


Accounting & Taxation

VOLUME 7

NUMBER 2

2015

CONTENTS

Do Firms Engage in Aggressive Tax Reporting Prior to Bankruptcy? Wendy Heltzer, Mary Mindak & Mingjun Zhou	1
Debt Repayment Capacity of Local Government Sector in Poland during the 2008-2013 Economic Slowdown Period Krzysztof Kluza	17
Royal Family Members and Firm Performance: Evidence from Kingdom of Saudi Arabia Abdullah Mohammed Alzahrani & Ayoib Che-Ahmad	29
A Test of the Pecking Order Theory of Capital Structure in Corporate Finance Ali Shakil Khan & Awang Yusop Adom	43
Earnings Management, Weak Internal Controls, and Firm Size Yousef Jahmani & Suman Niranjana	51
Transfer Pricing: Increasing Tension between Multinational Firms and Tax Authorities Wray Bradley	65
Relationships between Institutional Ownership, Capital Structure and Research and Development Investment Hsueh-En Hsu, Chiulien C Venezia & Chelsea Schrader	75
Accounting Knowledge, Practices, and Controls of Micro, Small and Medium Enterprises: Evidence from the Philippines Venus C. Ibarra & Rodrigo M. Velasco	83

DO FIRMS ENGAGE IN AGGRESSIVE TAX REPORTING PRIOR TO BANKRUPTCY?

Wendy Heltzer, DePaul University
Mary Mindak, DePaul University
Mingjun Zhou, DePaul University

ABSTRACT

Our study examines the tax reporting behaviors of firms just before they file for bankruptcy (“pre-bankruptcy firms”). Specifically, we investigate whether pre-bankruptcy firms engage in more aggressive tax reporting, in comparison to non-bankruptcy firms. We also investigate whether the relationship between aggressive financial reporting and aggressive tax reporting is different across pre-bankruptcy and non-bankruptcy firms. Our findings suggest that pre-bankruptcy firms engage in more aggressive tax reporting, vis-à-vis non-bankruptcy firms. Additionally, we find that the positive relation between aggressive book reporting and aggressive tax reporting is stronger among pre-bankruptcy firms, vis-à-vis firms that are not approaching bankruptcy. Thus, our findings not only further our understanding of the motivations behind these significant reporting decisions, but also help us understand how a growing proportion of corporate managers respond to increasing pressures to perform in a depressed economy.

JEL: M400, M410, M480

KEYWORDS: Tax Reporting, Bankruptcy, Aggressive Reporting

INTRODUCTION

This study examines the aggressive financial reporting and aggressive tax reporting of firms just before they file for bankruptcy (“pre-bankruptcy firms”). We conduct this study for two reasons. First, we have seen significant corporate bankruptcy filings over the past ten years. The number of business filings during this time period ranges from 19,695 filings in 2006 to 60,837 filings in 2009 as reported by the American Bankruptcy Institute (www.abi.org). Interestingly, some of the firms that filed for corporate bankruptcy during this time once held assets with significant values. The business world witnessed the largest bankruptcy filing in 2008 from Lehman Brothers Holding Inc., which had \$691 billion pre-petition assets (BankruptcyData.com). As such, it is important to better understand how managers of such firms make economic decisions; such decisions impact firm valuation and therefore have implications for investors and law enforcers. As discussed wherein, academic studies have largely focused on the financial reporting behavior of pre-bankruptcy firms (i.e. Rosner 2003 and Jaggi and Lee 2002); to the best of our knowledge, this is the first study to examine tax reporting behaviors of this growing sector of our economy.

Second, previous research finds a positive relationship between financial reporting aggressiveness and tax reporting aggressiveness (e.g. Frank *et al.* 2009). In other words, past research shows that firms which engage in aggressive financial reporting, characterized by the legal and illegal upwards reporting of Generally Accepted Accounting Principles (GAAP) income, simultaneously engage in aggressive tax reporting, characterized by the downward reporting of taxable income. This finding has garnered much attention from academics, policy-makers and practitioners, as it contracts the notion that aggressive reporting of one form of income must be done at the expense of the other form of income (e.g., in a

conforming manner). While managers generally have incentives to report higher book income (to generate higher returns) and, at the same time, report lower taxable income (to save cash), large divergences between book income and taxable income can be a “red flag” to both the Securities and Exchange Commission (SEC) and the Internal Revenue Service (IRS). In some instances, we observe firms increasing book income and overpaying on their taxes. Erickson *et al.* (2004) finds this situation with firms that fraudulently overstate their earnings. As discussed within, the unique incentives of firms approaching bankruptcy allow us to gain a deeper understanding into this intersection of aggressive financial and tax reporting.

Our findings suggest that pre-bankruptcy firms engage in more aggressive tax reporting, vis-à-vis firms that are not approaching bankruptcy. Additionally, we find a more pronounced positive relation between aggressive book reporting and aggressive tax reporting among pre-bankruptcy firms, vis-à-vis firms that are not approaching bankruptcy. Thus, our findings not only further our understanding of the motivations behind these significant economic trade-offs, but also help us understand how a growing proportion of corporate managers respond to increasing pressures to perform in a depressed economy.

The remainder of the paper is organized as follows. The next section provides a literature review on pre-bankruptcy firms and the financial and tax reporting aggressiveness research. Then, we discuss our research questions and research design. The following section provides details on the sample selection process and the summary statistics. We provide a discussion of the multivariate results in the subsequent section. The sensitivity results are included after the multivariate discussion. The final section of the paper provides our conclusion.

LITERATURE REVIEW

Pre-Bankruptcy Firms

Due to the large number of corporate bankruptcies over the past decade, several papers look at the relationship between earnings quality and bankruptcy. Garcia Lara *et al.* (2009) look at a sample of UK bankruptcy firms and find that the bankruptcy firms performed upward earnings management in the four years before the bankruptcy. Rosner (2003) investigates bankruptcy firms and finds that they are the most likely to have succeeded in reporting overstated earnings in their audited financial statements. In Saleh and Ahmed (2005), their analysis finds significantly negative discretionary accruals during debt renegotiation periods for firms that violated debt covenants as compared to a control set. The decision to use income-increasing or income-decreasing discretionary accruals are analyzed in Jaggi and Lee (2002) by investigating financially distressed firms with debt covenant violations and/or debt restructurings. This analysis finds that financially distressed companies who can obtain a waiver for their debt covenant violations use income-increasing accruals, whereas financially distressed companies who restructure the debt or renegotiate the debt use income-decreasing accruals. Taken together, these papers identify positive relationships between aggressive financial reporting and pre-bankruptcy related decisions.

