obtain

$\frac{dw}{w}+2\frac{y'_1}{y_1}dx+Pdx=0$

$\ln|w|=2\ln|y_1|=-\int Pdx+c$

$\ln|wy_1{}^2|=-\int Pdx+c$

$wy_1{}^2=c_1e^{-\int pdx}$

$w=u'=c_1\frac{e^{-\int pdx}}{y_1{}^2}$

Integrating again gives $u=c_1\int\frac{e^{-\int p(x)dx}}{y_1{}^2(x)}dx+c_2$ and therefore

$y=u(x)y_1(x)=c_1y_1(x)\int\frac{e^{-\int p(x)dx}}{y_1{}^2(x)}dx+c_2y_1(x)$

By choosing $c_2 = 0$ and $c_1 = 1$, we find that a second solution of equation (1) is

$$y_2 = y_1(x) \int \frac{e^{-\int p dx}}{{y_1}^2(x)} dx \qquad \text{(b)}$$

Substitute P by b/ax, and knowing that $y_1 = x^{m_1}$, (b) becomes

$$y_2 = x^{m_1} \int \frac{e^{-\int (b/ax) dx}}{(x^{m1})^2} dx$$

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BIOGRAPHY

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FLEXIBLE WORKING ARRANGEMENT AND STRESS MANAGEMENT TRAINING IN MITIGATING AUDITOR'S BURNOUT: AN EXPERIMENTAL STUDY

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ABSTRACT

This study examines the effectiveness of two burnout mitigation strategies (flexible work arrangement and stress management training) on auditors' job outcomes. Burnout is characterized by emotional exhaustion, reduced personal accomplishment, and depersonalization. It has negative impacts on individual auditor's job outcomes. The study employs a 2x2-between-subject experimental design with the participants of 48 accounting students as novice auditors. The experimental treatments were flexible vs. standard work arrangement and training vs. no training of management stress. The results showed that flexible work arrangements and training of management stress effectively reduces negative effects of burnout on auditor outcomes. Auditors in the group with flexible work arrangements and training of management stress have the highest job satisfaction and performance, and the lowest turnover intention.

JEL: M42

KEYWORDS: Burnout, Flexible Work Arrangement, Training of Management Stress

INTRODUCTION

Auditors face job pressures brought on by the demands for precision and professional skepticism of their responsibility to produce a high quality audit report. Jones, Norman, and Wier (2010) argue several attributes related to auditors' career may lead to a difficult situation creating a stressful working environment. For example when auditors are in the busy season working for more than ten hours per day, in a limited time period for several months causes stress. During their busy time, auditors often work on simultaneous assignments with short deadlines. This condition gives rise to a responsibility conflict of job, family, and other personal activities (Fogarty, Singh, Rhoads and Moore, 2000; Sanders, Fulks and Knoblett, 1995). Burnout is a form of stress experienced by the auditors that has got attention from previous studies with analyses of some factors of its antecedents or consequences (Fogarty et al., 2000; Goolsby, 1992; Schiltz dan Syverud, 1999). Burnout is a psychological phenomenon characterized by three related symptoms, such as emotional exhaustion, reduced personal accomplishment, and depersonalization (Fogarty et al., 2000). Furthermore, several studies related to burnout in accounting field have been done, including, burnout symptoms occurred in auditors' profession (Rose, 1983 and Sanders, 1998), internal audit (Kusel and Deyoub, 1983), and management accounting (Figler, 1980).

The empirical evidence from previous research shows that burnout has effects on dysfunctional behavior of auditors that result in substantial inefficiency on either organization or individual, such as turnover intention, absenteeism, and lower productivity (Jackson and Maslach, 1982; Leiter and Maslach, 1988; and Shirom, 1989). Fogarty et al. (2000), Murtiasri and Ghozali (2006), and Jones at el. (2010) documented that burnout mediates a relationship between job stressor consisting of role conflict, role ambiguity, and role overload, and job outcomes consisting of job performance, job satisfaction, and turnover intention. The increase of pressure on antecedent factor (job stressor) will increase the burnout intensity and then will result in diminished job outcomes of auditors. Nevertheless, those studies have not considered the factors which may mitigate burnout for increasing auditors' outcomes.

Goolsby (1992) uses role stress theory to identify ways to mitigate burnout conditions in marketing organizations. Mitigating burnout through a burnout-coping strategy could be done by intrinsic support (controlling character or condition of an individual) and extrinsic support (creating organizational and social environment). Jones et al. (2010) argue that a healthy individual life is an intrinsic support that could be used as a mechanism to prevent burnout. However, that mechanism tends to originate from the individual side of an auditor and is out of the public accounting firm's control. Thus, not all auditors have this kind of intrinsic support. Greenhaus and Parasuraman (via Goolsby, 1992) and several experts in organizational change environment suggest that an organization might improve stress reaction by modifying its working environment (extrinsic factor). It could reduce stress with two mechanisms, including modifying its working environment and carrying out stress management training programs. Modifying the work environment is done by creating flexibility in the work environment by allowing individuals to adjust their skills within the organization's requirements (Goolsby, 1992).

