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LETTER FROM THE EDITOR

Welcome to the *Academy of Accounting and Financial Studies Journal.* The editorial content of this journal is under the control of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The mission of the *AAFSJ* is to publish theoretical and empirical research which can advance the literatures of accountancy and finance.

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

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

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

Mahmut Yardimcioglu
Kahramanmaras Sutcu Imam University

A DEMOGRAPHIC STUDY OF POLISH ATTITUDES TOWARD TAX EVASION

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ABSTRACT

A number of studies have examined the relationship between tax collection and various demographic variables. However, until recently most of those studies have involved a United States sample population. The Internal Revenue Service provides demographic data for researchers on a regular basis. The present study goes beyond those studies in several important ways. For one, it uses data on Poland taken from the World Values database. Not much work has been done on the post-communist Polish tax or public finance system. Thus, the present study expands on the very limited research done on Polish public finance.

The present study expands on existing literature in at least two other ways as well. For one, it examines how various demographics interact with attitudes toward tax evasion. Secondly, we examine several demographic variables that were not examined in prior studies.

One of the questions in the World Values database asked whether it would be justifiable to cheat on taxes if it were possible to do so. Respondents were asked to choose a number from 1 to 10 to indicate the extent of their support for tax evasion. This study examines those responses, both overall and through the prism of more than 20 demographic variables. A trend analysis is also done to determine whether Polish attitudes regarding tax evasion have changed in recent years. A comparison is made with other ethical issues to determine the relative seriousness of tax evasion.

The study found that attitudes toward the justifiability of tax evasion often do vary by demographic variable. Tax evasion was found to be a less serious offense than wife beating, accepting a bribe or claiming government benefits to which you are not entitled and more serious than avoiding a fare on public transport or prostitution. Tax evasion has become less justifiable since the dismantling of the Berlin Wall but the trend has not been linear.

Although the present study focuses on Poland, the methodology used in the present study could serve as a template for research on other countries or regions.

INTRODUCTION

Many studies have been conducted in various areas of taxation and public finance. Practitioner journals focus on technical aspects of the tax code. Legal journals examine the tax code and various court cases. Economics and public finance journals emphasize the

microeconomic and macroeconomic aspect of various tax systems. A few studies have examined ethical aspects of tax systems, most notably the issue of tax fairness or tax evasion.

The present study examines Polish attitudes on the ethics of tax evasion. Most prior studies on tax evasion have taken a technical approach. Scholars have examined some factors that enhance or deter tax evasion. Some studies have even speculated on how to determine optimal tax evasion by weighing the relative costs and benefits of attempting to deter tax evasion.

A number of studies have examined various demographic variables in connection with tax collection and tax evasion. Most of these studies, until recently at least, have involved a USA sample population, mostly because the U.S. Internal Revenue Service publishes data for scholarly research on a regular basis. Non-U.S. studies that examine demographic variables are far less common, partly because of a lack of data.

Social scientists have gathered the *Human Beliefs and Values* survey data in more than 80 countries. The surveys asked hundreds of questions on a wide variety of topics. One question involved attitudes toward tax evasion. The present study uses the data gathered from the Polish sample in the most recent survey.

The vast majority of prior tax evasion studies have not examined the issue of when, or whether tax evasion is ethical. The underlying assumption may be that tax evasion is always unethical, or perhaps the scholars conducting the study may not recognize ethical aspects of tax evasion as a topic they wish to examine or discuss, especially if their study involves some technical issues that apparently have little or nothing to do with ethics. That may account for the relative lack of ethical discussion for tax evasion studies. However, a body of literature exists on the ethics of tax evasion. Most of it has appeared in the philosophical literature, which may be one reason why studies that have appeared in accounting, tax, economics or public finance journals have not addressed the ethical issues that are inherent in tax evasion. The present study attempts to partially correct that oversight in the literature review section.

Prior studies, both in the United States and elsewhere, either have not examined demographic variables in connection with tax collections or tax evasion, or have limited themselves to a few demographic variables, such as gender, age and income levels. The present study goes beyond those three variables. It includes more than 20 demographic variables, several of which have not been examined in prior studies.

The present study also compares attitudes toward tax evasion in Poland over time to see whether there is a trend either toward or away from justifying tax evasion. The relative seriousness of tax evasion is also determined by comparing attitudes on tax evasion to attitudes on some other ethical issues that were gathered in the World Values surveys.

REVIEW OF THE LITERATURE

Tax evasion has been in existence ever since rulers started to extract taxes from their populace (Adams, 1982, 1993; Webber & Wildavsky, 1986). At times, the people have risen up in

protest or have revolted against their government when the tax burden became excessive or when the tax system was perceived as being unfair (Beito, 1989; Laffer & Seymour, 1979; Rabushka & Ryan, 1982).

Authors have written about the abusive techniques of the Internal Revenue Service (Burnham, 1989; Hansen, 1984). Others have written about how to protect yourself from the IRS (Frankel & Fink, 1985; Kaplan, 1999; Wilson, 1980). Studies have been done of how tax dollars are wasted or how the tax burden is excessive (DioGuardi, 1992; Fitzgerald & Lipson, 1984; Grace, 1984; Payne, 1993; Shlaes, 1999).

There have been calls for tax reform because of the perception that the tax system is unfair, but scholars and commentators cannot agree on what reforms should be made. Some authors call for higher taxes or support the concept of a graduated tax that charges higher rates on the rich (Johnston, 2003, 2007), while other studies dispute the efficacy of the graduated income tax (Blum & Kalven, 1953). Some authors have called for the abolition of the income tax and its replacement with a flat tax or a fair tax (Boortz & Linder, 2005; Champagne, 1994; Hall & Rabushka, 1985). Others have called for an abolition of all coercive taxes and their replacement with a voluntary system (Curry, 1982; Sabrin, 1995).

Numerous studies on various aspects of tax collection and tax evasion have been done over the years. Richard Musgrave is perhaps the most famous theoretical researcher on this topic for the last half of the twentieth century (Musgrave, 1959, 1986; Musgrave & Musgrave, 1976; Musgrave & Peacock, 1958). He took a rather statist approach. His basic premise is that the state is entitled to take more or less whatever it wants to take, at least in a functioning democracy. His main focus was on how the government should extract taxes. He investigated issues of efficiency and, although he also addressed fairness at times, his concept of what is fair could be challenged by those who believe that the graduated income tax is either unfair or inefficient (Blum & Kalven, 1953).

James M. Buchanan, the 1986 Nobel Prize winner in economics, is far less statist in his approach (Buchanan, 1967; Buchanan & Flowers, 1975). He recognizes, as did James Madison, one of America's founding fathers, that the state can get out of control at times, even in a democracy, and that constitutional limits have to be placed on the legislature. Buchanan and Musgrave (2001) co-authored a book that presented their two contrasting views on the relationship between the individual and the state.

An examination of the philosophical literature on the ethics of tax evasion found that there are three basic positions on the issue (McGee, 2006a). Tax evasion is never ethical, sometimes ethical or always ethical. In terms of frequency, the most popular position in both the philosophical and empirical literature is that tax evasion is sometimes ethical, although scholars cannot agree on when tax evasion is ethical and when it is not.

It has been suggested that there may even be a positive duty to evade taxes, at least in some cases (McGee, 2012). For example, where the state is evil or corrupt or engages in unjust wars (McGee, 1994; Pennock, 1998), a case can be made that society's best interests could be

served by evading taxes, because evil regimes would not be fed the tax funds they need to carry on their evil activities.

Other instances where evasion might be a duty have also been suggested. For example, if one takes the efficiency strain of utilitarian ethics, which holds that the only ethical act is the one that is most efficient, a case can be made that keeping money in the more efficient private sector meets that utilitarian test, because paying taxes shifts the funds to the less efficient government sector (McGee, 2012).

Another case for advocating a duty to evade taxes is when doing so reduces the property rights violations that take place in society (McGee, 2012). If one takes the Nozick (1974) position that taxation is theft, a violation of property rights or a form of slavery, then one may reasonably conclude that evasion reduces the amount of theft, property rights violations and slavery in society.

Perhaps the strongest argument to justify tax evasion would be the case of Jews living in Nazi Germany. Surely if tax evasion were ever justified it would be in this case, since arguing that Jews have a duty to pay taxes to Hitler is unthinkable, or at least so it would seem. Several surveys have asked participants their opinions on the strength of various arguments that have been given over the centuries to justify tax evasion and the strongest argument in support of the tax evasion on moral grounds have often been the case of Jews paying taxes to Hitler. However, it was not always perceived as the strongest argument to justify tax evasion. A survey of students in Argentina ranked it in first place, tied with the ability to pay argument (McGee & Rossi, 2008). However, in a survey of Australian students it did not even rank in the top six (McGee & Bose, 2009). The top six reasons to justify tax evasion in the Australian study were in cases where tax rates were too high, where the tax system is perceived as being unfair, where a large portion of the money collected is wasted, where the government discriminates against the taxpayer on the basis of religion, race or ethnic background, where a significant portion of the money collected winds up in the pockets of corrupt politicians or their families and friends, and where the government imprisons people for their political opinions.

A survey of Orthodox Jewish students (McGee & Cohn, 2008) ranked the Jewish argument first place in terms of justifiability out of 18 arguments justifying tax evasion, but even among Jewish students it was perceived that there was some duty to pay taxes to Hitler, not because Hitler was worthy of their tax money but because of the perception that there is a duty to God to pay taxes and a duty to the Jewish community as well. There is a strain of thought within the Jewish religious and philosophical literature that one must obey the law regardless of what the law might be – "the law is the law." The Jewish literature also teaches that one must never do anything to disparage another Jew. Thus, if one Jew evades taxes it makes all other Jews look bad; therefore, a Jew must never evade taxes. Another reason for paying taxes is that Jews are obligated to do good works (mitzvos). Evading taxes might cause one to be imprisoned, where the possibility of doing good works is greatly reduced. Therefore, a Jew must not evade taxes. (Cohn, 1998; Tamari, 1998; McGee & Cohn, 2008).

These viewpoints may be challenged philosophically, but those were the reasons given by the Jewish sample for justifying paying taxes to Hitler. Surveys of other sample populations generally ranked the Jewish example high on the list of arguments to justify tax evasion, but it was not always in first place. The results of some other studies are given below.

BOSNIA & HERZEGOVINA (McGee, Basic & Tyler, 2008)
1st Tax evasion is ethical if a significant portion of the money collected winds up in the pockets of corrupt politicians or their families and friends.
2nd Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background.
3rd Tax evasion is ethical if the government imprisons people for their political opinions.

COLOMBIA (McGee, López & Yepes, 2009)
1st Tax evasion is ethical if a significant portion of the money collected winds up in the pocket of corrupt politicians or their families and friends.
2nd Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background.
3rd Tax evasion is ethical if a large portion of the money collected is wasted.
4th Tax evasion would be ethical if I were a Jew living in Nazi Germany.

ESTONIA (McGee, Alver & Alver, 2008)
1st Tax evasion is ethical if a significant portion of the money collected winds up in the pockets of corrupt politicians or their family and friends.
2nd Tax evasion is ethical if the government imprisons people for their political opinions.
3rd Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background.
4th Tax evasion is ethical if the tax system is unfair.
5th Tax evasion would be ethical if I were a Jew living in Nazi Germany.

FRANCE (McGee & M'Zali, 2009)
1st Tax evasion would be ethical if I were a Jew living in Nazi Germany.
2nd Tax evasion is ethical if the government imprisons people for their political opinions.
3rd Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background.
4th Tax evasion is ethical if a significant portion of the money collected winds up in the pockets of corrupt politicians or their families and friends.

It is somewhat surprising that the Jewish argument did not rank higher. Apparently, different cultures and countries have different values when it comes to ranking reasons for justifying tax evasion.

Several religious literatures address the issue of tax evasion. The religion that comes out strongest against tax evasion is the Church of Jesus Christ of Latter-Day Saints (Mormons). There is absolutely no excuse for tax evasion in their literature (Smith & Kimball, 1998). The religion ranked in second place in terms of lack of support for tax evasion is the Baha'i faith. Its religious literature would justify tax evasion only in cases where the government persecutes members of the Baha'i faith (DeMoville, 1998).

Other religions are more mixed on the issue. The Jewish religious literature frowns on tax evasion in general but does provide justification in some cases. Where a king usurps power or where the laws are discriminatory or capricious the king may be disobeyed, including in the area of tax laws (Tamari, 1998). There is no moral duty to pay taxes where a king forces himself onto a country if the people do not accept him. There is no duty to pay taxes where the leadership or government is not legitimate (Cohn 1998). In cases where evasion is not justifiable, tax evasion is regarded as theft (Tamari, 1998).

Not much has been written on Muslim religious views regarding tax evasion. Murtuza and Ghazanfar (1998) have discussed Zakat, the moral duty to provide for the poor, but they did not address the ethics of tax evasion directly. Ahmad (1995) and Yusuf (1971) addressed the ethics of tax evasion in their books on Islamic business ethics and economic justice. Their views basically coincided. In fact, Ahmad cited Yusuf several times. According to these Muslim scholars, there is no duty to pay customs duties, restrictive tariffs, court fees, revenue stamps, or any tax on income. Their reason for opposing income taxation is because it curbs initiative and it assumes the illegitimacy of the income of the rich. They suggest that the state should levy a proportional tax along the lines of Zakat on accumulated wealth.

They were also against indirect taxation, since they believed all taxes should be direct. There is no justification for the death tax. Any tax that causes prices to rise artificially is illegitimate. Presumably, that would include sales and use taxes as well as tariffs and attempts to fix prices. McGee (1997; 1998a&b) discussed the work of these two scholars from a non-Muslim perspective.

Jalili (2012) wrote a response to these studies and presented a different view. According to Jalili, in cases where the state is an Islamic state that follows Shariah law there is an absolute duty to pay whatever taxes the legitimate rulers demand without question. Thus, income taxes, sales taxes, death taxes, etc., are all legitimate and must be paid, provided one is paying to a legitimate Islamic state. Where the state is not a pure Islamic state or where the state is not Islamic at all, the ethics of paying taxes is less clear. Where the funds are spent on good deeds or the prevention of bad deeds it seems like there is a duty to pay. Where the state violates Islamic law or engages in bad deeds, it appears that there is no duty to pay. It may even be argued that there is a duty not to pay, although Jalili does not go into this possibility.

The Christian literature (other than the Mormon literature, which has already been discussed) is the most eclectic on the ethics of tax evasion. The most comprehensive treatise on the duty to pay taxes from a Catholic perspective was a doctoral dissertation written by Martin Crowe (1944). He reviewed 500 years of Catholic literature, some of it in Latin. There is no way to summarize this body of literature briefly. Basically, one might attempt a summary by stating that there is somewhat of a duty to pay just taxes and somewhat less of a duty to pay unjust taxes. Payment may be forgiven where there is no ability to pay. It might be acceptable to evade taxes imposed on the necessities of life in certain situations.

There is some Catholic literature to the effect that a person should pay taxes based on benefits received. If the state confers no benefits on a particular taxpayer, there is no moral duty to pay taxes (Crowe, 1944, pp. 24-25). There is some duty to government but that duty is not absolute. Where tax funds are used to provide for the common good there is some duty to pay but where they are not used for the common good there is no duty to pay, according to some Catholic scholars.

Schansberg (1998) discusses the duty of paying unto Caesar what is Caesar's but he does not identify quite what Caesar is entitled to receive. Pennock (1998) discusses the issue of whether there is a duty to pay taxes to a state that is engaging in an unjust war. Gronbacher (1998) discusses Catholic social thought from the perspective of classical liberalism.

Several secular studies have been done on the ethics of tax evasion. Martinez (1994) wrote a wide-ranging treatise, which cited an earlier article by McGee (1994). An edited book on the ethics of tax evasion (McGee, 1998c) included several secular studies. Block (1989, 1993) conducted studies of the public finance literature but could not find an adequate justification for taxation, presumably because the authors of public finance texts begin with the assumption that taxation is justified. Leiker (1998) discussed Rousseau's view on taxation. Morales (1998) discussed tax evasion from the viewpoint of Mexican workers and concluded that at times feeding the family takes precedence over paying taxes.

Some empirical studies have been done on attitudes toward tax evasion. Alm, Martinez-Vazquez and Torgler (2005) investigated Russian tax morale. Alm and Torgler (2006) discussed cultural differences and tax morale in the United States and Europe. Torgler and Valev (2010) examined public attitudes toward corruption and tax evasion from the perspective of gender.

A number of survey research studies have been done to discover student views on the ethics of tax evasion. Surveys were completed for students in Armenia (McGee & Maranjyan, 2006), China (McGee & Guo, 2007; McGee & An, 2008), Poland (McGee & Bernal, 2006), Puerto Rico (McGee & López, 2007) and Romania (McGee, 2006b). In each of those studies, various arguments that had been used in the past to justify tax evasion were ranked. In some cases, comparisons were also made based on gender, age, academic major, student status to determine whether those demographic variables made any difference. In some cases they did make a difference and in other cases they did not make a difference.

THE PRESENT STUDY

At least one prior study has examined tax evasion opinion in Poland. That study was a survey of business and economic students in Poznan (McGee & Bernal, 2006b). The survey found that most participants believed tax evasion is ethical in some cases, most notably when there is government corruption, waste or abuse. Of the 18 reasons given to justify tax evasion, the five strongest arguments were:

1st Tax evasion is ethical if a significant portion of the money collected winds up in the pockets of corrupt politicians or their family and friends.
1st (tie) Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background.
3rd Tax evasion is ethical if a large portion of the money collected is wasted.
3rd (tie) Tax evasion is ethical if a large portion of the money collected is spent on projects that I morally disapprove of.
5th Tax evasion would be ethical if I were a Jew living in Nazi Germany.

That study also compared views based on gender. It found that, although women were slightly more opposed to tax evasion, the difference was not statistically significant.

The present study uses the *World Values* data on Poland. The focus is on the tax evasion question that was asked in that survey. More than 20 demographic variables were examined.

METHODOLOGY

Groups of social scientists all over the world have been conducting coordinated surveys of the world's population since the 1980s. Some surveys have solicited the opinions of more than 200,000 people in more than 80 countries. The surveys included hundreds of questions on a wide range of subjects. One question in the most recent surveys addressed attitudes toward tax evasion:

> Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: Cheating on taxes if you have a chance.

The range of responses used a 10-point Likert Scale where 1 = never justifiable and 10 = always justifiable. The surveys collected data on a number of demographic variables, including level of education, gender and age. The present study uses the data gathered in the most recent survey on Poland.

More that 20 demographic variables are examined using t-tests and ANOVAs to determine whether any differences are significant at the 5 percent level. The ANOVA was used to

analyze mean score differences between groups as a whole. The ANOVA scores are reported in the "b" tables. T-tests were sometimes made to compare the mean scores of two particular groups. Those scores, where made, are reported in the "a" tables.

FINDINGS

The findings are presented below by demographic variable. The sample size for the age variable was 949. Sample sizes for the other demographic variables were about the same but varied somewhat, depending on variable.

Age

Prior studies on the relationship between age and ethical values have sometimes found that people become more ethical as they get older or that people tend to have more respect for law and for authority as they get older (Barnett & Karson, 1987, 1989; Harris, 1990; Ruegger & King, 1992). If that is the case, then it would be reasonable to expect that participants in the older age groups would be more averse to tax evasion than participants from the younger age groups.

However, this relationship has not always been found. Browning and Zabriskie (1983) found that younger purchasing managers were more ethical than older purchasing managers when it came to accepting gifts and entertainment. Other studies found that there is no correlation between age and ethical views (Kidwell, et al., 1987; Izraeli, 1988; Callan, 1992).

Table 1a shows the ranking of mean scores for the age category and the t-test results. Table 1b shows the ANOVA results.

H1: There is no relationship between age and views on the justifiability of tax evasion.
H1: Rejected.

Table 1a: Ranking by Age
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Age	Mean	Std. Dev.	n
1	65+	1.6	1.26	155
2	35-44	2.2	2.07	170
3	55-64	2.4	2.22	116
4	45-54	2.5	2.24	187
5	25-34	2.8	2.27	175
6	15-24	3.2	2.35	146

SIGNIFICANT DIFFERENCES IN MEAN SCORES			
			p value
15-24 v. 35-44			0.0001
15-24 v. 45-54			0.0059
15-24 v. 55-64			0.0054
15-24 v. 65+			0.0001
25-34 v. 35-44			0.0108
25-34 v. 65+			0.0001
35-44 v. 65+			0.0020
45-54 v. 65+			0.0001
55-64 v. F65+			0.0002

Table 1b: Age and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	226.932	5	45.386	10.273	<0.0001
Within Groups	4,166.045	943	4.418		
Total	4,392.978	948			

Differences between groups were significant at the 1 percent level ($p < 0.0001$). Many of the differences were also highly significant for individual group comparisons (Table 1a). There is a definite tendency for people in the older groups to be more opposed to tax evasion than people in the younger groups. The 65+ group was the most opposed and the two youngest groups were least opposed.

Education Level

It was not easy to predict a priori what the relationship might be between education level and opinions on tax evasion. The two best guesses are that people either become more averse or less averse to tax evasion as the level of education increases. Table 2a ranks the education categories by mean score and shows some of the significant p values for individual comparisons. Table 2b shows the ANOVA result. The differences between groups was significant at the 5 percent level ($p = 0.047$). People at the lower levels of education tended to be more averse to tax evasion than people with more education.

H2: There is no relationship between level of education and views on the justifiability of tax evasion.

H2: Rejected.

Table 2a: Ranking by Education Level (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Education Level**	**Mean**	**Std. Dev.**	**n**
1	Inadequately completed elementary education	1.5	1.65	22
2	Incomplete secondary – college preparatory	2.2	2.07	181
3	Completed elementary	2.3	2.09	178
4	Incomplete secondary – technical, vocational	2.5	2.16	278
5	Some university without degree	2.5	2.21	88
6	Complete secondary – college preparatory	2.7	2.19	132
7	University with degree	2.8	2.40	39
8	Complete secondary – technical, vocational	3.2	2.44	30
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Inadequately completed elementary education v. Incomplete secondary – technical, vocational				0.0347
Inadequately completed elementary education v. Complete secondary – technical, vocational				0.0068
Inadequately completed elementary education v. University				0.0279
Completed elementary v. Complete secondary – technical, vocational				0.0345
Incomplete secondary – college preparatory v. Complete secondary – college preparatory				0.0403

Table 2b: Educational Level and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	65.959	7	9.423	2.041	0.047
Within Groups	4,338.720	940	4.616		
Total	4,404.679	947			

Employment Status

Tables 3a and 3b show the results for the employment status demographic. The difference between groups was significant at the 1 percent level ($p < 0.0001$). Some of the individual comparisons were also highly significant. The group most opposed to tax evasion was the retired group. One possible explanation for that result is that retired people tend to be older than the general population, and older people tend to be more averse to tax evasion than other groups. Full-time employees were more opposed to tax evasion than the other groups except for the retired category. Self-employed individuals were least opposed, followed by housewives, students and unemployed.

H3: There is no relationship between employment status and views on the justifiability of tax evasion.

H3: Rejected.

Table 3a: Ranking by Employment Status (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Employment Status**	**Mean**	**Std. Dev.**	**n**
1	Retired	1.9	1.74	271
2	Full time	2.4	2.19	367
3	Part time	2.7	2.50	43
4	Unemployed	2.9	2.20	111
5	Students	3.0	2.16	73
6	Housewife	3.1	2.72	28
7	Self employed	3.3	2.63	33
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Full time v. Self employed				0.0268
Full time v. Retired				0.0020
Full time v. Students				0.0327
Full time v. Unemployed				0.0358
Part time v. Retired				0.0092
Self employed v. Retired				0.0001
Retired v. Housewife				0.0012
Retired v. Students				0.0001
Retired v. Unemployed				0.0001

Table 3b: Employment Status and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	165.370	6	27.562	6.141	<0.0001
Within Groups	4,124.745	919	4.488		
Total	4,290.115	925			

Gender

Gender is perhaps the most frequently tested variable for ethics studies. The results are mixed. Some studies have found that women are more ethical than men (Akaah, 1989; Betz, et al., 1989; Dawson, 1997; Glover, et al., 2002; Purcell, 1977), while other studies have found no statistical difference between men and women (Callan, 1992; Friedman et al, 1987; Fritzsche,

1988; Harris, 1989; Kidwell et al., 1987; Stern & Havlicek, 1986). A few studies have found men to be more ethical (Barnett & Karson, 1987; Weeks et al, 1999).

Some studies on the ethics of tax evasion have also examined gender. However, one must be careful not to conclude that women are more ethical than men in cases where women are more opposed to tax evasion, and vice versa. In order to arrive at that conclusion, one must begin with the premise that tax evasion is unethical, which may not be the case.

As was the case with the other studies on tax evasion, the results are mixed. Men and women were equally opposed to tax evasion for Argentina (McGee & Rossi, 2008), China (McGee & An, 2008; McGee & Noronha, 2008), Estonia (McGee, Alver & Alver, 2008), Hong Kong (McGee & Butt, 2008), Kazakhstan (McGee & Preobragenskaya, 2008) and Macau (McGee, Noronha & Tyler, 2007).

Women were more opposed to tax evasion in studies of China (McGee & Guo, 2007), Colombia (McGee, López & Yepes, 2009), Guatemala (McGee & Lingle, 2008), international business academics (McGee, 2006c), Orthodox Jews (McGee & Cohn, 2008) and New Zealand (Gupta & McGee, 2010). Men were more opposed to tax evasion in Romania (McGee, 2006b), Slovakia (McGee & Tusan, 2008) and Turkey (McGee & Benk, 2011).

The reason for the mixed results is difficult to determine. Some studies have speculated that in cases where women are more opposed to tax evasion or are more ethical in their behavior it might be because women in some cultures are taught from an early age to respect authority. In cases where women's opinions are the same as men's, one explanation that has been offered is that, as women achieve a higher degree of equality, their opinions become more like those of men. No explanation was given to explain the cases where men were more ethical or where men were more opposed to tax evasion.

The studies cited above were all student surveys, which are a popular sample population, since student data is relatively easy to gather for professors. However, it may not reflect the general population, since university students are younger than some groups and are more educated than the general population.

The present study overcomes this limitation because the sample includes a wide range of ages and education levels. Table 4 reports the results. The differences in mean scores was not significant ($p = 0.4741$).

H4: There is no relationship between gender and views on the justifiability of tax evasion.
H4: Cannot be rejected.

Table 4: Ranking by Gender (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Gender**	**Mean**	**Std. Dev.**	**n**
1	Female	2.4	2.06	492
2	Male	2.5	2.24	456
				p value
Male v. Female				0.4741

Income

Tables 5a and 5b show the results for income level. The ANOVA test found the differences between groups to be significant at the 10 percent level (p = 0.057). A t-test comparing levels 3 and 7 found step 3 to be significantly more opposed to tax evasion than step 7 (p = 0.0011). There seems to be no clear pattern for the divergence of opinion. All that can be said is that income level is sometimes correlated to view of tax evasion.

H5: There is no relationship between income level and views on the justifiability of tax evasion.
H5: Rejected.

Table 5a: Ranking by Income (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Income**	**Mean**	**Std. Dev.**	**n**
1	Tenth step	1.0	0	3
2	Third step	2.0	1.68	160
3	Ninth step	2.0	1	3
4	Eighth step	2.1	1.55	25
5	Lower step	2.3	2.42	96
6	Second step	2.3	2.07	91
7	Fourth step	2.5	2.23	171
8	Fifth step	2.6	2.23	199
9	Sixth step	2.7	2.22	91
10	Seventh step	2.9	2.07	59
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
3 v. 7				0.0011

Table 5b: Income and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	61.711	7	8.816	1.963	0.057
Within Groups	3,970.528	884	4.492		
Total	4,032.239	891			

Institution of Occupation

Table 6 shows the results for the institution of occupation category. People who work at public institutions were significantly more opposed to tax evasion than people who work in private business (p = 0.0235).

H6: There is no relationship between institution of occupation and views on the justifiability of tax evasion.
H6: Rejected.

Table 6: Ranking by Institution of Occupation (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Institution of Occupation**	**Mean**	**Std. Dev.**	**n**
1	Public Institution	2.2	1.97	170
2	Private Business	2.7	2.41	273
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Public Institution v. Private Business				0.0235

Occupation

Tables 7a and 7b show the results for the occupation category. Members of the armed forces were most opposed to tax evasion, followed by semi-skilled manual workers, unskilled manual workers and farmers who have their own farm. Agricultural workers was the least opposed group but the sample size was small. The general pattern seems to show that managers and supervisory workers are less opposed to tax evasion than unskilled and blue-collar workers. However, the ANOVA revealed that the between group differences were not significant (p = 0.667). T-tests comparing the mean scores of particular occupations found that some differences were significant at the 1 percent or 5 percent levels.

H7: There is no relationship between occupation and views on the justifiability of tax evasion.
H7: Rejected.

Table 7a: Ranking by Occupation (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Occupation**	**Mean**	**Std. Dev.**	**n**
1	Member of armed forces	1.7	1.50	19
2	Semi-skilled manual worker	2.0	1.50	32
3	Unskilled manual worker	2.1	2.27	38
3	Farmer – has own farm	2.1	1.63	71
5	Supervisory non-manual office worker	2.4	1.93	115
5	Skilled manual	2.4	2.12	384
7	Non-manual office worker	2.5	2.20	58
7	Never had a job	2.5	2.08	40
9	Foreman and supervisor	2.7	2.77	51
10	Professional worker	2.8	2.30	44
11	Employer/manager of establishment with less than 10 employed	2.9	2.31	34
12	Employer/manager of establishment with 10 or more employed	3.1	2.73	30
13	Agricultural worker	5.1	3.88	10
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Employer/manager of establishment with 10 or more employed v. Member of armed forces				0.0466
Employer/manager of establishment with less than 10 employed v. Member of armed forces				0.0473
Farmer – has own farm v. Agricultural				0.0001
Agricultural v. Member of armed forces				0.0021
Agricultural v. Never had a job				0.0053

Table 7b: Occupation and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	22.295	7	3.185	0.706	0.667
Within Groups	3,578.359	793	4.512		
Total	3,600.654	800			

Marital Status

Tables 8a and 8b show the results for marital status. The group most opposed to tax evasion was widowed. Part of the explanation might be because widowed people tend to be older

than the general population and older people tend to be more opposed to tax evasion than younger groups. Married people are also relatively more opposed to tax evasion. Separated people were least opposed to tax evasion but the sample size was only 7, so the result has to be discounted. People living together as married were less opposed than most other groups, followed by the single/never married group. The ANOVA found the between group differences to be highly significant ($p < 0.0001$). Some of the t-tests showed that comparisons between individual groups were also highly significant.

H8: There is no relationship between marital status and views on the justifiability of tax evasion.
H8: Rejected.

Table 8a: Ranking by Marital Status
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Marital Status	Mean	Std. Dev.	n
1	Widowed	1.7	1.49	76
2	Married	2.2	2.00	554
3	Divorced	2.5	2.53	39
4	Single/Never married	2.9	2.29	248
5	Living together as married	3.3	2.50	25
6	Separated	6.4	3.87	7

SIGNIFICANT DIFFERENCES IN MEAN SCORES	
	p value
Married v. Living together as married	0.0081
Married v. Widowed	0.0361
Married v. Single/Never married	0.0001
Living together as married v. Widowed	0.0002
Divorced v. Widowed	0.0351
Widowed v. Single/Never married	0.0001

Table 8b: Marital Status and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	253.821	5	50.764	11.516	<0.0001
Within Groups	4,156.896	943	4.408		
Total	4,410.717	948			

Number of Children

It was unclear what the relationship between the number of children and attitude toward tax evasion might be. One might think that as the number of children increases, aversion to tax evasion might dissipate because of the reduced ability to pay taxes. Tables 9a and 9b show the results.

It would appear that people with 7 children would be most opposed to tax evasion. However, with a sample size of only 3 it does not seem reasonable to reach that conclusion. A more reasonable statement would be that people with 3 children are most opposed to tax evasion, followed by people with 2 or 4 children. People with 6 children seem to be least opposed to tax evasion, but the sample size was only 6, so such a conclusion must be discounted. A more reasonable conclusion would be that people with no children were least opposed to tax evasion. The ANOVA showed that the between group p value was highly significant ($p < 0.0001$).

H9: There is no relationship between number of children and views on the justifiability of tax evasion.
H9: Rejected.

Table 9a: Ranking by Number of Children
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Number of Children	Mean	Std. Dev.	n
1	7	1.0	0	3
2	3	2.0	1.65	130
3	2	2.1	1.98	299
4	4	2.3	2.60	54
5	8 or more	2.4	1.94	4
6	1	2.5	2.26	145
7	5	2.6	2.55	22
8	None	2.9	2.25	285
9	6	4.3	2.64	5
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None v. 2				0.0001
None v. 3				0.0001
1 v. 3				0.0389

Table 9b: Number of Children and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	139.280	7	19.897	4.406	<0.0001
Within Groups	4,226.728	936	4.516		
Total	4,366.008	943			

Religious Practice

This question asked how often do you attend religious services? One might guess that people who attend religious services more frequently would be more opposed to tax evasion than other groups, since they are more likely to respect authority. This assumption is tested in Tables 10a and 10b. Interestingly, the mean scores for "once a week" and "once a year" were the same, indicating that the relationship might be curvilinear rather than linear. The ANOVA shows that the means between groups are highly significant (p = 0.003). However, there seems to be no discernible pattern.

H10: There is no relationship between religious practice and views on the justifiability of tax evasion.

H10: Rejected.

Table 10a: Ranking by Religious Practice (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Religious Practice**	**Mean**	**Std. Dev.**	**n**
1	Once a week	2.2	1.93	457
1	Once a year	2.2	2.03	34
3	More than once a week	2.3	2.07	88
4	Only on special holy days	2.6	2.29	130
5	Once a month	2.7	2.36	167
6	Less than once a year	2.8	2.26	19
7	Never/practically never	3.4	2.83	49
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
More than once a week v. Never/practically never				0.0102
Once a week v. Once a month				0.0073
Once a week v. Only on special holy days				0.0463
Once a week v. Never/practically never				0.0001
Once a year v. Never/practically never				0.0370

Table 10b: Religious Practice and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	92.090	6	15.348	3.356	0.003
Within Groups	4,284.737	937	4.573		
Total	4,376.827	943			

Size of Town

Size of town where the respondent lives was also tested. If one thinks like Thomas Jefferson, one of America's founding fathers, one might think a priori that people who live in small towns would be more averse to tax evasion than people who live in large cities because of his belief that big cities are corrupt and people who live in small towns are more honest.