This study extends the current literature on pre-bankruptcy firms and their reporting behaviors by examining whether aggressive tax reporting exists in pre-bankruptcy firms. Noga and Schnader (2013) analyze the ability of using tax reporting behaviors in the prediction of bankruptcies. Our study extends this analysis by looking at the bankruptcy firms’ tax reporting aggressiveness in comparison to non-bankruptcy firms in the period before the bankruptcy date. In addition, our investigation determines whether or not the aggressive tax reporting decisions exist at the expense of aggressive financial reporting. As outlined below, our findings suggest that pre-bankruptcy firms do engage in aggressive tax reporting, and that they are able to do so while also engaging in aggressive financial reporting.

The Interaction of Financial and Tax Reporting Aggressiveness

The reporting systems in the U.S. require public companies to prepare two distinct income measures, one for financial reporting (book) purposes to be submitted to the SEC following the rules and regulations outlined in U.S. GAAP and the other for tax reporting to be submitted to the IRS following rules and regulation outlined in the Internal Revenue Code. Under certain circumstances, public Companies may file financial statements with the SEC following the rules and regulations outlined in the International Financial Accounting Standards. While the objective of financial reporting is to provide relevant and reliable information for investors to assess a public company's financial performance, the purpose of tax accounting serves the government's objective of revenue collection and incentivizing firm's behaviors. Managers generally have incentives to report high book income and, at the same time, low taxable income. The literature has documented a positive gap between financial and taxable income reaching to the level of \$436 billion (e.g. Boynton *et al.* 2005).

Following Frank *et al.* (2009), we define the theoretical construct of financial reporting aggressiveness as upward earnings management that may or may not be within the confines of GAAP, and tax reporting aggressiveness as downward manipulation of taxable income through tax planning. Researchers have suggested that book-tax differences can indicate the managerial discretions allowed under GAAP to manage book earnings upward (i.e. Phillips *et al.* 2003), reflecting financial reporting aggressiveness. One assumption under this stream of literature is that, as Hanlon (2005) argued, the discretions allowed under financial reporting provide opportunities for earnings management while taxable income must "clearly reflect income" (Internal Revenue Code Section 446b).

An emerging stream of literature suggests book tax differences do not solely reflect aggressive financial reporting, but alternatively or additionally that firms also use aggressive tax planning (Heltzer 2009 and Wilson 2009). Alternatively, some studies find that firms using aggressive financial reporting are not using aggressive tax reporting. For instance, a few studies find firms who committed fraud or had restatements revising their earnings downwards were less likely to take an aggressive tax strategy (Lennox *et al.* 2013 and Badertscher 2009, respectively). Numerous studies also look at aggressive tax reporting in relation to other firm characteristics such as family firms and equity incentives. Chen *et al.* (2010) finds that family firms are less likely to exhibit tax aggressive reporting than non-family firms and Rego and Wilson (2012) find that equity incentives are a factor of aggressive tax strategies. Overall, these studies have furthered our understanding of the likelihood of tax reporting aggressiveness.

When considering tax and financial reporting aggressiveness together, one methodological challenge of separating the effect of tax planning from earnings management is that prior research focuses on the role of deferred tax expenses, or "temporary" book-tax differences to measure aggressive financial reporting and earnings management. The limit of using temporary book-tax differences, as Hanlon (2005) notes, is that it is difficult to "separate the (temporary book-tax) differences caused by aggressive tax planning from those motivated by aggressive earnings recognition".

To enable empirical researchers to separately measure aggressive tax and financial reporting, Frank *et al.* (2009) developed their tax aggressiveness measure (*DTAX*), which is based on "permanent" book-tax differences. We define the empirical proxies in the research design section of the paper. Using their *DTAX* measure, Frank *et al.* find that firms' tax aggressiveness is increasing with financial reporting aggressiveness and vice versa. In this study, we use their *DTAX* measure as the main variable of interest to investigate pre-bankruptcy firms' tax aggressiveness.

RESEARCH QUESTIONS AND RESEARCH DESIGN

Aggressive Tax Reporting

We begin our research by examining whether firms approaching bankruptcy engage in aggressive tax reporting. On one hand, managers of pre-bankruptcy firms face heightened pressure to generate cash flow, and thereby reduce taxable income, in order to stay afloat. Additionally, it may be the aggressive nature of managers' which put them in a pre-bankruptcy position. However, pre-bankruptcy firms have a greater occurrence of net operating losses (NOLs), vis-à-vis non-bankruptcy firms. Therefore, the reduced benefit of aggressive tax reporting among pre-bankruptcy firms may eliminate the need to engage in aggressive tax reporting. As such, our first research question is:

RQ1: Do pre-bankruptcy firms engage in more aggressive tax reporting, vis-à-vis non-bankruptcy firms?

In order to test RQ1, we use the empirical measure of tax aggressiveness (*DTAX*) in Frank *et al.* (2009). This measure is based on calculating the company's permanent book-tax difference from the following model:

$$PERMDIFF_{it} = \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 UNCON_{it} + \alpha_3 MI_{it} + \alpha_4 CSTE_{it} + \alpha_5 \Delta NOL_{it} + \alpha_6 LAGPERM_{it} + \varepsilon_{it} \quad (1)$$

In the equation, *PERMDIFF* represents total book-tax differences (less temporary book-tax differences), *INTANG* represents goodwill and other intangibles, *UNCON* represents income (loss) reported under the equity method, *MI* is the income (loss) attributable to minority interest, *CSTE* is the current state income tax expense, ΔNOL is the change in net operating loss carryforwards, and *LAGPERM* is the one year lagged *PERMDIFF*. The *DTAX* measure is calculated as the residual from model (1), thereby capturing the "abnormal" permanent difference across the relevant industry/year. Following Frank *et al.*, a firm observation will remain in the analysis if there are more than 15 observations per firm year and industry.