For example, in 1993, Deloitte and Touche adopted a flexible program for its female employees to fulfill the ethical obligations to create an appropriate professional environment (Cohen and Single, 2001). Almer and Kaplan (2002) compare the response between two groups of auditors in which each are in a standard or flexible working environment. Those who are in a flexible working environment experience lower burnout, higher job satisfaction, and lower turnover intention than those in a standard working environment. Nevertheless, the strategy used by Deloitte and Touche (1993) as well as Almer and Kaplan (2002) have not used the strategy of stress management training as suggested by Greenhaus and Parasuraman in Goolsby (1992). This study develops Almer's and Kaplan's (2002) approach by adding stress management training program as a burnout mitigating variable. The objective of this research is to experimentally test the effectiveness of two burnout mitigating strategies, a flexible work arrangement and stress management training, to improve novice auditors' performance. Following Courdes dan Dougherty (1993) suggestion, this research uses an experimental method to provide insight to causes, consequences, and ways of mitigating burnout. Most previous were based on limited survey data. Auditors' outcomes are represented by three variables which are job satisfaction, turnover intention, and auditors' substantive test performance. We expect that flexible work arrangements and stress management training separately will mitigate negative burnout impacts on auditors' outcomes and both will result in the best auditors' outcomes. The study employs a 2x2 between-subject experimental design with 48 participants who are randomly assigned to four groups. Each group consists of 12 participants.

The experiment is conducted first by distributing substantive test assignments to all participants in order to create a burnout condition. Then, they are randomly assigned to four groups, each with the treatments of flexible work arrangement, stress management training, a combination of both, or a control group getting none of the treatments. The results of the experiment shows that flexible work arrangement and stress management training separately mitigate negative burnout impacts on auditors' outcomes and simultaneously results in the best auditors' outcomes. This result is expected to enrich behavioral accounting literature, especially in the burnout management field. The results of this study may provide avenues for accounting firms to manage their auditors so that they achieve a high quality audit performance. The remainder of this paper is organized as follows. In the next section hypotheses development is presented. The third section provides the experimental research method used in this study, and the fourth explains the results and implications of the study. The conclusion and limitations of the study are presented in the last section.

LITERATURE REVIEW

Burnout

Burnout has attracted the attention of researchers, practitioners and the general public during the past 35 years (Schaufeli, Leiter dan Maslach, 2008). Burnout, first introduced by Freudenberger (1974), is a

representation of psychological stress syndrome as a negative response resulting from work pressure (Cordes dan Dougherty, 1993). Burnout is a syndrome of emotional exhaustion, reduced personal accomplishment, and depersonalization that can occur among individuals who work with people in some capacity (Maslach and Jackson, 1981). Emotional exhaustion is revealed by the deepest energy and feeling resulting from excessive psycho-emotional demands, which are characterized by the absenteeism of feeling and care, confidence, interest, and courage (Ray and Miller, 1994). Reduced personal accomplishment is an attribute of self-actualization, absenteeism, low work motivation, and lower self-confidence related to each individual's achievement (outcomes) (Cordes dan Dougherty, 1993). Schaufeli et al. (2008) stated that late 1980s, researchers and practitioners began to recognize that burnout occurred outside the human services, for instance among managers, entrepreneurs, and white-and blue collar workers. Burnout is caused by conditions referred to as role stressors, despite its connection to stress, burnout is not a stressor *per se* (Fogarty et al.2000).

Coping Strategies

Coping is defined as the process of managing external and/or internal demands that tax or exceed the resources of the person (Lazarus, 1981). There are two key features to this definition: it emphasizes process, and it describes coping in terms of relationship between the person and the environment (Folkman, 1982). Coping that is directed at managing or altering the problem is called *problem-focused coping* and coping that is directed at managing or reducing emotional distress is called emotion-focused coping (Folkman and Lazarus, 1984.). Folkman (1982) stated that problem and emotion-focused coping includes both cognitive and behavioral strategies. Problem-focused coping, includes strategies directed at analyzing the situation and strategies involving action. Emotion-focused coping includes cognitive strategies such as looking on the bright side of things as behavioral strategies.

Flexible work arrangements have been well-known as an employee benefit since the early 1970s (Sladek, 1995; Sullivan and Lussier, 1995). Flexible work arrangements, for example, is working with less working hours or working with the same working hours but with greater flexibility (Almer and Kaplan, 2002). By ignoring specific a format, a flexible work arrangement changes the professional working environment. Flexibility gives a chance to professionals since it "…is no longer working during the same hours and/or as many hours as in the norm in their office" (Hooks and Higgs, 2000). From an accounting firm's point of view, a flexible work arrangement is said to be successful if participating employees feel more comfortable and are willing to work at that accounting firm (Almer and Kaplan, 2002).