Tables 11a and 11b show the results. People who live in small towns generally have lower mean scores, indicating they are generally more opposed to tax evasion. However, some small town categories had higher mean scores than some big city groups. The ANOVA showed the between group difference was significant at the 10 percent level (p = 0.061). Some of the t-tests found individual differences to be significant at the 1 percent or 5 percent level.

H11: There is no relationship between the size of the town where a person lives and views on the justifiability of tax evasion.

H11: Rejected.

Table 11a: Ranking by Size of Town (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Size of Town**	**Mean**	**Std. Dev.**	**n**
1	2000 – 5000	1.9	1.28	62
2	2000 and less	2.3	2.12	325
2	20,000 – 50,000	2.3	1.97	101
4	50,000 – 100,000	2.4	2.17	82
5	5000 – 10,000	2.5	2.32	31
6	100,000 – 500,000	2.6	2.31	184
7	10,000 – 20,000	2.8	2.53	45
8	500,000 and more	2.9	2.16	117

SIGNIFICANT DIFFERENCES IN MEAN SCORES	
	p value
2000 and less v. 500,000 and more	0.0093
2000 – 5000 v. 10,000 – 20,000	0.0177
2000 – 5000 v. 100,000 – 500,000	0.0241
2000 – 5000 v. 500,000 and more	0.0010
20,000 – 50,000 v. 500,000 and more	0.0343

Table 11b: Size of Town and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	61.946	7	8.849	1.939	0.061
Within Groups	4,286.466	939	4.565		
Total	4,348.412	946			

Social Class

Social class was also examined. Tables 12a and 12b show the results. Working class was the category with the lowest mean score, indicating the most opposition to tax evasion, followed by lower class. Upper class had the least opposition to tax evasion. However, the between group difference was not significant (p = 0.409).

H12: There is no relationship between social class and views on the justifiability of tax evasion.
H12: Cannot be rejected.

Table 12a: Ranking by Social Class
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Social Class	Mean	Std. Dev.	n
1	Working class	2.3	2.04	371
2	Lower class	2.5	2.13	112
3	Upper middle class	2.6	2.04	110
3	Lower middle class	2.6	2.39	237
5	Upper class	3.0	1.87	7
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None Significant				

Table 12b: Social Class and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	18.512	4	4.628	0.996	0.409
Within Groups	3,866.039	832	4.647		
Total	3,884.551	836			

Feeling of Happiness

It was unclear, a priori, to guess what the relationship between happiness and opinion on tax evasion might be. If people are happy, it might be because they saved on taxes by evading them. On the other hand, if people were unhappy, it might be because they were worried about getting caught for tax evasion, or perhaps they were unhappy because they felt they paid too much in taxes because they did not evade.

Tables 13a and 13b show the statistical results. People who were very happy and quite happy were the two groups most opposed to tax evasion. People who were not happy at all were least opposed. However, the ANOVA found that the differences were not significant (p = 0.352).

H13: There is no relationship between how happy a person feels and views on the justifiability of tax evasion.
H13: Cannot be rejected.

Table 13a: Ranking by Feeling of Happiness (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Feeling of Happiness**	**Mean**	**Std. Dev.**	**n**
1	Very happy	2.3	1.97	206
2	Quite happy	2.4	2.14	633
3	Not very happy	2.5	2.26	65
4	Not happy at all	3.5	3.27	10
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None Significant				

Table13b: Feeling of Happiness and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	14.799	3	4.933	1.091	0.352
Within Groups	4,113.014	910	4.520		
Total	4,127.814	913			

State of Health

The state of health was compared to views on the ethics of tax evasion. Tables 14a and 14b show the results. People in poor health had the most aversion to tax evasion. As health got better, aversion to tax evasion decreased. The ANOVA showed the between group differences to be highly significant (p = 0.002).

H14: There is no relationship between the state of a person's health and views on the justifiability of tax evasion.

H14: Rejected.

Table 14a: Ranking by State of Health
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	State of Health	Mean	Std. Dev.	n
1	Poor	1.9	1.81	104
2	Fair	2.3	1.96	305
3	Good	2.6	2.29	361
4	Very good	2.8	2.25	177
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Very good v. Fair				0.0109
Very good v. Poor				0.0006
Good v. Poor				0.0043

Table14b: State of Health and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	67.945	3	22.648	4.985	0.002
Within Groups	4,284.161	943	4.543		
Total	4,352.106	946			

Self Positioning in Political Scale

The *World Values* survey gathered data on political ideology. It measured ideology on a ten-point scale from left to right. The results are reported in Tables 15a and 15b. Centrists had the lowest mean scores, indicating the strongest aversion to tax evasion. Far left and far right were least opposed to tax evasion. However, the ANOVA showed the between group differences to be insignificant (p = 0.826).

H15: There is no relationship between a person's position on the political scale and views on the justifiability of tax evasion.
H15: Cannot be rejected.

Table 15a: Ranking by Self Positioning in Political Scale (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Self Positioning in Political Scale**	**Mean**	**Std. Dev.**	**n**
1	4	2.3	1.76	37
2	6	2.4	2.03	91
2	7	2.4	1.94	64
4	5	2.5	1.94	259
5	8	2.6	2.37	67
5	Right	2.6	2.50	71
7	9	2.7	2.08	30
8	Left	3.1	2.96	30
8	3	3.1	2.87	23
10	2	3.3	3.04	19
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None Significant				

Table 15b: Self Positioning in Political Scale and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	16.068	7	2.295	0.511	0.826
Within Groups	2,878.278	641	4.490		
Total	2,894.346	648			

Income Equality

The *World Values* survey solicited opinions on the attitude toward income equality. At one extreme was the option that incomes should be more equal. At the other extreme was the option that we need larger income differences as incentives. It was difficult a priori to estimate what the relationship between views on income equality and tax evasion might be. One possibility is that there might be a positive relationship between support for income equality and the obligation to pay taxes. This possible relationship was tested below. Tables 16a and 16b report the results.

The ANOVA shows that the relationship is significant at the 5 percent level (p = 0.023). What is interesting is the pattern of the relationship. The two extreme positions had the two lowest means scores, indicating the strongest opposition to tax evasion. Centrists tended to have less opposition to tax evasion. Some of the t-test comparisons found significant differences at the 1 percent level.

H16: There is no relationship between a person's view on income equality and views on the justifiability of tax evasion.

H16: Rejected.

Table 16a: Ranking by Income Equality
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Income Equality	Mean	Std. Dev.	n
1	1 Incomes should be made more equal	1.7	1.77	53
2	10 We need larger income differences as incentives	2.2	2.13	151
3	4	2.3	2.05	53
4	8	2.5	2.02	215
4	9	2.5	2.25	87
6	7	2.6	2.06	125
7	6	2.7	2.29	63
8	3	2.8	2.28	42
9	5	3.0	2.60	91
10	2	3.1	2.71	25
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
1 v. 2				0.0078
1 v. 5				0.0015

Table 16b: Income Equality and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	75.234	7	10.748	2.329	0.023
Within Groups	3,830.297	830	4.615		
Total	3,905.531	837			

Private vs. State Ownership of Business

The *World Values* survey solicited opinions on the attitude toward ownership of business. At one extreme was the option that more businesses should be privately owned, which is a free market position. At the other extreme was the option that government should own more businesses, which is a statist opinion. It was difficult a priori to estimate what the relationship between views on ownership and tax evasion might be. One possibility is that there might be a positive relationship between support for government ownership and the obligation to pay taxes, since both are pro-state positions. This possible relationship was tested below. Tables 17a and 17b report the results.

The ANOVA found that the relationship was not significant ($p = 0.307$). However, a comparison of Groups 4 and 10 showed that Group 10 was significantly more opposed to tax evasion than Group 4 ($p = 0.0338$).

H17: There is no relationship between a person's view on the ownership of business and views on the justifiability of tax evasion.

H17: Cannot be rejected (generally).

Table 17a: Ranking by Private v. State Ownership of Business (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Private v. State Ownership of Business	Mean	Std. Dev.	n
1	10 Government ownership of business should be increased	2.2	2.22	211
2	1 Private ownership of business should be increased	2.3	2.22	35
2	7	2.3	1.92	68
4	9	2.4	2.00	91
5	3	2.5	2.11	54
5	8	2.5	2.16	119
7	2	2.6	2.00	38
7	5	2.6	2.37	157
7	6	2.6	1.95	78
10	4	2.9	2.19	58
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
4 v. 10 Government ownership of business should be increased				0.0338

Table 17b: Ranking by Private v. State Ownership of Business and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	38.967	7	5.567	1.187	0.307
Within Groups	4,275.740	912	4.688		
Total	4,314.707	919			

Government Responsibility

The *World Values* survey solicited opinions on the attitude toward government responsibility. At one extreme was the option that individuals should take more responsibility, which is a free market position. At the other extreme was the option that government should take more responsibility, which is a statist opinion. It was difficult a priori to estimate what the relationship between views on responsibility and tax evasion might be. One possibility is that there might be a positive relationship between more government responsibility and the obligation to pay taxes, since both are pro-state positions. This possible relationship was tested below. Tables 18a and 18b report the results.

The ANOVA showed that differences in mean scores between groups was not significant ($p = 0.535$). The pattern was interesting, however. The two categories with the lowest mean scores (most resistance to tax evasion) were at the extremes – Groups 9 and 1. Some of the centrist groups – Groups 4-8-6-7 – were most supportive of tax evasion. T-tests comparing individual categories found that none of the differences in mean scores were significant at the 5 percent level. However, a comparison of Groups 7 and 9 found that the means scores were significantly different at the 10 percent level ($p = 0.0697$).

H18: There is no relationship between a person's view on government responsibility and views on the justifiability of tax evasion.

H18: Cannot be rejected.

Table 18a: Ranking By Government Responsibility (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Government Responsibility**	**Mean**	**Std. Dev.**	**n**
1	9	2.0	1.74	32
2	1 The government should take more responsibility	2.2	2.28	153
3	2	2.4	2.00	80
3	3	2.4	2.04	78
3	5	2.4	2.04	165
3	10 People should take more	2.4	2.0	60

	responsibility			
7	4	2.6	2.02	73
7	8	2.6	2.36	107
9	6	2.7	2.56	85
10	7	2.8	2.22	83
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None Significant				

Table 18b: Government Responsibility and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	29.264	7	4.181	0.864	0.535
Within Groups	3,947.900	816	4.838		
Total	3,977.164	823			

Competition – Good or Harmful

The *World Values* survey solicited opinions on the attitude toward competition. At one extreme was the option that competition is good, which is a free market position. At the other extreme was the option that competition is harmful, which is a statist opinion. It was difficult a priori to estimate what the relationship between views on competition and tax evasion might be. One possibility is that there might be a positive relationship between competition is harmful and the obligation to pay taxes, since both are pro-state positions. This possible relationship was tested below. Tables 19a and 19b report the results.

The ANOVA showed that the relationship between groups was significant at the 5 percent level ($p = 0.045$). The relative ranking was interesting. The two extreme positions were ranked 1st and 3rd in terms of lowest mean scores (most opposition to tax evasion). Some of the centrist Groups -4-6-3-5 had relatively high mean scores, as did two of the extremist Groups -9-8, which indicates that these groups were less opposed to tax evasion than the other groups. T-test comparisons of Groups 1 & 8 and 1 & 5 found the differences in means scores to be significant at the 1 percent level ($p = 0.0084$ and 0.0051, respectively).

H19: There is no relationship between a person's views on the harmfulness or beneficial effects of competition and views on the justifiability of tax evasion.

H19: Rejected.

Table 19a: Ranking by Competition - Good or Harmful (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Competition Good or Harmful**	**Mean**	**Std. Dev.**	**N**
1	1 Competition is good	1.9	2.07	103
2	7	2.1	1.93	57
3	10 Competition is harmful	2.3	2.19	75
4	2	2.4	2.13	87
5	4	2.5	1.98	95
5	6	2.5	2.27	73
5	9	2.5	2.0	40
8	3	2.7	1.95	118
8	5	2.7	2.33	156
10	8	2.8	2.47	78
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
1 v. 8				0.0084
1 v. 5				0.0051

Table 19b: Competition Good or Harmful and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	66.872	7	9.553	2.068	0.045
Within Groups	3,515.398	761	4.619		
Total	3,582.270	768			

Hard Work Brings Success

The *World Values* survey solicited opinions on the relationship between hard work and success. At one extreme was the view that hard work usually brings a better life. At the other extreme was the view that luck and connections are more important than hard work.

The results are shown in Tables 20a and 20b. The ANOVA found the differences between groups were not significant (p = 0.608).

H20: There is no relationship between a person's view on the relationship between hard work and success and views on the justifiability of tax evasion.

H20: Cannot be rejected.

Table 20a: Ranking by Hard Work Brings Success (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)				
Rank	**Hard Work Brings Success**	**Mean**	**Std. Dev.**	**n**
1	3	2.2	1.72	82
2	1 In the long run, hard work usually brings a better life	2.3	2.31	63
2	6	2.3	2.05	81
4	5	2.4	2.22	132
4	9	2.4	1.85	74
6	2	2.5	2.29	55
6	10 Hard work doesn't generally bring success – it's more a matter of luck and connections.	2.5	2.30	117
6	8	2.6	2.43	131
9	4	2.7	1.95	99
10	7	2.8	2.31	80
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None significant				

Table 20b: Hard Work Brings Success and Attitudes toward Tax Evasion ANOVA Analysis					
	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	25.125	7	3.589	0.776	0.608
Within Groups	3,646.767	788	4.628		
Total	3,671.892	795			

Wealth Accumulation

The *World Values* survey solicited opinions on the cause of wealth generation and its relationship to other individuals. At one extreme was the view that people can only get rich at the expense of others. At the other extreme was the view that there is enough wealth for everyone and there is no need to exploit others in order to get rich. Stated differently, is wealth accumulation a zero-sum game or a positive-sum game?

The results are shown in Tables 21a and 21b.The ANOVA shows that the differences in mean scores between groups is not significant (p = 0.254). None of the t-tests comparing groups showed significance, either.

H21: There is no relationship between a person's view on wealth accumulation and views on the justifiability of tax evasion.
H21: Cannot be rejected.

Table 21a : Ranking by Wealth Accumulation
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Wealth Accumulation	Mean	Std. Dev.	n
1	1 People can only get rich at the expense of others.	2.0	1.89	66
2	4	2.2	1.58	52
2	10 Wealth can grow so there's enough for everyone.	2.2	2.07	107
4	6	2.4	2.26	92
4	9	2.4	2.08	81
6	7	2.5	2.08	95
7	3	2.6	2.26	70
7	5	2.6	2.21	141
9	8	2.8	2.31	142
10	2	2.9	2.77	32
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
None significant				

Table 21b: Wealth Accumulation and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	42.310	7	6.044	1.287	0.254
Within Groups	3,692.560	786	4.698		
Total	3,734.869	793			

Confidence in Government

The *World Values* survey solicited opinions on the confidence people place in government. One might assume that people who place more confidence in government would be

more averse to tax evasion and people who place less confidence in government would be less averse to tax evasion. This assumption is tested below.

The results are shown in Tables 22a and 22b. The ANOVA shows that the differences in mean scores between groups is significant at the 1 percent level (p = 0.005). Some of the t-test comparisons also showed significance at the 1 percent and 5 percent levels. The ranking reveals an orderly linear relationship. People who have the most confidence in government also have the strongest aversion to tax evasion and people who have the least confidence in government have the least aversion to tax evasion.

H22: There is no relationship between a person's confidence in government and views on the justifiability of tax evasion.

H22: Rejected.

Table 22a: Ranking by Confidence in Government
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Confidence in Government	Mean	Std. Dev.	n
1	A great deal	1.6	1.27	22
2	Quite a lot	2.1	1.88	136
3	Not very much	2.5	2.05	496
4	Not at all	2.8	2.58	235
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
A great deal v. Not very much				0.0418
A great deal v. Not at all				0.0321
Quite a lot v. Not very much				0.0407
Quite a lot v. Not at all				0.0059

Table 22b: Confidence in Government and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	60.715	3	20.238	4.317	0.005
Within Groups	4,148.850	885	4.688		
Total	4,209.565	888			

Confidence in the Justice System

The *World Values* survey solicited opinions on the confidence people place in the justice system. One might assume that people who place more confidence in the justice system would be

more averse to tax evasion and people who place less confidence in the justice system would be less averse to tax evasion. This assumption is tested below.

The results are shown in Tables 23a and 23b. The ANOVA shows that the differences in mean scores between groups is significant at the 1 percent level (p = 0.001). Some of the t-test comparisons also showed significance at the 1 percent level. The ranking reveals an orderly linear relationship. People who have the most confidence in the justice system also have the strongest aversion to tax evasion and people who have the least confidence in the justice system have the least aversion to tax evasion. This finding corresponds closely with the finding on the relationship between confidence in government and aversion to tax evasion.

H23: There is no relationship between a person's confidence in the justice system and views on the justifiability of tax evasion.

H23: Rejected.

Table 23a: Ranking by Confidence in the Justice System (Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Confidence in the Justice System	Mean	Std. Dev.	n
1	A great deal	2.3	2.13	49
1	Quite a lot	2.3	1.99	253
3	Not very much	2.4	2.04	444
4	Not at all	3.1	2.66	157
SIGNIFICANT DIFFERENCES IN MEAN SCORES				
				p value
Quite a lot v. Not at all				0.0006
Not very much v. Not at all				0.0007

Table 23b: Confidence in the Justice System and Attitudes toward Tax Evasion ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	72.916	3	24.305	5.249	0.001
Within Groups	4,163.099	899	4.631		
Total	4,236.014	902			

Relative Seriousness of Tax Evasion

How serious is tax evasion compared to other acts that might be considered unethical? The *World Values* surveys collected data on several other acts that might be considered unethical in some societies. We decided to compare mean scores to determine the relative seriousness of tax evasion. Tables 24a and 24b show the results.

Of the 11 acts reported on in the World Values surveys, tax evasion ranked 5th, which is more or less in the middle. Wife beating, accepting a bribe, claiming government benefits to which you are not entitled and suicide are considered more serious ethical breaches, whereas avoiding a fare on public transport, prostitution, abortion, homosexuality, euthanasia and divorce were considered less serious ethical breaches. One might challenge the view that some of the acts listed are unethical, but we will save that discussion for another day. We included these 11 categories because they were the 11 categories that the World Values surveys collected data on.

The ANOVA shows that the differences in mean scores between groups are significant at the 1 percent level ($p < 0.0001$). All of the t-test comparisons that included the tax evasion variable also showed significant differences at the 1 percent level.

Table 24a: Ranking by Relative Seriousness of Tax Evasion
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Relative Seriousness of Tax Evasion	Mean	Std. Dev.	n
1	Wife beating	1.2	0.93	988
2	Someone accepting a bribe in the course of their duties.	1.4	1.16	988
3	Claiming government benefits to which you are not entitled.	2.3	1.88	947
3	Suicide	2.3	2.02	919
5	Cheating on taxes if you have a chance.	2.4	2.15	949
6	Avoiding a fare on public transport.	2.5	2.12	980
6	Prostitution	2.5	2.23	931
8	Abortion	3.0	2.56	938
9	Homosexuality	3.1	2.78	883
10	Euthanasia	3.4	2.84	914
11	Divorce	4.7	2.75	929

SIGNIFICANT DIFFERENCES IN MEAN SCORES	
	p value
Cheating on taxes if you have a chance v. Someone accepting a bribe in the course of their duties.	0.0001
Cheating on taxes if you have a chance v. Homosexuality	0.0001
Cheating on taxes if you have a chance v. Abortion	0.0001
Cheating on taxes if you have a chance v. Divorce	0.0001
Cheating on taxes if you have a chance v. Euthanasia	0.0001
Cheating on taxes if you have a chance v. Wife beating	0.0001

Table 24b: Relative Seriousness of Tax Evasion and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	2,488.686	7	355.527	92.955	<0.0001
Within Groups	29,052.538	7,596	3.825		
Total	31,541.224	7,603			

Trend Analysis

The final test was to do a trend analysis. We wanted to see if the attitude toward tax evasion had changed over time, and if so, in what direction. Tables 25a and 25b show the results. Poland was included in four of the five waves of surveys the *World Values* social scientists conducted, so data were available to make comparisons.

The ANOVA shows that the mean score differences between groups were significant at the 1 percent level ($p < 0.0001$). However, the trend was not linear. Aversion to tax evasion was strongest in 1999. It was somewhat weaker in 2005, and weaker yet in 1997. The least aversion to tax evasion was in 1989-1990, which one might expect, since that was about the same time the Berlin Wall was dismantled. In other words, aversion to tax evasion was weakest at the time of the communist regime's collapse (1989-1990), then got stronger in 1997, stronger again in 1999, then dropped in 2005.

Table 25a: Ranking by Trend Analysis
(Cheating on taxes is: 1 = never justifiable; 10 = always justifiable)

Rank	Trend Analysis	Mean	Std. Dev.	n
1	Wave 4 1999	2.2	2.14	1066
2	Wave 5 2005	2.4	2.15	949
3	Wave 3 1997	2.5	2.26	1139
4	Wave 2 1989-1990	2.7	2.36	1866

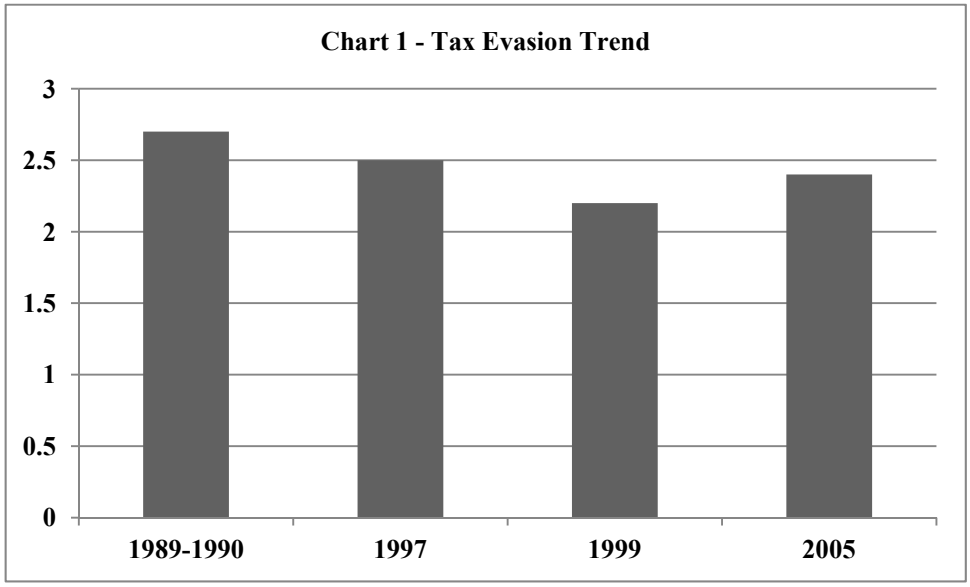
SIGNIFICANT DIFFERENCES IN MEAN SCORES	
	p value
Wave 2 1989-1990 v. Wave 3 1997	0.0221
Wave 2 1989-1990 v. Wave 4 1999	0.0001
Wave 2 1989-1990 v. Wave 5 2005	0.0010
Wave 3 1997 v. Wave 4 1999	0.0014
Wave 4 1999 v. Wave 5 2005	0.0368

Table 25b: Trend Analysis and Attitudes toward Tax Evasion
ANOVA Analysis

	Σ Squares	Df	Mean Squares	Fisher F-value	P value
Between Groups	179.727	3	59.909	11.803	<0.0001
Within Groups	25,459.157	5,016	5.076		
Total	25,638.884	5,019			

Chart 1 shows that the mean scores drop after the dismantling of the Berlin Wall (1989) and continue to drop, then rise in 2005, which indicates that the Poles became more averse to tax evasion at first, then less averse. One possible explanation for this change in attitude might be explained by the changing attitude toward government during those years. After the fall of the Berlin Wall, people began to place more trust in their new government, but after a few years, and

after experiencing what it is like to pay taxes, they started to change their attitude toward tax evasion.



CONCLUDING COMMENTS

This study found several interesting relationships between attitude toward tax evasion and 23 demographic variables. It is perhaps the most comprehensive demographic study of the Polish tax system done to date examining the relationship between certain demographic variables and attitude toward tax evasion. The methodology used in this study can also serve as a template for studies of other countries and regions. Some of the demographic variables included in this study have not been used in prior studies, which breaks new ground and may serve as the basis for further research into these variables.

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THE RELATIONSHIP BETWEEN EXECUTIVE PAY AND ALTERNATIVE EARNINGS MEASURE

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ABSTRACT

In this study, I present empirical evidence that using executive stock options to remunerate top 5 corporate executives increases future corporate performance even when alternative earnings measure (premanaged earnings) is considered. The findings further show that the contributions of executive stock options become progressively smaller into the future. It thus becomes an empirical question how far into the future the positive dollar impact of current option grants on future earning ends or becomes negative, as this could provide valuable decision tool to compensation committees on the efficient grant-frequency of executive stock options to top corporate executives. Overall the results of this study strongly support the incentive alignment theory of executive stock option grants.

Key words: executive compensation; earnings performance, earnings quality, stock options

INTRODUCTION

The objective of this study is to examine the findings of Hanlon et al (2003) and Akindayomi and Warsame (2012) within the context of alternative earnings measure – premanaged earnings1[1]. The findings from these studies show that granting stock options to top executives increase future reported earnings (Hanlon et al) and non-discretionary earnings (Akindayomi and Warsame).

The fact that executive pay has come under increased scrutiny in the recent past cannot be ignored. Unquestionably, this scrutiny substantially focuses on top (mostly the top 5) executives in corporate America. While some argue that top executives are over-remunerated, others contend that executive pay tied to performance is appropriate as these executives are motivated to improve corporate performance and thus increase shareholders' wealth. These contradicting positions have extensively attracted the interests of academics/scholars in accounting, economics and finance. However, scholarly research output in this area remains at best contradictory.

The genuine challenge posed by the separation of ownership and control is visibly highlighted in the agency research work of Jensen & Meckling (1976). The real agency cost associated with the agency problem in shareholder (principal)/manager (agent) relationship is

magnified due to varying interests and the opposing incentive structures of the shareholder and the manager. This creates an incentive alignment gap that must be bridged for the manager to maximize the shareholder's wealth. Executive stock option is one of the widely employed bridging tools in this context. However, the extent to which this compensation tool achieves its anticipated objective remains a practical and an empirical question in compensation research domain. In sum, research findings in this area have been at best inconclusive and controversial.

In practice, using executive stock options to remunerate executives continues to increase exponentially in the corporate world. The relative popularity of the choice of stock options among corporations is attested to in the literature. For example, Moran (2002) documents that the use of stock options grew among employee-recipients by about 900% between the late 1990's and the year 2002. In about the same time frame, Bear Stearns & Co reports (see Amromin and Liang, 2003) that stock option grants jumped by 200% relative to corporate operating earnings.

Given the preponderance of earnings management evidence in the literature, it is interesting that scholars findings are inconclusive especially (among others) on the relationship between executive compensation (stock options) and managers financial reporting strategies. Even though the literature in these areas has long history, it is still very active. Hence, the motivation for this study. Among others, my study contributes to the literature in the following ways. On one hand, it extends our understanding of the effect of compensation choice on future firm performance especially when one controls for financial misreporting (i.e.. earnings management) by managers. On the other hand, it reinforces the incentive alignment findings in Hanlon et al. This is important in that the findings of the current study provides a conclusive evidence that irrespective of the earning measures, remunerating corporate executive with stock options improves future corporate performance and thus align shareholders/managers interests thus minimizing the agency costs.

The remainder of the paper continues as follows. Section 2 examines relevant literature and the stated hypothesis. In section 3, I provide the research methodology and design. The empirical results/findings are presented in section 4 while final section is on the summary and the potential limitations of this study.

REVIEW ON EXECUTIVE PAY AND EARNINGS MANAGEMENT MEASURES

The connection between executive compensation and stock options continues to grow in recent corporate history (see Gritsch & Snyder, 2005). Hall & Liebman (1998) note the increasing level of executive wealth exposure to stock prices. Bergstresser & Phillppon (2006) corroborate this view claiming that such exposure becomes stronger in the mid 1990s leading to the new millennium. Two competing theories are advanced in this area of the compensation literature vis-à-vis the increasing use of stock options to remunerate executives. On one hand, some argue that given the agency problem and its attendant costs (see Jensen & Meckling, 1976), tying executive

pay to future performance reduces incentives gap between top management and the shareholders. This is called the incentive alignment theory (for more see, Rajgopal & Shevlin, 2002; Hanlon et al, 2003; Mawani, 2003). On the other hand, other scholars believe that if anything, such a corporate decision actually rewards executives in good times without any punishment during years of dismay performance, thus becoming a conduit for channeling shareholders' wealth to executives. This is referred to as rent extraction theory (for more see, Johnson 2003; Aboody & Kasznik, 2000; Baker et al, 2003).

During the sample period examined in this study, research evidence suggests that managers actively consider *ex ante* financial reporting costs in stock options grant decisions as well as the magnitude of the options to grant to executives (see Matsunaga, 1995; Klassen and Mawani, 2000 for example). This thus implies a substitution effect between stock options and cash compensation. However, findings in Bryan et al (2000) do not produce 'strong evidence' to support such a relationship. Notwithstanding, Murphy (1999) emphasizes the dominance of the financial reporting incentives albeit in the grant choice between at-the-money options and in-the-money options, suggesting the prevalence of the former. Hall & Murphy (2002) provide explanation for the lack of popularity of out-of- the money options grant. They argue that in addition to the de-motivational effect, such grants will trigger demand for higher premiums by executive recipients. This I contend could increase the firm's cost of capital.

With the prominence of stock options in the executive compensation and its relative dominant magnitude in the total compensation package, managers have renewed incentives to manage performance measures. A common performance measure candidate in this context is corporate earnings. Hence the popularity of earnings management studies in accounting, economics, finance and related literature from the 1900s till date. I must mention that there are different types of earnings and earnings management vis-à-vis executive stock options examined in the literature by related studies. This ranges from reported earnings (see for example, Hanlon et al, 2003), and nondiscretionary earnings (Akindayomi & Warsame, 2012). Another earnings management measure is premanaged earnings. To the best of my knowledge, very few studies examine this measure in the context of stock options as a remuneration choice to reward executive performance. A notable exception is Baker e al (2003)[2].

One way to improve corporate earnings is to increase managers' appetite for risks. The appeal of executive stock options to compensation committee is premised on the fact that it provides incentives for executives to move from their natural comfort zone of risk neutrality into the realm of risk taking. For example, Agrawal & Mandelker (1987) suggest that stock option holders experience increase in the value of options and the payoffs when they are able to increase the variance of their company's stock prices. In essence, stock options motivate managers to "adopt and not avoid" risky projects (Rajgopal and Shevlin, 2002). This implies that option's reward increases as managers take more risks. This is consistent with the risk-return rule. Two questions arise from this proposition. One, how effective is executive stock options in this context

and two, how aggressive should managers be in their risk taking endeavors. My study aims at examining the former in the context of accounting numbers and earnings measures

Both Hanlon et al (2003) and Akindayomi & Warsame (2012) find results consistent with the incentive alignment hypothesis, even though the latter shows that the positive impact executive stock options have future earnings is not as high (relative to the former) if one controls for the potentials of managers to actively interfere in the financial reporting process. In this study, I intend to subject both findings to alternative earnings measure – premanaged earnings, in terms of the direction and magnitude of the stock options contributions.

RESEARCH METHODS/DESIGN

There is a strong link between executive compensation (particularly stock options) and corporate performance, notwithstanding the controversy as to the direction and magnitude. Earnings management is uniquely situated in this controversy. It is a consensus that managers cannot manage earnings indefinitely in either direction. Cheng & Warfield (2005) state that "it is difficult, if not impossible, for a firm to manage earnings upward (or even downward) consistently". In fact, recent empirical evidence in the literature indicates that after an initial misstatement of earnings, managers tend to be more forceful in their future accounting choices in order to prevent being detected and the attendant penalizing market reactions that could follow such detection. Myers et al. (2007) term this a 'slippery slope' in the multi-period earning management process (see Schrand & Zechman, 2012 for example of studies of the slippery slope financial reporting).

Therefore, if the above is true, examining *ex post* performance effects of executive stock options should be earnings variables devoid of earnings management. Consequently, using accounting-based measures (as opposed to market-based measures)[3], I test the variation of the following hypothesis stated in alternative form:

> *Ceteris paribus, using stock option compensation to reward top 5 executives will increase the premanaged operating earnings of the firm.*

Consistent with Kang and Sivaramakrishnan (1995) Reitenga et al (2002), Baker et al (2003). I calculate premanaged earnings as:

$$[\text{OPINC}_t - \text{REV}_t \times \Delta(\text{AR} \div \text{REV})_t + \text{OpExp}_t \times \Delta(\text{CL-CM}) \div \text{OpExp})_t - \text{OpExp}_t \times \Delta(\text{Inventory} \div \text{OpExp})_t] \quad (1)$$

Where:

OPINC = Operating Income before depreciation scaled by Sales of firm i at time t;
REV = revenues;

OpExp = Cost of goods sold and selling and administration expense before depreciation;
AR = Accounts Receivable
CL = Current Liabilities
CM = current maturities of long term debt.
Δ is the change and computed as the difference between time t and t – 1.