After calculating *DTAX*, we use the following multivariate regression to analyze the tax reporting aggressiveness of pre-bankruptcy firms:

$$DTAX_{it} = \alpha_0 + \alpha_1 BANKRUPTCY_D_{it} + \alpha_2 PTROA_{it} + \alpha_3 NOL_D_{it} + \alpha_4 FOR_D_{it} + \alpha_5 LEV_{it} + \alpha_6 MTB_{it} + \alpha_7 AF_D_{it} + \alpha_8 NUM_ANALYST_{it} + \alpha_9 EMI_{it} + \alpha_{10} EM2_{it} + \alpha_{11} EM3_{it} + \alpha_{12} APTCFO_{it} + \alpha_{13} SIZE_{it} + \varepsilon_{it} \quad (2)$$

As stated previously, *DTAX* is the residual calculated from model (1). *BANKRUPTCY_D* is an indicator variable taking the value of one (zero) if it is an ex post bankrupt (non-bankrupt) firm. The remaining variables in model (2) are control variables established by prior literature. Table 2 provides definitions of these independent variables. In evaluating aggressive tax reporting, our analysis focuses on α_1 to determine if the pre-bankruptcy firms are more aggressive with their tax reporting. A positive (negative) α_1 coefficient suggest that pre-bankruptcy firms are more (less) aggressive in their tax reporting, relative to non-bankruptcy firms.

To further evaluate the company's tax reporting aggressiveness, we run additional models to validate the tax reporting aggressiveness of pre-bankruptcy firms. Previous research has identified advantages and disadvantages of tax avoidance measures (Hanlon and Heitzman 2010). The following model uses two of these measures, the "Cash Effective Tax Rate" (*CASH_ETR_{it}*) and the "Book Effective Tax Rate" (*BOOK_ETR_{it}*), as the dependent variables:

$$ETR_{it} = \alpha_0 + \alpha_1 BANKRUPTCY_D_{it} + \alpha_2 SIZE_{it} + \alpha_3 MVE_{it} + \alpha_4 BM_t + \alpha_5 EP_{it} + \alpha_6 ROA_{it} + \quad (3)$$

$$\alpha_7LEV_{it} + \alpha_8R\&D_{it} + \alpha_9ADV_{it} + \alpha_{10}FOR_D_{it} + \alpha_{11}CAP_{it} + \alpha_{12}INV_{it} + \varepsilon_{it},$$

In regards to Equation (3), a negative (positive) α_l will suggest that pre-bankruptcy firms are more (less) aggressive in their tax reporting, vis-à-vis non-bankruptcy firms. We provide definitions for the *ETR* and control variables from Model 3 in Table 2.

Relationship between Aggressive Tax Reporting and Financial Reporting

Second, we examine the relationship between aggressive financial reporting and tax reporting across pre-bankruptcy firms and firms which are not approaching bankruptcy. Managers have conflicting incentives in the period leading up to a bankruptcy event. On one hand, management of pre-bankruptcy firms strive to increase book income and simultaneously reduce taxable income to create a better financial outlook, as a company's financial strength directly impacts its ability to raise capital. Such aggressive reporting may reflect the aggressive behavior of a management team heading towards bankruptcy. On the other hand, increasing book income and simultaneously lowering tax income could lead to increased regulatory scrutiny due to a large gap between the book and taxable income. The IRS has previously noted the growing gap between book and taxable income and has identified issues with the tax system and the use of abusive tax shelters (Summers 2000). Graham *et al.* (2014) finds that 69% of managers surveyed view reputational concerns as a factor in why their company does not adopt possible tax planning strategies. Further, decreased taxable income and increased NOLs among pre-bankruptcy firms may lead managers of such firms to engage in aggressive financial reporting at the expense of taxable income, as pre-bankruptcy firms will pay, on average, fewer tax dollars. These competing incentives for pre-bankruptcy firms lead to our second research question:

RQ2: Is the relationship between aggressive financial reporting and aggressive tax reporting different among pre-bankruptcy firms, vis-à-vis non-bankruptcy firms?

We test RQ2 by investigating the association between the firm's tax reporting and financial reporting aggressiveness per Frank *et al.* (2009):

$$DTAX_{it} = \alpha_0 + \alpha_1DFIN_{it} + \alpha_2BANKRUPTCY_D_{it} + \alpha_3DFIN_{it}*BANKRUPTCY_D_{it} + \alpha_4PTROA_{it} + \alpha_5NOL_D_{it} + \alpha_6FOR_D_{it} + \alpha_7LEV_{it} + \alpha_8MTB_{it} + \alpha_9AF_D_{it} + \alpha_{10}NUM_ANALYST_{it} + \alpha_{11}EMI_{it} + \alpha_{12}EM2_{it} + \alpha_{13}EM3_{it} + \alpha_{14}APTFCFO_{it} + \alpha_{15}SIZE_{it} + \varepsilon_{it}, \quad (4)$$

$$DFIN_{it} = \alpha_0 + \alpha_1DTAX_{it} + \alpha_2BANKRUPTCY_D_{it} + \alpha_3DTAX_{it}*BANKRUPTCY_D_{it} + \alpha_4PTROA_{it} + \alpha_5NOL_D_{it} + \alpha_6FOR_D_{it} + \alpha_7LEV_{it} + \alpha_8MTB_{it} + \alpha_9AF_D_{it} + \alpha_{10}NUM_ANALYST_{it} + \alpha_{11}EMI_{it} + \alpha_{12}EM2_{it} + \alpha_{13}EM3_{it} + \alpha_{14}APTFCFO_{it} + \alpha_{15}SIZE_{it} + \varepsilon_{it}, \quad (5)$$

The coefficient of interest in the above two models is α_3 . This coefficient captures the additional reporting aggressiveness of bankruptcy firms above the reporting aggressiveness of non-bankruptcy firms. The additional variables in Models 4 and 5 control for tax planning and earnings management incentives as noted in Frank *et al.* (2009). We provide definitions of *DTAX_{it}* and the control variables in Table 2. In Table 3, we define the variable *BANKRUPTCY_D_{it}*, and Table 4 defines the *DFIN_{it}* and interaction variables.

SAMPLE SELECTION AND SUMMARY STATISTICS

Sample Selection

Our sample of pre-bankruptcy firms was obtained through bankruptcydata.com and COMPUSTAT. We first obtained 3,372 pre-bankruptcy firms during the period 1978 to 2012 from bankruptcydata.com, a database which lists companies experiencing bankruptcy proceedings. This database provides company names and bankruptcy dates. We then used the DLRSN code in COMPUSTAT to compare our pre-bankruptcy sample obtained through bankruptcydata.com to firms identified as a bankruptcy in COMPUSTAT. We searched each company manually in Compustat with the code lookup function in this database to improve our ability to keep as many bankruptcy firms in the sample as possible. We further searched COMPUSTAT to identify additional bankruptcy firms with the variable DLRSN (delisting code) of 02. We found 487 additional firms identified as bankruptcy firms on COMPUSTAT that were not on the bankruptcydata.com database.