Stress management training is a part of mentoring from mentor to mentee of an organization. The mentoring relationship is present to model positive coping strategies and through social support stress may decrease (Kram, 1983; Kram & Hall, 1989). Psychological empowerment and job satisfaction will increased if positive coping strategies give the mentee a feeling of increased competence (Luna & Cullen, 1995) in Chung (2011). Job satisfaction is an individual's affective response in the work place (Brief and Wiess, 2002; Bamber and Iyer, 2002). Locke defines job satisfaction as a pleasant or emotionally positive condition, resulting from someone's judgment towards his/her own job or working experience (Saari and Judge, 2004, Vandenberg and Lance, 1992). Job satisfaction refers to common characteristic of an individual towards his/her job. Locke (1976) via Judge and Locke (1993) distinguishes job satisfaction according to moral perspective and job involvement, which categorized moral and job satisfaction as a positive emotion felt by an employee. Someone with high job satisfaction shows a positive attitude towards his/her job, and in contrast, someone who is not satisfied with his/her own-job shows a negative attitude towards his/her job (Robbins, 2001). However, Mobley *et al.,* (1979) argue that an individual having high job satisfaction tends to survive in his/her working environment, reversely, an individual having low job satisfaction tends to change his/her working position.

Turnover intention is a direct cause of employees' turnover (Lee dan Mowday, 1987). Turnover intention refers to employees' willingness to look for an alternative job which has not been realized in action (Pasewark and Strawser, 1996). Turnover is defined as a voluntarily self withdrawal or involuntarily self withdrawal from an organization (Robbins, 2001). Voluntary turnover is a decision to leave an organization because of two factors, which are how interesting a current work is, as well as the availability of other job alternatives. On the contrary, involuntarily turnover or firing reflects an employer's decision to end up working relationship and it tends to be uncontrollable for employees experiencing it. Voluntarily turnover is a center of attention for researchers (Lee *et.al*, 1994).

According to Campion (1991), voluntarily turnover can be functional as well as disfunctional. It is functional if an employee leaving the organization is less or not competent at all (deserves to leave), so that it gives a chance for everyone to have motivation and better ability. Disfunctional turnover is when a leaving employee is an unexpected leaving employee since the withdrawal itself might bother and reduce the effectiveness of an organization (Campion, 1991), diminish performance and even decrease the ability to maintain organizational survival (Cattani, *et.al*., 2002).

In the role stress model, performance is a consequence resulting from role pressure and job satisfaction and turnover intention. Performance, based on Kalbers and Fogarty (1996), is a measurement of efficiency and effectiveness of job achievement defined as evaluation towards a job done through direct supervisors, colleagues, one's own, and direct subordinates. Low performance related to role pressure is also discussed by Greene and Organ (1973) in Rebele and Michaels (1990). Job performance depends on personal's interaction and nurture of mutual relationships towards each other, and possibly influenced by role conflict and ambiguity of some jobs which have to be done (Jackson and Schuler, 1985).

Flexible Work Arrangement as Burnout Mitigating Strategy

Perceived usability construct is an indicator of the availability of flexible working policy from an organization. A flexible work practice from perceived usability refers to the freedom of doing flexible work which is available through a formal policy of an organization (Eaton, 2003). When the job stressor is increasing, either as role ambiguity, role conflict, or role overload, it will affect job outcomes. However, the availability of a flexible work arrangement decreases negative impacts of burnout to job outcomes. Lambert, Marler and Gueutal (2008) define a flexible work arrangement as a benefactor from employer to employees based on their levels of control towards time and place outside their standard working days. Lambert et al. (2008) state that work arrangements consist of time flexibility and emphasis on weekly working schedules. As for an example, an employee may choose to work overtime during the day, yet, be compensated with less working days each week.

Through the flexibility of work arrangements, auditors would be more flexible on finishing their jobs. In a burnout condition, the psychological welfare they perceive will increase and it will have positive impacts on job satisfaction and performance. Based on Goolsby (1992), boundary role stimuli (BRS) or limited role stimuli, represents a tension through two cognitive processes. These processes are recognition and reaction in a role tension model. That model shows that a relationship between recognition and reaction will be influenced by intrinsic and extrinsic supports. The extrinsic support can be an organization strategy, whereas the intrinsic support originated from individual's own. The organization strategy suggested by Goolsby is work flexibility and an intervention program. Mattis (1990) and Scandura and Lankau (1997) argue that employees using a flexible work arrangement are able to increase their job satisfaction and commitment to their organizations. In the accounting field, Hooks et al. (1997) state that turnover intention among professionals should be lower when they are under flexible working arrangement. Through the availability of flexible work arrangements, when an individual experiencing burnout because of role pressure and employee experiences higher job satisfaction, lower turnover intention, and higher job performance. Researchers expect that accounting firms can increase auditors'

performance by using an extrinsic support policy to mitigate burnout conditions experienced by auditors. Specifically, the hypotheses relate to impacts of flexible work arrangements as an extrinsic support on job satisfaction, turnover intention, and auditors' outcomes as follows:

H1: Flexible work arrangements mitigate the negative impacts of burnout condition on auditors' job satisfaction.

H2: Flexible work arrangements mitigate the negative impacts of burnout condition on auditors' turnover intention.

H3: Flexible work arrangements mitigate the negative impacts of burnout condition on auditors' performance.