The following empirical models are used to test the above hypothesis:

$$(PMGD/S)_{it} = \alpha_0 + \alpha_1(TA/S)_{i,t-1} + \sum_{k=0}^{5} \alpha_{2,k}(BSO/S)_{i,t-k} + \sum_{k=0}^{5} \alpha_{3,k}(BSO/S)^2_{i,t-k} + \sum_{k=0}^{5} \alpha_{4,k}(R\&D/S)_{i,t-k} + \alpha_5\sigma(PMGD/S)_{i,t-1} + \alpha_6 \text{ Idummies} + \alpha_7 \text{ Ydummies} + \varepsilon_{it} \quad (2)$$

$$(PMGD/S)_{it} = \alpha_0 + \alpha_1(TA/S)_{i,t-1} + \alpha_2(BSO/S)_{i,t-1} + \alpha_3(BSO/S)^2_{i,t-1} + \alpha_4(R\&D/S)_{i,t-1} + \alpha_5 \text{ Idummies} + \alpha_6 \text{ Ydummies} + \varepsilon_{it} \quad (3)$$

Where:

PMGD = Premanaged earnings scaled by Sales of firm i at time t.
TA = Total Assets of firm i at time t
BSO = Black-Scholes value of executive stock options granted to top 5 executives. BSO is also squared to adjust for an observed non-linearity in the relationship between BSO and PMGD.
R&D = Research and development expenses of firm i during the year *t – k (k = 0 – 5)*
$\sigma(P\ PMGD)_{i,t-1}$= Standard deviation of earnings measures estimated over the prior 5 year, for firm i.
S = is the annual sales in time t.
Idummies = Industry dummies
Ydummies = Year dummies

The difference between equation (2) and (3) is that the former is the modified version of the Hanlon et al baseline model which is referred to by Larcker (2003) as "backward-looking" empirical design and the latter as "forward-looking". One improvement of the "forward-looking model is that it allows the model specification to efficiently maximize the sample size. In addition, Larcker considers the absence of the control for prior performance in the baseline model as an important exclusion. Therefore, consistent with Larcker's position, I control for prior performance in the following equation:

$$(PMGD/S)_{it} = \alpha_0 + \alpha_1(TA/S)_{i,t-1} + \sum_{k=0}^{5} \alpha_{2,k}(BSO/S)_{i,t-k} + \sum_{k=0}^{5} \alpha_{3,k}(BSO/S)^2_{i,t-k} + \sum_{k=0}^{5} \alpha_{4,k}(R\&D/S)_{i,t-k} + \alpha_5\sigma(PMGD/S)_{i,t-1} + \alpha_6(PMGD/S)_{i,t-1} + \text{Idummies} + \alpha_8 \text{ Ydummies} + \varepsilon_{it} \quad (4)$$

$$(PMGD/S)_{it} = \alpha_0 + \alpha_1(TA/S)_{i,t-1} + \alpha_2(BSO/S)_{i,t-1} + \alpha_3(BSO/S)^2_{i,t-1} + \alpha_4(R\&D/S)_{i,t-1} + \alpha_5(PMGD/S)_{i,t-1} + \alpha_6 \text{ Idummies} + \alpha_7 \text{Ydummies} + \varepsilon_{it} \quad (5)$$

(See variable definitions above).

All variables in the above equations are scaled by sales to control for potential heteroscedascticity. Consistent with Core et al (1999), the standard deviation estimated previous five years controls for the possible relation between firm risk and future premanaged earnings (see also Hanlon et al). To control for size effects, all variables are scaled by sales. The year dummies are the fiscal year when the premanaged earnings variable is measured. The industry dummies are based on a two-digit SIC code.

Research and Development (R&D) variable is introduced into the models above in order to avoid estimation error. This is because R&D expenditure has the potential to increase or decrease future corporate earnings and failure to account for this reality may over (under)estimate the performance value of BSO/S.

SAMPLE

In this study, I use all US firms that meet the data availability criteria in the Execucomp database (which begins in 1992) and Compustat tapes. The choice of the sample locale is mainly to avoid potential complications from different reporting rules in different jurisdictions/countries (see Matsunaga, 1995). In addition, due to different earnings management incentives, I exclude firms in regulated industries, i.e., utilities (SIC codes 4900-4999) and financials (SIC codes 6000-6099).

The sample period spans 1992 through 2004. This period is relatively longer than Hanlon et al, thus providing a more efficient sample size good for improved generalizability of results. Further, due to the financial reporting changes vis-à-vis expensing stock options (FAS 123 with year 2005 effective date) and the potential confounding effects it will have on my study, year 2004 is the cut-off period. The initial analysis for all the relevant models begins with 2507 firms with 17,970 firm-years. Recall that the empirical models are both 'backward-looking' and 'forward-looking'. After necessary data screening, there are 858 firms with 2,579 firm years in the former design. The latter model has three designs as follows:

i. n + 1 (1,666 firms with 8,384 firm years);
ii. Sum n + 1 + 2 (1,476 firms with 6,666 firm years);
iii. Sum n + 1 + 2 + 3 (1,283 firms with 5,357 firm years);

(n in the above designs is the grant year)

Note that the discrepancies in the number of firms and firm-years above is primarily due to more stringent data screening requirements necessitated by their unique individual underlying characteristics. In all models, I use firm-years and not firm-quarters because Execucomp database, from where I obtain the Black-Scholes value of an option for my sample period, only provides the stock options data on annual basis.

RESULTS

The empirical results for this study are presented in this section. I start with the descriptive statistics showing the sample characteristics of the data in relation to the variations of the designs developed above, i.e. 'backward-looking design and 'forward-looking design' hereinafter referred to as BLD and FLD respectively in this section.

Descriptive Statistics

In tables 1 through 4, panel A shows descriptive statistics while panel B contains the correlation matrix of the variables tested in the models. All variables in panel B are significant at conventional thresholds.

Table 1: Backward Looking Design} Descriptive Statistics And Correlation Matrix

Panel A: Descriptive Statistics (N = 2,579: F = 858)

Variables	Mean	Std. deviation	Median	Q1	Q3
PMGD($billion)	0.887	2.238	0.236	0.087	0.731
SALES ($billion)	5.395	11.151	1.737	0.73	4.977
BSO grants ($million)	7.758	18.819	2.684	0.865	7.512
ASSETS ($billion)	5.05	12.382	1.564	0.654	4.611
PMGD/S	0.157	0.237	0.142	0.083	0.221
TA/S	1.083	0.794	0.887	0.621	1.281
BSO/S	0.004	0.009	0.001	0.0005	0.003
R&D/S	0.043	0.181	0.004	0	0.037

Panel B: Correlation Matrix

Variables		PMGD/S	TA/S	BSO/S	R&D/S
PMGD/S		1			
TA/S		0.294	1		
BSO/S		0.216	0.382	1	
R&D/S		0.213	0.522	0.491	1

Note on Panel A: The 'backward-looking' design model is estimated using 2,579 firm-year observations for a total of 858 firms with no missing data. The firm years span through 1998 to 2001. PMGD is premanaged earnings, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA) and R&D is research and development expenditure. Missing values of R&D are set to zero.

Note on Panel B: Variables are as described above scaled by sales. All correlations are significant at conventional thresholds except otherwise indicated as a superscript NS.

Table 2: {Forward Looking Design} {Year + 1} Descriptive Statistics And Correlation Matrix					
Panel A: Descriptive Statistics (*N* = 8,384: *F* = 1,666)					
Variables	**Mean**	**Std. deviation**	**Median**	**Q1**	**Q3**
PMGD($billion)	0.625	1.965	0.159	0.057	0.476
SALES ($billion)	4.089	10.057	1.216	0.494	3.497
BSO grants ($million)	4.428	11.171	1.673	0.645	4.263
ASSETS ($billion)	3.805	10.983	0.991	0.384	2.952
PMGD/S	0.15	0.221	0.14	0.08	0.21
TA/S	1.01	0.921	0.82	0.59	1.18
BSO/S	0.003	0.004	0.001	0.0004	0.004
R&D/S	0.03	0.071	0.001	0	0.033
Panel B: Correlation Matrix					
Variables	**PMGD/S**	**TA/S**	**BSO/S**	**TCC/S**	**R&D/S**
PMGD/S	1				
TA/S	0.029	1			
BSO/S	0.145	0.19	1		
TCC/S	0.082	0.301	0.434	1	
R&D/S	0.245	0.279	0.36	0.375	1

Note on Panel A: *The 'forward-looking' design model {Year + 1} is estimated using 8,384 firm-year observations for a total of 1,666 firms with no missing data. Firm years span through 1992 to 2001. PMGD is premanaged earnings following the year of grant, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA), TCC is cash compensation for top 5 corporate executives as per Execucomp, and R&D is research and development expenditure. Missing values of R&D are set to zero.*

Note on Panel B: *Variables are as described above scaled by sales. All correlations are significant at conventional thresholds except otherwise indicated as a superscript NS.*

Table 3: {Forward Looking Design} {Sumyear + 1 + 2} Descriptive Statistics And Correlation Matrix					
Panel A: Descriptive Statistics (*N* = 6,666: *F* = 1,476)					
Variables	**Mean**	**Std. deviation**	**Median**	**Q1**	**Q3**
PMGD1 ($billion)	1.371	3.923	0.36	0.137	1.065
SALES ($billion)	9.034	22.517	2.707	1.089	7.72
BSO grants ($million)	4.687	10.677	1.811	0.703	4.564
ASSETS ($billion)	3.984	11.302	1.02	0.401	3.165
PMGD1/S	0.16	0.146	0.14	0.09	0.21
TA/S	0.48	0.393	0.39	0.28	0.56
BSO/S	0.002	0.004	0.001	0.0002	0.002
R&D/S	0.009	0.014	0.002	0	0.014
Panel B: Correlation Matrix					
Variables	**PMGD1/S**	**TA/S**	**BSO/S**	**TCC/S**	**R&D/S**
PMGD1/S	1				
TA/S	0.07	1			
BSO/S	0.106	0.154	1		
TCC/S	0.048	0.213	0.442	1	
R&D/S	0.308	0.036	0.204	0.175	1

Note on Panel A: *The 'forward-looking' design model {SumYear + 1 + 2} is estimated using 6,666 firm-year observations for a total of 1,476 firms with no missing data. Firm years span through 1992 to 2001. PMGD1 is sum of premanaged earnings for two years following the grant year, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA), TCC is cash compensation for top 5 corporate executives as per Execucomp, and R&D is research and development expenditure. Missing values of R&D are set to zero.*

Note on Panel B: *Variables are as described above scaled by sales. All correlations are significant at conventional thresholds except otherwise indicated as a superscript NS.*

Table 4: {Forward Looking Design} {Sumyear + 1 + 2 + 3} Descriptive Statistics And Correlation Matrix

Panel A: Descriptive Statistics (*N* = 5,357: *F* = 1,283)

Variables	Mean	Std. deviation	Median	Q1	Q3
PMGD2 ($billion)	2.14	5.678	0.55	0.207	1.625
SALES ($billion)	12.866	29.887	3.943	1.587	11.265
BSO grants ($million)	5.065	12.627	1.587	0.748	4.727
ASSETS ($billion)	3.66	8.358	1.015	0.396	2.993
PMGD2/S	0.16	0.102	0.15	0.1	0.2
TA/S	0.285	0.107	0.267	0.199	0.353
BSO/S	0.001	0.004	0	0.0002	0.001
R&D/S	0.01	0.013	0.004	0	0.014

Panel B: Correlation Matrix

Variables	PMGD2/S	TA/S	BSO/S	TCC/S	R&D/S
PMGD2/S	1				
TA/S	0.265	1			
BSO/S	0.166	0.14	1		
TCC/S	0.088	0.137	0.364	1	
R&D/S	0.501	0.293	0.237	0.257	1

Note on Panel A: *The 'forward-looking' design model {SumYear + 1 + 2 + 3} is estimated using 5,357 firm-year observations for a total of 1,283 firms with no missing data. Firm years span through 1992 to 2001. PMGD2 is sum of premanaged earnings for three years following the year of grant, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA) and R&D is research and development expenditure. Missing values of R&D are set to zero.*

Note on Panel B:

Variables are as dscribed above scaled by sales. All correlations are significant at conventional thresholds except otherwise indicated as a superscript NS.

In panel A of table 1, the sample characteristics of BLD indicates average value of (BSO) stock options granted to the top 5 executives is $7.758 million (median $2.7 million). This represents approximately 0.4% of operating revenues. The average assets are $5 billion (median $1.6 million) with asset turnover rate of approximately 0.90. With approximately 16% premanaged earnings margin, the firms generated revenue worth 5.395 billion (median 1.7 billion) on the average during the sample period. Overall, the statistics indicate that the sampled firms are clearly large and profitable with intensive use of executive stock options compensation to remunerate top executives[4]. Similar inferences are drawn from the figures in tables 2 through 4 on the FLD.

REGRESSION RESULTS

These results are analyzed in two subsections i.e., Backward-Looking design (BLD) and Forward-Looking design (FLD).

Backward-Looking Design

The baseline model results are contained in table 5. In panel A, the regression coefficients are presented in columns 1 through 4. However, for discussions purposes, I only focus on

columns 3 and 4 which have nonlinear specifications since nonlinear relationship is established between the main regressor of interest (BSO/S) and the dependent measure (PMGD/S)[5]. The coefficients BSO/S and $(BSO/S)^2$ are respectively positive and negative consistent with the concavity relation between executive stock options and the earning measure. This means that while future performance increases in executive stock option grants, such an increase only occurs at diminishing rate[6].

Table 5: {Backward Looking Design} Estimation Of Payoffs Using Black-Scholes Values Of BSO Grants {N = 2,579; F = 858}

Panel A: Regression Coefficients}

	LINEAR		NONLINEAR	
	1	2	3	4
Variable **{Dependent: PMGD/S}**	Coefficient	Coefficient	Coefficient	Coefficient
TA/S	0.142***	0.079***	0.108***	-0.029
$\sum_{k=0}^{5} \alpha_{2,k}(BSO/S)_{i,t-}$	0.436***	0.446***	0.879***	0.920***
$\sum_{k=0}^{5} \alpha_{3,k}(BSO/S)^2_{i,t-k}$			-0.417***	-0.418***
$\sum_{k=0}^{5} \alpha_{4,k}(R\&D/S)_{i,t-k}$	-0.021***	-0.038***	0.139***	-0.193***
$\sigma(PMGD/S)_{i,t-1}$	-0.217***	-0.200***	-0.156***	-0.119***
$(PMGD)_{t-1}/S$		0.169***		0.195***
Adj. R^2 without dummies	0.224	0.265	0.262	0.305
Adj. R^2 overall	0.311	0.328	0.34	0.36

Panel B: Economic effects sensitivity of various BSO distribution {without previous performance}

		LINEAR			**NONLINEAR**	
		Effect on	Implied		Effect on	Implied
Distribution Cutoff	BSO/S	PMGD/S	Sensitivity	BSO/S	PMGD/S	Sensitivity
FIRST	0.0005	0.0002	0.44	0.0005	0.0004	0.88
MEDIAN	0.0012	0.0005	0.44	0.0012	0.0011	0.88
THIRD	0.0033	0.0014		0.0033	0.0029	

Panel C: Economic effects sensitivity of various BSO distribution {with previous performance}

FIRST	0.0005	0.0002	0.45	0.0005	0.0004	0.92
MEDIAN	0.0012	0.0006	0.45	0.0012	0.0011	0.92
THIRD	0.0033	0.0015		0.0033	0.003	

*Note on Panel A: ***, ** and * represent significance levels at 0.01, 0.05 and 0.10 respectively. The 'backward-looking' design model is estimated using 2,579 firm-year observations for a total of 858 firms with no missing data. The firm years span through 1998 to 2001. PMGD is premanaged earnings; Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA) and R&D is research and development expenditure. Missing values of R&D are set to zero. All variables are scaled by sales. Years are indexed by t and firms by i, time and industry dummies are suppressed for expositional convenience. Panel A contains regression coefficient estimates. Columns 1 and 3 contain coefficients without previous performance while columns 2 and 4 cover estimates with previous performance. Columns 1 to 2 and columns 3 to 4 are for linear and nonlinear models respectively.*

Note on Panel B and C: Implied sensitivity analyses in panel B and C refer to the change in PMGD/S scaled by change in BSO/S.

From panel A of table 5, column 3 shows that without controlling for prior performance, BSO/S and $(BSO/S)^2$ are 0.879 and -0.417 respectively. Controlling for prior performance, the coefficients are respectively 0.920 and -0.418. The positive signs of the variable of interest

(BSO/S) show the positive contribution of executive stock options to alternative earnings measure (PMGD). Panels B and C confirm this assertion as the economic effect of BSO/S provide consistent results. Implied economic sensitivity numbers computed using Hanlon et al approach is the change in PMGD/S scaled by change in BSO/S. This is the dollar amount of changing the median BSO up or down to next quartile cutoff (Hanlon et al and then Akindayomi & Warsame). With (without) prior performance, this 'economic impact' analysis shows that using one dollar executive stock options to remunerate top executives increases my measure of corporate earnings by $1.92 ($1.88). In sum, even after using alternative earnings measure (premanaged earnings), it is shown that executive stock options increase future earnings performances as reflected in the results from both the regression and implied sensitivity analyses.

Forward-Looking Design

Recall that Larcker (2003) criticized Hanlon et al BLD as restrictive in sample size, sample period and diminished model explanatory power. In effect, Larcker challenged the BLD results presented above. In response, I re-examine the hypothesis using the FLD (see subsection on 'Sample' above) and the results are presented in tables 6 through 8.

Please note that in (i) – (iii) above (see subsection on 'Sample'), I examine the effects of granting executive stock options to top executives in year n and the option-payoffs of such grants to future earnings performance in: one year after the new grants (Year + 1); combined two years after the grant (SumYear + 1 + 2); combined three years after the grant (SumYear + 1 + 2 + 3). After controlling for firms' total assets, R&D, earnings performance in year t-1, and cash components of the executive compensation package, tables 6 - 8 indicate that my main variables of interest viz: BSO/S and $(BSO/S)^2$ are significant with very high t-statistic while displaying positive and negative signs respectively. Similar to the findings in Akindayomi & Warsame, it is instructive to note that BSO/S coefficients in all the three specifications are consistently lower when previous earnings performances are controlled for. The coefficients are 0.208 (0.245), 0.176 (0.191) and 0.129 (0.149) respectively for Year + 1, SumYear + 1 + 2, SumYear + 1 + 2 + 3 in with (without) prior performance models specifications. These results corroborate Lacker assertion of potential omission variable bias in similar empirical research settings. Further, I interpret the implied analyses results on the strength of this assertion (i.e. only panel D) even though, the dollar effects of stock option grants to the target executives are provided in panel C and D (mainly because Panel D reports results after controlling for previous earnings performance).

Table 6: {Forward Looking Design} {Year + 1} Estimation Of Payoffs Using Black-Scholes Values Of BSO Grants {N = 8,384; F = 1,666}

Panel A: {Regression Coefficients without Previous Performance}

	1	2	3		4	5	6
Variable **{Dependent: PMGD/S}**	Coefficients	t-statistic	p-value		Coefficients	t-statistic	p-value
TA/S	-0.201	-16.25	.000		-0.2	-16.2	.000
BSO/S	0.049	4.12	.000		0.245	7.96	.000
$(BSO/S)^2$					-0.203	-6.9	.000
RD/S	0.262	20.77	.000		0.269	21.31	.000
TCC/S	-0.029	-2.38	0.017		-0.036	-2.98	0.003
Adj. R^2 without dummies	0.066				0.075		
Adj. R^2 overall	0.167				0.172		

Panel B: {with previous performance}

TA/S	-0.24	-18.98	.000		-0.239	-18.98	.000
BSO/S	0.062	5.24	.000		0.208	8.79	.000
$(BSO/S)^2$					-0.213	-7.33	.000
RD/S	0.286	22.66	.000		0.294	23.25	.000
TCC/S	-0.043	-3.59	.000		-0.051	-4.24	.000
$(PMGD)_{t-1}/S$	-0.134	-12.74	.000		0.136	12.97	.000
Adj. R^2 without dummies	0.068				0.077		
Adj. R^2 overall	0.183				0.188		

Panel C: Economic effects sensitivity of various BSO distribution {without previous performance}

		LINEAR			**NONLINEAR**	
Distribution Cutoff	BSO/S	Effect on PMGD/S	Implied Sensitivity	BSO/S	Effect on PMGD/S	Implied Sensitivity
FIRST	0.0004	0.0000	0.05	0.0004	0.0001	0.24
MEDIAN	0.0012	0.0001	0.05	0.0012	0.0003	0.24
THIRD	0.0035	0.0002		0.0035	0.0008	
FIRST	0.0004	0.0000	0.06	0.0004	0.0001	0.27
MEDIAN	0.0012	0.0001	0.06	0.0012	0.0003	0.27
THIRD	0.0035	0.0002		0.0035	0.0009	

Notes on Panels A & B: *The 'forward-looking' design model {Year + 1} is estimated using 8,384 firm-year observations for a total of 1,666 firms with no missing data. Firm years span through 1992 to 2001. PMGD is premanaged earnings following the year of grant {the dependent measure}; Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA), TCC is cash compensation for top 5 corporate executives as per Execucomp and R&D is research and development expenditure. Missing values of R&D are set to zero. All variables are scaled by sales. Years are indexed by t and firms by i, time and industry dummies are suppressed for expositional convenience. Panel A is with respect to estimates without previous performance while Panel B covers estimates with previous performance. Columns 1 to 3 and columns 4 to 6 are for linear and nonlinear models respectively in both panels.*

Note on Panel C and D: *Implied sensitivity analyses in panel C and D refer to the change in PMGD/S scaled by change in BSO/S.*

Pane D shows that executive stock options grants to the top 5 executives increase my earnings measure by $1.27 in Year + 1, $1.18 in SumYear + 1 + 2, and $1.13 in SumYear + 1 + 2 + 3. These results document strong empirical evidence for the theoretical assertion of concave relations between executive stock options and future earnings performances maintained by Hanlon et al, but which they could not empirically test because of the limitations imposed by their backward-looking empirical design[7]. The fact the contribution becomes progressively smaller in the FLD suggests an interesting dimension. Since my sample period coverage does not permit the empirical analysis beyond SumYear 1 + 2 + 3, future studies may examine at what point in the

future does the positive dollar impact of options grants to top corporate executives on future earnings ends or even becomes negative. This is important in that it could provide valuable decision tool to compensation committees on the efficient *grant-frequency* of executive stock options to top corporate executives.

Table 7: {Forward Looking Design} {Sumyear + 1 + 2} Estimation Of Payoffs Using Black-Scholes Values Of BSO Grants {N = 6,666; F = 1,476}

Panel A: {Regression Coefficients without Previous Performance}

	1	2	3		4	5	6
Variable **{Dependent: PMGD1/S}**	Coefficients	t-statistic	p-value		Coefficients	t-statistic	p-value
TA/S	-0.144	-11.18	0.000		-0.146	-11.38	0.000
BSO/S	0.053	4.33	0.000		0.191	7.94	0.000
$(BSO/S)^2$					-0.146	-6.66	0.000
RD/S	0.31	21.73	0.000		0.303	21.25	0.000
TCC/S	-0.053	-4.29	0.000		-0.07	-5.53	0.000
Adj. R^2 without dummies	0.101				0.109		
Adj. R^2 overall	0.268				0.273		
Panel B: {with previous performance}							
TA/S	-0.22	-16.5	0.000		-0.221	-16.62	0.000
BSO/S	0.05	4.17	0.000		0.176	7.47	0.000
$(BSO/S)^2$					-0.133	-6.21	0.000
RD/S	0.258	18.02	0.000		0.252	17.63	0.000
TCC/S	-0.041	-3.36	0.001		-0.056	-4.52	0.000
$(PMGD)_{t-1}/S$	0.212	17.42	0.000		0.209	17.25	0.000
Adj. R^2 without dummies	0.169				0.175		
Adj. R^2 overall	0.3				0.304		

Panel C: Economic effects sensitivity of various BSO distribution {without previous performance}

		LINEAR			NONLINEAR	
Distribution Cutoff	BSO/S	Effect on PMGD1/S	Implied Sensitivity	BSO/S	Effect on PMGD1/S	Implied Sensitivity
FIRST	0.0002	0.0000	0.05	0.0002	0.0000	0.19
MEDIAN	0.0016	0.0000	0.05	0.0016	0.0001	0.19
THIRD	0.0015	0.0001		0.0015	0.0003	

Panel D: Economic effects sensitivity of various BSO distribution {with previous performance}

FIRST	0.0002	0.0000	0.05	0.0002	0.0000	0.18
MEDIAN	0.0016	0.0000	0.05	0.0016	0.0001	0.18
THIRD	0.0015	0.0001		0.0015	0.0002	

Notes on Panels A & B: *The 'forward-looking' design model {SumYear + 1 + 2} is estimated using 6,666 firm-year observations for a total of 1,476 firms with no missing data. Firm years span through 1992 to 2001. PMGD1 is sum of premanaged earnings for two years following the grant year{the dependent measure}; PMGD is premanaged earnings, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA), TCC is cash compensation for top 5 corporate executives as per Execucomp and R&D is research and development expenditure. Missing values of R&D are set to zero. All variables are scaled by sales. Years are indexed by t and firms by i, time and industry dummies are suppressed for expositional convenience. Panel A is with respect to estimates without previous performance while Panel B covers estimates with previous performance. Columns 1 to 3 and columns 4 to 6 are for linear and nonlinear models respectively in both panels.*

Note on Panel C and D: *Implied sensitivity analyses in panel C and D refer to the change in PMGD1/S scaled by change in BSO/S.*

The controlled variables substantially show the anticipated coefficient characteristics. Research and Development coefficients are all positive and highly significant. This means that even after controlling for investment expenditure in R&D, BSO/S still possesses incremental

earning performance value. With (without) previous earnings, R&D/S are 0.294 (0.269), 0.252 (0.303) and 0.314 (0.420) respectively for Year + 1, SumYear + 1 + 2, SumYear + 1 + 2 + 3 model specifications. In the same pattern, TA/S coefficients display -0.239 (-0.200), -0.221 (-0.146) and -0.043 (0.045). I must mention that caution should be exercised interpreting TA/S coefficients as I believe that the negative coefficients show asset turnover features.

Table 8: {Forward Looking Design} {Sumyear + 1 + 2 + 3}Estimation Of Payoffs Using Black-Scholes Values Of BSO Grants {N = 5,357; F = 1,283}

Panel A: {Regression Coefficients without Previous Performance}

	1	2	3	4	5	6
Variable **{Dependent: PMGD2/S}**	Coefficients	t-statistic	p-value	Coefficients	t-statistic	p-value
TA/S	0.045	3.51	0.000	0.045	3.51	0.000
BSO/S	0.064	5.35	0.000	0.149	7.34	0.000
$(BSO/S)^2$				-0.096	-5.18	0.000
RD/S	0.43	29.75	0.000	0.42	28.92	0.000
TCC/S	-0.093	-7.64	0.000	-0.105	-8.51	0.000
Adj. R^2 without dummies	0.272			0.275		
Adj. R^2 overall	0.39			0.393		
Panel B: {with previous performance}						
TA/S	-0.044	-3.52	0.000	-0.043	-3.46	0.001
BSO/S	0.067	6	0.000	0.129	6.72	0.000
$(BSO/S)^2$				-0.069	-3.95	0.000
RD/S	0.319	22.21	0.000	0.314	21.72	0.000
TCC/S	-0.071	-6.17	0.000	-0.08	-6.84	0.000
$(PMGD)_{t-1}/S$	0.309	24.8	0.000	0.306	24.54	0.000
Adj. R^2 without dummies	0.371			0.373		
Adj. R^2 overall	0.453			0.455		

Panel C: Economic effects sensitivity of various BSO distribution {without previous performance}

	LINEAR			**NONLINEAR**		
Distribution Cutoff	BSO/S	Effect on PMGD2/S	Implied Sensitivity	BSO/S	Effect on PMGD2/S	Implied Sensitivity
FIRST	0.0002	0.0000	0.06	0.0002	0.0000	0.15
MEDIAN	0.0004	0.0000	0.06	0.0004	0.0001	0.15
THIRD	0.0011	0.0001		0.0011	0.0002	

Panel D: Economic effects sensitivity of various BSO distribution {with previous performance}

FIRST	0.0002	0.0000	0.07	0.0002	0.0000	0.13
MEDIAN	0.0004	0.0000	0.07	0.0004	0.0001	0.13
THIRD	0.0011	0.0001		0.0011	0.0001	

Notes on Panels A & B: *The 'forward-looking' design model {SumYear + 1 + 2 + 3} is estimated using 5,357 firm-year observations for a total of 1,283 firms with no missing data. Firm years span through 1992 to 2001. PMGD2 is sum of premanaged earnings for three years following the grant year {the dependent measure}; PMGD is premanaged earnings, Sales is annual sales, BSO is Black-Scholes value of options grants to top 5 corporate executives as per Execucomp, ASSETS is year-end balance sheet value of total assets (TA), TCC is cash compensation for top 5 corporate executives as per Execucomp and R&D is research and development expenditure. Missing values of R&D are set to zero. All variables are scaled by sales. Years are indexed by t and firms by i, time and industry dummies are suppressed for expositional convenience. Panel A is with respect to estimates without previous performance while Panel B covers estimates with previous performance. Columns 1 to 3 and columns 4 to 6 are for linear and nonlinear models respectively in both panels.*

Note on Panel C and D: *Implied sensitivity analyses in panel C and D refer to the change in PMGD2/S scaled by change in BSO/S.*

Following the analytical position of Tian (2004) on cash-options substitution effect, I use TCC/S to control for total cash compensation in the overall compensation of the target executives.

Tian suggests that cash compensation and options are mutually exclusive. The TCC/S coefficients empirically reflect the analytical argument of Tian cash-option mutual exclusivity. For example, TCC/S coefficients are consistently negative across all models while BSO/S coefficients are consistently positive. With (without) previous earnings, TCC/S are -0.051 (-0.06), -0.056 (-0.070) and -0.080 (-0.105) respectively for Year + 1, SumYear + 1 + 2, SumYear + 1 + 2 + 3 Also, if interpreted in relation to dependent measure (PMGD/S), TCC/S coefficients show that cash compensation actually depress future earnings performance implying that cash compensation de-motivates top executives while stock options motives them to improved performance.

Overall, my results provide evidence consistent with incentive alignment hypothesis and thus maintain that using executive stock options to remunerate top 5 corporate executives improve future earnings performance although at a materially diminishing amount over the future years.

Additional Analysis

Knowing that some constraints could potentially confound the interpretations of my findings, I performed some sensitivity analyses to test the robustness of the results. Recall, that I assign zero to missing R&D values in the Compustat Database. In order to address this self selection bias, I re-run the analysis using R&D only firms. In addition, I use alternative scalar variables to scale the variables. For parsimony, I do not show the results since the results are substantially similar both quantitatively and qualitatively. Hence, the overall tenor of the findings remains that using executive stock options to remunerate top 5 corporate executives is value relevant to shareholders as future performances are improved.

I must mention that my study possesses some limitations. For example, the sampling technique reflects survival bias. The Black-Scholes option pricing model has its own inherent limitations. Also, the model specifications may possess measurement errors such as correlated omitted variable bias as well as concerns for endogeneity effects[8], such that inferences from my results may change if perfect instrumental variables are available. Further, the generalizability of my findings may be impaired given the relatively short sample period, in addition to the fact that my study excludes regulatory and financial institutions. These industries no doubt constitute a viable segment of the US economic landscape. I must also note that there is the real potential concern of expectation problem regarding the implementation of FAS 123 revised and reissued in December, 2004. There has been voluntary adoption by firms prior to the effective commencement date of this standard, even though I will argue that voluntary adoption firms did not do so on a consistent basis. I challenge future research in these contexts.

CONCLUSION

Larcker (2003) emphasizes the "…performance consequences of managerial choices…", the choice of which include using stock options as a remuneration package for top corporate

executives by compensation committees. Notwithstanding the earlier limitations mentioned earlier, overall, this study reveals that in sum, using stock options continue to provide incentives for executives to improve future corporate performance and thus improve shareholders wealth. Executive compensation continues to be significant part of overall global corporate narratives especially in the US. The conversation intensified in the wake of corporate bailouts and overall top corporate executive compensation package comes under increased scrutiny both by the public and the regulators. No doubt, stock options remain substantial portion of such compensation package. Academic and scholarly findings in the compensation literature have not helped the debate in that such findings are at best inconclusive and controversial. While some believe in the incentive alignment hypothesis, others document rent extraction. In this study, my findings could not reject the incentive alignment hypothesis. In fact, its empirical evidence strongly supports the hypothesis. Using alternative earnings measure (premanaged earnings); my sample during the sample period (1992-2004) finds strong results for improved future corporate performance when top 5 corporate executives are remunerated by stock options.

ENDNOTES

1. Premanaged earnings is derived consistent with Baker et al (2003) which is computed by "removing an estimate of the effect of earnings management from income before extraordinary items." In other words, it is earnings before earnings management.
2. In the context of the current study, the core difference, among others, from Baker et al are: (1) the authors examined this earning measure in earnings smoothening context, thus making the measure a predictor variable versus a dependent measure in this current study; (2) the research methodology employed in the current study is tailored on Hanlon et al methodology which is substantially different from Baker et al.; (3) Baker et al, find results consistent with rent extraction hypothesis as opposed to the current study, i.e. incentive alignment.
3. My choice of accounting-based measure is consistent with the argument of Murphy (2000) that these measures are directly influenced by executives actions and that market-based measures are generally noisy (Wiseman & Gomez-Mejia, 1998).
4. The above statistics compare with those reported in related research (see Hanlon et al and Akindayomi & Warsame, for example).
5. This will be the trend for the remaining part of this paper.
6. In econometric terms, the inferences from this specification is that the sum of coefficients vis-à-vis the second order term (i.e. the square term) is expected to be zero, if and only if, the specified relation is linear as assumed.
7. Also note that Akindayomi & Warsame could not find a progressively consistent lower amount of dollar contributions across these three models, i.e. Year + 1, SumYear + 1 + 2 and SumYear + 1 + 2 + 3 vis-à-vis their earnings measure (Nondiscretionary Earnings). Specifically, they report $1.15, $1.16 and $1.15 respectively. One may be tempted to assume that the one cent difference is not material. On one hand, the direction is important. On the other hand, it is more telling if one considers that during the sample period, on the average, as high as $5 million worth of executive stock options were granted by the sampled firms in the FLD.

8. Larcker (2003) clearly expresses econometric challenges that studies like mine faces. He states that "any research study that has some type of managerial choice as the predictor (or right-hand-side) variable confronts the econometric problems caused by endogeneity. …"

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TOWARD A BETTER UNDERSTANDING OF THE CONTINGENT DETERMINANTS RELATED TO THE PERFORMANCE OF THE CAMEROONIAN MUNICIPAL PUBLIC SERVICES

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ABSTRACT

This paper aims to examine the nature of the contingent determinants related to the performance of the municipal public services of the Cameroonian municipalities. Its objective is twofold: first, to better understand the practices of performance measurement of the municipalities; and second, to identify the factors likely to influence the performance of the municipal public services. The study is based on a hypothetico-deductive approach. Two questionnaires were administered, one to the local elected officials and another to the managers of the different service departments visited. Subsequently, the data analysis clearly shows the existence of some structural factors which influence the performance of the Cameroonian municipal public services.