Some firms from our bankruptcydata.com data set had other delisting codes identified in COMPUSTAT. For instance, 173 of our pre-bankruptcy firms were listed with delisting code of 01 (Acquisition or Merger) in COMPUSTAT. Bankruptcydata.com identified these firms as a bankruptcy, so we keep all of these firms with various delisting codes in our pre-bankruptcy data set. The bankruptcydata.com database identified all of these firms as a specific type of bankruptcy (i.e. chapter 7, 11, etc.) 272 of our observations from the bankruptcydata.com database did not have a delisting code from COMPUSTAT. This shows that using both the COMPUSTAT and bankruptcydata.com resources aids in obtaining a larger sample of pre-bankruptcy firms.

We lost 1,415 pre-bankruptcy observations due to data limitations in calculating necessary variables and through eliminating firms in the finance and utilities industries. Due to using discretionary accruals in our aggressive financial reporting measure, we eliminate firms in the finance, insurance and real estate industries (SIC 6000-6999) and in the electric gas and sanitary services industries (SIC 4900-4999). This left us with 1,957 pre-bankruptcy observations in the *ETR* Sample Set. We lost an additional 1,636 observations with missing *DTAX* variable data leaving us with 321 observations in our pre-bankruptcy *DTAX* Sample Set. We outline pre-bankruptcy sample selection process in Table 1, Panel A.

To perform our analysis, we compare our pre-bankruptcy sample set on an annual basis to all other COMPUSTAT observations during our time period which are not included in our pre-bankruptcy dataset. In Table 1, Panel B and C, we provide more details on the non-bankruptcy sample selection process. The total sample size for our analysis is 169,545 yearly observations. The sample observations have an equal representation across the sample years included in our analysis. We find that our sample contains about 2-4% of the sample each year. In the non-bankruptcy sample, the lowest number of observations occurs in 1978 (0.4%) and the highest percentage occurs in 2000 (3.9%). In the pre-bankruptcy sample, the lowest number of observations occurs in 1978 (0.1%) and the highest percentage occurs in 2000 (9.2%). We obtained each observation's data in relation to the last year they filed prior to the bankruptcy. We obtained the pre-bankruptcy data from Compustat. In order to preserve the size of the pre-bankruptcy sample observations, we pull the most recent data prior to the bankruptcy filing date. About 24% of our sample has data in Compustat immediately preceding the bankruptcy year. About 37% of the sample has data from the previous year. We eliminated any observations that have the last filing data older than 7 years from our analysis. In our robustness tests, we also drop a firm if it does not have any financial data in the three years preceding the bankruptcy filing. The results are highly similar.

Summary Statistics

We provide descriptive statistics on the dependent and independent variables used in our analysis in Table 2. Table 2 Panel A provides details on the dependent variables. As expected, DTAX is close to zero across both samples, as it is the residual from Equation (1). It is worth noting that both *CASH_ETR* and *BOOK_ETR* are significantly lower in the Pre-Bankruptcy samples (relative to the Non-Bankruptcy samples). This suggests that Pre-Bankruptcy firms may engage in more aggressive tax reporting, vis-à-vis Non-Bankruptcy firms. Due to potential correlated omitted variables, all of these proxies are analyzed further using multivariate analysis. In Panel B and C of Table 2, we analyze the explanatory and control variables across pre-bankruptcy and non-bankruptcy firms. This provides information on the type of firms that fall into each category.

Table 1: Sample Details

Panel A: Pre-Bankruptcy Sample Selection	
Description	Number of Observations
BankruptcyData.com listed firm bankruptcies	3,372
Firms that are not listed in Compustat	(1,042)
<i>Subtotal</i>	2,330
Firms that do not have Compustat data within five years prior to	(171)
Firms in Compustat with DLRSN of 02 and not in bankruptcydata.com list	487
Eliminate firms in finance and utilities industries	(279)
<i>Subtotal</i>	2,367
Eliminate observations missing ETR variables	(410)
Pre-bankruptcy ETR Sample Set	1,957
Eliminate observations missing DTAX variables	(1,636)
Pre-bankruptcy DTAX Sample Set	321
Panel B: Non-Bankruptcy Sample 1 (Dependent Variable = DTAX)	
Description	Number of Observations
COMPUSTAT observations from 1978-2012	358,354
Eliminate observations missing total asset data	(46,819)
Eliminate observations with total assets less than zero	(787)
Eliminate firms in finance and utilities industries	(65,215)
<i>Subtotal</i>	221,373
Eliminate observations missing DTAX regression and control variables	(153,494)
<i>Subtotal</i>	67,879
Eliminate observations missing lag asset data	(10,580)
Eliminate observations missing common equity data	(7)
Eliminate observations with common equity data less than zero	(511)
<i>Subtotal</i>	53,803
Eliminate observations with less than 15 observations in Industry	(4,565)
<i>Subtotal</i>	49,238
Pre-bankruptcy Observations	(321)
Non-bankruptcy Observations	48,917
Panel C: Non-Bankruptcy Sample 2 (Dependent Variable = ETR)	
Description	Number of Observations
COMPUSTAT observations from 1978-2012	358,354
Eliminate observations missing total asset data	(46,819)
Eliminate observations with total assets less than zero	(787)
Eliminate firms in finance and utilities industries	(65,215)
<i>Subtotal</i>	221,373
Eliminate observations missing ETR control variables	(49,871)
<i>Subtotal</i>	171,502
Pre-bankruptcy Observations	(1,957)
Non-bankruptcy Observations	169,545