Stress Management Training as Burnout Mitigating Strategy

According to Goolsby (1992), an organization can reduce stress reaction by increasing the individual's ability to overcome and prevent stress through an intervention program, such as stress management training program. Empirically, this program has mitigated participants' stress (Murphy, 1987). This stress management training is a coping technique defined as a cognitive and behavioral effort to manage external demands and/or internal demands which valued as exceeding someone's resources (Lazarus and Folkman, 1984). Two strategies, emotion focused and problem focused strategies, used for explaining how coping may mitigate role pressure reaction, are expressed as moderating variables (Goolsby, 1992).

Emotion focused response is mitigates or manages emotional distress which is caused by a full pressure situation. A problem focused strategy is used as a control, changing and managing a situation that causes stress (Goolsby, 1992). The problem focused strategy involves preventing responses when an individual accepts that the effort used for modifying the environment will be constructive (Lazarus dan Folkman, 1994). Moreover, Goolsby (1992) identifies that an organization can mitigate stress reaction by improving individual problem solving. The ability to overcome stress is developed through intervention programs. The organization may provide assistance to staff, finance, and training for social support groups, chancellors, and managers (Greenhaus and Parasuraman, 1987 in Goolsby, 1992). Murphy (1987) suggests that stress management training mitigates psychological stress measurement in most participants.

The application of stress management training can mitigate burnout felt by auditors, especially when they are doing audit assignments. The reduced burnout causes increased job satisfaction and increased auditors' outcomes (Fogarty et al.2000, Jones et al.2000, Almer and Kaplan, 2002), as well as diminished turnover intention (Fogarty et al.2000, Jones et al.2000, Almer and Kaplan, 2002, Cohen and Single, 2001, Firth and Britton 1989). Therefore, researchers expect that accounting firms can improve their auditors' performance by employing an intervention program as an extrinsic support policy in order to reduce burnout conditions encompassing the auditors. Specifically, the hypotheses relates to the impacts of stress management training as an extrinsic support on job satisfaction, turnover intention, and auditors' performance as follows.

H4: Stress management training mitigates the negative impacts of burnout condition on auditors' job satisfaction.

H5: Stress management training mitigates the negative impacts of burnout condition on auditors' turnover intention.

H6: Stress management training mitigates the negative impacts of burnout condition on auditors'performance.

In general, researchers expect the combination of accounting firms' two extrinsic policies, flexible work arrangement and stress management burnout altogether will effectively mitigate the negative impacts of burnout conditions on auditors' job satisfaction, turnover intention, and performance. Lazarus and Folkman (1984) explained that the combination of problem focused coping effort and emotion-focused coping effort is highly dependent on appraisals performed by individuals on the situation at hand. In reality people use both problem-focused coping and emotion-focused coping in stressful situations (Folkman and Lazarus, 1980; Gaudreau and Blondin, 2004). A combination of distraction-oriented coping with task-oriented coping (i.e problem focused coping) leads to more positive outcomes (Gaudreau and Blondin, 2004). Hence, we formulate the following hypotheses to be examined in this study.

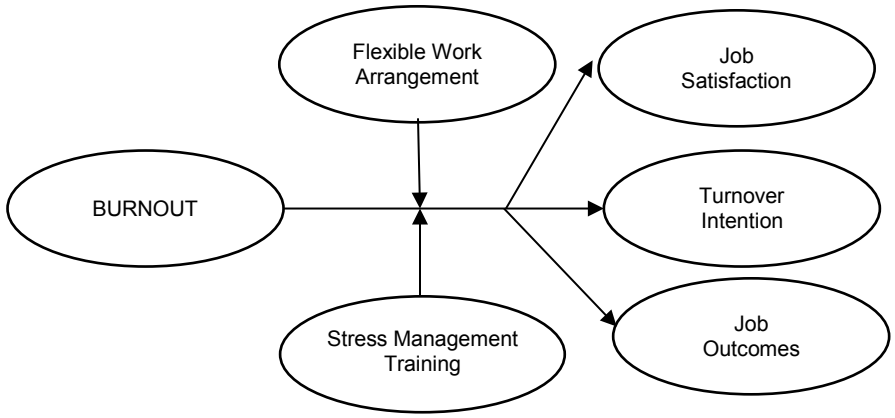
H7: In a burnout condition, auditors who receive flexible work arrangements and stress management training will achieve the highest job satisfaction.

H8: In a burnout condition, auditors who receive flexible work arrangements and stress management training will achieve the lowest turnover intention.

H9: In a burnout condition, auditors who receive flexible work arrangements and stress management training will achieve the best performance.

Figure 1 below shows research model which describes the relationship among variables to be investigated.

Figure 1: Research Methodology



This figure shows the research methodology used in the study.

DATA AND METHODOLOGY

This study employs a 2x2 between-subject experimental design. The experiment is conducted in a class with accounting students who have taken Auditing and Auditing Practice courses, and been treated as novice auditors being the research subjects. Experiments were administrated in the second academic semester 2012. In the audit assignment, novice auditors will get tasks which are full of complex technical jobs so they experience a burnout condition. Besides, the result of novice auditors' jobs will also give a significant contribution to senior auditors' or partners' judgment in giving audit opinion. In the beginning of the experiment, all participants are put under burnout conditions first then randomly assigned to four groups. Each group gets a treatment of either flexible work arrangement, stress management training, a combination of flexible work arrangement and stress management training, or control group which gets neither treatment. The experimental design matrix is depicted in Table1. Table 1 shows a four group

experiment, consist of Group 1: flexible work arrangement-stress management training; Group 2: non flexible work arrangement- stress management training; Group 3: flexible work arrangement without stress management training and, Group 4 non flexible work arrangement-without stress management training.