INTRODUCTION

Performance measurement systems have considerably improved in the last few years in the areas of management control. Most organizations today must face new constraints and are increasingly asked to justify their actions depending on the public opinions, whether it concerns quality, fairness, cost transparency, or effectiveness regarding the objectives fixed to them (Alecian & Foucher, 1994). Local communities cannot avoid this obligation to legitimize their actions since the public entity that conferred such a service for such a long time no longer exists; they must now demonstrate the effectiveness of the public services they provide. Thus, the communities' structure must now also include a means of reacting to the public (the end-users) demands. Performance measurement systems of the municipal public services therefore aim to rehabilitate local public services which are now facing a crisis of legitimacy and identity. It seems that Cameroonian people have more and more requirements. They see themselves as customers waiting on line for a service, whether of a civil matter or a technical one. In addition, the social and urban consequences in the current politico-economic context will result in the emergence of new needs such as garbage removal, supplying potable water, and installing public lighting, at which the local communities will have to answer. Finally, Cameroonian people are increasingly

advocating the reject of mediocre public services and they are more and more demanding about the quality of the public funds usage.

Without entering into a much detailed analysis of the difficulties faced by Cameroonian municipalities, a certain number of questions underlie our problematic: we must question the nature of the measurement systems used for assessing the performance of the municipal public services in Cameroon. In other words, we stress on the two following questions. Do the measures taken by Cameroonian authorities, such as the new decentralization plan, the balancing of public finances, as well as the implementation of a sector-based accounting plan, achieve the performance expected by the municipalities? Are there some factors likely to influence the performance of the municipal public services of the Cameroonian municipalities? The objective of the present paper is to bring some answers to these questions. It is twofold: first, this paper brings a contribution to a better understanding of the contingent determinants related to the performance of the municipal public services; and second, it aims to identify the factors likely to influence the performance of the municipal public services.

The paper is structured as follows. In the first part of the paper, we present the performance measurement systems through structural contingency factors and we formulate the research hypotheses to be tested. In the second part, we describe the research methodology. And, in the last part, we present and discuss the main results got from a principal component analysis (PCA) and a multiple linear regression.

SPECIFICITIES OF THE PERFORMANCE OF THE MUNICIPAL PUBLIC SERVICES

Studies conducted on performance indicators in municipal offices in the United States show that such indicators are not created solely in themselves but in conjunction with their environment, such as contributions by elected officials, citizens, public servants, partners, and managers. With external support, local collectives complete *output* measurements along with *outcome* measurements (Wang & Berman, 2001). The involvement of outside strengths in establishing the indicators is necessary due to the complexity of local initiatives and the importance of end-user judgments in the measurement of local performance. The performance measurement system in local communities is not limited to simply providing managerial information, but it also includes informing end-users on the performance of the local entities.

To this effect, Melkers and Willoughby (2005) concluded, from a quantitative study carried out on a sample of 300 local communities, that measurement systems are developed and that they contribute to improve the channels of communication between services, facilitating training, and confirming budgetary decisions derived from the information collected on the results, costs, and actions considered.

An analysis from various reports on performance measurement systems shows that the system must have four main parameters:

1) The information from the performance evaluation should be used to review local efforts and to correct recorded anomalies. The integration of these indicators will not only be at the operational level, but also extended at the strategic level: the review of local public policy in light of the results of the local performance evaluation. "The data should again be integrated in the corporate strategy to allow the hypotheses to be tested and therefore question again their actual perspectives." (Drucker, 1995) The measurement system is well integrated into the managerial procedure of municipal offices only if it allows reformulating the local strategy and therefore the local public policies.
2) It must also integrate the performance indicators in budget appropriations. This parameter is partly realized: the established financial indicators are integrated since they are part of the accounting system that provides the core informational outline of organizations. The question now arises on whether to use non-financial indicators in budget appropriations. Kaplan and Norton (2001) consider performance-based remuneration of employees as an example of integrating non-financial indicators (innovation and competency) into budget appropriations.
3) Communicating internally the results of the performance evaluation is a main parameter in the measurement system. Waterhouse (1999) considers such communication originating from management to employees as a means of implementing the strategy and thus encouraging the employees to participate (quoted in Kaplan & Norton, 2001).
4) Communicating the results can also be done externally, principally to customers through numerous channels; for example, a marketing campaign showing to customers the performance and competency of innovative groups accompanied by a demonstration of the quality of the product proposed. In our mind, outside communication seems to be a principal parameter in performance measurement systems of municipalities for the reasons stated previously, but also because the officials have the legal obligation to report to the public (citizens) and to justify their policy decisions. This parameter is an inseparable and irrefutable concept of "local governance" where elected officials must prove that they "govern the municipal entity by taking into account the citizens' wishes."

DETERMINANTS OF THE PERFORMANCE OF MUNICIPAL PUBLIC SERVICES AND FORMULATION OF THE RESEARCH HYPOTHESES

Dependent Variables

Dependent variables are chosen by taking into account the specific organizational details of African municipalities. Considering the general reticence of African municipal officials to disclose their financial statements, and particularly in Cameroon, we have then measured the performance using a combination of six criteria: Q371_IMO (importance of the objectives 1 = users satisfaction); Q372_IMO (importance of the objectives 2 = to ensure the garbage

collection); Q373_IMO (importance of the objectives 3 = to ensure recording birth and marriage certificates); Q374_IMO (importance of the objectives 4 = staff satisfaction); Q375_IMO (importance of the objectives 5 = drinking water supply); and Q38_RO: to reach the objectives. These criteria were assessed and personally evaluated by the department managers as a function of their importance on a five-point Likert-type scale.

Independent Variables

The determinants of municipal performance are regrouped into five exogenous variables. After having explained the theory for each of these explicative variables, we then introduce the respective related hypotheses.

Level of computerization of the activities

The level of computerization of the activities within the organization as a structural contingency factor has been the subject of numerous empirical studies, especially in small and medium businesses (SMBs). So its use as a performance measurement in community settings does not need further explanation in the scope of our study. A study conducted by Chapellier (1994) is one of the few which have tried to globally characterize the accounting practices of SMBs, defined simultaneously in terms of preparing and using data for management, relative to four fields: general accounting, management control, financial control, and control panels. Other studies, particularly those of Lacombe-Saboly (1994) and Lavigne (1999), are more concerned with the specific field of general accounting. These research studies (Chapellier, 1994; Lacombe-Saboly, 1994; Lavigne, 1999), entering in the flow of contingency theory by including as much objective (structural) as subjective (behavioural) information, have shown the heterogeneity of SMBs accounting information systems and have also identified some determinants. According to Chapellier (1994), in the overall context of SMBs, the structural contingency factors can be limited to a few fundamental characteristics that are cross-referenced with more general concepts of complexity and uncertainty.

In his research, Chapellier (1994) recognized the size and age of the organization, the degree of management using information technologies (IT), and the nature of the activity. On the other hand, Germain (2000) shows in his study on SMBs that there is a significant link between the degree of computerization of the activities into the organization and the sophistication of the control panels. These Germain's results corroborate the conclusions of other researchers looking at this relationship following the examples of Kalika (1987) and Chapellier (1994). Therefore, it is a matter of verifying whether the level of computerization of municipal actions influences or not the organizational performance of public services. We then propose to test the following hypothesis.

H1: The level of computerization of the activities has a positive influence on the performance of the municipal public services of the Cameroonian municipalities.

Size-effect

Among the work emphasizing the evidence of the influence of the size of an organization during the 1960's, the ASTON school (Pugh et al., 1969) is often cited as a pioneer into this field, notably in initiating comparative analysis whose the aim was to uncover common and specific problems from all types of organizations. The core results of the ASTON school argue that "the size of the organization is a *major predictive factor* in its structure" (Desreumaux, 1992). As for the relationship between size and structure, numerous empirical works support the findings of the ASTON group (Blau & Schoenherr, 1971; Child & Mansfield, 1972…). Nevertheless, a study conducted by Meyssonnier (1993) on the use of control panels in 82 French communities shows that a great majority of municipalities do not use control panels to control the functioning of services and to manage municipal actions. Using the khi2 test to evaluate the hypothesis of independence between control panels and the size of communities, the author found a khi2 value of 4.59 with 2 degrees of freedom and a probability of 9.85%. According to this author, "we cannot attest with certainty that size and use of control data are correlated, particularly given the nature of these control data can be variable". Considering the previous work, regardless of the size of the organization, the size seems to be a variable susceptible to influence the performance of the municipal public services of the Cameroonian municipalities. So, in the context of this study, along with other previous works, we propose the two following hypotheses.

H2a: The size of the municipalities has a positive influence on the performance of the municipal public services of the Cameroonian municipalities.

H2b: There is a significant relation between the use of control panels and the size of the Cameroonian municipalities.

Regularity of the controls

A diatomic vision of the control and its consistency was studied by Mintzberg (1982, pp. 148-157). He establishes the distinction between "performance control", its "consistency", and the "planning of actions". "The system of performance control is by nature "general" and it is related to the consequences of actions, while the planning of actions occurs before their execution and is related to specific actions". To that end, it specifies the objectives of the performance control system, that is, measurement and motivation. As for the planning of actions, according to Mintzberg, they emerge as the means by which non-routine decisions and actions in a function-structured organization can be achieved in an integrated mode. The notion of control seems

preferable to those of planning in the way it induces ambivalence with the terms "mastery" and "inspection". In order to specify the field of application of the notion of consistency of controls (Sharma & Ho, 2002), do we first inquire the motivations of not-for-profit organizations? If the case of profit organizations is relatively simple, we can argue that profit can appear as the first objective of these entities. However, the case of local communities is more delicate to understand. Anthony and Young (1988) indicate that there is a double objective for these other forms of organizations. The first is to ensure a balance between resources and employees. The second is to maximize the services offered to the collectivity within the constraint of minimizing costs. In that sense, the desire to put under control the local collectivity is not a fruitless effort. So, in this framework, we can ask ourselves if the consistency of controls allows a greater performance of the municipal public services of the Cameroonian communities. Such a question leads us to suggest the following hypotheses.

H3: The more the controls are regular in the municipal public services of the Cameroonian municipalities, the more the performance is better (improved).

H4: There is a positive relation between the size of the municipal public services and the regularity of the controls.

H5: There is a positive relation between the control of the objectives by MINTAD (Ministry of the territorial administration and decentralization) and the performance of the municipal public services.

RESEARCH METHODOLOGY

This research is based on a hypothetico-deductive approach. To test the hypotheses formulated above, a study using a questionnaire was performed with the local elected officials (mayors) and the managers of the municipal public services.

Development and Pre-Test of the Questionnaire

In order to answer the problematic situation and then verify the hypotheses formulated in our research, we decided to choose the questionnaire as principal means of data collection. It seemed to us that this method was an undeniable opportunity given the exploratory nature of the study did not allowed us to get the maximum amount of information required without using, once again, the same technique of administrating the questionnaire. Hence, in the first trimester of 2006, the first pre-test questionnaire was hand-fully administered to more than 20 service managers of the municipalities of Douala. The items which seemed to be difficult to understand

were therefore reformulated. With the pre-test errors both detected and corrected, a modified questionnaire was then prepared. This new questionnaire was, like the first, tested by more than 20 elected officials and managerial staff of the municipalities of Yaoundé. This second pre-test did not detect any major anomalies into the questionnaire thus validating our final product. The first phase of the questionnaire administration could then begin.

Data Collection

To collect data, questionnaires were sent to elected officials (mayors) and service managers of the Cameroonian municipalities visited. The global response rate of the study is presented in Table 1.

Table 1: Global Response Rate of the Study		
	Number of questionnaires	**Percentages**
Questionnaires sent	250	100%
Questionnaires returned	150	60%
Non-usable questionnaires	40	16%
Usable questionnaires	**110**	**44%**

Table 1 shows that 250 questionnaires were sent to elected officials and service managers of the Cameroonian municipalities. They returned 150 completed questionnaires. From these 150 questionnaires returned, we found that 40 were non-usable either because they were lacking too much information or because a part of the information was non-appropriate. So, in the whole, the data collection resulted in 110 usable questionnaires, for a global response rate of 44%. Table 2 summarizes the different types of municipalities and services involved in the study.

Table 2: Types of Municipalities and Services Examined			
Types of municipalities		**Types of services**	
Rural municipalities	84 (82%)	Financial services	56 (38%)
Urban municipalities	5 (5%)	Technical services	40 (27%)
District urban municipalities	11 (10.78%)	Administrative services	52 (35%)
Special urban municipalities	2 (1.96%)	-	-
Total	**102 (100%)**	**Total**	**148 (100%)**

We can see in Table 2 that most of the municipalities surveyed were rural and that only a small percentage of the municipalities were urban, including 2 urban municipalities having special needs. On the other hand, Table 2 shows that the percentages of services examined in the study were relatively well distributed between financial, technical, and administrative services, with 38%, 27% and 35%, respectively.

Validity and Reliability of the Questionnaire

Taking into account the necessity of adapting the rules to the specific context of each individual research, Perrien et al. (1984), Evrard et al. (2003), and Usunier et al. (1993) all agree that for an exploratory research, a Cronbach alpha coefficient between 0.5 and 0.6 is acceptable. Thus, in this study, all the elements that did not achieve this level were withdrawn in order to get more reliable measurements. And we retained the measure of internal consistency to determine the reliability of measuring instruments. The Cronbach alpha coefficient was therefore estimated to test the homogeneity of items integrated into the measurement of variables related to the evaluation of the performance of the Cameroonian municipal public services. The Cronbach alpha coefficients got in the analysis are summarized in Table 3.

Table 3: Cronbach Alpha Coefficients

Variables	***Cronbach alpha coefficients***
Q371_IMO: importance of the objectives 1 = users satisfaction Q372_IMO: importance of the objectives 2 = ensuring garbage collection Q373_IMO: importance of the objectives 3 = ensuring recording birth and marriage certificates Q374_IMO: importance of the objectives 4 = staff satisfaction Q375_IMO: importance of the objective 5 = drinking water supply Q38_RO: meeting the objectives	0.753
Q47_NAF: number of agents trained	0.797
Q19_RCO: regularity of controls	0.758
Q09_NPO: level of computerization of the activities	0.872
Q39_COM: control of the objectives by MINTAD	0.614
Q28_UTBM: use of control panels in the municipalities Q29_TAIMAI: size of the municipalities	0.721
Q52_EDVO: existence of voluntary departures Q53_DVO**:** voluntary departures	0.371

All the Cronbach alpha coefficients presented in Table 3 have values higher than 0.6 and thus clearly meet the criteria of reliability generally accepted. Only the coefficient attached to the variables Q52_EDVO and Q53_DVO have a low value (0.371). It is the same thing for the correlation coefficients got between these variables and the performance of the municipal public services. However, a correlation analysis was conducted between these variables and the other variables susceptible to influence the performance of the municipal public services. All the variables of the model were measured using a five- or seven-point Likert-type scale. As pointed out by Kinnear and Gray (2005), if the data are measurements taken at an ordinal level and done for a series of rows or nominal data, the non-parametric test is the only possibility. Hence, in the case of this study and, considering our small sample size and the assigned objectives, we privileged non-parametric tests. Finally, we used the version 10.00 of the Statistical Package for the Social Sciences (SPSS) software for the data analysis in our study.

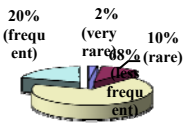
RESULTS AND DISCUSSION

In this last section of the paper, we present and discuss the main results related to the contingency factors necessary to measure the performance of municipal public services. This description and interpretation is derived from a one-dimensional analysis of the variables used in the study. And, finally, we test the research hypotheses.

Descriptive Results

The control methods existing within the local Cameroonian municipalities are "legal oversight", that is, the control is made under the tutelage of the Ministry of Tutelage. Indeed, the local services provided by private organizations are not necessarily better than those offered by the public sector, as much as for the costs as for the quality of services (Hoffmann-Martinot, 1988). However, Terny and Prud'homme (1986) state that when the services are badly managed and the objectives not properly followed, sometimes we must privatize or even leave the services. These authors believe that we must be careful not to categorically oppose private management to public management. Thus, these remarks forced us both to question and review if the current controls exercised by the municipality tutelage system were sufficiently frequent. Consequently, we must determine if these same controls can influence the performance of the Cameroonian municipal public services. To that end, we asked the personnel involved to identify the frequency of control by MINTAD (Ministry of the territorial administration and decentralization) on a five-point Likert-type scale, ranging from "very rarely" to "very frequently", and to mention whether the MINTAD regularly control the objectives assigned to the municipal areas under tutelage. Figure 1 illustrates the opinions of the respondents.

Figure 1: Frequency of Control of the Objectives by MINTAD



It is evident that the control of the objectives by MINTAD is not at all frequent as seen by the opinions got from the personnel closely associated with these projects in our survey (see Figure 1). Indeed, 12% percent of the respondents state that the control of these objectives is rare or very rare versus 68% who think that they are less frequent. And, only 20% mention that the control of the objectives for the municipalities by MINTAD is made frequently. No respondent

found the control of the objectives by MINTAD to be very frequent. So these results lead us to think, as suggested by Chaudemanche (1995), that one of the problems created by the willingness to control the local communities is that they are atypical and complex organizations. We can even ask ourselves if it is possible to reconcile control and public service. Simply asking such a question can become a "minefield" in itself, while the legitimate authority would be weakened. In order to deliver appropriate service performance to the public at large, the control and the associated tools, such as providing assistance to decision making or management, are or must become necessary to the public interest. According to Chandler (1989) and Mussche (1979), the concept of control that we propose to exercise must be capable of resisting to inherent constraints, specifically to three factors: structure, environment, and politics. Looking at the results regarding the issue of control, the Cameroonian local municipalities do not escape these constraints and, as such, can be justified by the weak level of control exercised within these public entities.

Perception of the number of officials trained by municipalities (mayors and department managers)

The findings of our field study allowed us to conclude that there is a genuine problem in the training of the municipal staff in Cameroon. Indeed, we were able to see that the recruitment is only based on politics. However, we cannot confirm these observations without to examine the opinions of the main municipal players. Therefore, in Figure 2, we measure the perception of the trained officials on a five-point Likert-type scale from "Nil" to "Very high". The 110 respondents had to situate themselves on the scale according to their point of view on the officials trained over the last two years before the survey. Table 4 shows the descriptive statistics related to this perception measured in Figure 2.

Figure 2: Assessment of Officials Trained by Municipalities

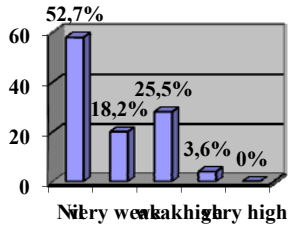


Table 4: Opinions of the 50 Mayors and 60 Department Managers				
Minimum	**Maximum**	**Mean**	**Mean spread**	**Coefficient of variation**
0	58	22	23.15	1.052

Principal components analysis of explicative factors of performance measurement for municipal public services of Cameroonian municipalities

The principal components analysis (PCA) is part of the multivariate descriptive analysis (MDA) framework. The aim of this analysis is to list the maximum amount of information possible, while excluding the minimum information possible to facilitate the interpretation of a large number of initial data and to provide greater meaning to the resulting database.

In most situations, we reject a number of observations on each individual in the sample study. We must therefore take into account the p variables per individual, with p being absolutely greater than 1. When each of these variables is removed from the study, some information remains, but is insufficient since it also extracts some links which are often at the heart of the study. As stated by Evrard et al. (2003), "*the role of multi-factorial statistics is to analyse the data in its entirety by considering all the variables.*" We found two different approaches to PCA in the literature:

1) It can be presented as an overall research exempt of uncorrelated variables, linear combinations of initial variables exactly detailing the data (the Anglo-Saxon approach).
2) Another interpretation is based on the representation of the initial data with a scatter graph in a geometric space. The objective is to find sub-spaces (right, plan ...) that best represents the initial scatter graph. This last approach is the one we chose. The PCA allows us to reduce very large tables to a small number of variables (generally 2 or 3), while maintaining the maximum amount of information. The initial variables are referred to as "metrics". To analyse the PCA, we finally came at the following conclusions: first, by observing the correlation matrix (see Table 5), we have seen that numerous variables are indeed correlated and superior to 0.5; second, we observed if the KMO (Kaiser-Meyer-Olkin) index tends toward 1. To evaluate this index, it is generally recommended to use the following scale: 0.5 and less: unacceptable; 0.6 to 0.7: poor; 0.7 to 0.8: average; 0.8 to 0.9: good; and > 0.9: excellent; and finally, we used the Bartlett's sphericity test to verify if it tended toward 0.00, less than 0.05, or between 0.05 and 0.10.

As shown in Table 6, the result of the KMO test is greater than 0.7; it indicates a good data capacity to be factorized. The Bartlett's sphericity test confirms it since it is very significant (it tends toward 0.000). With the PCA having satisfied these three conditions, the data can now be subject to factorization. After this step, we had to retain a certain number of factors; but which ones? To do that, three rules are generally applicable: the first Kaiser rule is that we only retain the factors with a value greater than 1; the second rule is that we choose the number of axes as a function of the minimum information restitution that we wish. For example, we want that the model restores at least 80% of the data; and the "Scree test" rule in which we observe the graphic eigenvalues (the proper values) and retain the values which are found to the left of the inflexion

point. Graphically, we take the components that provide the least amount of information on the right, draw a straight line on the points nearly aligned, and then retain only the axes above this line.

Table 5: Correlation Matrix

		TAMAI	EFENC	RECO	UTBM	NAF	FLI	PDC	RATCG	NPO	COM	ARP	CFIAT
Correlations	TAMAI	1.000	.976	.568	.647	.472	.045	.324	.656	.526	.014	.139	.273
	EFENC	.976	1.000	.527	.568	.413	-.053	.287	.599	.502	-.015	.050	.205
	RECO	.568	.527	1.000	.508	.216	.151	.050	.522	.420	.349	-.020	.147
	UTBM	.647	.568	.508	1.000	.398	.330	.296	.562	.217	.155	.155	.263
	NAF	.472	.413	.216	.398	1.000	.405	.373	.351	.182	.074	.185	.239
	FLI	.045	-.053	.151	.330	.405	1.000	.364	.235	.042	.081	-.039	.305
	PDC	.324	.287	.050	.296	.373	.364	1.000	.047	.131	.099	.243	.463
	RATCG	.656	.599	.522	.562	.351	.235	.047	1.000	.444	.076	-.039	.249
	NPO	.526	.502	.420	.217	.182	.042	.131	.444	1.000	.164	.039	.253
	COM	.014	-015	.349	.155	.074	.081	.099	.076	.164	1.000	-.065	.016
	ARP	.139	.050	-.020	.155	.185	-.039	.243	-.039	.039	-.065	1.000	.218
	CFIAT	.273	.205	.147	.263	.239	.305	.463	.249	.253	.016	.218	1.000

Table 6: KMO Index and Bartlett's Test

Precision measurement of de Kaiser-Meyer-Olkin sample		0.702
Bartlett's sphericity test	Khi2	341.698
	ddl	66
	Sig.	.000

Thus, according to the criteria by Kaiser (Gianneloni & Vernette, 1995), we have retained three factorial axes (or principal components) whose eigenvalues are greater than 1. These three factorial axes gave us the means of listing the initial information on the 12 variables which characterize the performance measurement for the municipal public services of the Cameroonian municipalities. To retain the eigenvalues of these three axes and, according to the two first rules mentioned above, we examined the total explicative variance (see Table 7). The eigenvalues of the three factorial axes are 4.41, 1.72, and 1.28, and explain, respectively, 36.79%, 14.34%, and 10.69% of the initial scatter-plot variance. It is a good representation considering that the factorial plan restores globally near from 61.83% of the total inertia of the scatter-plot.

In this case, the PCA does not extract the number of axes higher than 2, which does not allow us to study many graphics. The importance of each axis is provided for the percentage of the explained variance. The component matrix allows us to get the variables contributing to the formation of the two principal factorial axes (see Table 8 and Table 9).

Table 7: Sum of Variance Explained						
Initial eigenvalues				*Sum of "charge squares"*		
Components	***Total***	***% of variance***	***% accumulated***	***Total***	***% of variance***	***% accumulated***
1	4.415	36.796	36.796	4.415	36.796	36.796
2	1.722	14.346	51.142	1.722	14.346	51.142
3	1.283	10.690	61.832	1.283	10.690	61.832
4	.917	8.471	70.303			
5	.870	7.248	77.552			
6	.721	6.008	83.559			
7	.641	5.339	88.899			
8	.463	3.855	92.754			
9	.388	3.237	95.991			
10	.287	2.391	98.382			
11	.183	1.521	99.903			
12	1.165E-02	9.706E-02	100.000			
Extraction Method: Principal Components Analysis						

Table 8: Component Matrix[a]			
	Components		
	1	***2***	***3***
TAMAI	.907	-.209	-.272
EFENC	.843	-.292	-.308
RECO	.678	-.348	.318
UTBM	.764		
NAF	.599	.362	
FLI	.323	.582	
PDC	.444	.657	
RATCG	.753	-.253	
NPO	.590	-.269	
COM	.182		
ARP	.164	.404	-.496
CFIAT	.452	.512	
Extraction Method: Principal Components Analysis. [a]3 components extracted.			

Table 9: The Variables of the Factorial Axis 1	
Variables positively correlated	**Variables negatively correlated**
Set of 12 variables (see Table 5)	None

The results of the correlation matrix show that it is the first factorial axis (total size of municipality) that explains the total inertia of the scatter-plots. Moreover, the explicative factors of performance measurement of municipal public services contribute positively to the formation

of this first component. This axis provides a very good presentation of municipal performance measurement. Otherwise, the set of variables of this first component are all positively correlated between themselves. Generally, in a factorial axis, whenever all the variables are positively correlated, according to Escoffier et al. (1990) and Lebart et al. (1995), the interpretation that we usually give to this component is usually defined as a "size factor", which, in other words, would suggest that all individuals are positioned on the axis by increasing value for the entire set of variables.

On the other hand, this "size factor" goes against the use of control panels in municipalities that are, nonetheless, little used in the group of services seen, even though they are used more frequently in the two largest urban communities of Douala and Yaounde. This is explained by the importance of relatively well-trained personnel on staff. However, the consistency of controls (that is, the controls exercised by the community tutelage (administrative supervision) by the MINEFI (Ministry of economy and finances) and the MINTAD (Ministry of the territorial administration and decentralization)) in this axis is explained by the important size of the municipality personnel. The greater the staff levels, the more regular are the controls. Moreover, the variables such as the size of the municipality (TAMAI) and the complement of staff personnel (EFENC) contribute the most to the construction of the factorial axis 1. Thus, when the municipality personnel staffing is important, we also see, in parallel, a strong rate of supervisory staffing. Finally, the municipalities in which management control were implemented are hardly represented in the sample. We observed that management control is most often an arm of the mayor's office, be it a government delegate (tutelage) or the secretary general of the office. This is what appeared in axis 1 of the PCA of our statistical analysis.

In order to visualize the positioning of the explicative factors of performance measurement of municipal public services, all variables were projected on the factorial plans 1 and 2 (see Figure 3 and Figure 4).

Figure 3: The Positioning of Factors Characteristics of Performance for the Municipal Public Services on the Principal Components 1 and 2

TAMAI: Size of the municipality	PDC: Proportion of short-term debt
EFENC: Supervisory staffing	RATCG: Responsible management control
RECO: Consistency of the controls	NPO: Number of computer terminals
UTBM: Use of control panels in communities	COM: Control of objectives by MINTAD
NAF: Number of staff trained	ARP: Late payments

Figure 4: The Positioning of the Explicative Factors of Performance Measurement of the Municipal Public Services

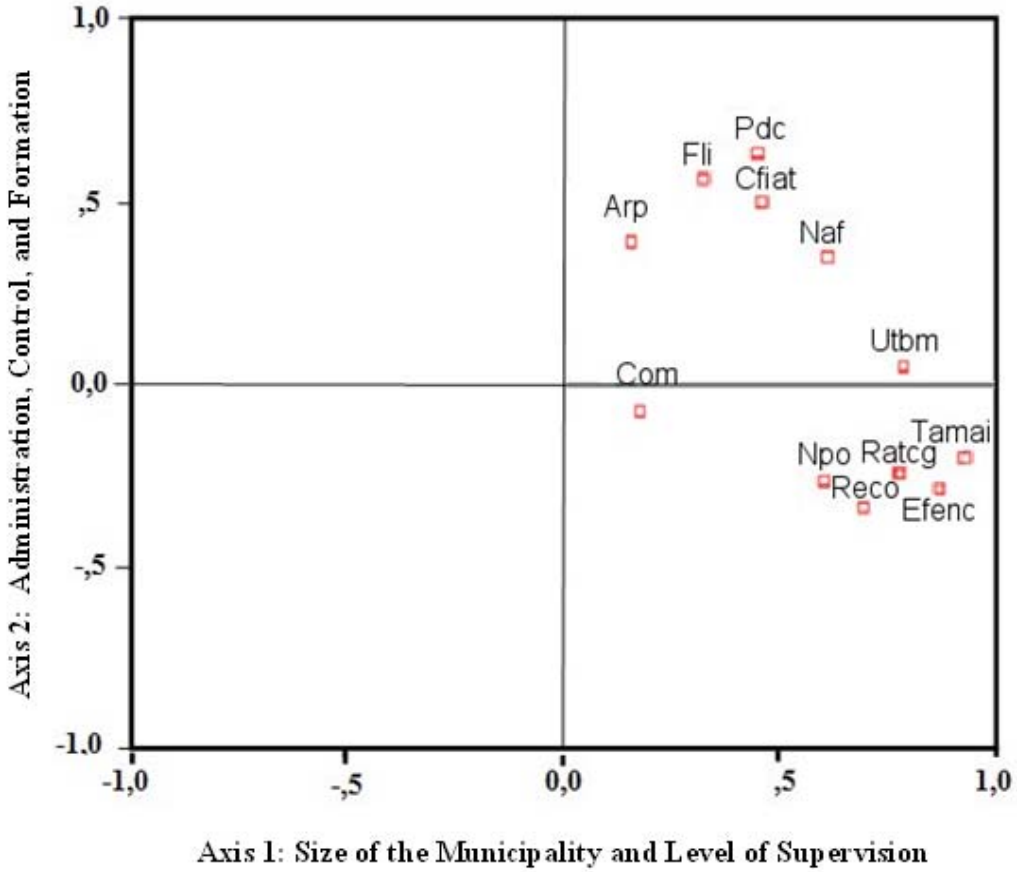


Table 10: The Variables of the Factorial Axis 2			
Variables positively correlated		**Variables negatively correlated**	
NAF (number of trained staff) =	0.36	TAIMAI (size of the communities) =	-0.20
PDC (proportion of short-term debt) =	0.65	EFENC (administrative staff) =	-0.29
FLI (frequency of dismissals) =	0.58	RATCG (Adm. management control)=	-0.25
CFIAT (control, financial/administrative) =	0.51	RECO (consistency of the controls) =	-0.34
ARP (delay in payments) =	0.40	NPO (number of IT terminals) =	-0.26

Table 10 shows the variables contributing to the formation of the second principal component. The second factorial axis indicates that it is opposed to the number of trained officials in the municipalities (NAF). The use of control panels (UTBM) and the size of the municipalities (TAMAI) in terms of trained staff and in terms of administrative staff (EFENC). There are strong

positive correlations between TAMAI, EFENC, RECO, and UTBM with the first factorial axis; that is, high values for the factor corresponding to high values of these variables and vice-versa. According to the principal of transitivity, we can conclude that these variables are strongly and positively correlated, which means that the performance of municipal services, if there is a significant link with the size of municipalities or the administrative staffing, necessarily has the same link with the consistency of controls and the administrative staffing. Similarly, there are oppositions between the size of the municipalities and the number of IT terminals and, to a lesser extent, with control objectives by MINTAD (COM). If the frequency of dismissals (FLI) differentiates itself on the factorial 2 axis, some factors, inversely, contribute positively to the formation of this axis. The qualitative explanation that we can give to the factorial 1 axis can be stipulated in the following manner: the control exercised by the community tutelages (MINEFI and MINTAD) are quite non-frequent. This explains, at times, the financial misappropriations in the majority of the municipalities that we examined, as was revealed during the field study. In addition, it is in this axis that we find a considerable number of well-trained community staff. The control of objectives is not static, even though we observe these irregularities in the majority of the services seen in our field study.

Though it has an eigenvalue greater than 1, the third component does not seem interesting as well as not having any exploitable information. It does not explain at all the performance measurements of the municipal public services.

The PCA allowed us to reduce the numerous initial variables (all variables taking into account in the measurement of the performance of the municipal public services) and to retain only those that contribute the most to the measurement of performance of the municipal public services of Cameroonian municipalities.

Results of the regression analysis and test of the hypotheses

In this sub-section, we present and discuss the main results got, while focusing on the objectives of this research. In order to test the hypotheses proposed, we begin with the definition and the validation of our concepts, with equal weight to validity and reliability. And, we can discuss the results and begin to verify our hypotheses. Equipped with refined scales, we begin with linear regressions. The statistical method of multiple linear regressions allows us to study the link between a dependent variable and at least two independent variables (explicative or exogenous) and to elaborate a formula indicating by which manner the variables are related. Therefore, in order to include the factors that best explain the performance of municipal public services, we proceeded with a multiple linear regression of the total performance of the five variables previously retained. As a result: R^2 is equal to 0.314, which means that 31.4% of the variance in performance is explained by the model. The Fisher's F test of global significance of the model is 2.795 and the model is significant to the threshold value of 5%. Tables 11, 12, 13, and 14, as well as Figure 5 present all the details of the regression analysis.

Table 11: Variables Introduced/Eliminated[a]			
Model	**Variables introduced**	**Variables eliminated**	**Method**
1	RECO, TAIMAI, UTBM, COMINAT, NPO		Introduce
All required variables introduced.			
[a]Dependent variable: RO.			

Table 12: Summary of the Model[a]										
	R	**R^2**	**R^2 adjus-ted**	**Standard estimation error**	**Change in the statistics**					**Durbin-Watson**
Model					Variation of R^2	Variation of F	ddl 1	ddl 2	Modification of F (significant)	
1	.563	.314	.225	1.2964	.214	2.395	5	44	.023	2.744
Predicted Values: (constants) RECO, TAIMAIRIE, UTBM, COMINAT, NPO.										
[a]Dependent variable: RO.										

Table 13: ANOVA[a]						
Model		**Sum of squares**	**ddl**	**Mean Square**	**F**	**Sig.**
1	Regression	20.128	5	4.026	2.795	.023
	Residual	73.952	44	1.681		
	Total	94.080	49			
redicted Values: (constants) RECO, TAIMAIRIE, UTBM, COMINAT, NPO.						
[a]Dependent variable: RO.						