Table 2: Descriptive Statistics

Panel A: Dependent Variables									
<i>Non-bankruptcy</i>									
<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Med.</i>	<i>T-Stat</i>	<i>P-Value</i>			
<i>DTAX</i>	48,917	0.002	0.140	0.004	2.89	0.004			
<i>CASH_ETR</i>	102,986	0.187	0.228	0.110	263.52	<.0001			
<i>BOOK_ETR</i>	169,424	0.232	0.229	0.244	416.85	<.0001			
<i>DFIN</i>	45,142	0.004	0.119	-0.000	6.60	<.0001			
<i>Pre-bankruptcy</i>									
<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Med.</i>	<i>T-Stat</i>	<i>P-Value</i>			
<i>DTAX</i>	321	-0.015	0.213	0.000	-1.23	0.221			
<i>CASH_ETR</i>	1,264	0.064	0.187	0.000	12.22	<.0001			
<i>BOOK_ETR</i>	1,955	0.093	0.202	0.000	20.29	<.0001			
<i>DFIN</i>	311	0.040	0.197	0.032	3.57	0.0004			
<i>Differences</i>									
<i>Variable</i>	<i>Mean Diff.</i>	<i>T-Stat</i>	<i>P-Value</i>						
<i>DTAX</i>	0.016	2.08	0.04						
<i>CASH_ETR</i>	0.123	19.10	<.0001						
<i>BOOK_ETR</i>	0.139	26.73	<.0001						
<i>DFIN</i>	-0.036	-5.30	<.0001						
Panel B: Explanatory and Control Variables for Sample 1 (DTAX Sample).									
<i>Variable</i>	<i>Non-bankruptcy (N=48,917)</i>			<i>Pre-bankruptcy (N=321)</i>			<i>Differences</i>		
	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>	<i>Mean Diff.</i>	<i>T-Stat</i>	<i>P-Value</i>
<i>SIZE</i>	5.36	2.20	5.29	4.57	1.66	4.61	0.79	6.43	<.0001
<i>PTROA</i>	0.05	0.21	0.07	-0.15	0.29	-0.10	0.19	15.96	<.0001
<i>NOL_D</i>	0.52	0.50	1.00	0.73	0.44	1.00	-0.22	-7.76	<.0001
<i>FOR_D</i>	0.35	0.48	0.00	0.19	0.39	0.00	0.16	5.93	<.0001
<i>LEV</i>	0.22	0.22	0.17	0.35	0.28	0.32	-0.13	-10.58	<.0001
<i>MTB</i>	2.88	3.26	1.95	2.12	3.47	1.10	0.76	4.18	<.0001
<i>ΔPTCFO</i>	0.01	0.12	0.01	-0.04	0.17	-0.02	0.05	7.69	<.0001
<i>AF_D</i>	0.43	0.50	0.00	0.38	0.49	0.00	0.05	1.75	0.0807
<i>NUMEST</i>	0.02	0.04	0.00	0.01	0.03	0.00	0.01	2.29	0.0219
<i>EM1</i>	0.03	0.18	0.00	0.02	0.12	0.00	0.02	1.73	0.0830
<i>EM2</i>	0.11	0.31	0.00	0.01	0.11	0.00	0.10	5.57	<.0001
<i>EM3</i>	0.01	0.07	0.00	0.00	0.00	0.00	0.00	1.25	0.2113
Panel C: Explanatory and Control Variables for Sample 2 (ETR Sample)									
<i>Variable</i>	<i>Non-bankruptcy (N=169,545)</i>			<i>Pre-bankruptcy (N=1,957)</i>			<i>Differences</i>		
	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>	<i>Mean Diff.</i>	<i>T-Stat</i>	<i>P-Value</i>
<i>SIZE</i>	4.51	2.49	4.45	4.01	2.08	3.94	0.51	8.98	<.0001
<i>MVE</i>	1,345	4,702	80	123	1,072	11	1,222	11.49	<.0001
<i>BM</i>	0.59	1.07	0.49	-0.62	3.01	0.17	1.21	47.69	<.0001
<i>EP</i>	-0.10	0.60	0.05	-1.52	1.74	-0.71	1.43	101.21	<.0001
<i>ROA</i>	-0.14	0.88	0.05	-0.39	0.91	-0.15	0.25	12.45	<.0001
<i>LEV</i>	0.32	0.55	0.20	0.51	0.64	0.37	-0.19	-15.30	<.0001
<i>INT</i>	0.11	0.21	0.01	0.12	0.24	0.00	-0.01	-1.77	0.0761
<i>R&D</i>	0.07	0.16	0.00	0.06	0.18	0.00	0.00	1.13	0.2564
<i>ADV</i>	0.01	0.04	0.00	0.02	0.05	0.00	-0.01	-5.08	<.0001
<i>FOR_D</i>	0.22	0.41	0.00	0.14	0.35	0.00	0.08	7.96	<.0001
<i>CAP</i>	0.36	0.36	0.26	0.32	0.34	0.22	0.04	5.46	<.0001
<i>INV</i>	0.16	0.18	0.09	0.16	0.20	0.08	-0.01	-1.13	0.2569

Table 2: Descriptive Statistics (Continued)