Table 1: Experimental Design Matrix

	Flexible Work Arrangement	**Non Flexible Work Arrangement**
Stress Management Training	Group 1	Group 2
Without Stress Management Training	Group 3	Group 4

This table shows the experimental design matrix.

Research Variables and Operational Definitions of Variables

Independent variables or treatments are burnout and burnout mitigating strategies. These strategies are flexible work arrangements and stress management training. The burnout variable employs one dimension that is emotional exhaustion represented by questions from the 1981*Maslach Burnout Inventory (MBI)* instrument. To create a burnout condition, participants are asked to do audit practice tasks from a practical case in a laboratorium which has been modified by researchers, such as the completion of audit tasks, from completing an audit working sheet to making adjusting entries in 120 minutes. Flexible work arrangement treatment is self developed by researchers, referring to Cohen's article (2001) and *workplace flexibility 2010,* as well as McNall, Masuda, and Nicklin (2010). Stress management training is facilitated by a professional motivator who gives a strategy to overcome stress in order to be able to keep motivated while finishing the tasks. Auditors' job outcomes' variable is the dependent variable. It is measured by three dimensions: job satisfaction, turnover intention, and job performance. The job satisfaction instrument in this study is adopted from Andre's, Bissel's and Perrar's work (1999) consisting of ten questions with answers in a seven score Likert scale. The performance variable is measured by auditors' ability to answer correctly which audit tasks were completed and several basic questions about accounting treatment towards problems that arise in the audit assignments. Last, turnover intention is measured by using three questions from Jones et al. (2010).

Experimental Procedure

The experimental procedure and assignment were developed based on substantive test materials in an audit practice course. This audit practice task is developed from a cases in an audit practice course, found in PT. We use Harapan Utama's financial statements with adjusted numbers to make it as realistic as possible. After all materials and procedures have been distributed, researchers carry out focus group discussions (FGD) to discuss the materials and procedures with public accountant practitioners from a middle scale accounting firm as well as accounting and auditing lecturers. Then, a pilot test is conducted to test the validity of tasks and experimental protocols by involving participants, who are accounting tutors, in one of private universities in Indonesia, where the experiment is conducted.

The first task for participants, as auditors in an accounting firm, is to identify audit evidence in substantive test in order to make adjusting entries suggested by auditors. The aim is to create auditors' burnout conditions just before they get an experimental treatment and further audit tasks. In this substantive test, participants are required to complete an audit working sheet and to cross index on the working sheet by using colorful tints according to the types of notes (black for adjusting entries, blue for explanation on each entry, and red for worksheet index). At the end of the first task, all of the participants have to complete and submit the summary of adjusting entries on the working sheet provided. The allocated time to finish this experiment task is two hours. After the task is completed, participants are asked to complete a manipulation check questionnaire to measure burnout. Manipulation check uses the

emotional exhaustion dimension of burnout instrument from Maslach and Folkman (1981), that consists of four questions with measurement scale of 1 (fully disagree) up to measurement scale of 7 (fully agree).

Furthermore, participants are randomly assigned to four groups as follows, group 1 with "stress management training" and "flexible work arrangement" experimental treatments; group 2 with "stress management training" and "non-flexible work arrangement" experimental treatments; group 3 with "without stress management training" and "flexible work arrangement" experimental treatments; and group 4 does not get any experimental treatment. The stress management training" experimental treatment is conducted in a class for 1.5 hours by a professional motivator. "Flexible work arrangement" experimental treatment is manipulated by letting participants choose their own places and facilities (can be in a class or in a park around the class) to do their tasks and announce that the result of their tasks are to be submitted after the experiment ends. Whilst, the "non-flexible work arrangement" experimental treatment is manipulated by asking participants to do their tasks on their predetermined seats in a class and they have to get those tasks done in two hours.

Each participant's task in each group is completing a working trial balance working sheet as a base for making audited financial statements (income statement, equity statement, and audited balance sheet). After finishing the last task of this audit assignment, each participant in each group is required to fill out a questionnaire of job satisfaction, turnover intention, outcomes measurement, demography data, and manipulation check according to the experimental treatment they are assigned. In the last part, participants from all groups are gathered together in a room for debriefing and door prize drawing of four 4GB-USB of which each is for one winner from each treatment groupThe participants of this experiment are 48 undergraduate accounting students (12 students in each group) from one of the largest private universities in Indonesia who have taken auditing and audit practice courses. This university is chosen since not only it has a big accounting major, but also is a private university which cooperates with three, big four accounting firms (PriceWaterhouse Coopers, KPMG, and Delloitte). This condition is expected to be able to delineate the readiness of accounting students to enter professional careers as novice professional auditors. Participants' involvement is voluntary by signing up to the administration office at university's accounting department after researchers announcing this experimental study plan, a month before it is finally carried out. In order to attract participants, researchers give information in the announcement that this experiment task is an interesting audit assignment for auditor wannabes and each participant is promised a monetary incentive of which the amount depends on their own work achievements. Furthermore, all participants are promised to be given participatory certificates from the university. Participants' incentive is computed based on two components, the first is a fixed incentive of IDR10,000 of which participants will get eventually by participating in this experiment.