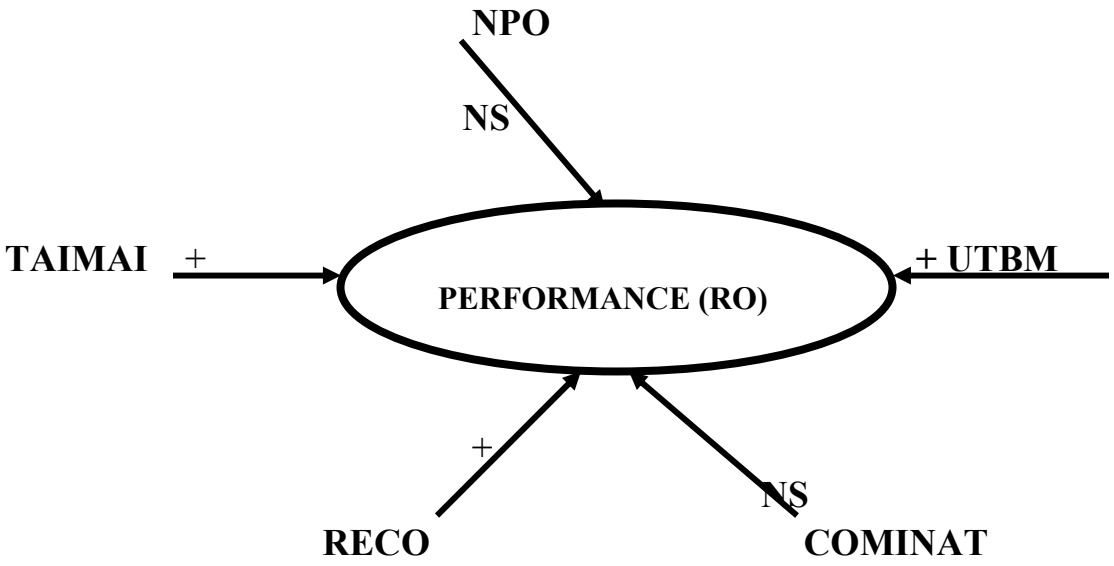
Table 14: Diagnostic of Collinearity[a]										
		Non standardized coefficients		**Standardized coefficients**	**t**	**Sig.**	**Interval of confidence at 95% of B**		**Statistics of collinearity**	
Model		B	Standard error	Beta			Lower bound	Upper bound	Tolerance	VIF
1	(constant)	0.585	.341		1.622	.000	3.488	7.281		
	NPO	-.043	.150	-0.140	-.457	.344	-.445	.158	.830	1.205
	TAIMAI	0.280	.001	0.338	2.258	**.029**	.000	.006	.799	1.251
	UTBM	0.0307	.148	0.291	2.079	**.044**	-.605	-.009	.913	1.095
	COMINAT	-.240	.166	-.201	-1.448	.155	-.575	.094	.930	1.075
	RECO	-0.381	.143	0.431	1.741	**.033**	-.426	.150	.972	1.029
[a]Dependent variable: RO.										

Our formula is as follows:

$$RO = 0.585 - 0.043NPO + 0.280\ TAIMAIR - 0.307\ UTBM - 0.240\ COMINAT - 0.381\ RECO$$
$$(1.622)\quad (-0.457)\quad (2.258)\quad (-2.079)\quad (-1.448)\quad (-1.741)$$

$R^2 = 31.4\%$; number of observations = 60.

Figure 5: Representation of the Regression Results



To ensure there is no errors, a multicollinearity test (the multicollinearity represents the degree by which the effect of each variable can be predicted for the other variables that are part of the analysis. When the multicollinearity increases, the capability to determine the effect of each variable decreases. Thus, the inclusion of variables that are not conceptually relevant can have numerous negative effects, even if the additional variables do not directly bias the results of the model (Hair et al., 1995)) was conducted with SPSS following the two steps procedure suggested by Hair et al. (1995, pp. 153-154). It is a multiple regression analysis realized with all the variables of the theoretical research model in order to determine the tolerance levels, the variance inflation factors, the eigenvalues, the condition indexes, as well as the variance coefficients for each of the predictive variables of the model. These values allow us to verify the degree of multicollinearity between the predictive variables. Tables 15 and 16 show the results of this analysis.

Table 15: The Multicollinearity Test Between the Variables (level of tolerance and variance inflation factors)

Variables	Level of tolerance	Variance inflation factors
(1) NPO	0.830	1.205
(2) TAIMAI	0.799	1.251
(3) UTBM	0.913	1.095
(4) COMINAT	0.930	1.075
(5) RECO	0.972	1.029

Table 16: The Multicollinearity Between Eigenvalues, Conditional Indexes, and Coefficients of Variance								
Dimensions	**Eigen values**	**Conditional index**	**(1[a])**	**(2[b])**	**3**	**4**	**5**	**6**
(1[a])	4.734	1.000	0.00	0.00	0.00	0.00	0.00	0.00
(2[b])	0.315	2.573	0.00	0.00	0.71	0.01	0.00	0.01
3	0.020	4.837	0.00	0.53	0.06	0.05	0.28	0.02
4	0.017	5.197	0.00	0.24	0.14	0.00	0.24	0.44
5	0.014	5.720	0.00	0.00	0.08	0.42	0.37	0.17
6	0.028	12.824	0.99	0.22	0.00	0.52	0.10	0.36

[a]The number 1 represents the constant β_0 in the multiple regression models.
[b]The numbers 2 to 6 establish the correspondence with the variables of the theoretical research model identified in Table 15, 1 to 5.

In Table 15, the tolerance level and its opposite, the variance inflation factor (VIF), indicate the degree by which each independent variable is explained by the other independent variables. In short, each independent variable becomes a dependent variable, and then is regressed against the remaining independent variables. Small values of the tolerance level and large values of the variance inflation factor denote a high collinearity. According to Hair et al. (1995), a common threshold limit is 0.10 for the tolerance level, which corresponds to tolerance levels of variance inflation, indicating that there is no collinearity since there is no variance inflation factor exceeding 10, and that the tolerance levels show that in no case does the collinearity explain more than 10% of each predictive variable. This result is supported and also reinforced when we examine the index conditions of Table 16. We note that there is no index of condition that exceeds 30, the common threshold limit proposed by Hair et al. (1995), and which represents a substantial proportion of variance (0.90 and higher) for two variance coefficients or more (coefficients of cells 1 to 5). Hence, there is no problem of multicollinearity in the predictive variables of the theoretical research model.

Returning to the results of our model, a global view shows that three variables are significant (see Figure 5). In fact, the correlation coefficients between the different exogenous variables and the performance of municipal public service variables are sufficiently significant in the sense that they vary between 0.043 and 0.381. This supposes that our exogenous variables have an explicative effect on the performance of municipal public services. The results of the multiple regression analysis show that the degree of computerization of activities (NPO) has no influence on the performance of municipal public services of Cameroonian municipalities (hypothesis H_1 is then rejected). Moreover, we observe positive relationships between the size of municipalities (TAIMAI) and performance (0.338) and the size of municipalities and the use of control panels (UTBM) with a positive correlation of 0.291, all at the threshold of 5%. The hypotheses $H2_a$*:"The size of the municipalities has a positive influence on the performance of the municipal public services of the Cameroonian municipalities"* and $H2_b$*: "There is a significant relation between the use of control panels and the size of the Cameroonian municipalities"* are therefore supported. The positive correlation coefficient indicates that the larger the size of the

municipality, the greater the gains in performance. This result is found in the studies of Burlaud and Malo (1988) which state that the size of the municipal organization is a criterion of complexity that can influence the organizational performance. Contrary to Meyssonnier (1993), in his study of municipal services in France, while the author found no positive relation between UTBM and TAIMAI; however, our results confirm the hypothesis by which TAIMAI is correlated to UTBM. In other words, this means that the greater the size of the municipality, the more elaborate is the control panels, and the more we reach municipal objectives. Moreover, *H4: "There is a positive relation between the municipal size and the consistency of the controls"* is supported (0.431) at the threshold of 5%. And, *H3*: *"The more the controls are regular in the municipal public services of the Cameroonian municipalities, the more the performance is better"* is rejected since there is no significant link between COMINAT and RO. In other words, this means that the larger the municipality, the greater the consistency of control performed by the Ministry of Tutelage. On the other hand, the control of the objectives by the Ministry of Tutelage (COMINAT) has no influence on the performance of municipal public services thus rejecting *H5:* "*There is a positive relation between the control of objectives by MINTAD and the performance of the municipal public services"*. Finally, *H1:"The level of computerization of the activities has a positive influence on the performance of the municipal public services of the Cameroonian municipalities"* is therefore rejected given no significant relation exists between the exogenous variable COMINAT and the endogenous variable RO (reaching the objectives).

CONCLUSION

The objective of the paper was to discuss the main results of an empirical study. The methodological approach is by nature quantitative of the hypothetico-deductive type. All of the data were collected by the administration of two questionnaires to the local elected officials and service department managers visited during a field study. Furthermore, we conducted a search by means of a multiple linear regression of factors likely to influence the performance of municipal public services. In addition, the PCA allowed us to reduce the numerous initial variables (all variables considered in the measurement of the performance of municipal public services) and to retain only those that were contributing the most to the measurement of municipal performance. Overall, the results of the contingency analysis reveal that some factors of structural nature have a positive influence on the performance of municipal public services of the Cameroonian municipalities. With the exception of the variables TAIMAI, UTBM and RECO, which are positively correlated to the performance of the municipal public services, the other factors in our study showed no significant link with the municipal performance.

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MARKET REACTION TO RESTATEMENTS AFTER SARBANES-OXLEY

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ABSTRACT

Much has been written about the effects of the Sarbanes-Oxley Act (SOX). Some authors have noted the high cost of implementation, while others have focused on the proposed benefits of the Act. Research results have been conflicting, but in general, they have determined that the market, at a minimum, has not been confused by the changes (Jain & Rezaee, 2006). Recent articles on the market reaction to earnings management and restatements before and after SOX find that, subsequent to SOX, the market reacts less to these events, speculating that this means the market is less shocked by restatements than in the past (Burks, 2011, Li, Pincus & Rego, 2008).

It is possible, however, that these prior results may be confounded by changes in behaviors during the implementation phase of SOX. In other situations, management opportunistically reports exceptionally poor results when overall results are not good (the big bath) because the market does not incrementally reduce returns more if the news is worse. With the Section 404 disclosures on internal control weaknesses, management reported problems during implementation, either because the increased scrutiny brought new items to light or because management felt that some system weaknesses would be expected, because the stock returns would not suffer as much if the problems were reported promptly (Hermanson & Ye, 2009). Finally, articles in the Wall Street Journal talked about restatements during this implementation period as being positive news in that companies were recognizing and correcting issues in the current period so they would not impact earnings in the future.

We investigate whether the market reaction to restatements is different during the implementation period (2002-2003) compared to the current period (2004-2009). We find there are differences. The reaction to management's discovery of errors leading to restatements is now more negative than during the implementation phase. In addition, restatements of core earnings are now viewed more negatively. Finally, companies currently making stealth restatements (not issuing a press release or 8-K) are viewed more negatively than during the implementation period.

Accordingly, it does seem that management received a "bye" during the implementation phase of SOX. More research is needed to see if this effect confounded prior studies. In addition, more research is necessary to see if the restatement behavior of management has changed.

INTRODUCTION

This paper examines differences in the market response to accounting restatements after the passage of the Sarbanes-Oxley Act (SOX). Our focus is on whether the market responded differently to restatements during the initial implementation of SOX than it did subsequently. As a result of past financial frauds, SOX was designed to boost investor confidence in corporate reporting. Restatements increased after the passage of SOX, and it has been suggested that this is evidence of the effectiveness of the Act, since this was the first time companies were systematically evaluating and being held accountable for the effectiveness of internal controls. Because this was a change for all companies, it was believed that the disclosure of material weaknesses and restatements would be common during the initial implementation of SOX. Therefore, we posit that companies were not penalized as strongly by the stock market for restatements occurring immediately after the required implementation of SOX. This study contrasts the market reaction to restatements during the implementation period with the market reaction after SOX became entrenched in corporate reporting.

MOTIVATION

The Sarbanes-Oxley Act was intended to improve investor's confidence in financial reporting. A side-effect of the Act was a dramatic increase in the number of accounting restatements (Turner & Weirich, 2006). Accounting restatements occur when a company releases incorrect financial statements and then must correct the reported numbers. At best, these arise because managers are not scrutinizing the financial statements diligently. At worst, managers were caught unethically manipulating earnings. The fact that corrections almost always reduce income (GAO, 2002; Wilson, 2008) gives some credence to the latter explanation. Therefore, restatements are generally considered evidence that executives were not acting in the best interest of the stockholders.

Krishnan, Rama & Zhang (2008) documented a significant cost to implementing SOX, so several studies have tested the benefits received. Chang, Fernando & Liao (2009) established that the market believes earnings are of higher quality subsequent to SOX. Lobo and Zhou (2006) found that management is more conservative subsequent to SOX, tending to recognize losses earlier than before. Cohen, Dey & Lys (2008) corroborated this finding. In their sample, management manipulated income less after SOX, but modified operating decisions to opportunistically manage earnings. Bartov and Cohen (2009) combined these studies with analysts' forecasts and found that fewer companies just met or exceeded earnings forecasts after SOX. Therefore, managers appear to still manipulate earnings, but are using different methods to accomplish that goal. Koh, Matsumoto & Rajgopal (2008) confirmed less direct earnings management in the post-SOX period. In addition, they determined that the stock market reacted less to meeting analysts' expectations. Finally, Wilson (2008) investigated restatements prior to

SOX and found that investors are dubious of earnings reported subsequent to a restatement, but lose their skepticism after about a year.

In addition, researchers have examined whether SOX improved the credibility and clarity of financial reporting by testing for differences in the relationship between restatements and market returns before and after its implementation (e.g., Hirschey et al, 2010; Burks, 2011). They demonstrated that SOX has improved credibility, or at least, not increased investor confusion. Burks (2011) examined the earnings drift related to restatements before and after the passage of SOX. Hirschey, Smith & Wilson (2010) also contrasted the market response to restatements before and after SOX implementation. In general, all the studies find a negative market reaction to restatements, but the reaction is less severe post-SOX. Our contribution is to demonstrate whether the market effects of restatements documented in the literature are confounded by the uncertainty surrounding initial implementation of SOX.

It has been suggested that immediately following the passage of the Act, restatements may be viewed differently. A *Wall Street Journal* article (Reilly, 2006) suggested that the increasing number of restatements were a positive result of Sarbanes-Oxley and an indicator that companies were improving systems and scrutinizing the books more closely. A separate article (Gullapalli, 2005) suggested that managers may have been finding (or at least reporting) more restatements as they implemented SOX. It has been well documented that managers opportunistically decide to take write-offs or report bad news when the effects may be overshadowed by other events (the big bath behavior). For example, it is posited that in the years immediately following SOX, companies took the opportunity to report material weaknesses that always existed, but credited the new rules and increased controls with the disclosure (Hermanson & Ye, 2009).

Therefore, this study will contrast the period immediately following SOX with the subsequent years. It is anticipated that companies received a "bye" in the two years immediately following Sarbanes-Oxley implementation. Between the positive impacts that could be attributed to companies looking at their processes more thoroughly, and the learning curve for management, auditors, and investors, we hypothesize that the market reaction to restatements during the implementation period will be less than during the post-implementation period. After the SOX processes are well-established, the restatements should elicit a more negative reaction than during the implementation period. If this is true, then managers may have been wise to recognize as many restatements as possible during the 2002-2003 period.

Table 1: Means Of Cars

	N	MEAN	STD. DEV.	MIN	MAX
All Observations	3,471	-0.01453	0.10632	-0.95179	1.46444
Implementation	644	-0.00920	0.12465	-0.51419	1.35821
Post-Implementation	2,827	-0.01575	0.10167	-0.95179	1.46444

DESCRIPTION OF THE SAMPLE

Restatements and disclosure dates were identified using Audit Analytics. Over 11,000 restatements were reported by this source, but many are not publicly traded companies. Combining this list with CRSP to get stock market returns, resulted in 7,561 observations with cumulative abnormal returns. Combining these data with COMPUSTAT to get financial statement data resulted in a final sample of 3.471 restatements.

The implementation period was set as 2002 and 2003. There were 644 restatements with complete information in this period. The post-implementation period was 2004 – 2009, which resulted in 2,827 restatements in this time period.

VARIABLES

Our dependent variable is the Value Weighted Cumulative Abnormal Returns (CAR), estimated using the disclosure date plus and minus one trading day (Table 1). Other windows were tested with similar results. Palmrose, Richardson & Scholz (2004) document the variables related to the market reaction to restatement announcements. Our independent variables are extrapolated from that study.

Restatement Variables

Palmrose, Richardson & Scholz (2004) found that fraud, core restatements, and direction of the restatement influence the market reaction to restatements. Audit Analytics (AA) includes an indicator variable for fraud. FRAUD is coded as 1 if that was the reason for the restatement. AA also includes fields that describe the nature of the restatement. If AA indicated the restatement was a revenue recognition issue or involved cost of goods sold or other operating expenses, core restatements (CORE) is coded as a 1. Next, if the restatement had a negative impact on earnings, the stock market effect should be greater. NEG is coded as 1 if there is a negative earnings adjustment.

The pervasiveness of the restatement was also noted as a source of concern for investors. AA presents the number of problem areas, so that number is used as a proxy for this construct (NUMFAIL). In addition, the period of the restatement is a cause of concern. The market may view the restatement of earnings over several years as being more of a systemic problem than if the company just restates one quarter's earnings. We subtracted the end of the restatement period from the beginning of the restatement period to get the number of days in the restatement period. That is the value used for RESTDAYS.

The next set of variables revolves around the discovery and reporting of the problem. Audit Analytics designates if the restatement was the result of an SEC investigation. In addition, there is an indicator variable if there was disclosure about the Board or Audit Committee being

involved. Finally, there is a variable indicating if there was disclosure regarding the auditor's involvement in the restatement. Each of these is coded as a 1 if the particular entity was involved in the discovery/reporting of the restatement issue.

The final variable associated with restatements deals with how the restatement is disclosed to the public. Companies often notify the public of the restatement through a press release and/or filing an 8-K with the SEC. However, some companies simply restate their financials on their current SEC filings. In this case, the restatement is buried within the 10-K or 10-Q. These are called stealth restatements, and market participants may not be adequately notified of these restatements in a timely fashion (Hee & Chan, 2010). In this study, if the company issues an 8-K or press release regarding the restatement, PR8K is coded as a 1. The stealth restatements, therefore, are the default (zero).

Control Variables

The size of the corporation is often related to market returns; the natural log of assets is used as the size variable. The stock market is also a control for size as well as the amount of information available to the public. NYSE is coded as 1 if the company was traded on the New York Stock Exchange and a zero otherwise.

In addition, the SEC focused on a few wide-spread errors in financial reporting that required many companies to restate. It had become common practice to backdate option grants so that the grant was made on the most favorable date for the company and employee. Also, it had become customary for lessees to record rent holidays and other leasing terms inappropriately. Once the SEC became aware of these practices, several hundred companies restated their financials. The market may have reacted differently to these restatements compared to more company-specific restatements. In addition, both of these occurred at one point in time, so their relationship to SOX implementation may confound our results. In our sample, 255 companies restated leases, and 27 of those occurred during the implementation period. For backdating, 135 restatements occurred and only 2 of those were disclosed during the implementation period. These are coded as a 1 if the restatement was the result of this particular problem.

THE MODEL

The initial ordinary least squares regression model tested is:

$$CAR = \alpha + \beta_1 FRAUD + \beta_2 CORE + \beta_3 NEG + \beta_4 NUMFAIL + \beta_5 RESTDAYS + \beta_6 SEC + \beta_7 BOARD + \beta_8 AUD + \beta_9 PR8K + \beta_{10} ASSETS + \beta_{11} NYSE + \beta_{12} LEASE + \beta_{13} BACKDATE + \varepsilon$$

Where:

CAR	= the value weighted cumulative abnormal return from -1 trading day to +1 trading day around the disclosure date of the restatement.
FRAUD	= 1 if fraud was present; otherwise, zero.
CORE	= 1 if it was a core restatement; otherwise, zero.
NEG	= 1 if there was a negative earnings impact; otherwise, zero.
NUMFAIL	= the number of reporting issues requiring restatements.
RESTDAYS	= the number of days in the restatement period.
SEC	= 1 if there was an SEC investigation; otherwise, zero.
BOARD	= 1 if the Board of Directors or Audit Committee was involved in uncovering the problem; otherwise, zero.
AUD	= 1 if the auditor was involved in uncovering the problem; otherwise, zero.
PR8K	= 1 if the restatement was announced through a press release or 8-K; otherwise, zero.
ASSETS	= the natural log of assets.
NYSE	= 1 if the company's stock was being traded on the NYSE; otherwise, zero.
LEASE	= 1 if the restatement was related to the SEC's interpretation of the leasing pronouncement; otherwise, zero.
BACKDATE	= 1 if the restatement was related to backdating of options; otherwise, zero.

First we run this model for the implementation period (2002 – 2003) and then for the post-implementation period (2004-2009). Next, we include interaction variables for each period so we can isolate significant differences between the two periods. For the interaction variables, restatements in the post-implementation period will be coded with a 1. This dummy variable will be multiplied by each independent variable. To interpret the results, therefore, the implementation period is the default. The significance level of the coefficient on the interaction variable indicates if the market reacted differently during 2004 - 2009.

EMPIRICAL RESULTS

The means of the independent variables are presented in Table 2. Table 2 also shows the univariate t-tests contrasting the two periods. Of the non-control variables, there were a greater number of core restatements and more with a negative earnings impact during the implementation period. This provides evidence of some "big bath" reporting going on. Management and the auditor were more likely to be designated as the prompter of the restatement subsequent to the implementation period. Also, the restatement period increased post-implementation as well as the likelihood that the disclosure would be made through an 8-K or press release.

Next, regression is run individually for each time period (Table 3). Four variables are significant in both periods; three are in the same direction. Fraud and non-stealth disclosures are predictors of a significantly negative market reaction for both groups. The lease restatement is associated with a significantly less negative (a positive coefficient) market reaction for both groups (at the .10 level). Management's involvement in the restatement process is the most

interesting result. During the implementation period, this was considered a positive sign. During the post-implementation period, there is a significantly negative reaction to management's disclosure of the restatement. This is in line with the *Wall Street Journal's* speculation that restatements initially were viewed positively as SOX required management to take a closer look at their accounting processes.

Table 2: Means of Independent Variables & T-Tests

	All Observations		Implementation		Post-Implementation		
N	3,473		645		2,829		
Variable	**MEAN**	**STD**	**MEAN**	**STD**	**MEAN**	**STD**	**Prob of t-test**
FRAUD	0.0228	0.1491	0.0310	0.1735	0.0209	0.1434	0.167
CORE	0.3025	0.4594	0.4047	0.4912	0.2793	0.4537	**0.000**
NEG	0.8443	0.3627	0.8853	0.3189	0.8349	0.3683	**0.001**
NUMFAIL	2.1934	1.5101	2.2078	1.6381	2.1902	1.4672	0.803
RESTDAYS	788.514	731.720	637.467	524.258	822.952	771.192	**0.000**
SEC	0.1065	0.3085	0.1008	0.3013	0.1078	0.3083	0.601
BOARD	0.4807	0.4997	0.0806	0.2725	0.5719	0.4957	**0.000**
AUD	0.6442	0.4788	0.2574	0.4375	0.7324	0.4434	**0.000**
PR8K	0.5449	0.4981	0.2465	0.4313	0.6129	0.4882	**0.000**
ASSETS	6.0571	2.0878	5.9438	2.1759	6.0829	2.0668	0.127
NYSE	0.2389	0.4265	0.2093	0.4071	0.2512	0.4306	**0.043**
LEASE	0.0728	0.2599	0.0419	0.2004	0.0785	0.2712	**0.000**
BACKDATE	0.0377	0.1905	0.0031	0.0556	0.0458	0.2087	**0.000**

Bold indicates a statistically significant difference between the implementation and post-implementation periods at the 10% level or better.

Table 3: Regression on Individual Time Periods
Dependent Variable Is Value Weighted Cars (-1,0,+1)

	IMPLEMENTATION				POST-IMPLEMENTATION			
Variable	**Estimate**	**Std Err**	**t-value**	**Prob. of t**	**Estimate**	**Std Err**	**t-value**	**Prob. of t**
Intercept	-0.02303	0.02115	-1.08900	0.277	0.01001	0.00831	1.20406	0.229
FRAUD	-0.08019	0.03059	-2.62195	**0.009**	-0.04478	0.01345	-3.33052	**0.001**
CORE	0.01080	0.01080	0.99970	0.318	-0.01656	0.00448	-3.69640	**0.000**
NEG	0.00732	0.01535	0.47724	0.633	-0.01490	0.00514	-2.89664	**0.004**
NUMFAIL	0.00117	0.00325	0.35996	0.719	0.00095	0.00140	0.67639	0.499
RESTDAYS	0.00000	0.00001	0.18014	0.857	0.00000	0.00000	-0.22426	0.823
SEC	-0.02916	0.01718	-1.69720	**0.090**	-0.01053	0.00644	-1.63420	0.102
BOARD	0.05727	0.02030	2.82162	**0.005**	-0.00972	0.00574	-1.69443	**0.090**
AUD	0.00397	0.01136	0.34935	0.727	0.00144	0.00544	0.26504	0.791
PR8K	-0.04322	0.01233	-3.50573	**0.000**	-0.00992	0.00494	-2.00889	**0.045**
ASSETS	0.00085	0.00264	0.32308	0.747	-0.00047	0.00108	-0.43847	0.661
NYSE	0.01517	0.01385	1.09507	0.274	0.01151	0.00508	2.26643	**0.024**
LEASE	0.04375	0.02430	1.80078	**0.072**	0.02357	0.00732	3.21983	**0.001**

Table 3: Regression on Individual Time Periods Dependent Variable Is Value Weighted Cars (-1,0,+1)								
	IMPLEMENTATION				**POST-IMPLEMENTATION**			
Variable	**Estimate**	**Std Err**	**t-value**	**Prob. of t**	**Estimate**	**Std Err**	**t-value**	**Prob. of t**
BACKDATE	-0.13971	0.08773	-1.59244	0.112	0.01342	0.01101	1.21968	0.223
			N	644			N	2826
			MODEL F-VALUE	2.43			MODEL F-VALUE	6.91
			SIGNIFICANCE	**0.003**			SIGNIFICANCE	**<.0001**
			ADJUSTED R-SQUARED	0.028			ADJUSTED R-SQUARED	0.025
Bold indicates statistical significance at the 10% level or better.								

Four variables were significant in only one of the two periods tested. During the implementation period, an SEC investigation resulted in a more negative market reaction. In the post-implementation period, being traded on the NYSE resulted in a less negative reaction. In addition, during the post-implementation period, core restatements and negative earnings restatements increased the negative reaction. These differences also suggest that the market was less concerned about restatements during SOX implementation.

Table 4 presents the results with all interactions, which determines if the differences observed in the prior table are significant. The overall market reaction to restatements, fraud, an SEC investigation, and/or a press release/8K announcement, all resulted in a negative market response. In addition, the reaction was less negative if management was involved in the discovery or reporting of the issue.

The more important results deal with the interaction variables. Consistent with the Table 3 results, POSTIMPLCORE and POSTIMPLBOARD are significantly negative, . This result means that the market reacted less negatively to a core restatement during the implementation period. In addition, if management made the restatement announcement, the market reaction was lessened during SOX implementation. Therefore, management did seem to get a "bye" during the implementation period; making a similar restatement announcement **after** 2003 resulted in a significantly greater negative market reaction.

Finally, the reaction to stealth restatements changed. There is a significantly less negative reaction to companies making these announcements through an 8-K or press release after the implementation period compared with using this method during the implementation period. Perhaps the spotlight on stealth restatements have resulted in companies being penalized more by trying to sneak their restatements past investors by not issuing an 8-K or press release.

Table 4: Regression With All Possible Interactions Dependent Variable Is Value Weighted Cars (-1,0,+1)				
Variable	**Estimate**	**Std Err**	**t-value**	**Prob. of t**
Intercept	0.0046	0.0078	0.5887	0.556
FRAUD	-0.0809	0.0260	-3.1178	**0.002**
POSTIMPLFRAUD	0.0355	0.0295	1.2047	0.228
CORE	0.0099	0.0091	1.0897	0.276
POSTIMPLCORE	-0.0262	0.0102	-2.5650	**0.010**
NEG	-0.0087	0.0088	-0.9876	0.323
POSTIMPLNEG	-0.0038	0.0088	-0.4310	0.667
NUMFAIL	0.0000	0.0026	0.0009	0.999
POSTIMPLNUMFAIL	0.0011	0.0029	0.3633	0.716
RESTDAYS	0.0000	0.0000	-0.2008	0.841
POSTIMPLRESTDAYS	0.0000	0.0000	0.1753	0.861
SEC	-0.0270	0.0146	-1.8528	**0.064**
POSTIMPLSEC	0.0169	0.0160	1.0526	0.293
BOARD	0.0563	0.0167	3.3775	**0.001**
POSTIMPLBOARD	-0.0333	0.0089	-3.7520	**0.000**
AUD	0.0026	0.0095	0.2745	0.784
POSTIMPLAUD	-0.0002	0.0055	-0.0316	0.975
PR8K	-0.0422	0.0105	-4.0166	**0.000**
POSTIMPLPR8K	0.0331	0.0117	2.8289	**0.005**
ASSETS	-0.0002	0.0010	-0.2050	0.838
NYSE	0.0153	0.0106	1.4443	0.149
POSTIMPLNYSE	-0.0041	0.0113	-0.3669	0.714
LEASE	0.0252	0.0072	3.5174	**0.000**
BACKDATE	0.0095	0.0114	0.8405	0.401
		MODEL F-VALUE	5.05	
		SIGNIFICANCE	**<.0001**	
		ADJUSTED R-SQUARED	0.026	
Bold indicates statistical significance at the 10% level or better.				

Table 5 presents a reduced model excluding most insignificant variables. While asset size is not a factor, the negative market reaction to restatement is less severe when the company's stock is traded on the NYSE. This is probably due to the increased scrutiny of companies traded on the NYSE so there is less of a surprise when a restatement is announced. The disclosure of a fraud or SEC investigation is consistently viewed as a negative event as is a negative earnings effect. If the restatement is the result of the change in the interpretation of the leasing pronouncement, the market did not react as strongly.

Across time periods, the differences related to core earnings, management announcements, and stealth disclosures are statistically significant. With respect to restatements related to core earnings, the market reaction is significantly more negative subsequent to the implementation period. Management's involvement in the disclosure of the restatement is very different in the two time periods. In general, there is a positive reaction to management's disclosure of the problem, but in the post-implementation period, the reaction is significantly negative. To interpret this

result, the coefficients need to be subtracted. There was about a +4.8% change in the market return if management disclosed the problem in the implementation period; in the post implementation period, there is only about a +2% change (.04791 minus .02801). Finally, the reaction to stealth restatements differs. During the implementation period, the market return declined by 4.4% if a press release of 8K disclosed the pending restatement. This suggests that stealth disclosure did obscure the restatement. The new SOX rules as well as the focus in the popular press may have brought the stealth restatements to the attention of the market, so there is currently only about a .9% (.04404 minus .03549) penalty to disclosure through a press release or 8-K. In other words, there is no longer an advantage to providing the stealth disclosure. The market has learned to adjust for restatements provided only in the 10-K or 10-Q.

Table 5: Parsimonious Regression Model
Dependent Variable Is Value Weighted Cars (-1,0,+1)

Variable	Estimate	Std Err	t-value	Prob. of t
Intercept	0.00598	0.00728	0.82171	0.411
FRAUD	-0.05369	0.01226	-4.38023	**0.000**
CORE	0.00977	0.00764	1.27905	0.201
POSTIMPLCORE	-0.02549	0.00850	-2.99907	**0.003**
NEG	-0.01142	0.00494	-2.31187	**0.021**
BOARD	0.04791	0.01544	3.10205	**0.002**
POSTIMPLBOARD	-0.02801	0.00808	-3.46768	**0.001**
SEC	-0.01135	0.00592	-1.91672	**0.055**
PR8K	-0.04404	0.00968	-4.54708	**0.000**
POSTIMPLPR8K	0.03549	0.01064	3.33379	**0.001**
ASSETS	-0.00014	0.00099	-0.13825	0.890
NYSE	0.01179	0.00480	2.45493	**0.014**
LEASE	0.02543	0.00696	3.65294	**0.000**
		MODEL F-VALUE	9.32	
		SIGNIFICANCE	**<.0001**	
		ADJUSTED R-SQUARED	0.028	

Bold indicates statistical significance at the 10% level or better.

CONCLUSION

The Sarbanes-Oxley Act was intended to boost investor's confidence in the market. However, we hypothesize that the market expected managers to find errors during the initial implementation of SOX; therefore, the market may not have penalized accounting restatements as severely during the implementation phase as it would post-implementation. This study investigated the stock market reaction to restatements during the implementation of SOX compared with the post-implementation period.

We found that the market reaction to restatements, in general, was less negative during the implementation period then it is during the post-implementation period. The negative market reaction to a restatement was mitigated during the implementation period if management disclosed the issue. In addition, the market reacted less negatively to core restatements during implementation. Finally, during the implementation period, the market reacted more negatively to restatements disclosed through an 8-K or press release than it currently does. This may be due to the increased scrutiny on stealth restatements.

This study corroborates the research on the adoption of new pronouncements and regulatory changes. The market reaction to restatements was less punitive in the first couple years of SOX. Therefore, researchers must isolate the years immediately subsequent to the passage of SOX before drawing conclusions about its impact.

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A MODEL TO EVALUATE DIVISIONAL MANAGERS WITHIN THE GENERALLY ACCEPTED ACCOUNTING PRINCIPLES FRAMEWORK

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ABSTRACT

This paper develops a performance metric for the evaluation of divisional managers that is based on generally accepted accounting principles. We show that is possible for a decentralized entity to adopt an economic value concept within the parameters of the accounting framework. This is achieved when the head office leases the assets to the division at the rate of return implicit in the capital budget proposal. If the divisional manager's performance is as per the proposal then the residual cash flow at the end of each accounting period will be zero.

By linking the performance measure to the capital budgeting process we ensure that the divisional managers do not significantly overestimate their cash flow projections since this will be captured by the performance metric. We also prove that our model is robust regardless of whether the head office chooses to classify the arrangement as an operating or a capital lease.

INTRODUCTION

The use of some form of return on investment to evaluate divisional managers is widely used in many decentralized companies. In general, accounting information and ratios are the cornerstone for measuring the performance of managers. One example is the DuPont formula which uses a combination of the asset turnover ratio, profit margin and a capital structure ratio (see, for example, Kaplan & Atkinson, 1998).