Panel D: Explanation of Variables Used in Analysis	
Variable	Definition
<i>DTAX</i>	Residuals from the following model, estimated by industry and year: $PERMDIFF_{it} = \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 UNCON_{it} + \alpha_3 MI_{it} + \alpha_4 CSTE_{it} + \alpha_5 \Delta NOL_{it} + \alpha_6 LAGPERM_{it} + \varepsilon_{it}$ INTANG represents goodwill and other intangibles, UNCON represents income (loss) reported under the equity method, MI is the income (loss) attributable to minority interest, CSTE is the current state income tax expense, ΔNOL is the change in net operating loss carryforwards, and LAGPERM is the one year lagged PERMDIFF.
<i>CASH_ETR</i>	Measures the amount of cash taxes paid per dollar of pre-tax earnings, calculated as total income taxes paid (TXPD) divided by (book income (BI) minus special items (SPI)).
<i>BOOK_ETR</i>	Measures the amount of tax expense per dollar of pre-tax earnings, calculated as total income taxes (TX) divided by (book income (BI) minus special items (SPI)).
<i>SIZE</i>	Natural logarithm of total assets (AT) at year <i>t</i> .
<i>PTROA</i>	Pretax book income (BI) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>NOL_D</i>	Dummy variable set to 1 if the firm has net operating loss carryforwards (NOL) in year <i>t</i> , and 0 otherwise.
<i>FOR_D</i>	Dummy variable set to 1 if the absolute value of foreign pretax income (PIFO) is greater than 0 at year <i>t</i> , and 0 otherwise.
<i>LEV</i>	Total of long-term debt (DLTT) and debt in current liabilities (DLC) in year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>MTB</i>	Market value (MVE defined below) at year <i>t-1</i> , divided by book value of common equity (CEQ) at year <i>t-1</i> .
<i>ΔPTCFO</i>	Change in pre-tax cash flow (PTCFO) from operations from year <i>t-1</i> to <i>t</i> , scaled by total assets at year <i>t-1</i> .
<i>AF_D</i>	Dummy variable set to 1 if at least one financial analyst is covering the firm on IBES in year <i>t</i> , and 0 otherwise.
<i>NUMEST</i>	Number of analysts covering the firm as reported by IBES in year <i>t</i> , scaled by total assets at year <i>t-1</i> .
<i>EMI</i>	Dummy variable set to 1 if net income (NI) in year <i>t</i> divided by market value of common equity (MVE defined below) at year <i>t-1</i> is greater than 0 and less than or equal to 0.01, and 0 otherwise.
<i>EM2</i>	Dummy variable set to 1 if the change in net income from year <i>t-1</i> to year <i>t</i> , divided by the market value of common equity at year <i>t-2</i> is greater than 0 and less than or equal to 0.01, and 0 otherwise.
<i>EM3</i>	Dummy variable set to 1 if firm's actual earnings per share (basic excluding extraordinary items) less the median analyst forecast for fiscal year <i>t</i> is greater than 0 and less than or equal to 0.01, and 0 otherwise.
<i>MVE</i>	Market value of equity, calculated as annual fiscal closing price (PRCC_F) times the common shares outstanding (CSHO) at year <i>t</i> .
<i>BM</i>	Book to market ratio, calculated as common ordinary equity total (CEQ) divided by MVE at year <i>t</i> .
<i>EP</i>	Earnings-to-price ratio, calculated as (book income (BI) minus special items (SPI)) divided by MVE at year <i>t</i> .
<i>ROA</i>	Return on assets, calculated as (book income (BI) minus special items (SPI)) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>INT</i>	Intangible assets (INTANG) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>R&D</i>	Research and development expenses (XRD) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>ADV</i>	Advertising expense (XAD) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>CAP</i>	Capital intensity (PPENT) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>INV</i>	Inventory intensity (INV) at year <i>t</i> , scaled by total assets (AT) at year <i>t-1</i> .
<i>BANKRUPTCY_D</i>	Dummy variable set to 1 if the firm experienced a bankruptcy; otherwise, the value is set to 0.
<i>DFIN</i>	Calculated as the residuals from the model: $TACC_{it} = \alpha_0 + \alpha_1 (\Delta REV_{it} - \Delta AR_{it}) + \alpha_2 PPE_{it} + \varepsilon_{it}$
<i>DTAX*</i>	Interaction term of the DTAX and bankruptcy dummy variables.
<i>BANKRUPTCY_D</i>	
<i>DFIN*</i>	Interaction term of the DFIN and bankruptcy dummy variables.
<i>BANKRUPTCY_D</i>	

We see from Panel B that the pre-bankruptcy firms are significantly smaller (*SIZE*), are significantly more leveraged (*LEV*), and have a significantly lower pretax book income (*PTROA*) than the non-bankruptcy firms. We also observe that NOLs are more prevalent in pre-bankruptcy firms: 52% of non-bankruptcy firms have NOLs while 73% of pre-bankruptcy firms have NOLs. It is possible that the increase presence of NOLs will take away the incentive of pre-bankruptcy firms to engage in aggressive tax reporting. In Panel C of Table 2, we see again that the pre-bankruptcy firms are smaller (*SIZE*) and more leveraged (*LEV*) than the non-bankruptcy firms. The pre-bankruptcy firms also have a significantly lower return on asset (ROA) and earnings-to-price (EP) ratio than the non-bankruptcy firms. Panel D of Table 2 provides a detailed explanation of the variables used in the analysis.

RESULTS

Tax Reporting Aggressiveness

We begin our multivariate analysis by examining RQ1 to determine the tax reporting aggressiveness of the pre-bankruptcy firms, vis-à-vis non-bankruptcy firms. We first test RQ1 by using *DTAX* as the dependent variable. Results may be found in Panel A of Table 3. Consistent with Frank *et al.* (2009), we

Table 3: Multivariate Analysis of the Tax Reporting Aggressiveness Variables

Panel A: <i>DTAX</i>		
Independent Variable	Estimate	t Value
<i>INTERCEPT</i>	-0.0076219	-3.97***
<i>BANKRUPTCY_D</i>	0.0128885	1.69*
<i>PTROA</i>	0.1916509	56.38***
<i>NOL_D</i>	0.0236407	17.28***
<i>FOR_D</i>	-0.0034833	-2.43**
<i>LEV</i>	0.0142202	5.00***
<i>MTB</i>	0.0004098	2.15**
<i>AF_D</i>	-0.0037227	-2.51**
<i>NUM_ANALYST</i>	-0.0762192	-4.71***
<i>EM1</i>	0.0151577	4.41***
<i>EM2</i>	-0.0075685	-3.78***
<i>EM3</i>	0.0132198	1.49
<i>ΔPTCFO</i>	0.0542173	10.52***
<i>SIZE</i>	-0.0022382	-6.57***
R ²	0.077	
N	49,238	

Panel B: <i>BOOK_ETR</i>				
Independent Variable	Dependent Variable: <i>BOOK_ETR</i>		Dependent Variable: <i>CASH_ETR</i>	
	Estimate	t Value	Estimate	t Value
<i>INTERCEPT</i>	0.1026752	93.57***	0.0724850	45.68***
<i>BANKRUPTCY_D</i>	-0.1270567	-25.69***	-0.1116006	-17.85***
<i>SIZE</i>	0.0298916	129.24***	0.0225374	72.15***
<i>MVE</i>	-0.0000012	-25.52***	-0.0000007	-13.46***
<i>BM</i>	-0.0000014	-2.88***	-0.0000008	-1.48
<i>EP</i>	0.0000057	2.91***	0.0000031	1.50
<i>ROA</i>	0.0000302	2.35**	0.0000244	1.34
<i>LEV</i>	-0.0000290	-1.67*	-0.0000235	-0.96
<i>R&D</i>	-0.0000036	-0.13	0.0000105	0.33
<i>ADV</i>	0.0000172	0.08	-0.0000557	-0.12
<i>FOR_D</i>	-0.0173774	-12.81***	0.0127317	8.00***
<i>CAP</i>	-0.0000063	-1.39	-0.0000038	-0.76
<i>INV</i>	0.0001079	1.80*	0.0000837	1.00
R ²	0.100		0.064	
N	171,259		104,187	

Panel A provides results from estimating the following regression: $DTAX_{it} = \alpha_0 + \alpha_1 BANKRUPTCY_D_{it} + \alpha_2 PTROA_{it} + \alpha_3 NOL_D_{it} + \alpha_4 FOR_D_{it} + \alpha_5 LEV_{it} + \alpha_6 MTB_{it} + \alpha_7 AF_D_{it} + \alpha_8 NUM_ANALYST_{it} + \alpha_9 EM1_{it} + \alpha_{10} EM2_{it} + \alpha_{11} EM3_{it} + \alpha_{12} \Delta PTCFO_{it} + \alpha_{13} SIZE_{it} + \epsilon_{it}$, (2) The data period is from 1988-2012. *, **, and *** denotes significance at the 10%, 5% and 1% levels, respectively.