The second is a variable incentive, amounted IDR1,500 for every correct answer they get. Thus, the scheme of total insentive per participant = IDR10,000+ IDR1,500(X), given X is a total of correct answers. In this experiment, the lowest total incentive received by a participant is IDR25,000.00 and the highest total incentive is IDR35,000.00. Generally, this total insentive has been very sufficient and slightly above the average minimum wage allowed per day. Aside from it, all participants also get a lunch, snack, and beverage to participate in this experiment which requires approximately six hours for following all of the processes. Table 2 provides a description of demographical data of fourty eight participants in this experiment. Table 2 presents the demographics of participants, consisting of 33 females (68.8%) and 15 males (15%), within the range of 20-24. Around 25 participants (52.1%) are third year students and 22 participants (45.8%) are fourth year students. According to their academic achievements, 20 participants (41.7%) have GPAs of 2.5-3.0 and 23 participants (47.9%) have GPAs of more than 3.5, and the rest have GPAs of 3.1-3.5.

Table 2: Participants' Demography

Explanation	Total (People)	Percentage (%)
Gender		
Female	33	68.8
Male	15	31.2
Age		
20 years old	14	29.2
21 years old	21	43.8
22 years old	12	25.0
23 years old	1	2.1
Year		
Third	25	52.1
Fourth	22	45.8
Fifth	1	2.1
GPA		
2.5-3.00	20	41.7
3.1 -3.25	3	6.2
3.26-3.50	2	4.2
>3.51	23	47.9

Source: Processed Primary Data (2011)

RESULTS

Participants in this study take a role as novice auditors who have been working for several months in an accounting firm. In the first phase, forty eight (48) participants are given a task to identify audit evidence and make audit working sheets in order to make auditors' suggested adjusting entries. After working on the task for two hours, participants are asked to fill out a questionnaire of manipulation to check for burnout conditions they may feel. The burnout manipulation check has a theoretical average of 16, implying that, if participants experience burnout conditions, the scores will be more than 16. Table 3 shows that all participants experience burnout conditions with the scores ranged from 17-28, with an average of 22.5. Thus all participants fulfill the requirement of getting further treatments in one of four treatment groups allocated randomly. The same happened to the results of the manipulation check of treatments in each group which also shows that manipulation treatments are effective. The average treatment scores of stress management training, flexible work arrangement, and non-flexible work arrangement are the same, at 11 and ranging from 8 to 14, with the theoretical average of 8.

Table 3: The Total Result of Manipulation Check for All Treatments

Variable	Theoretical		Facts		
	Range	Mean	Range	Mean	Explanation
Burnout Condition	4-28	16	17-28	22.5	100% participants are in a burnout condition
Stress Management Training	2-14	8	8-14	11	100% participants feel that sress management training has been of a help to finish audit assignments
Flexible Work Arrangement	2-14	8	8-14	11	100% partcipants experiencing flexible work arrangement
Non Flexible Work Arrangement	2-14	8	8-14	11	100% participants experiencing non flexible work arrangemet

Source: Processed Primary Data (2011)

To test the effectiveness of the randomization procedure in eliminating individual's characteristic differences among groups, a differential test is conducted among four treatment groups. The result of a One-Way Anova from demographical characteristics of gender, age, semester, and GPA is presented in Table 4. Table 4 shows there is no significant difference among groups in the characteristics of gender (flexible vs. non-flexible work arrangement = 0.762; stress management training vs. non training = 0.361); age (flexible vs. non flexible work arrangement=0.722; stress management training vs. non training= 0.722). There are no significant difference in the characteristics of semester (flexible vs. non-flexible work arrangement= 0.696; stress management training vs. non training group = 0.148). The result

of difference of GPA between subject show that there are no difference between flexible work arrangement vs. non flexible work arrangement (0.554) and between stress management training vs. non training (0.361)

Table 4: The Differential Test Result of Randomization Effect

Characteristic		Flexible and Non Flexible Work Arrangement Groups			Stress Management Training and Non Training Groups		
		Quadratic Mean	F	Sig.	Quadratic Mean	F	Sig.
Gender	Inter Group	0.021	0.093	0.762	0.188	0.852	0.361
	Intra Group	0.224			0.220		
Age	Inter Group	0.083	0.128	0.722	0.083	0.128	0.722
	Intra Group	0.650			0.650		
Semester	Inter Group	0.188	0.155	0.696	2.521	2.169	0.148
	Intra Group	1.213			1.162		
GPA	Inter Group	0.750	0.356	0.554	2.083	1.003	0.361
	Intra Group	2.107			2.078		

Source: Processed Primary Data (2011)

The data quality test result covers reliability and validity tests are provided in Table 5. A construct is reliable if it gives a cronbach alpha value of >0.60 and valid when it has a significant correlation coefficient between questions and total score. Table 5 shows that all variables are reliable and valid with cronbach alpha of 0.956 for job satisfaction and 0.932 for turnover intention. The correlation ranges from 0.419**- 0.906**, for job satisfaction and 0.776* - 0.957** for turnover intention.