The utilization of financial accounting data has limitations when it is used to evaluate managers. Most capital expenditure decisions are based on discounted cash flows which attempt to capture the economic value of the proposed investment. Thus a divisional manager has to justify a capital project in terms of its economic value to the entity and yet the manager's performance is measured in terms of accounting information.

It appears to be logical to evaluate a division manager's performance with reference to the original capital budget proposal. One probable reason why this is not done is the cost of extracting and converting the data into a suitable form. When the accounting information used to evaluate performance is the same as that generated by the economic value analysis done to approve the project, then the use of the accounting data is a far more reliable performance metric. The purpose of this paper is to develop such a model for a decentralized organization in which the accounting

and economic information are highly correlated and thus enhancing the evaluation of the divisional manager. This is achieved by having the head office lease the assets to the division.

The remainder of this paper is organized as follows. We next summarize the literature before discussing our model. We then illustrate the principles of our model and discuss the tax implications. We then extend our model to incorporate the residual income and prove that it is robust for both operating and capital leases. In the final section we draw our conclusions.

LITERATURE REVIEW

The traditional basis for evaluating the performance of a divisional manager has been some form of financial accounting information such as divisional earnings and return on investment (Abernethy, Bouwens, & van Lent, 2004; Drury & El-Shishini, 2005; Jensen & Mechling, 2009; Keating, 1997; Ramakrishnan, 2008; Shih, 2007; Wulf, 2002). These traditional backward looking, short-term financial performance indicators have been criticized because they fail to align the project metrics to the performance metrics (Gupta, 2004). They encourage the divisional manager to maximize the performance measure which can lead to suboptimal decisions since management may focus on short-term financial results. In addition, the use of accounting policies such as the depreciation method can distort the performance measures. Another limitation of the financial performance indicators is that they deal with the current reporting period whereas the performance metric should focus on expected future results arising from current decisions (Drury & El-Shishini, 2005).

In order to overcome these limitations the concept of residual income is often recommended as the basis to evaluate the performance of a divisional manager. Under this method the divisional manager is levied with a prescribed interest charge for the actual investment employed by the division. The literature has shown the superiority of residual income compared to the traditional financial metrics as a performance measure (see, for example, Baldenuis, 2003; Dutta, 2003; Egginton, 1995; Friedl, 2005; Pfeiffer, 2000; Reichelstein, 1997, 2000; Rogerson, 1997; Wagenhofer, 2003). The literature advocates the use of the entity's cost of capital as both the required rate of return and the prescribed interest charge rate (Young & O'Byrne, 2001). Poterba and Summers (1995) found that the actual hurdle rates used in practice are significantly higher than the cost of capital. They contend that this is a crude measure to address attempts by managers to overstate cash flow projections.

According to Johnson and Kaplan (1987), companies do rely on financial measures for internal performance evaluation. Drury and El-Shishini (2005) claim that the reliance on generally accepted accounting principles (GAAP) in determining the metric for the evaluation of divisional managers is to ensure that this metric is consistent with accounting methods used by external stakeholders to evaluate the performance of the group.

Solomon's (1965) study on divisional performance measurement argued that the accounting rules that are adopted in the determination of the performance metric should guide managers toward wealth enhancing decisions. This claim, when combined with the residual income approach, has lead to the development of economic profit plans. These plans make adjustments to the divisional performance metrics for distortions introduced by GAAP (Drury & El-Shishini, 2005; Dutta & Reichelstein, 2005). Economic value added is the best known of the

economic profit plans. It was pioneered by Stern, Stewart and Company and develops a performance metric which incorporates the changes in the corporation's wealth. Thus divisional managers' goals are linked to those of the shareholders. Palliam (2006) contends that the benefits of economic value added are unfounded and dubious.

Our contribution to the literature is that we use financial accounting information to develop a performance measure of divisional managers that is consistent with the objective of economic profit plans. Our model is based on information generated from lease agreements recorded using GAAP and cash flows from operations. Dutta and Reichelstein (2005) show that the accrual accounting treatment of capital leases, but not operating leases, can result in performance measures that comply with the economic value added concept when using the residual income approach. We will show that our model can be generalized for both capital and operating leases.

There is very little literature dealing with the inclusion of cash flows in the performance metrics of divisional managers. A few articles deal with the implications of cash flows on the performance evaluation of the chief executive officer of the entity (Banker, Huang, & Natarajan, 2009; Nwaeze, Yang, & Yin, 2006) but none do so for divisional managers.

THE PROPOSED MODEL

It is common practice for divisional managers to have to justify their capital expenditure proposals on an economic value basis. The managers are closely involved with the process and with the detailed quantitative considerations inherent in their proposals. They are also presumed to have superior information regarding the cash flows associated with the investment. Thus it is logical to judge their performance by comparing the actual results of an investment against the original capital expenditure proposals which were the source of the approval of the investment.

The economic income of an investment for a particular period is the sum of the actual cash flows plus the difference in the present value of the future cash flows at the beginning and the end of the period. It is therefore important that the proposed model results in reported income having the same pattern as the economic model.

In a decentralized business entity this can be achieved if the head office leases the asset to the division and allocates the finance income in a systematic way. This allocation is based on a constant periodic after-tax rate of return on the net investment outstanding. The rate to be used is the internal rate of return implicit in the capital budget proposal. This will result in the head office reporting accounting income for the investment that is the same as the economic income.

Performance of the divisional manager is evaluated based on the division's cash position. If a manager achieves a better than expected result, in terms of the original budget proposal, then surplus cash will accumulate in the division. A less than satisfactory performance will result in the manager calling for additional funds. Thus the principle of management by exception is also instilled in the proposed model.

The proposed model should circumvent the problem identified by Poterba and Summers (1995) of a divisional manager overstating the cash flows associated with the investment. If a manager does deliberately overestimate the cash flows associated with an investment then the

actual cash flows from the project will result in a negative cash flow for the division and thus adversely affect the performance measure.

AN ILLUSTRATION OF THE MODEL

A hypothetical investment proposal is shown in Table 1 where the after-tax internal rate of return is 26.4181 percent. It is assumed that all cash flows occur at the end of the period, there is no debt, there are no working capital requirements, all operating cash flows are tax deductable, the tax rate is thirty five percent, and the division is a separate legal entity.

Table 1: Projected cash flows for a hypothetical capital budgeting proposal

Details	Total	Year				
		1	2	3	4	5
Operating cash flows	$ 190,000	$ 70,000	$ 80,000	$ 10,000	$ 10,000	$ 20,000
Tax payable	-31,500	-14,225	-10,049	-2,753	-2,450	-2,023
Net cash flow	158,500	55,775	69,951	7,247	7,550	17,977
Present value factor at 26.4181 %		0.79102	0.62572	0.49496	0.39152	0.30970
Present value	100,000	44,119	43,770	3,587	2,956	5,568
This yields a zero net present value on a $100,000 initial investment.						

Table 2 shows the computation of the accounting income based on the economic investment. The net finance income is computed using the economic investment balance at the beginning of the year and the after-tax internal rate of return. Since the internal rate of return is net of tax it is necessary to adjust the net finance income to account for any tax payments by the entity.

The financial statements of the division over the five year lease period are shown in Table 3. It is assumed that the division uses the straight-line method to depreciate its leased assets. The finance charges are same as the gross finance income computed in Table 2 and are equivalent to income that the parent company records.

Table 2: Computation of the accounting income based on the economic investment

Year	Details	Amount	Taxation		Net finance income	
1	Beginning balance	$100,000				
	Gross finance income	40,643	=	$ 14,225	+	$ 26,418
	Lease payment	-70,000				
2	Beginning balance	70,643				
	Gross finance income	28,712	=	10,049	+	18,663
	Lease payment	-80,000				
3	Beginning balance	19,355				
	Gross finance income	7,866	=	2,753	+	5,113
	Lease payment	-10,000				
4	Beginning balance	17,221				
	Gross finance income	7,000	=	2,450	+	4,550
	Lease payment	-10,000				

Table 2: Computation of the accounting income based on the economic investment						
Year	**Details**	**Amount**	**Taxation**		**Net finance income**	
5	Beginning balance	14,221				
	Gross finance income	5,779	=	2,023	+	3,756
	Lease payment	-20,000				
	Ending balance	0		31,500		58,500
The net finance income is determined by taking the beginning period balance multiplied by the after-tax rate of return which is 26.4181 percent						

Table 3: Financial statements of the subsidiary company					
Year	1	2	3	4	5
Income statement					
Net income before the following	$ 70,000	$ 80,000	$ 10,000	$ 10,000	$ 20,000
- Depreciation	-20,000	-20,000	-20,000	-20,000	-20,000
- Finance charges	-40,643	-28,712	-7,866	-7,000	-5,779
Income before tax	9,357	31,288	-17,866	-17,000	-5,779
Deferred taxation	-3,275	-10,951	6,253	5,950	2,023
Net income	6,082	20,337	-11,613	-11,050	-3,756
Balance sheet					
Leased asset	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Total assets	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Current portion of long-term liability	$ 51,288	$ 2,134	$ 3,001	$ 14,221	0
Current portion of deferred tax liability	0	6,253	5,950	2,023	0
Obligation under capital lease	19,355	17,221	14,221	0	0
Deferred tax liability	3,275	7,973	2,023	0	0
Contributed capital	0	0	0	0	0
Retained income	6,082	26,419	14,806	3,756	0
Total claims	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Cash flow statement					
Operating cash flow	$ 70,000	$ 80,000	$ 10,000	$ 10,000	$ 20,000
Lease payment to parent company	-70,000	-80,000	-10,000	-10,000	-20,000
Net cash inflow	$ 0	$ 0	$ 0	$ 0	$ 0
Tax computation					
Income before tax	$ 9,357	$ 31,288	$ 17,866	$-17,000	$ -5,779
Add: Depreciation	20,000	20,000	20,000	20,000	20,000
Less: Bonus depreciation	-100,000				
Loss carry forward	$ -70,643	$ -9,355	$ 17,221	$ 14,221	$ 0

Although the financial statements of the subsidiary do not present information that reflects the economic consequences of the investment, the cash flow statement does provide information to monitor the performance of the manager. It can be seen that the cash flow of the subsidiary is zero if the actual results from the investment equal the projected results. A positive cash flow reflects a better than budgeted performance whilst a negative cash flow indicates that the performance of the manager is not measuring up to expectations given the original proposal.

The financial statements of the holding company are given in Table 4. This shows that the economic income, which was the basis of the approval of the capital project, is the same as the accounting net income because the net income of the parent is equivalent to the net finance income in Table 2.

Table 4: Financial statements of the parent company

Year	1	2	3	4	5
Income statement					
Finance income	$ 40,643	$ 28,712	$ 7,866	$ 7,000	$ 5,779
Taxation expense - current	-14,225	-10,049	-2,753	-2,450	-2,023
Net income	$ 26,418	$ 18,663	$ 5,113	$ 4,550	$ 3,756
Balance sheet					
Cash	$ 55,775	$125,726	$132,973	$140,523	$158,500
Debtor under capital lease	51,288	2,134	3,000	14,221	0
Investment in leased asset	19,355	17,221	14,221	0	0
Total assets	$126,418	$145,081	$150,194	$154,741	$158,500
Contributed capital	$100,000	$100,000	$100,000	$100,000	$100,000
Retained earnings	26,418	45,081	50,194	54,744	58,500
Total claims	$126,418	$145,081	$150,194	$154,744	$158,500
Cash flow statement					
Operating cash flow	$ 40,643	$ 28,712	$ 7,866	$ 7,000	$ 5,779
Tax payment	-14,225	-10,049	-2,753	-2,450	-2,023
Capital lease repayments	29,357	51,288	2,314	3,000	14,221
Net cash inflow	$ 55,775	$ 69,951	$ 7,247	$ 7,550	$ 17,977

TAXATION IMPLICATIONS

The Tax Relief, Unemployment Insurance Reauthorization and Job Creation Act of 2010 increased the bonus depreciation to 100 percent of the remaining depreciable basis for those capital investments placed in service after September 8, 2010, but before December 31, 2011. In 2012, bonus depreciation returns to 50 percent and then presumably expires at the end of the year. Thus in Table 3 we show the taxation computation of the subsidiary based on the 100 percent bonus depreciation allowance.

Our model ensures that over the economic life of the investment, the subsidiary is in a tax neutral position if the projected cash flows are realized. This results from the fact that the revenues are exactly offset by the depreciation allowance and the finance expense. To demonstrate this we have utilized the 50 percent bonus depreciation allowance rather than the 100 percent allowance and assumed that the subsidiary uses the straight-line method rather than the modified accelerated cost recovery system. The internal rate of return drops from 26.4181 percent to 25.5745 percent. In addition, as shown in Table 5, the subsidiary will have to pay taxes of $4,680 in the second year. This will then result in refunds in the third and fourth years due to the loss carry backs.

Table 5: Financial statements of the subsidiary company					
Year	1	2	3	4	5
Income statement					
Net income before the following	$ 70,000	$ 80,000	$ 10,000	$ 10,000	$ 20,000
- Depreciation	-20,000	-20,000	-20,000	-20,000	-20,000
- Finance charges	-39,345	-27,284	-10,225	-7,498	-5,647
Income before tax	10,655	32,716	-20,225	-17,498	-5,647
Provision for taxation	-3,729	-11,451	7,078	6,124	1,976
- Current taxation	0	-4,680	3,579	1,101	0
- Deferred taxation	-3,729	-6,771	3,499	5,024	1,976
Net income	$ 6,926	$ 21,265	$ 13,147	$ 11,374	$ -3,671
Balance sheet					
Leased asset	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Total assets	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Current portion of long-term liability	$ 48,036	$ 3,353	$ 3,603	$ 14,353	$ 0
Current portion of deferred tax liability	0	3,500	5,024	1,976	0
Obligation under capital lease	21,309	17,956	14,353	0	0
Deferred tax liability	3,729	7,000	1,976	0	0
Contributed capital	0	0	0	0	0
Retained income	6,926	28,191	15,044	3,671	0
Total claims	$ 80,000	$ 60,000	$ 40,000	$ 20,000	$ 0
Cash flow statement					
Operating cash flow before tax	$ 70,000	$ 80,000	$ 10,000	$ 10,000	$ 20,000
Tax payments/refunds	0	-4,680	3,579	1,101	0
Lease payment to parent company	-70,000	-75,320	-13,579	-11,101	-20,000
Net cash inflow	$ 0	$ 0	$ 0	$ 0	$ 0
Tax computation					
Income before tax	$ 10,655	$ 32,716	$ 20,225	$ 17,498	$ -5,647
Add: Depreciation	20,000	20,000	20,000	20,000	20,000
Less: Bonus depreciation	-50,000				
Less: Depreciation allowance	-10,000	-10,000	-10,000	-10,000	-10,000
Loss carry forward	-29,345	0	0	-4,353	0
Taxable income	0	13,370	-10,225	-7,498	0
Tax payments/refunds	0	4,680	-3,579	-1,101	0

Thus far it has been assumed that the division is a separate legal entity which means that the lease has to be classified as a capital lease for accounting and tax purposes. If the division is a segment of the entity then the lease can be treated as an operating lease with the annual lease payments based on the projected yearly net cash inflows given in the capital budget proposal. This means that the head office will be able to claim the depreciation allowance. Using the scenario given in Table 5, this will result in an increase in the after-tax return from 25.5745 percent to 27.3566 percent.

EXTENDING THE MODEL TO INCORPORATE RESIDUAL INCOME

Dutta and Reichelstein (2005) model the use of GAAP recorded leases as performance measures using a residual income approach. They prove that their capital lease model, when combined with a relative benefit depreciation expense, develops a performance measure that captures a share of the value of the investment. Thus one limitation of this model is that the periodic performance measure does not identify the proportion of the value created by the investment. Another limitation of their model is that it does not generalize to operating leases. Dutta and Reichelstein (2005) thus argue that, for divisional management performance evaluation purposes, an accounting adjustment should be made to GAAP and the option of classifying long-term leases as operating should be eliminated.

We will now prove that our model overcomes the two limitations of the Dutta Reichelstein (2005) model when we incorporate the depreciation expense on a relative benefit, or economic, basis.

When the subsidiary enters into the lease agreement it records an asset and a liability which are the present value of the future lease payments less any tax payments that the group has to make in respect of the investment. Thus the initial values recorded by the subsidiary in respect of the lease are:

$$AV_0 = LV_0 = \sum_{t=1}^{T} \left(\frac{1}{1+r}\right)^t (y_t - tp_t). \quad (1)$$

Where AV_0 = initial value of the asset in the subsidiary's books,

LV_0 = initial value of the liability in the subsidiary's books,
r = internal rate of return on the investment,
y_t = cash lease payments at date t for each t ϵ (1,…, T), and
tp_t = tax payments at date t.

At the end of period t, the carrying value of the liability is the beginning period value plus the net finance interest, rLV_{t-1}, plus the head office tax payments, tp_t, less the lease payment, y_t. Therefore

$$LV_t = (1 + r)LV_{t-1} - y_t + tp_t. \quad (2)$$

This yields

$$LV_t - LV_{t-1} = rLV_{t-1} - y_t + tp_t. \quad (3)$$

The residual income approach requires the depreciation expense, dep_t, to be a function of the change in the economic value of the asset. Thus

$$AV_t = AV_{t-1} - dep_t. \quad (4)$$

Since both the lease asset and the liability are measured on the basis of their economic value, their carrying values at *t*, are:

$$AV_t = LV_t = \sum_{t=t+1}^{T} \left(\frac{1}{1+r}\right)^t (y_t - tp_t). \quad (5)$$

Any change in the carrying values must be the same for both AV and LV. Thus substituting AV for LV in equation 3 gives:

$$AV_t - AV_{t-1} = rAV_{t-1} - y_t + tp_t. \quad (6)$$

By rearranging equation 6 and substituting into equation 4 we get:

$$(1 + r)AV_{t-1} - y_t + tp_t = AV_{t-1} - dep_t. \quad (7)$$

Rearranging this equation results in:

$$y_t - dep_t - rAV_{t-1} - tp_t = 0. \quad (8)$$

The periodic income of the subsidiary, inc_t, is the net operating cash inflows, θx_t, less the gross finance expense, which is the net finance income plus the tax payments, less the depreciation expense, or

$$inc_t = \theta x_t - dep_t - rLV_{t-1} - tp_t. \quad (9)$$

The net cash inflows are represented by the θ variable to indicate that they are an expected outcome of the divisional manager's information set and beliefs regarding the future net cash flows predicated by entity's current decisions. Once the lease agreement is finalized, all the other variables are known amounts. Since the beginning period carrying value of the lease liability and asset are equivalent when computing the depreciation expense using the relevant benefit approach, the residual income, RI_t, is:

$$inc_t \equiv RI_t = \theta x_t - dep_t - rAV_{t-1} - tp_t. \quad (10)$$

In our model we set the lease payments, y_t, equal to the expected net operating cash inflows, θx_t, which means that the expected net cash flow for any period, CF_t, is zero. Substituting into equation 10 and using the results of equation 8 yields:

$$inc_t \equiv RI_t = CF_t = 0 \quad (11)$$

Thus the capital lease method when combined with the relative benefit depreciation ensures that the cash flow and residual income for each period are the same. If the actual realized net cash inflows of the division exceed, or fall short of, the expected net cash inflows, θx_t, then

the residual income will be greater, or less, than zero. The managers are best served by revealing their superior information about the expected net cash flows resulting from the investment. If the managers underestimate the net cash flows they run the risk of the investment being denied. If they overestimate the expected net cash flows, then their performance evaluation will be adversely affected because the metric will be negative. Thus this performance metric negates the overestimation problem identified by Poterba and Summers (1995). The proposed performance metric promotes a culture of value increasing decision making on the part of the divisional managers.

For an operating lease, Dutta and Reichelstein (2005) show that subsidiary's net income is equal to its residual income such that:

$$inc_t = RI_t = \theta x_t - y_t. \quad (12)$$

In our model we set the lease payments, y_t, equal to the expected net operating cash inflows, θx_t, which means that the expected net income, the expected residual income and the expected net cash flow for any period will be the same. This is the same result that is achieved with a capital lease as shown in equation 11. Thus our performance measure is valid regardless of the accounting method used to record the lease. We have therefore shown that our model is more robust that the one suggested by Dutta and Reichelstein (2005).

CONCLUSION

A model is developed within the constraints of generally accepted accounting principles to measure the performance of divisional managers. The springboard for the model is the capital budget proposal which is normally evaluated using some form of discounted cash flows.

It is argued that the performance of a divisional manager should be evaluated based on the capital budget that was used to approve the investment rather than on traditional accounting measures. The proposed model demonstrates that this can be achieved if the asset is leased to the division.

The actual performance of the divisional manager with respect to the capital investment is evaluated by monitoring the division's residual cash flow. A positive residual cash flow reflects a better than budgeted performance. This results in the head office recording accounting income that is equivalent to the economic income. We link the model to the residual income concept and prove that our model is robust regardless of whether the transaction is classified as operating or capital lease for accounting purposes.

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COMMUNICATION FAILURES, SYNTHETIC CDOS, AND THE 2008 FINANCIAL CRISIS

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ABSTRACT

This paper posits that communication failure in the investment community contributed to the 2008 financial crisis. The paper shows that there were communication failures in the pricing of collateralized debt obligations (CDOs) between underwriters and management and between the sale side and the buy side of the same department. In the marketing of CDOs, there was communication failure because of lack of transparency into the true nature of the composition of the CDOs. CDO originators changed the composition of the CDOs they sold without informing potential buyers of this important information. There was communication failure in the investment community because investors such as pension fund managers relied totally on the advice of advisors from companies such as Merrill Lynch & Co., Wachovia Corp. and Bear Stearns who pitched these securities without revealing their own selfish interest. Furthermore, investors - hedge funds, pension funds, insurance companies, banks, and others, who bought CDOs, exhibited cognitive dissonance by relying solely on ratings agencies and abandoning much of their own due diligence in the gathering of information on CDOs

Keywords: Collateralized debt obligation, financial crisis, securitization, subprime mortgages, special purpose vehicles, tranches, and communication.

INTRODUCTION AND BACKGROUND OF THE FINANCIAL CRISIS

The global savings glut, cuts in interest rates by the Federal Reserve Bank in response to Y2K in 2000, and the terrorist attack in 2001 kept interest rates low in the U.S. stimulating demand for mortgage loans. The glut of the loan-able funds also meant that there was a thirst for high yield securities. Furthermore, the passage of the Gramm-Leach-Bliley Act[1] in l999 which deregulated financial markets and removed the firewall between banking and trading activities enabled banks, insurance companies, securities firms and other financial institutions to affiliate under common ownership and to offer their customers a complete range of financial services which intensified competition and innovation of financial securities in the industry. The rise in demand for mortgage loans on one hand and the rise in demand for high yield securities by investors on the other hand escalated the securitization of home mortgages. This meant that banks could originate mortgage loans and quickly sell them to others who pooled them into

mortgage backed securities. As this phenomenon became a wide spread practice, the due diligence required in screening creditworthy borrowers was relaxed. The resultant mortgage payment delinquencies from subprime borrowers triggered the financial crisis.

The following examples highlight some of the major events mortgage companies and some other financial institutions experienced as a result of the mortgage crisis. By February 2007, the situation for mortgages and mortgage related securities had deteriorated enough to cause the Federal Home Loan Mortgage Corporation (Freddie Mac) to announce that it would no longer buy the most risky subprime mortgages and mortgage-backed securities. By April, 2007, New Century Financial Corporation, a leading subprime mortgage lender, filed for bankruptcy protection; and by July 31, 2007, Bear Stearns liquidated two of its hedge funds that had invested in mortgage-backed securities[2]. Thus, Bear Stearns became the first investment bank to fail. The next section explains how its investments in CDO led to its failure.

Bear Sterns had made substantial investments in CDOs it had created and insured them with credit default swaps (CDS) from AIG. Unfortunately, the unraveling sub-prime mortgage delinquencies drove the credit ratings of AIG down which subsequently reduced the value of the CDOs Bear Stearns had insured with AIG. Therefore, as the value of insurance Bear Stearns held with AIG decreased, it became insufficient to cover its losses on CDOs. Thus by July 2007, Bear Stearns' two subprime hedge funds, which were heavily invested in CDOs, reportedly lost all of their value. This situation was made worse by creditors who closed Bear Stearns' line of credits and increasingly demanded cash on outstanding loans. Under these conditions, if Bear Stearns had been a commercial bank, it could have turned to the Federal Reserve Bank as a lender of last resort. However, since Bear Stearns was an investment bank and not a commercial bank, it was unable to go directly to the Federal Reserve Bank for help. The loss of confidence in Bear Stearns' capacity to withstand its liquidity problems forced many of its counterparties to cut off their business ties with the company. Eventually, the exodus of investors, creditors, and other clients caused its share value to plummet driving it into bankruptcy. Fearful that Bear Stearns' collapse would severely damage the entire financial system, in March, 2008, the Federal Reserve Bank of New York announced that it would provide financing opportunities to facilitate the acquisition of Bear Stearns by JPMorgan[3]. Eventually, in March 2008, Bear Sterns was sold to JPMorgan Chase.

In 2008, Fannie Mae and Freddie Mac were on the verge of bankruptcy as a result of rising mortgage delinquencies and foreclosures. Consequently, on September 7, 2008, the Federal Housing Finance Agency (FHFA) placed Fannie Mae and Freddie Mac in government conservatorship thus saving them from bankruptcy. In the same month, Merrill Lynch, an investment bank, agreed to be sold to Bank of America. At the same time, Lehman Brothers filed for bankruptcy protection. Evidently, Lehman Brothers held a large position in subprime related assets. As foreclosures on subprime loans started to unravel, investors started getting out of the securities tied to subprime loans and its derivatives. As a result, huge losses in these assets led to wide spread short selling of Lehman's shares (pulling its share price further down). With massive

exodus of its business clients and a drop in its credit ratings which made it impossible to conduct business as usual, Lehman Brothers filed for bankruptcy protection on September 15[4].

AIG, which provided credit-default swaps, a form of insurance on CDOs, succumbed to the negative effects of the unexpected and wide spread mortgage delinquencies. The resulting drop in value of the assets it insured threatened not only its survival but that of multitudes of other financial entities from around the world that it had insured as well. To avoid a catastrophic global financial meltdown, the Federal Reserve Bank rescued AIG with a loan. However, by this time the problem had spread to too many other financial institutions as well. In September 2008, Goldman Sachs and Morgan Stanley were granted change of status from investment banks to bank holding companies by the Federal Reserve Bank. At the time, Washington Mutual Bank and Wachovia were also sold to Morgan Stanley and Citigroup, respectively. The result of these institutional changes was a wide spread loss of confidence, confusion, and a liquidity crunch[5] which quickly spread to other domestic and global institutions as well.

The purpose of this paper is twofold. First, we examine how communication failures in the pricing, marketing, and investing community in collateralized debt obligations contributed to the 2008 financial crisis. Second, we apply the intellectual hazard theory developed by Miller and Rosenfield (2008) to provide a rationale why communication failure occurred. For the purpose of this paper, we choose a simple definition of communication: the process of transmitting information, ideas, thoughts, opinions and plans within and between various departments of an organization. Within this context, good communication means that decision makers at various levels are in a position to acquire, process, transmit, and implement key information pertinent to their role in the organization. In contrast to previous studies that use other factors to explain the causes of the financial crisis, we focus on one key financial instrument that played a significant role in causing the crisis. Our key finding is that CDOs are a good example of one rotten tomato that spoiled a basketful.

This paper contributes to the literature in two significant ways. First, we contribute to the current debate about the causes of the 2008 financial crisis. Contrary to previous studies that look at market and other economic factors and their role in the financial crisis, we look at a human factor, namely, communication failure and examine how and why it occurred. Second, to our knowledge, our paper is the first to apply the intellectual hazard theory to an analysis of CDOs and the financial crisis. The current study provides a more detailed analysis of CDOs and the role they played in the financial crisis.

The remainder of the paper is divided as follows: Section II provides a review of the literature. Section III introduces collateralized debt obligations and their structure. Section IV examines the pricing of CDOs. Section V introduces the marketing of CDOs. Section VI examines the investing community in CDOs. Section VII examines why communication failures occurred using the hazard theory. Section VIII summaries the paper.

REVIEW OF THE LITERATURE

Previous studies link the 2008 financial crisis to various factors. For example, Bordo (2008) attributes the crisis to major changes in regulation, lax regulatory oversight, relaxation of normal standards of prudent lending, and a period of abnormally low interest rates. He argues that many of the financial institutions and instruments caught up in the crisis are part of a centuries old phenomenon of financial innovation whereby new instruments often devised to avoid regulation are then proved to be successful or not by the test of financial stress. He further argues that the rise and fall of financial instruments occurs as part of a long standing pattern of booms and busts in asset markets, and that the boom often leads to over indebtedness and eventually to bank failures.

Congleton (2009) looks at the role that government policies in the 2008 financial crisis and argues that U.S. home ownership policies and bank regulations created a highly leveraged international market for mortgage-based securities. Examples of favorable home ownership policies include the Housing Act of 1949 which authorized the Federal Housing Administration (FHA) to insure home mortgages and the establishment of the Federal Home Loan Mortgage Corporation (FHLMC or "Freddie Mac") in 1970 to make loans, loan guarantees, and to create a market for mortgage-backed securities. Congleton (2009) further points out the following acts as factors contributing to the crisis: the Riegle-Neal Interstate Banking Act of 1994 which allowed holding companies to own banks in several states as well as the merger of banks from different states; the Gramm-Leach-Bliley Act of 1999 which allowed holding companies to own insurance and security companies as well as banks; the 2004 special ruling of the U.S. Securities and Exchange Commission (SEC) which allowed the five largest investment banks in the United States to reduce their capital reserves; and the Sarbanes-Oxley Act of 2002 which allowed the use of "mark-to-market" accounting rules which increased the supply of funds for credit in general and mortgage-backed securities in particular.

Sharfman (2009) points out that the 2008 financial instability is a direct result of rent seeking behavior by executives, traders, and investment bankers because of compensation policies that are based on large annual bonuses; and that these individuals pursue what is referred to as "fake alpha" in which the remote chance of a major disaster is ignored in the pursuit of immediate extravagant benefits. He argues that although the individual involved understand that the risk will materialize, the extravagant potential compensation to be earned before the likely materialization of the risk makes the risk well worth taking.

Schwartz (2009) concludes that expansive monetary policy, the adoption of flawed financial innovations, and the collapse of trading contributed to the financial crisis of 2008. He argues that low interest rates which induced borrowing, government policies that encouraged the home ownership of low- and moderate-income borrowers, the design of mortgage-backed securities collateralized by a pool of an assortment of mortgages of varying quality with no guidance on how to price the pool, as well as the improper ratings of the securities contributed to

the crisis. Mayer-Foulkes (2009) contends that the crisis has long-term causes that are rooted in the economic dynamics of globalization in which he attributes the global savings glut as the source of the financial crisis. He suggests that the roots of the crisis lie in the huge economic flows generated by globalization leading to a global savings glut and investment shortfalls which dramatically lowered long-term real interest rates and causing the housing bubble in many countries. Driscoll (2009) attributes the crisis to easy money and credit during the boom phase that made it possible to borrow money cheaply to finance appreciating assets like residential mortgages in hot real estate markets like California, Nevada, and Florida. He notes that the boom phase ended when the Federal Reserve began raising interest rates. Consequently, housing prices first dropped in 2006 and then began declining. As a result, mortgages started going into arrears as homeowners walked away from their speculatively purchased homes.

Lewis et al (2010) associate the crisis with a highly leveraged financial industry. They point out that approximately $1.1 trillion of Goldman Sachs and $1 trillion Merrill Lynch assets were based merely on $40 billion and $30 billion equity values, respectively. They further argue that greed and unethical financial practices of the financial services industry lead to the crisis. Simpson (2010) argues that integration, linkages, and interdependence in the global banking systems increased undiversified systemic risk which resulted in a major and widespread global financial crisis in 2008. Rosenthal (2010) attributes the trigger of the financial crisis to a misguided and unregulated economic paradigm that overvalues the role of financial markets and simultaneous undervalues the role of the state in economic and social performance.

Reinhart (2011) argues that when the financial authorities – Secretary of the Treasury, Hank Paulson, Chairman of the Federal Reserve Bank, Bernie Bernanke, and President of the Federal Reserve Bank of New York, Timothy Geithner, inserted the government into the resolution of the Investment Bank, Bear Sterns, in March 2008 by protecting its uninsured creditors, they raised the expectations of failure bailouts. Thus, when the same authorities failed to intervene in September 2008 to protect Lehman Brothers, it had no choice but declare bankruptcy. Reinhart points out that Lehman's failure had wide spread consequences because of the false hopes engendered by the Fed's support to Bear Sterns.

The above literature and other studies explain how the 2008 financial crisis was instigated by government policies and changes in financial regulations, lax regulatory oversight, rent seeking behaviors, flawed financial innovations, global savings glut, excessive corporate leveraging, etc. However, we feel that although communication failure played a pivotal role in the financial crisis, it has not to date received much attention. Therefore, our objective in this article is to fill this gap in the literature by showing how and why communication failure in the origination, marketing, and investment community in CDOs contributed to the 2008 financial crisis. In the next section, we describe the structure of CDOs.

CREDIT DEBT OBLIGATION

A CDO is an investment security created by pooling together similar credit instruments such as bonds, loans, mortgage backed securities (MBS)[6], asset backed securities (ABS) etc. into a single portfolio. They are financial instruments collateralized by a portfolio of diversified loans, mortgages, bonds, or other financial assets or a combination of these. However, the term "collateralized debt obligation" is a misnomer and misleading because in this security, an investor is entitled only to a specific percentage of the pool's principal and interest income, depending on the CDO tranche on which the funds are invested (Zimmett, 2008)[7]. Each tranche is a sub-set of the collateralized debt obligation asset pool having a different principal, interest, maturity, and default risk.