Panel B provides results from estimating the following regression: $ETR_{it} = \alpha_0 + \alpha_1 BANKRUPTCY_D_{it} + \alpha_2 SIZE_{it} + \alpha_3 MVE_{it} + \alpha_4 BM_{it} + \alpha_5 EP_{it} + \alpha_6 ROA_{it} + \alpha_7 LEV_{it} + \alpha_8 R\&D_{it} + \alpha_9 ADV_{it} + \alpha_{10} FOR_D_{it} + \alpha_{11} CAP_{it} + \alpha_{12} INV_{it} + \epsilon_{it}$, (3). The data period is from 1988-2012. *, **, and *** denotes significance at the 10%, 5% and 1% levels, respectively.

find that *PTROA*, *NOL_D*, *LEV*, *EM1* and *ΔPTCFO* are positive and significantly associated with the *DTAX* variable. We also find (along with previous research) that analyst following variables (*AF_D* and

NUM_ANALYST) are significant and negatively associated with *DTAX*. Regarding our research question, we find that *BANKRUPTCY_D* is positive and significantly associated with the tax aggressiveness measure *DTAX* at the 90% level. This suggests that pre-bankruptcy firms do indeed engage in more aggressive tax reporting, relative to non-bankruptcy firms. We augment our analysis by using alternative aggressive tax reporting measures: *BOOK_ETR* and *CASH_ETR*. Results are found in Panel B of Table 3. We find that *BANKRUPTCY_D* is significantly negative at the 99% level across both ETR measures, supporting our finding that pre-bankruptcy firms do indeed engage in more aggressive tax reporting, relative to non-bankruptcy firms. In sum, across all measures of aggressive tax reporting, we find that pre-bankruptcy firms are more aggressive with their tax reporting than non-bankruptcy firms.

Relationship between Tax and Financial Reporting Aggressiveness

We investigate RQ2 by examining whether the relationship between financial and tax reporting aggressiveness is more pronounced in firms approaching bankruptcy, vis-à-vis firms not approaching bankruptcy. Results may be found in Table 4.

Control variables are significant and in the expected direction, based upon previous research. Specifically, as outlined in Panel A, we find that *DFIN*, *PTROA*, *NOL_D*, *LEV*, *EMI* and *ΔPTCFO* are positive and significantly associated with the *DTAX* variable. Previous research has found analyst following to be significantly and negatively associated with *DTAX*. In our analysis, we find that one of the analyst following variables (*AF_D*) is significant and negatively associated with *DTAX*. In Panel B, we also find similar results to prior research. *DTAX*, *PTROA*, *NOL_D*, *LEV* and *MTB* have all been found to be positively and significantly associated with *DFIN* and we find the same results. We also find that *AF_D*, *NUM_ANALYST*, *ΔPTCFO* and *SIZE* are significant and negatively associated with *DFIN* as previous research has found.

In regards to RQ2, we find the interaction term of *DFIN* * *BANKRUPTCY_D* is positively and significantly associated with *DTAX* the dependent variable at the 99% level in Panel A. This suggests that pre-bankruptcy firms are concurrently performing aggressive tax and financial reporting. Panel B also supports this analysis by showing the alternative multivariate regression using *DFIN* as the dependent variable. In Panel B, we see a significant and positive relationship between the *DTAX* * *BANKRUPTCY_D* interaction term and the *DFIN* dependent variable at the 99% level.

SENSITIVITY TEST RESULTS

We perform several robustness tests (un-tabulated). First, we follow the procedure in Frank *et al.* (2009) by estimating *DTAX* in Equation (1) without lagged permanent differences (*LAGPERM*) and then test whether our results are sensitive to this alteration. Similar to that reported in Frank *et al.*, the revised *DTAX* measure continues to be positively and significantly related with *DFIN*. Further, the coefficients on *DTAX*BANKRUPTCY_D* and *DFIN*BANKRUPTCY_D* remain positive and significant, suggesting that removing the control for yearly effects does not change the main inference on the relationship between tax and financial reporting aggressiveness.

Second, we include the changes in tax cushion (*D_Cushion*) measure by Blouin and Tuna (2007) in our multivariate analysis. When computing the tax cushion measure, we follow the practice in Frank *et al.* by excluding the tax benefit from stock options to preserve sample size and have a meaningful cross-section and time series multivariate regression analysis. We continue to find positive and significant coefficients on *DTAX*Bankruptcy_D* and *DFIN*Bankruptcy_D* after including *D_Cushion* and *D_Cushion*Bankruptcy_D* as additional control variables.