Table 5: Reliability and Validity Tests

No	Variable	Reliability Test		Validity Test		
		Cronbach Alpha Value	Explanation	Correlation Range	Sign	Explanation
1.	Job Satisfaction	0.956	Reliable	0.419**- 0.906**	0.01**	Valid
2.	Turnover Intention	0.932	Reliable	0.776**- 0.957**	0.001***	Valid

** *significance at 5%, *** significant at 1%, source: Output SPSS, 2011*

Hypotheses Testing

The effectiveness test of burnout mitigating strategies on job outcomes (job satisfaction, turnover intention, and performance) is detected by comparing the response between flexible work arrangement and non-flexible work arrangement groups. If these mitigating strategies are effective, job satisfaction and job outcomes' levels in flexible work arrangement group will be higher than those in non-flexible work arrangements. Meanwhile, turnover intention level in a flexible work arrangement group will be lower than in a non-flexible work arrangement. Table 6 shows the results of hypotheses test indicating significant support the first, second, and third hypotheses.

The average values of job satisfaction and job outcomes in flexible work arrangement group (41.33 and 8.08) is higher than the average values of job satisfaction and job outcomes in non flexible work arrangement group (30.96 and 7.00) each with significance levels of 1% (p-value: 0.005) and 5% (p-value: 0.042), respectively. The response average value of turnover intention in flexible work arrangement (11.17) is significantly lower than the average value of turnover intention in non-flexible work arrangement (13.79) at a significance level of 5% (p-value: 0.04)

Table 6: The Hypotheses Testing Result of Flexible Work Arrangement Strategy ($H_{1,2,3}$)

Hypothesis		Mean	Std Dev	Levine's Test for Equality Variance F(sign)	t-test (Sign)
1	Job satisfaction of flexible work arrangement group	41.33	10.78	2.831	2.932
	Job satisfaction of non flexible work arrangement group	30.96	13.58	(0.099)	(0.005)***
2	Turnover intention of flexible work arrangement group	11.17	4.02	0.359	-2.109
	Turnover intention of non flexible work arrangement group	13.79	4.59	(0.552)	(0.040)**
3	Job performance of flexible work arrangement group	8.08	1.42	1.886	2.093
	Job performance of non flexible work arrangement group	7.00	2.16	(0.176)	(0.042)**

****: significance at 1%, **: significance at 5%, Source: Output SPSS, 2011*

Similar to the first three hypotheses, Table 7 shows results that significantly supports the fourth, fifth, and sixth hypotheses. The average values of job satisfaction and job outcomes in stress management training group (40.75 and 8.08) are higher than the average values of job satisfaction and job outcomes in non-stress management training group (31.54 and 7.00), each with a significance level of 5% (p-value: 0,014 dan 0,042) respectively. Besides, the average response value of turnover intention in stress management training group (10.17) is significantly lower than the average response value of turnover intention in non-stress management training group (14.79) at a significance level of 1% (p-value: 0.00).

Table 7: The Hypotheses Testing of Stress Management Training ($H_{4,5,6}$)

Hypothesis		Mean	Std dev	Levine's Test for Equality Variance F(sign)	t-test (Sign)
4	Job satisfaction of stress management training group	40.75	13.18	0.027	2.552
	Job satisfaction of non stress management training group	31.54	11.79	(0.870)	(0.014)**
5	Turnover intention of stress management training group	10.17	4.15	0.148	-4.163
	Turnover intention of non stress management training group	14.79	3.53	(0.702)	(0.000)***
6	Job performance of stress management training group	8.08	1.44	1.419	2.093
	Job performance of non stress management training group	7.00	2.09	(0.240)	(0.042)**

***: significance at 5% , ***: significance at 1%, Source: Output SPSS, 2011*

To examine the effectiveness of both burnout mitigating strategies–flexible work arrangement and stress management training–on improving auditors' outcomes, the experimental outcomes in Group 1 get the highest job satisfaction and performance, also the lowest auditors' turnover intention compared to other three groups. Tables 8, 9 and10 below provide the result of hypotheses testing in comparing outcomes among group 1 and other three groups. Table 8 shows that burnout can be mitigated effectively by employing two burnout mitigating strategies with the highest job satisfaction (mean = 44.25; F = 6.23; and p-value = 0.001).