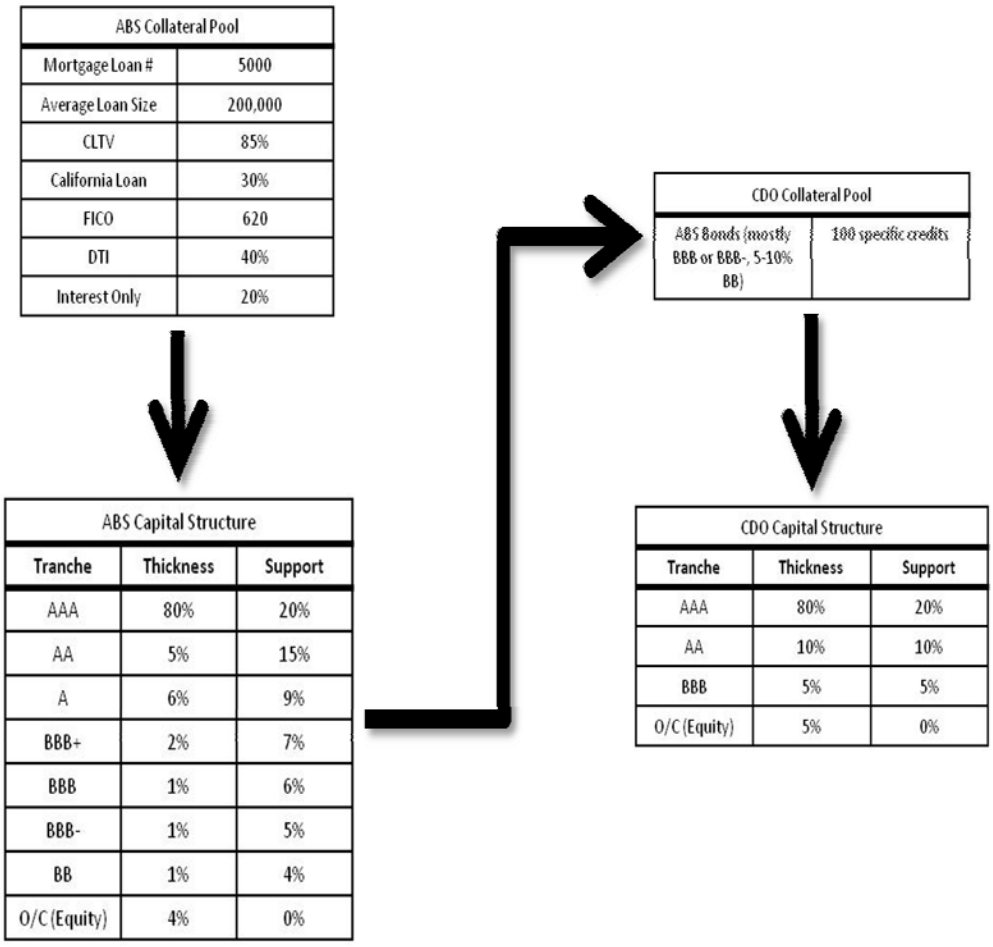
CDOs are sometimes described according to why and how they are structured. For example, an arbitrage CDO is designed to generate equity payments and management fees from the hoped-for positive spread between the yield earned on the portfolio assets and the yield paid on the CDOs notes. CDOs are also classified by the type of assets in their portfolios. At a more abstract level, there are CDOs-squareds, CDOs collateralized by a pool of other CDO tranches and synthetic CDOs that invest in derivative contracts such as credit default swaps (CDSs), as distinct from cash CDOs backed by bonds and loans. Our focus here is on cash flow CDOs and synthetic CDOs.

Structure of Collateralized Debt Obligation Tranches

A CDO pool is typically divided into three tranches in which each tranche behaves as a separate CDO enabling the sponsor or originator to attract multiple investors having varying risk preferences. The term "tranche" is derived from French word for "slice" and is used in finance to define part of an asset that is divided (sliced, hence the term) into smaller pieces. The first tranche is the equity tranche which consists of unrated and lowest quality securities. Investment in this tranche yields the highest return to counter the higher risk it bears. However, equity tranche investors are the first to lose funds when loans in the pool are not repaid. The second tranche is the mezzanine tranche and consists of slightly higher A rated securities. Investment in this tranche yields moderate returns to compensate for bearing moderate risk. The third tranche is senior tranche or senior debt and consists of safer AAA rated securities. This tranche is typically highly rated and is ranked on top in terms of priority of payments. However, the interest rate on investments in this tranche is also the lowest because of the lower risk that it bears.

The figure below shows how collateralized debt obligation tranches may be created from asset backed securities. In this example, a bank takes a set of assets such as subprime loans and creates a pool with them and then sells them to a sponsor (SPV[8] or SPE) as asset backed securities. The sponsor then takes those asset backed securities and puts them into another pool with a bunch of other securities such as corporate debt, commercial loans, credit card loans,

student loans, junk bonds, and whatever else, and creates a new security called collateralized debt obligation, an actively traded security. The trouble for investors in this security is that the market has no transparency with regard to both current prices and contents of the collateralized debt obligations. Thus by design, collateralized debt obligations are murky and investors cannot see enough information to enable them make rational investment decisions. In addition, the sponsor can change the composition of the collateralized debt obligation after it has been sold without the knowledge of the buyer.



ABS Collateral Pool	
Mortgage Loan #	5000
Average Loan Size	200,000
CLTV	85%
California Loan	30%
FICO	620
DTI	40%
Interest Only	20%

CDO Collateral Pool	
ABS Bonds (mostly BBB or BBB-, 5-10% BB)	100 specific credits

ABS Capital Structure		
Tranche	Thickness	Support
AAA	80%	20%
AA	5%	15%
A	6%	9%
BBB+	2%	7%
BBB	1%	6%
BBB-	1%	5%
BB	1%	4%
O/C (Equity)	4%	0%

CDO Capital Structure		
Tranche	Thickness	Support
AAA	80%	20%
AA	10%	10%
BBB	5%	5%
O/C (Equity)	5%	0%

Table 1: A stylized hypothetical CDO Dollar amounts in millions)				
Tranche	Attachment points	Notional amount	Credit rating	Spread (basis points)
Equity	0-3%	3	Note rated	1200
Mezzanine	3-10%	7	A	200
Senior	10-100%	90	AAA	10
Memo				
Entire Portfolio	0-100%	100	A	6

A CDO pool is therefore a way of taking a portfolio of risky assets, e.g. loans, with a principal of say, $100 million and creating from it $90 million of AAA-rated debt. This is accomplished through a Special Purpose Vehicle (SPV) or conduit that buys the instruments from issuers such as banks and creates the securities that it sells to investors as shown in the Table 1.

COLLATERALIZED DEBT OBLIGATION PRICING

In models used to determine the value of CDO tranches for sale such as Compound Correlation[9], Gaussian Copula method[10] or Monte Carlo Simulation[11], underwriters of CDO structured products use as inputs expected percent defaults, expected percent foreclosures of the mortgages in the CDO, and the expected future volatility of the traded prices in the eventual market. However, the rapid rise in the use of CDOs and CDOs-squareds on the sale side of the CDO market has not been matched by developments in models needed on the buy side to price and analyze such instruments. Hence, investors have been buying instruments whose value they cannot correctly determine. Gary Kendall noted that some people who invested in CDOs had no idea of the default risk assumed in the model used to value the securities they invested in. For such people, the worst case is that their principal would be wiped out completely (Mammery, 2005). With regard to price-risk relationship, Matthew Woodhams observed that "if you can't price them, then you can't risk-manage them" (Mammery, 2005). One hedge fund manager described the lack of clarity on CDO pricing as more a result of confusion than "malice or incompetence". Unfortunately, he is not wrong. Indeed, confusion seems to be the buzzword for those battling to price CDOs, along with other words not inclined to inspire much confidence in absolute accuracy, such as 'guesstimation', 'uncertainty' and 'compromise'.

There is undeniably a good reason for this confusion in CDO pricing; CDO structures are incredibly complex. For example, the variables needed to price credit default swaps (a sort of insurance on CDOs) - include the probability of defaulting, and time when that event happens, and how much the investor gets back. These variables are compounded in CDOs because of the issue of interdependence. When you add CDOs and CDSs together you have to add in how they relate to each other; i.e. how they are correlated. This is a problem in CDO pricing because no one, it seems, can agree on the best way to tackle the problem.

The current state of confused development in pricing CDOs is largely a result of the rapid speed of growth in this highly technical area. For example, developments in the front office have not been matched with developments in the back office - a phenomenon that is also causing problems in the wider credit derivatives market. The UK's financial regulator, the Financial Services Authority (FSA), warned in late February 2005 of the risks it saw in the growing number of unsigned confirmations in over-the-counter (OTC) credit derivatives (Keane, 2005). Firms active in this fast-developing OTC market were failing to resource the back office sufficiently to allow it to keep pace with growth in the front-office business. The development lag between front and back office is even more pronounced in CDO pricing because the arrival of CDOs is more recent.

MARKETING COLLATERALIZED DEBT OBLIGATIONS

Marketing is the process by which companies create customer interest in goods and/or services. It generates the strategy that underlies sales techniques, business communication, and business developments. It is an integrated process through which companies build strong customer base and create value for their customers and for themselves. It is used to identify the customer, to satisfy the customer, and to keep the customer. With the customer as the focus of its activities, it can be concluded that marketing management is one of the major components of business management. The adoption of marketing strategies requires businesses to shift their focus from production to the perceived needs and wants of their customers as the means of staying profitable. But did the marketing strategies of CDOs by some sponsors contribute to communication failure by concealing the true nature of these instruments from investors?

To answer this question, we examine a number of law suits and investigations that have been brought against major sponsors of CDOs such as Goldman Sachs, Morgan Stanley, JP Morgan, and Credit Agricore. On April 16, 2010, Reuters reported that the Securities and Exchange Commission (SEC) filed civil fraud charges against Goldman Sachs, citing its marketing of CDOs. The charge alleged Goldman Sachs allowed a hedge fund, Paulson & Co. to help design the CDO[12]. Paulson & Co. then bet against the CDO it created. According to the SEC, Goldman Sachs failed to disclose this piece of critical information to its customers. The vice president primarily responsible for the CDO known as ABACUs was Fabrice Tourre. Losses tied to this product are in the range of $1 billion, according to the SEC. The product was launched in the spring of 2007, after the first signs of trouble in the subprime mortgage market had appeared, but long before the extent of the crisis was widely understood. Goldman Sachs wrongly permitted a client that was betting against the mortgage market to heavily influence which mortgage securities to include in an investment portfolio, while telling other investors that the securities were selected by an independent, objective third party.

On October 25, 2010, Reuters reported that Morgan Stanley was sued by a group of Singapore investors that accused it of rigging a bond sale related to collateralized debt obligations

in order to wipe out their $154.7 million investment[13]. In a complaint filed in Manhattan federal court, the 18 investors said they invested in notes issued by Pinnacle Performance Ltd, a Cayman Islands-registered entity, which Morgan Stanley had marketed as "conservative," with an eye to protecting the investors' principal. Morgan Stanley instead invested their funds in synthetic CDOs of its own making, where the bank was the counterparty on the underlying swap agreements. Investors said this arrangement was structured to let Morgan Stanley gain one dollar for each dollar they lost. The suit alleges that Morgan Stanley designed the synthetic CDOs to fail while placing itself on the side guaranteed to win (the "short" side) and the plaintiffs and investment class on the side guaranteed to lose (the "long" side). This activity by Morgan Stanley boiled down to a classic bait-and-switch scheme.

On October 25, 2010, the Wall Street Journal reported that Credit Agricore unit, a French bank, was sued by a group of Channel Islands investment companies claiming fraud in the marketing and sale of three CDOs. The lawsuit claimed that Credit Agricore corporate and investment bank secretly allowed a hedge fund to select poor quality assets underlying two of its CDOs. The hedge fund then took short positions, i.e. bet against the success of the investments. Credit Agricole also decided to exit the CDO business in February 2007, but failed to disclose its exit while unloading, its unwanted, poor quality assets into a third CDO. The lawsuit claims the investment bank built and then abandoned its CDO business virtually overnight.

On November 1, 2010, ProPublica reported that the SEC was investigating whether JPMorgan Chase allowed a hedge fund to improperly select assets for a $1.1 billion deal backed by subprime mortgages. The CDO called "Squared" and completed in May 2007, was made up of pieces of other CDOs. The hedge fund, Magnetar Capital, based in Evanston, Illinois, purchased the riskiest slice (equity tranche) of Squared as part of a strategy to bet against the mortgage market. As was reported in April by Chicago Public Radio's "This American Life" and NPR's "Planet Money", Magnetar often purchased the riskiest portion of CDOs. It also frequently bet against those same CDOs, using side bets. Magnetar's purchases ultimately spawned at least $40 billion worth of risky CDOs in 2006 and 2007. The SEC is examining whether JPMorgan adequately disclosed to investors it marketed Squared to that Magnetar had a role in picking the securities that went into the deal while also betting against segments of the deal. The 294-page Squared Prospectus, which JPMorgan created, had generic language only warning investors that the CDO manager might have investments that conflicted with the interests of other holders of the CDO.

THE INVESTMENT COMMUNITY IN COLLATERALIZED DEBT OBLIGATIONS

Participants in CDOs transactions include investors, underwriters, asset managers, trustee and collateral administrators, accountants and attorneys. Beginning in 1999, the Gramm-Leach-Bliley Act allowed banks to also participate. Our focus here is on 1) the buyers of the investment-grade and riskiest, unrated equity portions of CDOs, and 2) how differences in the unrealistically

high returns the CDOs promised and the actual low and sometimes negative returns they actually delivered contributed to the financial crisis. Investors have different motivations for purchasing CDO securities depending on which tranche they select. At the more senior levels of debt, investors expect to obtain better yields than those that are available on more traditional securities (e.g. corporate bonds) of similar rating. In some cases, investors utilize leverage and hope to profit from the difference in interest rates offered by the senior tranche and the cost of borrowing[14]. This is because senior tranches pay a spread above LIBOR despite their AAA-ratings[15]. Furthermore, investors also hope to benefit from the diversification of CDO portfolios, the expertise of the asset managers, and the credit support built into the transaction. Investors in this tranche include banks and insurance companies. Buyers of senior tranches include hedge funds, pension funds, insurance companies, asset managers, banks, and others.

Mezzanine tranche investors hope to achieve a leveraged, non-recourse investment in the underlying diversified collateral portfolio. For example, mezzanine notes and equity notes promise yields that are not available in most other fixed income securities. Investors in the mezzanine tranche include hedge funds, banks, and wealthy individuals. Among the buyers of the equity tranche are insurance companies, banks, asset managers, hedge funds and pension funds. Investors buy these toxic securities because they promise a very high return. This concept was perpetuated by sales representatives like Jean Fleischhacker, Bear Stearns senior managing director who told fund managers at a Las Vegas hotel ballroom that they could get a 20 percent annual return from the bottom level of a CDO (Quinn). Pension funds in the U.S. bought these CDO portions in an effort to boost returns. The reason is that many pension funds, facing growing numbers of retirees, are still reeling from investments that went sour after technology stocks peaked in March 2000. Fund managers buy equity tranches to boot their returns even though these investments are not rated by rating agents like Fitch Group Inc., Moody's Investors Service or Standard & Poor's. Some of the well known pension funds such as California Public Employees' Retirement System (Calpers), the nation's largest public pension fund, invested $140 million in such unrated CDO portions sold by Citigroup, according to data Calpers provided in response to a public records request (Evans, 2007).

The New Mexico State Investment Council, which funds education and government services for children, had $222.5 million invested in equity tranches; and the council decided to invest an additional $300 million in April, 2005. That investment was 2 percent of the $15 billion it managed. Kay Chippeaux, fixed-income portfolio manager of the New Mexico council, said that the council decided to buy equity tranches after listening to pitches from Merrill Lynch & Co., Wachovia Corp. and Bear Stearns (Evans, 2007). ``We got very interested in them just because a broker brought them to our attention," Chippeaux, said. She said that the investment was worth the risk because the fund would be able to get higher returns than it did from bonds. The council purchased equity tranches from Bear Stearns, Citigroup, Merrill Lynch and Morgan Stanley on advice from bankers who were selling the CDOs. She said, ``We manage risk through who we invest with…I don't have a lot of control over individual pieces of the subprime."

In 2005, the General Retirement System of Detroit, the Teachers Retirement System of Texas, and the Missouri State Employees' Retirement System held $38.8 million, $62.8 million, and $25 million worth of equity tranches, respectively (Evans, 2007). Edward Altman, director of the Fixed Income and Credit Markets program at New York University's Salomon Center for the Study of Financial Institutions said that had trouble understanding why public pension funds delved into equity tranches (Evans, 2007). He asked, “Do they know something that the market doesn't know?”" The investments in equity tranches are obviously very risky play and if there's a meltdown, it will hit those tranches first."

Because CDO contents are secretive, fund managers can't easily track the value of the components that go into these bundles. ``You need to monitor the collateral in your investment and make sure you're comfortable there will be no defaults," says Satyajit Das, a former Citigroup banker who has written 10 books on debt analysis (Latif, 2007). However, it is very difficult to track the contents of any CDO or its current value since about half of all CDOs sold in the U.S. in 2006 were loaded with subprime mortgage debt, according to Moody's and Morgan Stanley (Latif, 2007). Furthermore, since CDO managers can change the contents of a CDO after it's sold, investors may not know how much subprime risk they face, Das said.

Chriss Street, treasurer of Orange County, California, the fifth-most-populous county in the U.S., said no public fund should invest in equity tranches (Evans, 2007). He said that fund managers are ignoring their fiduciary responsibilities by placing even 1 percent of pension assets into the riskiest portion of a CDO. ``It's grossly inappropriate to take this level of risk," he said. ``Fund managers wanted the high yield, so Wall Street sold it to them. The beauty of Wall Street is they put lipstick on a pig."

WHY COMMUNICATION FAILURE?

We provide a rationale why communication failure occurred in the financial organizations using the intellectual hazard theory developed by Miller and Rosenfield (2008). Intellectual hazard is the tendency of behavioral biases to interfere with accurate thought and analysis within complex organizations. The theory attributes communication failure in complex organizations to failure to properly acquire, communicate, analyze, and implement information pertinent to the success of its operation. Following Miller and Rosenfield, we examine three types of intellectual hazard: (a) complexity bias, (b) incentive bias, and (c) asymmetry bias to help us explain why communication failure occurred.

Complexity bias is the propensity of a decision maker to wrongly analyze a situation due to inherent limitations on his/her ability to interpret complex sets of information within the time period needed for the decision (Miller & Rosenfield, 2008). One example of complexity bias is tunnel vision whereby all other information is excluded as exemplified by underwriters in the pricing of CDO’s. For example, to determine the value of the tranches of CDO’s for sale, underwriters of these structured products used as inputs expected percent defaults, expected

percent foreclosures of the mortgages in the CDO, and the expected future volatility of the traded prices in the eventual market (that is, the housing prices). The trouble is that the underwriters are in general technical experts endowed with mathematical model building skills who used past data to predict future values of the three variables. They had almost no knowledge of credits, or actual or projected credit conditions, or most importantly, underwriting standards. For the Sub-Prime CDO's, the underwriters projected that there would be some increase in defaults, foreclosures, and market volatility. However, they had no way of knowing how severe the deterioration in lending standards would be in the real estate lending market for specific regions (Kohlhagen, 2010).

The situation with underwriters depicted above is a classic example of why and how failure to communicate in complex organization occurred. Employees of a particular department focused only on those aspects of underwriting that were pertinent to their departments. Since employees from other departments had no knowledge of how structured products were priced, they did not generally understand the implications of underwriting standards of their own firm. In short, there was failure to communicate between departments (Kohlhagen, 2010). In the FCIC hearing on June 30, 2010, former Professor Kohlhagen took this a step further when he said and we quote, "Thus, the firms were unknowingly producing and selling products, not only to their customers, but also to their own firms (trading desks, top of the house investments, etc) that were overpriced, not by a little bit, but by staggering amounts. He further stated that it was difficult for him to imagine the alternative, namely that they were knowingly selling staggering overpriced assets to their own executives—Lehman Bros, Merrill Lynch, Goldman Sachs – (but, if this were true, if the employees knew the assets were virtually worthless – there should be detailed internal emails and memos disclosing these values)." The firms in which employees of the firm, either initially or eventually, realized the implication of the above situation and communicated it to their senior management were in a position to hedge their exposure and to stop originating the business. However, for those who never did, they sustained unacceptable losses as did all their customers.

Another example of complexity bias is authoritarian bias; the tendency to over-value information provided by authoritative sources. We provide two examples of this bias with reference to communication failure. First, in the pricing of CDO's, management tended to defer excessively to the authority or expertise of underwriters in determining the value of CDO tranches without exercising independent thought or judgment as to whether the information used in the models was actually reliable. In our opinion, this was fatal communication failure. Second, the rating agencies had the means to remedy the overpricing of CDOs since they had precisely the qualities needed to do so. By this we mean they had: 1) structured products departments who vet the pricing coming out of the originating banks; and 2) credit departments whose job it is to understand the underwriting and credit environment in the markets. The purpose of these departments is to determine the appropriate rating for each security and hence its pricing. Additionally, they have access to non-public information and have a fiduciary obligation for

discovery, without the competitive pressures that faced the underwriters. The rating agencies either did not know the credit environment and its implications or fatally ignored them. In either case, they failed in their only mission to provide investors with correct ratings for the securities. Thus communication failure emanating from complexity bias resulted in over-rated and over-priced CDO securities.

Incentive bias has to do with the self-interest of the actors, specifically underwriters in this situation. In many cases the actors have a personal interest in facts being one way rather than another. In wanting to see the world in a certain way, they often tend to analyze information in accordance with their self interest. A good example of incentive bias is herding behavior which is common in financial markets. When an actor in a complex organization observes other actors interpreting the world in a certain way, the actor often determines that the best option is to conform to what everyone else is doing. This happens because of fear of being criticized if they are wrong or fear of suffering adverse consequences for being right in the short term since the long term rewards they can anticipate from being proved right may well be out-weighted by the sanctions they can anticipate from being wrong.

Another example of incentive bias is cognitive dissonance in which an actor working in a complex organization may have an incentive to see things in a particular way even if the information available may suggest a different interpretation, inconsistent with the actor's self-interest. Cognitive dissonance occurs when the actor finds it uncomfortable to see things in a way that potentially threatens his/her interests. For example, institutional investors and financial institutions had an incentive to rely solely on the ratings agencies and had abandoned much of their own due diligence efforts. Required and incentivized by domestic and international regulatory bodies to use the rating agencies, and incentivized by loose monetary policies and relaxed regulations, the institutional investors and financial institutions community was relegated to reach for securities with better returns. Thus motivated by self interest and greed, they abandoned their own standards of due diligence. Incentive bias also manifests itself in self-serving behavior where the actor knows or has good reason to know that the facts are a certain way, but deliberately elects to ignore that fact or even suppress information or distort the analysis out of a conscious intention to promote the actor's own interests.

Another explanation for why the crisis happened is asymmetry bias. Asymmetry bias appears when actors in a complex financial organization bring fixed ideas, judgments, or attitudes in the analysis of information. The biases influence market participants to act in ways that give inappropriate and unequal weighting to information and analysis created in support of certain types of conclusions. Thus, the financial crisis was partly a result of human failure, greed and bias to act in self serving ways.

CONCLUSIONS

The role of communication failure in the 2008 financial crisis has not received the attention it deserves in the field of business communication. The aim of this paper is to help business students and others understand how communication failures in the origination, marketing of and investment of CDOs played a key role in the 2008 financial crisis. Apparently, financial institutions failed to properly acquire, communicate, analyze, and implement information pertinent to the success of their operation. Wide spread securitization of mortgage payments into complex financial instruments such as CDOs resulted in communication failures triggering the 2008 financial crisis.

Investors - hedge funds, pension funds, insurance companies, banks, and others, who bought CDOs, exhibited cognitive dissonance by relying solely on rating agencies and abandoning much of their own due diligence in gathering information on CDOs. The rapid rise in the marketing of complex CDOs on the sale side was not matched by developments in pricing mechanisms on the buy side and as such investors had no idea of the default risk assumed in the pricing of CDOs. The gimmicks involved in the creation and marketing of the CDOs were not transparent to investors (buyers). Sometimes, financial institutions created CDOs and bet against them (short sell) in the market without disclosing this critical information to investors.

Management exhibited a symptom of complexity bias by heavily relying on the authority of underwriters in determining the value of CDO tranches. The mathematical experts who determined the value of the CDOs not only failed to factor in the severity of the risks involved, but also failed to make transparent the details of their CDO pricing models to others. The ratings agencies contributed to communication failure by failing to provide investors with correct ratings for the securities because they did not fully understand the depth of the financial problem and/or fatally ignored them.

Information asymmetry also contributed to communication failure. For example, the contents of CDOs were secretive and complex and were understood only by the underwriters. Others had to rely on the little information they could gather from underwriters making it difficult for them to track the true value of the components that made up the CDOs. The traditional wisdom of transparency and communication needed for the long-term progress of organizations were overlooked and instead short-term gains from risky activities were adopted as a way of conducting business among lenders, underwriters, investors, and credit rating agencies alike.

Regulators contributed to communication failure by failing to understand the degree and extent of risk involved by the adoption and implementation of the Gramm-Leach-Bliley Act. Furthermore, the information and communication accountability required from executives and/or managers of the financial institutions were not adequate. Policy options to remedy the communication failure in the origination, marketing and investment community in CDOs include: improvement in information provisions, and control and supervision of unnecessarily risky behaviors.

ENDNOTES

1 The Gramm–Leach–Bliley Act (GLB), also known as the Financial Services Modernization Act of 1999, (Pub.L. 106-102, 113 Stat. 1338, enacted November 12, 1999) is an act of the 106th United States Congress (1999–2001). It was signed into law by President Bill Clinton and it repealed part of the Glass–Steagall Act of 1933, opening up the market among banking companies, securities companies and insurance companies. The Glass–Steagall Act prohibited any one institution from acting as any combination of an investment bank, a commercial bank, and an insurance company.

2 See The Federal Reserve Bank of St Louis, "The Financial Crisis: a Time Line of Events and Policy Actions", 2010, http://timeline.stlouisfed.org/index.cfm?p=timeline

3 See The Federal Reserve Bank of St Louis, "The Financial Crisis: a Time Line of Events and Policy Actions", 2010, http://timeline.stlouisfed.org/index.cfm?p=timeline

4 See The Federal Reserve Bank of St Louis, "The Financial Crisis: a Time Line of Events and Policy Actions", 2010, http://timeline.stlouisfed.org/index.cfm?p=timeline

5 A credit crunch (also known as a credit squeeze or credit crisis) is a reduction in the general availability of loans (or credit) or a sudden tightening of the conditions required to obtain a loan from the banks. A credit crunch generally involves a reduction in the availability of credit independent of a rise in official interest rates. In such situations, the relationship between credit availability and interest rates has implicitly changed, such that either credit becomes less available at any given official interest rate, or there ceases to be a clear relationship between interest rates and credit availability (i.e. credit rationing occurs). Many times, a credit crunch is accompanied by a flight to quality by lenders and investors, as they seek less risky investments (often at the expense of small to medium size enterprises).

6 A mortgage-backed security (MBS) is an asset-backed security that represents a claim on the cash flows from mortgage loans through a process known as securitization

7 A tranche is a group of investment that differs from other groups in interest rate, level of risk, etc.

8 A subsidiary corporation with an asset/liability structure and legal status that makes its obligations secure even if the parent company goes bankrupt. It is designed to serve as counterparty for swaps and other credit sensitive derivative instruments. It is also called a "derivatives product company."

9 The Compound Correlation method is calculated by finding the level of correlation that equates the theoretical spread and the market spread, using the Gaussian Copula model based on the observed market spread for a tranche. The situation is analogous to how implied volatility is calculated in the options market.

10 The Gaussian copula model for managing CDO tranches, a widely-used foundational model which displays qualitative characteristics observed in practice and through simulations in other models. It uses the normal distributions to incorporate correlation among individual credits in a portfolio

11 Monte Carlo simulation is a computerized mathematical technique.

12 The literature describes hedge funds as a lightly regulated investment fund that is typically open only to a limited range of professional or wealthy investors.

13 Rigging refers to an illegal action which typically involves artificially manipulating prices.

14 Leverage typically refers to the use of borrowed money in investments.

15 LIBOR, (London Interbank Offered Rate,) is a London-based inter-bank lending rate.

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THE INFLUENCE OF CORPORATE BOARD CHARACTERISTICS ON FIRM PERFORMANCE OF PUBLICLY LISTED PROPERTY COMPANIES IN THE PHILIPPINES

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ABSTRACT

The need to intensify the corporate governance mechanism in the Philippines triggers this study to determine the influence of corporate boards on firm performance among publicly-listed property companies given the risks involved in this industry. Using financial and governance-related disclosure information from 29 listed property companies in the Philippines, the results revealed that managerial ownership positively influences firm performance. Moreover, firm size, leverage, and age influence the accounting-based measures of performance to a great extent than the market-based measures. Because of the limited focus of this study, further research should focus on the overall impact of corporate governance among all Philippine companies using different measures of performance as well as the introduction of other relevant governance-related parameters to better assist the decision making of the company's stakeholders.

Keywords: corporate governance, firm performance, disclosures, investors' decision making, board of directors

INTRODUCTION

The past and present events concerning the international business community have resulted to the term "corporate governance" finding its prominence in every business activity. In the light of massive debacles that affected firms whose primordial goals rests on profit maximization and the fulfillment of personal interests, there is a need for governance reforms where the protection of interests by all stakeholders is of great importance. Corollary to this, there is a noticeable surge in the quantity and quality of relevant research literature pertaining to corporate governance, one area of which focuses on improving the dynamics of corporate boards and their oversight role.

The Philippines is of no exception to respond to this call for better governance. Inspired by the issuance of the first version of the Philippine Code of Corporate Governance in 2002 and its eventual revision in 2009 (RCCG), this study attempts to provide evidence that effective

corporate boards influence firm performance on the notion that corporate boards exercising greater accountability, honesty, integrity, and ethical responsibility would ensure the company's sustained creation of shareholder value and the continued business partnership between the company and its stakeholders.

This study represents the second phase of a series of discourses whose aim is to provide empirical evidence of on the influence of corporate governance to firm performance among Philippine companies. However, in contrast with my first study where the locus of the research is on the holdings sector, this paper concentrated on listed Philippine companies in the property sector. The measures of performance used were believed to have direct association towards the goal of creating shareholder wealth which influences the business decisions of a company's investors.

With the issuance of the Report on the Observance of Standards and Codes by the World Bank (2006) indicating the need for greater and more restrictive oversight role of corporate boards in Philippine companies, this study rests on the fundamental nature of corporate governance which is to ensure transparency in disclosing of information that affects the decision-making of stakeholders. Consistent with the argument by Samontaray (2008), this study believes that companies promoting transparency are the ones favored by potential investors which would stimulate economic activity and firm growth as well.

To shed additional light on the influence of corporate boards on firm performance, measured in terms of return on equity and share prices, among publicly-listed property companies in the Philippines, this paper attempts to seek responses to the following research questions:

- Does board size influence firm performance of publicly-listed property companies in the Philippines?
- Does independence affect firm performance of listed property companies in the country?
- Does the separation or duality of the Chairman of the Board and Chief Executive Officer roles affect the performance of publicly-listed Philippine property companies?
- Does the busyness of directors in other corporate boards affect firm performance of publicly-listed property companies in the Philippines?
- Does ownership affect firm performance of publicly-listed Philippine property companies?

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Through an efficient corporate governance mechanism, an entity need not resort to remedies that would counter attack the problems that it may face in the course of its operations. According to Stewart (2003), it is a closed-loop system of ensuring that decisions are carefully made, accountability is in full force and effect, and that incentives are to be provided as a result of better performance. This would increase the motivation of every member of the organization,

from the Board of Directors down to the lowest ranking person in the entity, to give their very best towards attaining success and creating value.

The traditionalist view on corporate governance which stemmed from the agency theory proposed by Jensen & Meckling (1976, as cited in Spitzeck & Hansen, 2010), emphasizing profit maximization and share prices, resulted to numerous debacles that tainted the integrity of many firms whose governance mechanisms are in question. Fama and Jensen (1983) stated that agency conflicts arise because shareholders and management have conflicting pursuits that can prevent goal congruence in meeting the organization's goals. In addition, with the presence of the information asymmetry environment, managers will use the information for their own benefit at the expense of the shareholders (Banderlipe, 2009).

Thus, incorporating the resource dependence perspective presented in Haron, Ibrahim, and Muhamad (2008), corporate boards are responsible for ensuring that accurate and timely information must be provided to help address the company's objective of meeting operating efficiency standards. Moreover, because of their status in the firm and in their professional communities, Haron et al. stated that the board of directors should be capable of addressing environmental uncertainties so that better firm performance can be achieved. Such ability to manage risk in a control environment is delineated in the Philippine RCCG which advocates for the integrity of information provided by corporate boards.

The free flow of accurate information in and out of corporate boards allows a more objective assessment of the company's corporate health based on its performance (Solomon, 2007). In line with the governance thrust of the organization, Hawkins (1997) noted that institutional investors consider companies with better governance in their selection of investment portfolio, with preference given to those entities that are capable of restraining corporate fraud through effective oversight, resulting to more attractive share prices and increased shareholder wealth.

The influence of corporate boards on firm performance has triggered the interest of many researchers in corporate governance. As the variables are discussed, this paper presents relevant studies that are noteworthy of being mentioned as they shed light in the formulation of our research hypotheses.

Board Size

The traditional perspective of the agency theory stresses that larger boards can reduce potential shareholder-management conflicts because of the increased vigilance to oversee management's actions (Kiel & Nicholson, 2003). In addition, Kiel and Nicholson added that the resource dependence theory perspective places greater premium on large boards because of greater links and access to resources. Using data from Australian companies, they found a positive correlation between board size and Tobin's q, a market-based measure of firm

performance; however, no significant relationship was exhibited when Return on Assets (ROA), an accounting-based measure of performance, was used.

Similarly, Daily and Dalton (1993) argued that the mere presence of large boards absorb much of the uncertainty in the business environment through valuable information provided to the entity. Using a canonical analysis, board size was found to be positively correlated with ROA, Return on Equity (ROE), and Price Earnings (P/E) Ratio. Julian (n.d.) studied a group of Philippine companies who underwent an Initial Public Offering (IPO) and concluded that higher firm value is created when the expertise of those who are known in their respective functional capacities in management are pooled in. In addition, a meta-analysis of 27 studies revealed significant direct relationship between board size and firm performance, which was more evident in smaller companies (Dalton, Daily, Johnson, and Ellstrand, 1999; as cited in Finegold, Benson, & Hecht, 2007).

However, some studies reveal a negative relationship on board size and firm performance. This was based from a proposition by Levrau and Van den Berghe (2007) that there will be a time when an oversized board may experience lack of cohesiveness in member interaction, thereby resulting to poor performance. For example, Rashid, De Zoysa, Lodh, and Rudkin (2010) noted a negatively significant relationship of this variable to accounting-based performance measures on Bangladeshi companies. Such observation supports the contention of Mashayekhi and Bazaz (2008) that smaller boards provide close monitoring over management leading to a high level of performance upon examining listed companies in Iran. Pathan, Skully, and Wickramanayake (2007) added that smaller boards better oversees managers in Thai banks which results to lesser tendency for agency and free rider problems to occur.

Yermack (1996, as cited in Arslan, Baha Karan, and Eksi, 2010) observed a negative association between board size and performance because information asymmetry and communication problems may arise on enlarged boards. Similarly, Arslan et al. found the same observation in their study of listed firms in Turkey, with stock performance declining for companies with large boards during the periods of crisis in the country. However, no evidence of strong positive or negative association between board size and firm performance was shown in Di Pietra, Grambovas, Raonic, and Riccaboni (2008). Because of the conflicting inferences drawn from prior literature, this study proposed the following null hypothesis:

Null Hypothesis (Ho_1): Board size does not significantly influence firm performance.

Board Independence

The agency theory posits that greater board independence allows restrictive monitoring of self-interest pursuits and thereby minimizes opportunities for fraud and agency costs (Fama and Jensen, 1983). However, Finegold et al. (2007) asserted inconsistent evidence as to the influence of greater independence on firm performance. For one, although the studies of Daily and Dalton

(1993), Mashayekhi and Bazaz (2008), Ehikioya (2009), and Uadiale (2010) found a strong positive correlation between board independence and performance, Haron et al. (2008), noted an inverse relationship between independence and Earnings per Share (EPS) and ROE after analyzing the listed construction and technology firms in Malaysia. The same observation was evident in the paper of Arslan et al. (2010), which suggests that information asymmetry may exist between inside and outside directors resulting to the questionable integrity of both financial and strategic information that is being divulged during board meetings.

Such conclusion can be explained by the proposition of Levrau and Van den Berghe (2007). According to them, as outside directors do not assume managerial roles in the firm and corporate boards do not meet frequently, less cohesiveness takes place which can outweigh their role of performing critical assessments and taking objective stands on various corporate issues affecting management's interest and values. This is unless the market views independence as something that increases confidence towards their reputation, as argued in Pathan et al. (2007). No evidence of significance exists in the papers of Abdullah (2004), Leng (2004), and Rashid et al. (2010).

The problem of board independence in the Philippines is that most outside directors are brought into the organization by controlling shareholders (De Ocampo, 2000) which would likely impair independence unless the personal values of the director would support their right to be identified as an independent director (Galvez, 2003). With the conflict of observations noted in prior literature, this study proposes the following null hypothesis:

Null Hypothesis (Ho_2): *Board independence does not significantly influence firm performance.*

Duality of the Chairman's Role and the Chief Executive Officer's Role

There is a question on whether the company's Chairman of the Board (COB) and the Chief Executive Officer (CEO) positions should be held by one person. Although it may serve as the vantage point of leadership (Anderson & Anthony, 1986; as cited in Daily & Dalton, 1993), the agency theory posits that such unification might not serve the interests of the firm especially because of managerial interest (Daily & Dalton, 1993) and ineffective monitoring (Kiel & Nicholson, 2003). On the contrary, the stewardship theorists, who believe in the innate goodness and trustworthiness of managers in handling the company's resources (Donaldson & Davis, 1991; as cited in Kiel & Nicholson, 2003), argue that such duality results to a more defined responsibility over the firm's business processes and performance.

Finegold et al. (2007) revealed inconclusive evidence between the duality or the separation of both roles and firm performance. The study of Daily and Dalton (1993) showed no significant relationship between duality and firm performance which was also evident in Leng (2004), Elsayed (2007), Mashayekhi and Bazaz (2008), Jackling and Johl (2009), and Rashid et

al. (2010) unless the market-based measures are used, where Rashid et al. identified strong association between the two. A positive relationship was also noted in the paper of Coles, McWilliams, and Sen (2001) where duality was correlated with Economic Value Added (EVA) as the accounting-based measure of performance. Conversely, Abdullah (2004) observed a negative association between the two variables and concluded that there exists an apparent weakness in the governance structure if duality is observed.

In the Philippines, the RCCG stresses that the Chair and CEO roles should "as much as practicable, be separate to foster an appropriate balance of power, increased accountability and better capacity for independent decision-making by the Board" (p. 3). But the issue on practicality exists, as Galvez (2003) attributed the concern to set up Philippine corporations where one family or controlling shareholders dominate the board and are usually involved in managing its operations. With the mixed results presented by prior literature, this study draws the following null hypothesis:

Null Hypothesis (Ho_3): *CEO-COB duality does not influence firm performance.*

Multiple Directorial Positions

There is an existing active market that compensates members who strives to upgrade their competence and competitiveness in the board through exposure in other corporate boards (Chtorou, Bedard, & Courteau, 2001; as cited in Banderlipe, 2009). In accordance with the resource dependence theory which relies on external resources towards maximizing firm performance (Kiel & Nicholson, 2003), the interlocking of some directors allow increased access to various resources and linkages that can help the firm achieve its full potential to operate effectively. This was validated in the study of Di Pietra et al. (2008) where the green light for corporate success in the capital market is on for companies whose corporate boards have made the best connections and linkages with the business community.

However, Fich and Shivdasani (2006) provided an opposite conclusion after conducting a survey of the top 500 corporations in the United States. In the study, they revealed that firms with busy directors are equivocal to a weak quality of governance mechanism because their busyness constrains their ability to become effective directors inside the organization. Only when these directors leave the firm will the company experience positive returns. This was supported by Jackling and Johl (2009) as they studied Indian companies with busy directors who may have not possessed the competence and integrity to help achieve better performance. Kiel and Nicholson (2003) prognosticated that neither the market-based nor the accounting-based measures of performance were significantly influenced by the board's busyness outside the firm when a regression analysis which controls for firm size is performed.

No conclusions were made as to the optimal number of busy directors in a corporate board or as to the number of boards that a busy director should serve. The only proviso in the Philippine

RCCG is that the board should set an optimum number of outside directorships where diligence in corporate boards cannot be compromised. Hence, the following null hypothesis is formulated:

Null Hypothesis (Ho_4): *Busyness of directors does not influence firm performance.*

Managerial Ownership

Limited studies with contradicting results have been identified with ownership. Finegold et al. (2007) argues that increased ownership is a result of dynamism in the corporate environment where the board is likely to support actions that will benefit them since they are both owners and executives of the firm. They also contended that firm performance increases as ownership increases up to a certain percentage only because adverse effects on operations will be experienced beyond that point. This was validated by Julian (n.d.) when a non-linear relationship was noted as these two variables were tested.

Arslan et al. (2007) found no significant relationship between ownership and accounting-based measures of firm performance, which is also evident in Uadiale (2010) and Rashid et al. (2010), although Arslan et al. presented a positive influence on stock market measures during the crisis period in Turkey. No evidence of relationship was noted in the study of Coles et al. (2001) since increased ownership may have resulted as part of the compensation package given to the organization's directors and executives.

In addition, Abor and Biekpe (2007) argued that a direct relationship can be established because of the perceived notion that the owners' acumen on firm operations would lead to better results. Furthermore, it increases the motivation of managers to steer the company to meet its goals because they are also owners of the business who aspire for increased shareholder value. Ehikioya (2009) have the same predicament because a positive relationship was exhibited between ownership and Return on Assets (ROA) as the measure of performance among Nigerian companies.

In line with the East Asian model on corporate governance (Classens, Djankov, & Lang, 2000; as cited in Dela Rama (2011), there is no separation between ownership and control in most Philippine companies whose focus lies on the accretion of wealth. Only few groups or families, together with some government officials, control the economy which, according to Dela Rama (2011), suggests the existence of crony capitalism and are considered hazards to better corporate governance and improved firm performance. The mixed observations triggered this study to propose the following null hypothesis:

Null Hypothesis (Ho_5): *Board ownership does not influence firm performance.*

RESEARCH METHODOLOGY

This paper adopted the causal and evaluative approach to determine the influence of corporate board characteristics on firm performance of publicly-listed property companies in the Philippines. In this study, two measures of firm performance were used: the share price (SHP) as the market-based measure of performance, and the return on equity (ROE) as the accounting-based measure of performance. There is a need to use these measures because SHP figures emanate at the close of the trading of shares in the Philippine Stock Exchange (PSE) while the ROE is computed based from the financial statements as one of the final outputs of the rigorous accounting and auditing process. Cited in most literature, these variables are the most likely indicators of the firm's ability to create shareholder value for its investors.

Summarized in the model of Hermalin and Weisbach (2003, as cited in Julian, n.d.), the methodology and related problems on corporate governance and firm performance studies can be characterized through an estimation using one or more of the following equations:

$$a_{t+s} = \varphi c_t + \varepsilon_t \quad (1)$$

$$p_{t+s} = \beta a_t + \eta_t \quad (2)$$

$$c_{t+s} = \mu p_t + \xi_t \quad (3)$$

where c represents a certain board characteristic or characteristics (i.e. size, no. of independent directors); a represents an event (i.e. change of auditor, CEO dismissal/resignations); p represents firm performance (i.e. net income, stock returns); t represents time and s (≥ 0) creates a lead-lag relations for variables with high variability of observations: φ, β, and μ are parameter estimates; and ε, η, and ξ denotes the stochastic disturbance terms to capture the unobserved elements not defined in the model.

Julian's (n.d.) inkling on the model is that "existing governance affects managerial action, managerial action affects firm performance, and firm performance affects future governance" (p. 11). Prior literature, however, reduces the form of analysis by combining equations (1) and (2); hence, the model is presented with the limitation of incompleteness due to the presence of endogeneity which is the concern of corporate governance studies (Coles, Lemmon, & Meschke, 2003; as cited in Julian, n.d.):

$$p_{t+s} = \beta(\varphi c_t + \varepsilon_t) + \eta_t \quad (4)$$

For this paper, our focus is on the property sector which is greatly affected by sensitivities and the boom and bust cycle arising from local and international sources (Silva, 2003) and thus, effective governance needs to take an active role. According to Silva, this sector constitutes the management, the operation, and the lease of property for residential and commercial use, as well

as the provision of services in connection with the ownership of real property. It is one of the industries where extra caution is exercised in making forecasts and predictions because it involves long-term investments and it is associated with various risks, thus, making them one of the potential indicators of economic health.

Silva (2003) noted that the risk sensitivity of this sector to various changes in economic and political conditions, such as the upward increase in interest rates and the unstable political environment in the Philippines, can displease potential investors who are interested in buying and developing real property in the country. On the other hand, economic growth evidenced by high level of investments could stimulate the market activity in this sector as well.

The exposure to risks not only by companies in this sector, but also by almost all Philippine companies, has triggered the mandate of the Philippine SEC in its 2009 RCCG to place greater emphasis on mechanisms to ensure that the control environment of the organization is properly maintained. Thus, the board of directors must oversee the proper and effective management and supervision of the entity's operations and systems that will lead to increased integrity in the financial reporting process.

As of May 2011, there are 40 property firms listed in the PSE, comprising 15.44% of the total companies listed in the exchange which already numbers to 259 firms. Similar to previous studies, assumption was made that all listed entities are required to comply with the policies set by regulatory bodies and are mandated to make their information available to the public (Ehikioya, 2009). After eliminating 4 companies because no data was available for perusal, additional 2 companies because their fiscal year ends on a date other than December 31, 2009, and 5 remaining companies whose data were already superseded by 2010 data, this study draws inference from 29 companies, which is equivalent to 72.5% of the total property companies listed in the PSE. This study utilized information obtained from the 2009 SEC Form 17-A (Annual Report) which was filed by listed companies to SEC, a copy of which is forwarded to the PSE and can be accessed through the PSE website (http://www.pse.com.ph).

Following the review of literature of Abor and Biekpe (2007), Samontaray (2008), Mashayekhi and Bazaz (2008), Banderlipe (2009), the variables of interest were measured as follows:

Share price (SHP). The first of the two dependent variables, this is measured as the closing share price of the stock at the end of the calendar year. If this is not available in the report, we use the mean of the high and low closing prices of the share for the 4^{th} quarter.

Return on equity (ROE). The second of the two dependent variables, this is measured as net income divided by shareholders' equity.

Board size (BSIZE). This is measured as the number of directors in the company.

Board independence (BPIND). This variable is measured as the percentage of independent directors over the total number of directors in the board.

Chairman - CEO duality (CCDUAL). This dummy variable assigns a value of 1 to a company if duality occurs (i.e. the chief executive office and the chairman of the board positions are occupied by a single person); 0 if otherwise.

Multiple directorships (MDIRPS). This dummy variable assigns a value of 1 if at least one of the independent directors have at least two directorships outside the firm, 0 if otherwise.

Managerial ownership (MOWN). This variable is determined by the percentage of ownership of shares by the board of directors and the executives of the firm as identified in the SEC Form 17-A.

Firm size (FSIZE). This control variable is measured as the $\log_{10}$ of the company's total assets. This is extensively used as a controlling measure (Mashayekhi & Bazaz, 2008) to control the variability in the peso value of assets that may potentially affect the estimation process.

Leverage (LEV). This control variable is measured as total liabilities divided by total assets. This is used because performance is influenced by the monitoring of creditors (Mashayekhi & Bazaz, 2008).

Age (AGE). This control variable is the length of time that an entity's shares have been traded in the PSE up to December 31, 2009. It is used to minimize specification bias in the model (Abor & Biekpe, 2007) because firm performance may have been affected by the length of time the shares are traded.

In addition to descriptive statistics, two sets of multivariate analyses were employed to test the linearity between the BOD variables of interest and firm performance, measured in terms of either the SHP or ROE. Thus, the empirical models are presented as:

$$SHP_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BPIND_{it} + \beta_3 CCDUAL_{it} + \beta_4 MDIRPS_{it} + \beta_5 MOWN_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV_{it} + \beta_8 AGE_{it} + \varepsilon_{it} \quad (5)$$

$$ROE_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BPIND_{it} + \beta_3 CCDUAL_{it} + \beta_4 MDIRPS_{it} + \beta_5 MOWN_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV_{it} + \beta_8 AGE_{it} + \varepsilon_{it} \quad (6)$$

where:

SHP_{it} = Share price of firm *i* in year *t*;

ROE_{it} = Return on equity of firm *i* in year *t*;

$BSIZE_{it}$ = Board size of firm *i* in year *t*;

$BPIND_{it}$ = Percentage of independent directors of firm *i* in year *t*;

$CCDUAL_{it}$ = A dummy variable equal to 1 if the Chairman-CEO duality exists at firm *i* in year *t*, 0 if otherwise;
= A dummy variable equal to 1 if firm *i* has at least one independent director who holds two or more outside directorial positions, 0 if otherwise;
= Managerial ownership of the board of directors and key executives of firm *i* in year *t*;
$FSIZE_{it}$ = Firm size of firm *i* in year *t*;
LEV_{it} = Leverage ratio of firm *i* in year *t*;
AGE_{it} = Firm age of firm *i* in year *t*; and
ε_{it} = stochastic error term.

Additional insights were obtained through interviews with five key informants who have exposure to directorships and who are business educators at the same time. Mr. A, a board member of a marketing-based organization, was interviewed at the library of a top business school in Makati City at 2:00 p.m. of May 4, 2011. At 6:15 p.m. on the same day, the interview with Mr. B, a board member of a construction firm and a medium-sized food service company, was conducted at a private university located in Pasig City. On the other hand, Mr. C requested for the interview guide (see Appendix A) and responded on May 5, 2011 through e-mail. Because the information was deemed sufficient, a face-to-face interview need not take place. His extensive experience includes sitting in the board of trustees of a leading university in Manila.

The fourth informant, Mr. D, who is a professor in the United States and a board member of a financial services firm, was interviewed last May 12, 2011 at 9:30 p.m. (Manila Time) via Skype's video call feature. The interview with Mr. E took place on May 20, 2011 at 9:00 a.m. at his office in Manila. He was a board member in one of the biggest banking conglomerates in the Philippines and is a trustee of various organizations. Following the ethical procedures in conducting interviews, all key informants received a letter requesting for their confirmation to be interviewed. Few days after the interview, a copy of the summarized points was e-mailed to them for validation. It is noteworthy that the responses of these key informants are integrated which was presented in the discussion section of this paper.

EMPIRICAL FINDINGS

This study aims to determine the influence of corporate boards on firm performance of publicly-listed property companies in the Philippines. Drawn from 29 listed property firms, all data for governance and control variables were encoded in an Excel spreadsheet and applicable statistical tests were conducted using either the MegaStat or the EViews 4.0 software.

Table 1: Descriptive Statistics										
Measure	SHP	ROE	BSIZE	BPIND	CCDUAL[1]	MDIRPS[2]	MOWN	FSIZE	LEV	AGE
Count	29	29	29	29	29	29	29	29	29	29
Minimum	0	-0.7977	5.00	0.1429	0	0	1.37E-09	8.6541	-3.4401	2.400
Mean	1.9140	0.0100	8.41	0.2741	0.28	0.69	0.07622	9.6993	1.4093	19.172
Median	1.1900	0.0480	8.00	0.2857	0.00	1.00	0.00127	9.6944	0.5564	17.831
Maximum	11.2500	0.2277	14.00	0.6250	1.00	1.00	0.77143	11.0337	25.5886	50.888
Skewness	2.6570	-2.9402	1.04	1.4456	1.06	-0.87	2.86462	0.3399	4.8611	1.129
Kurtosis	7.8977	10.8898	0.87	3.4281	-0.95	-1.35	8.51331	-0.7406	25.2287	2.248
Variance	6.0713	0.0374	4.32	0.0108	0.21	0.22	0.03136	0.4628	23.0314	107.396
Standard deviation	2.4640	0.1935	2.08	0.1038	0.45	0.47	0.17708	0.6803	4.7991	10.363
Coefficient of variation	128.7%	1928.2%	24.7%	37.9%	164.9%	68.3%	232.3%	7.0%	340.5%	54.1%

Note. [1]For CCDUAL, 8 firms were observed to have observed the COB-CEO duality in a single individual, while 21 firms have appointed different persons to occupy the COB and the CEO positions.

[2]For MDIRPS, 20 firms were observed to have at least one (1) independent director hold outside directorships in more than two companies, while 9 firms have independent directors who do not have more than two outside directorships.

Table 1 presents the descriptive statistics for this study. As can be seen, there is a high level of variation among ROE, whose coefficients of variation is 1,928%, which is 5.66 times larger than LEV and 8.3 times larger than MOWN. It is also seen that in BPIND, the average percentage of independent directors in corporate boards is approximately 27.5%. In addition, the same table shows presents that the ownership of the BOD in of one company is 77.143%, as control is probably have been exercised in this firm. Except for ROE and MDIRPS, all other variables are skewed to the right when presented in a probability distribution function (PDF) with asymmetric evidence. There is also a noticeable difference in the skewness between SHP and ROE.

On the other hand, BSIZE, CCDUAL, MDIRPS, FSIZE, and AGE have platykurtic probability distribution functions with kurtosis values less than 3. In terms of variance and standard deviation, BPIND registered the lowest variance among all variables, while AGE has the highest variance and standard deviation values. The longest period for a company to be listed in the PSE is almost 51 years, with the mean AGE of 19.17 years. These statistics complemented some observations culled from the actual data gathering process.

Applying the Ordinary Least Squares (OLS) multiple regression analysis using share price as the dependent variable, Table 2 summarizes the estimation results. As seen in the table, CCDUAL and MDIRPS exhibited negative coefficients of -.82 and -1.34, respectively. The same direction was exhibited by AGE. Other variables exhibited positive coefficients, but only MOWN and FSIZE exhibited significance from $\alpha = 0.10$ for MOWN to $\alpha = 0.01$ for FSIZE. The other governance vectors will fall in the region of accepting the null hypothesis, while MOWN is observed to be positively related to SHP. Control variables other than FSIZE were observed to have no significant relationship with SHP. Thus, a 1% increase in managerial ownership of

corporate boards and key executives would result to an increase in the value of the stock by almost P6.00, while a corresponding increase in FSIZE, when expressed in $\log_{10}$, would increase share price by P1.75.

Table 2: Summary of Regression Results With SHP as Dependent Variable					
Class	Variable	OLS Estimate	Std. Error	t-stat	p-value
Constant	Intercept	-17.7543	8.6397	-2.055	.0532*
Governance	BSIZE	0.2611	0.3009	0.868	.3960
	BPIND	5.0508	5.4101	0.934	.3617
	CCDUAL	-0.8247	1.1692	-0.705	.4887
	MDIRPS	-1.3471	1.3671	-0.985	.3362
	MOWN	5.9270	2.9181	2.031	.0557*
Control	FSIZE	1.7507	0.7303	2.397	.0264**
	LEV	0.0573	0.1016	0.564	.5792
	AGE	-0.0141	0.0494	-0.285	.7788
Std. Error of Regression = 2.28; *R*-squared = 0.388; Adjusted *R*-squared = 0.144.					
Note: * statistically significant at α = 0.10. ** statistically significant at α = 0.05.					

The table also shows that only 38.8% of the variation in SHP can be explained by the variation in the independent variables. When adjusted for the degrees of freedom, the variation in the governance and control vectors can only explain almost 14.5% of the differences in SHP. This is expected to happen, given the limited data that was used for the study and only a few significant variables were noticeable. Such limitation should serve as the motivation for future studies regarding firm performance after the RCCG has been implemented for a good number of observation years.

Table 3: Summary of Regression Results With ROE as Dependent Variable					
Class	Variable	OLS Estimate	Std. Error	t-stat	p-value
Constant	Intercept	-0.9826	0.4647	-2.114	.0472**
Governance	BSIZE	-0.0040	0.0162	-0.246	.8085
	BPIND	-0.0934	0.2910	-0.321	.7516
	CCDUAL	-0.0025	0.0629	-0.040	.9683
	MDIRPS	0.0706	0.0735	0.960	.3486
	MOWN	0.3920	0.1570	2.498	.0213**
Control	FSIZE	0.0946	0.0393	2.408	.0258**
	LEV	-0.0314	0.0055	-5.746	.0000***
	AGE	0.0052	0.0027	1.974	.0624*
Std. Error of Regression = 0.123; *R*-squared = 0.713; Adjusted *R*-squared = 0.598.					
Note: * statistically significant at α = 0.10. ** statistically significant at α = 0.05. *** statistically significant at α = 0.01.					

Using Return on Equity as the dependent variable, Table 3 summarizes the estimation results using the same ordinary least square analysis. Consistent with Table 2, only MOWN

exhibited positive significance with ROE; however, the strength of association increased when the parameter estimate of .0706 registered a p-value greater than the level of significance ($\alpha = 0.05$) compared with SHP. In addition, FSIZE remained significant at became $\alpha = 0.05$ on a positive direction. In contrast with Table 2, the control variable LEV became significant as it was observed to be negatively influence ROE while AGE was identified to be positively related to ROE, with OLS estimates of -0.0314 and 0.0052, respectively. The table also shows that 71.3% of the variation in the ROE can be explained by the variation in the independent variables. When adjusted for the degrees of freedom, the variation in the governance and control vectors can only explain almost 60% of the differences.

Although limited data was used for the study, the increase in the number of variables that became significant when ROE was used would have contributed to the increase in the explanatory power of the model. Thus, a 1% increase in managerial ownership would lead to an increase in ROE by 39.2%, and a corresponding $\log_{10}$ increase in FSIZE would increase ROE by almost 9.5%. Moreover, as the firm advances in terms of AGE, ROE will increase by 0.52%, while a 1% increase in debt over equity will decrease ROE by 3.14%. A better set of results would have been obtained if future studies on firm performance take into consideration a good number of observation years after the RCCG has been implemented. Nevertheless, having included the variables that are normally used in firm performance research, this study believes that no misspecification took place because appropriate parameters have been defined and have been measured in the model.

Appendix A presents the results of the auxiliary regression analysis performed with each of the independent variables with SHP and ROE. As can be seen in SHP, the same variables MOWN and FSIZE became significant at the same levels of significance as what was observed in the multivariate analysis. Furthermore, almost all intercepts exhibited significance that indicates that the predictive power is not strong enough as there are other governance variables not covered in the model that may exhibit statistical significance and thereby should be integrated in one comprehensive analysis.

However, when ROA was used as the dependent variable, only the control variables FSIZE and LEV became significant which may indicates that controlling factors were properly identified in the model as done in prior studies, considering that all AGE became significant as well when regressed with other variables. Hence, the study noted that the predictive power of the ROE model can be manifested when the interaction among the parameters can take place.

Table 4 presents the ANOVA tables of the joint testing for all governance and control variables. As seen in Panel A, when SHP was used as independent variable, no statistical significance can be inferred in the model because it falls even beyond the highest level of significance ($\alpha = 0.10$) used in the study. In consonance with the observations drawn from Table 3, such occurrence is probably driven by the limited data used in the study, considering that only 29 of the 40 companies were used, and that only MOWN, FSIZE, and the intercepts became significant. Increasing the power of the model would entail considering other potential

governance-related and control variables to be included in the analysis, as well as using a larger sample of firms and incorporating the effects of industry affiliation.

Table 4: Anova Table for Joint Testing of Governance and Control Variables					
PANEL A: SHP AS DEPENDENT VARIABLE					
Source	SS	df	MS	F	p-value
Regression	66.0055	8	8.2507	1.59	.1912
Residual	103.9915	20	5.1996		
Total	169.9970	28			

Table 5: ANOVA Table for Joint Testing of Governance and Control Variables					
PANEL B: ROE AS DEPENDENT VARIABLE					
Source	SS	df	MS	F	p-value
Regression	0.7471	8	0.0934	6.21	.0004***
Residual	0.3009	20	0.0150		
Total	1.0480	28			
Note: *** statistically significant at $\alpha = 0.01$.					

In Panel B, it can be seen that when the accounting based measure of performance, ROE, was used, the governance model became significant. This could be attributed to the relationship of the control variables with ROE; as the increase in firm size (FSIZE), the length of time the company's shares are traded (AGE), and the decreased reliance on debt, as measured by LEV, the company's return on equity will move upward because of the positive response of people who conduct business with well-established companies who have been in the business for years and are not dependent too much on financing. After applying the tests for plausibility and robustness for similar cross-sectional econometric models, this study finds no evidence of more than one linear relationship across variables (multicollinearity) and correlation between the series of observations (autocorrelation) in the empirical models.

DISCUSSION

The finding of this study suggests that only managerial ownership significantly influence the firm performance of publicly listed property companies in the Philippines. Rejecting the null hypothesis, and in consonance with the findings of Finegold et al. (2007), Julian (n.d), Abor and Biekpe (2007), and Ehikioya (2009), the study noted an positive relationship with managerial ownership and firm performance. As owners and executives of the firm, the board of directors is likely to support those endeavors that will be beneficial for them.

However, as noted in Julian (n.d.), the ownership structure of most companies in the Philippines poses a problem because it can displace the minority shareholders of the entity, resulting to agency costs. Mr. B (personal communication, May 4, 2011) and Mr. E (personal communication, May 20, 2011) agreed that domination of the family and/or majority shareholders

may be noticeable in the conduct of board meetings. Thus, it is important to set the ground rules in conducting board meetings and those directors and executives must be able to differentiate the role of policy making of the board and the management of day-to-day operations of the company's executives. In addition, Mr. B proposes to put a cap on the investments in the firm so as to minimize the negative effects of the domination problem.

What could probably explain the insignificance of other variables? In terms of BSIZE, this study agrees with the inference drawn by Di Pietra et al. (2008) that no strong evidence can relate this variable to firm performance. Mr. E (personal communication, May 20, 2011) noted that conflicts may arise because of the differences in opinion of board members, but a decision still has to be reached by resolving such conflict with a vote or by achieving consensus. Regardless of whether a corporate board is large or small, consensus have to achieved because board decisions are aligned to the vision and mission of the organization and not merely on the results of operations (Mr. A, personal communication, May 4, 2011). Moreover, it is important to respond quickly to various problems so as not to be overridden by the competition when the company's survival in the industry is at stake (Mr. B, personal communication, May 4, 2011). Perhaps autocracy, taken on a positive note, would be needed inside the board to mediate on such problems or conflicts because a strong leader must be able to move the organization at a specific direction that it intends to go (Mr. C, personal communication, May 5, 2011).

Board independence, or BPIND, has also exhibited no significant relationship with any of the measures of performance and is consistent with the observations of Abdullah (2004), Leng (2004), Finegold et al. (2007), and Rashid et al. (2010). There is no question that independent members are very important in the board because according to Mr. D (personal communication, May 12, 2011), independent directors provide the organization with their expertise in their functional fields and are helpful in the promotion of integrity and transparency in the board. Their special capabilities allow them to be regarded as special consultants of the company (Mr. A, personal communication, May 4, 2011).

However, Mr. B (personal communication, May 4, 2011) argues that independence, which results to a quality decision, must be coupled with the ability to make quick decisions. Because of the competitive nature of the business environment depending on the industry, it is imperative that the company must respond immediately to the challenges or problems that they face so as to keep the company surviving in the midst of difficult times. According to Mr. B. quality, yet quick decision making is an important component for good and fast governance to achieve better performance. Furthermore, Galvez (2003) sees that most companies observe the independence rule as presented in RCCG as a form of mere compliance. It is therefore important to embrace this concept wholeheartedly so as to increase the confidence of the public and the stakeholders to the company which could lead to better operating results.

Similar to Daily and Dalton (1993), Leng (2004), Elsayed (2007), Mashayekhi and Bazaz (2008), Jackling and Johl (2009), the split or duality of the Chairman and CEO has no substantial bearing on the company's firm performance. Consistent with ownership structure of most

Philippine companies, although the roles are handled by two different individuals, familial relationships would concentrate the ownership, power, and authority over the corporation among the family itself. Although most of the key informants agree that there must be a split of the two roles as it minimizes the conflict of "purity" in doing the mandate of the corporate policy and increases accountability among the members (Mr. C, personal communication, May 5, 2011), the problem exists when the Chairman may not be able to monitor properly how the CEO implements the policies in the course of its operations since the Chairman is more concentrated on the strategic direction of the company (Mr. B, personal communication, May 4, 2011).

For MDIRPS, it is no doubt for all interviewees, hiring non-executive directors with outside directorships would be beneficial as most of the best governance practices from other firms can be infused to the company. But then, conflicting views were noted in previous literature. To add to the inconclusive evidence of this variable, Mr. B (personal communication, May 4, 2011) highlighted that holding too much outside directorships might affect one's personal order and thus, time management is essential to steer all the companies towards achieving better performance. However, holding too little number of corporate boards limits one's capacity to contribute to the company and one's income as they are compensated for attendance at board meetings.

For the control variables, FSIZE is found to be positively related with both SHP and ROE as a measure of performance, as bigger property firms significantly perform better than small property companies in the country, since investor confidence is gained when the company has already gained its reputation in this high-risk industry. The negative relationship of LEV and ROE implies that better firm performance can be achieved if the company is not too dependent on leverage to sustain their operations. AGE, on the other hand, exhibits a positive behavior with ROE that is similar to FSIZE. When companies advance in terms of age, it may indicate the company's strength to surpass the challenges that continuously affect the property industry over time; hence, influencing potential stakeholders to make business with them given its reputation and its sustainable growth. The insignificance of LEV and AGE on SHP indicates that these variables may still pose reluctance on the part of the investors to purchase shares because of the high-risk and high-volatility of the shares of property firms.

CONCLUSIONS AND RECOMMENDATIONS

Having achieved the objectives of this attempt to study the influence of corporate boards on firm performance of property listed companies in the Philippines; this study concludes that managerial ownership is the most influential variable to affect firm performance. In addition, firm size is also noted to manifest significant positive relationship with share prices among the control variables used in this research because better performance of property companies is a result of the entity's growth amidst the challenges of the dynamic industry where risks are very evident. Leverage and firm age is significant when related to return on equity but has no conclusive

relationship on share prices, indicating that controlling factors have mostly affect accounting-based measures of firm performance.

This undertaking will remain inconclusive of what will be the overall behavior of corporate governance variables related to the board of directors because the focal point of this study is only on the property companies. Considering that our Revised Code of Corporate Governance is still very young, the challenge for every member of the business community and the regulatory bodies to intensify monitoring activities to promoting good governance across Philippine companies not just for compliance purposes.

Recommendations for future studies include the following: analyze the impact of these characteristics on firms belonging to different industries, as well as conduct an overall analysis of firm performance involving all companies over time where firm performance can be observed to a greater extent. Moreover, this study encourages the use of other governance variables that are present in extant prior literature and the use of other accounting-based and market-based measures of performance towards supporting the shareholders and all stakeholders' aims to make better and informed business decisions.

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Appendix A
Summary results of individual regressions with SHP and ROE as dependent variables

	SHP				ROA			
Variables	Estimates	Std. Error	t-stat	p-value	Estimates	Std. Error	t-stat	p-value
Intercept	2.6019	1.9701	1.321	.1977	0.1560	0.1523	1.024	.3150
BSIZE	-0.0818	0.2275	-0.359	.7221	-0.0173	0.0176	-0.986	.3330
Intercept	1.4135	1.3317	1.061	.2979	-0.0397	0.1044	-0.381	.7064
BPIND	1.8259	4.5527	0.401	.6915	0.1815	0.3568	0.509	.6150
Intercept	2.1787	0.5389	4.043	.0004***	0.0406	0.0415	0.979	.3363
CCDUAL	-0.9596	1.0260	-0.935	.3579	-0.1109	0.0790	-1.404	.1718
Intercept	2.2461	0.8329	2.697	.0119**	0.0129	0.0657	0.197	.8454
MDIRPS	-0.4815	1.0029	-0.480	.6350	-0.0042	0.0791	-0.053	.9581
Intercept	1.5057	0.4695	3.207	.0034***	-0.0052	0.0393	-0.134	.8947
MOWN	5.3577	2.4715	2.168	.0392**	0.2005	0.2067	0.970	.3407
Intercept	-9.8965	6.3825	-1.551	.1326	-0.9594	0.4982	-1.926	.0647*
FSIZE	1.2177	0.6565	1.855	.0746*	0.1000	0.0512	1.951	.0615*
Intercept	1.9420	0.4860	3.996	.0004***	0.0509	0.0265	1.921	.0653*
LEV	-0.0199	0.0987	-0.201	.8419	-0.0290	0.0054	-5.388	.0000***
Intercept	3.0118	0.9641	3.124	.0042***	0.0527	0.0774	0.681	.5018
AGE	-0.0573	0.0444	-1.289	.2082	-0.0022	0.0036	-0.624	.5378

Note: * statistically significant at α = 0.10. ** statistically significant at α = 0.05.
*** statistically significant at α = 0.01.