Table 8: The Hypotheses Testing of Two Combined Strategies for Job Satisfaction

Job Satisfaction	Mean	Std dev	F(Sign)
Group 1: Flexible Work Arrangement and Stress Management Training	44.25	10.48	6.23 (0.001)***
Group 2: Non Flexible Work Arrangement and Stress Management Training	37.25	15.05	
Group 3: Flexible Work Arrangement and Non Stress Management Training	38.41	10.71	
Group 4: Non Flexible Work Arrangement and Non Stress Management Training	24.67	8.52	

****: significance at 1%*

Table 9 shows the mean of turnover intention in Group 1 (8.83), Group 2 (11.5), Group 3 (13.5) and Group 4 (16.08). Burnout can be mitigated effectively by employing two burnout mitigating strategies (Group 1: flexible work arrangement and stress management training) with the lowest turnover intention (mean = 8.83; F = 8.32; and p-value = 0.00) that were compared with three other groups.

Table 9: The Hypotheses Testing of Two Combined Strategies for Turnover Intention

Turnover Intention (H8)	Mean	Std. Dev.	F(Sign)
Group 1: Flexible Work Arrangement and Stress Management Training	*8.83*	2.79	8.316 (0.000)***
Group 2: Non Flexible Work Arrangement and Stress Management Training	11.5	4.92	
Group 3: Flexible Work Arrangement and Non Stress Management Training	13.5	3.75	
Group 4: Non Flexible Work Arrangement and Non Stress Management Training	16.08	2.87	

****: significance at 1%*

Table 10 shows the mean of job performance in Group 1(8.33), Group 2 (7.33), Group 3 (7.33) and Group 4 (6.67). Burnout can be mitigated effectively by employing two burnout mitigating strategies and the highest performance (mean = 8.83; F = 3.37; and p-value = 0.027) to Group 1 which has a flexible work arrangement and stress management training treatments.

Table 10: The Hypotheses Testing of Two Combined Strategies for Job Performance

Job Performance (H9)	Mean	Std. Dev.	F(Sign)
Group 1: Flexible Work Arrangement and Stress Management Training	*8.33*	*0.71*	3.370 (0.027)**
Group 2: Non Flexible Work Arrangement and Stress Management Training	7.33	1.61	
Group 3: Flexible Work Arrangement and Non Stress Management Training	7.33	1.56	
Group 4: Non Flexible Work Arrangement and Non Stress Management Training	6.67	2.53	

**: significance at 5%

The result of this study generally supports the argument that work arrangement and stress management training can be used to mitigate burnout, thus, improving auditors' job satisfaction and performance as well as reducing auditors' turnover intention. In this study, burnout that takes form of emotional exhaustion occurs when novice auditors experience assignments which require precision and obedience to procedures done in a certain period of time. The first assignment is used as a base for the next one, so that the mistakes in the first phase will result in a failure of an assignment.

The responsibility for finishing the job according to procedures in a form of working sheet completion and intolerance of mistakes places novice auditors in an uncomfortable situation. Then, a burnout condition taking form of emotional exhaustion is able to be created. In a burnout condition, novice auditors having stress management training feel motivated to be able to finish the next assignments although they feel burnout and failed in the first task. This condition fits Goolsby's model (1989), stating that stress management training can mitigate burnout in professional employees. Another burnout mitigating strategy used in this research is flexible work arrangement. The result is consistent with several previous studies [Almer and Kaplan (2002), Mattis (1990), Scandura and Lankau (1997), Hooks et al. (1997)] which also argue that flexible work arrangement can improve job satisfaction and job performance as well as reducing auditors' turnover intention. A novice auditors' performance raises when burnout is mitigated by flexible work arrangements. Therefore, in order to improve auditors' outcomes,

an accounting firm must pay attention to the mechanism of professional auditors' management through regular management training and using of flexible work arrangement.

CONCLUDING COMMENTS

This study develops Almer's and Kaplan's research (2002) by adding a stress management training variable as a burnout mitigating variable. The objective of this research is to experimentally examine the effectiveness of two burnout mitigating strategies, consisting of flexible work arrangement and stress management training on improving novice auditors' performance. In addition, this study is carried out to fill in the gap from previous studies' results (Fogarty et al., 2000; Murtiasri and Ghozali, 2006; and Jones et al., 2010) which succeed in proving that burnout has impacts on job outcomes. The impacts are lower job satisfaction, higher turnover intention, and diminished performance. However these studies did not considered the factors that are able to mitigate burnout and are based on surveys with low response levels.

The research employs an experimental method, as suggested by Courdes' and Dougherty's (1993), in order to give an insight into causes, consequences, and ways of mitigating burnout to increase research validity. Auditors' outcomes are represented by three variables: job satisfaction, turnover intention, and auditors' substantive test performance. This study supports the expectation that flexible working environment and stress management training, separately, may mitigate the negative burnout impacts on auditors' outcomes and altogether may result in the best auditors' outcomes.

Two limitations exist in the study. First, not all of the experimental case materials cover audit working sheets. Further research is expected to improve the experiment materials by giving assignments that are more consistent with the practice, including presentation of audit evidence samples, use of audit procedures, as well as making more real-world adjusting entries in audit assignments. Finally, participants in the experiment work individually since so that it ignores the audit assignments which usually done as a team. Further research may develop burnout mitigation by giving audit assignments to a team, but the measurement of burnout response may be done individually. This will be interesting to examine because it is more consistent with general audit practice.

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