TABLE 4: Multivariate Analysis of the Financial Reporting Aggressiveness Variables

Panel A: DTAX		
Independent Variable	Estimate	t Value
INTERCEPT	-0.0128798	-6.41***
DFIN	0.1523573	26.49***
BANKRUPTCY_D	-0.0018276	-0.24
DFIN * BANKRUPTCY_D	0.1838718	4.74***
PTROA	0.1645000	45.16***
NOL_D	0.0197498	14.00***
FOR_D	-0.0016815	-1.15
LEV	0.0121430	4.13***
MTB	0.0001920	0.99
AF_D	-0.0050209	-3.07***
NUM_ANALYST	0.0000833	0.69
EM1	0.0174713	5.00***
EM2	-0.0064181	-3.13***
EM3	0.0129804	1.46
DPTCFO	0.1127293	19.86***
SIZE	-0.0012331	-3.40***
R ²	0.096	
N	45,453	

Panel B: DFIN		
Independent Variable	Estimate	t Value
INTERCEPT	0.0144682	8.84***
DTAX	0.1008261	26.42***
BANKRUPTCY_D	0.0397753	6.40***
DTAX * BANKRUPTCY_D	0.1511811	5.32***
PTROA	0.1657976	56.57***
NOL_D	0.0244716	21.36***
FOR_D	-0.0061321	-5.13***
LEV	0.0240928	10.07***
MTB	0.0009094	5.73***
AF_D	-0.0080008	-6.01***
NUM_ANALYST	-0.0003259	-3.32***
EM1	-0.0139714	-4.91***
EM2	-0.0031122	-1.87*
EM3	-0.0055938	-0.77
ΔPTCFO	-0.3748528	-87.21***
SIZE	-0.0048953	-16.63***
R ²	0.185	
N	45,453	

Panel A, Table 4, provides results from estimating the following regression: $DTAX_{it} = \alpha_0 + \alpha_1 DFIN_{it} + \alpha_2 BANKRUPTCY_D_{it} + \alpha_3 DFIN_{it} * BANKRUPTCY_D_{it} + \alpha_4 PTROA_{it} + \alpha_5 NOL_D_{it} + \alpha_6 FOR_D_{it} + \alpha_7 LEV_{it} + \alpha_8 MTB_{it} + \alpha_9 AF_D_{it} + \alpha_{10} NUM_ANALYST_{it} + \alpha_{11} EM1_{it} + \alpha_{12} EM2_{it} + \alpha_{13} EM3_{it} + \alpha_{14} \Delta PTCFO_{it} + \alpha_{15} SIZE_{it} + \varepsilon_{it}$, (4). The data period is from 1988-2012. *, **, and *** denotes significance at the 10%, 5% and 1% levels, respectively.

Panel B, Table 4, provides results from estimating the following regression: $DFIN_{it} = \alpha_0 + \alpha_1 DTAX_{it} + \alpha_2 BANKRUPTCY_D_{it} + \alpha_3 DTAX_{it} * BANKRUPTCY_D_{it} + \alpha_4 PTROA_{it} + \alpha_5 NOL_D_{it} + \alpha_6 FOR_D_{it} + \alpha_7 LEV_{it} + \alpha_8 MTB_{it} + \alpha_9 AF_D_{it} + \alpha_{10} NUM_ANALYST_{it} + \alpha_{11} EM1_{it} + \alpha_{12} EM2_{it} + \alpha_{13} EM3_{it} + \alpha_{14} \Delta PTCFO_{it} + \alpha_{15} SIZE_{it} + \varepsilon_{it}$, (5). The data period is from 1988-2012. *, **, and *** denotes significance at the 10%, 5% and 1% levels, respectively.

CONCLUSION

Our study adds to two branches of the academic literature: pre-bankruptcy analysis and the intersection between aggressive financial reporting and aggressive tax reporting. Recent studies have investigated the relationship between financial reporting aggressiveness and pre-bankruptcy firms, but to the best of our knowledge, there has not been an examination of the tax reporting aggressiveness of pre-bankruptcy firms. Our findings suggest that pre-bankruptcy firms exhibit greater tax reporting aggressiveness than non-bankruptcy firms. As such, we shed light on the manager's decision-making process of pre-bankruptcy firms, a growing proportion of our economy. This finding may be used to caution analysts and regulators about the precision of taxable income determination in the years preceding bankruptcy filings.

We additionally find that the positive relation between financial reporting aggressiveness and tax reporting aggressiveness, as previously documented in Frank *et al.*, is stronger among pre-bankruptcy firms, vis-à-vis firms which are not approaching bankruptcy. As such, we provide greater motivation behind the economic trade-offs managers face to report high book income, and, at the same time, low book income. While increased book income and taxable income can be a “red flag” to investigators, managers facing increased pressures to survive will exhibit more aggressive reporting of both GAAP and IRC income.

It should be noted that our study is only as strong as the proxies used for aggressive reporting. While past research has vetted the proxies used herein, this does remain an inherent limitation of our findings. Further, future research may advance our study by examining specific causes of our findings. For example, it may be interesting to examine whether the increased aggressive tax reporting among pre-bankruptcy firms is more strongly aligned with the aggressive nature of managers of pre-bankruptcy firms, vis-à-vis non-bankruptcy firms, or the need to increase cash flow. How, if at all, does the proximity to fundraising impact the tax aggressive reporting of pre-bankruptcy firms? We leave it to future research to propel this discussion forward.

REFERENCES

- Badertscher, B., J. Phillips, M. Pincus, and S. Rego. 2009. Earnings management strategies and the trade-off between tax benefits and detection risk: To conform or not to conform? *The Accounting Review*, Vol. 84(1): 63-97.
- Blouin, J. and I. Tuna. 2007. Tax contingencies: Cushioning the blow to earnings? Working paper, University of Pennsylvania.
- Boynton, C., P. DeFilippes, and E. Legel. 2005. Prelude to Schedule M-3: Schedule M-1 corporate book-tax difference data 1990–2003. Proceedings of the Annual Conference on Taxation, 131–137. Washington, D.C.: National Tax Association–Tax Institute of America.
- Chen, S., X. Chen, Q. Cheng. And T. Shevlin. 2010. Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, Vol. 95(1): 41-61.
- Erickson, M., M. Hanlon and E. Maydew. 2004. How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *The Accounting Review*, Vol. 79(2): 387-408.
- Frank, M., L. Lynch, and S. Rego. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review*, Vol. 84(2): 467-496.

- García Lara, J. M., B.G. Osma, and E. Neophytou. 2009. Earnings quality in ex-post failed firms. *Accounting and Business Research* Vol. 39(2): 119-138.
- Graham, J., M. Hanlon, T. Shevlin and N. Shroff. 2014. Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review*, Vol. 89(3):991-1023.
- Hanlon, M. 2005. The persistence and pricing of earnings, accruals, and cash flows when firms have large book-tax differences. *The Accounting Review* 80 (1): 137-166.
- Hanlon, M. and S. Heitzman. 2010. A review of tax research. *Journal of Accounting and Economics*, Vol. 50(2-3): 127-158.
- Heltzer, W. 2009. Conservatism and book-tax differences. *Journal of Accounting, Auditing & Finance* 24(3): 469 – 504.
- Jaggi, B. and P. Lee. 2002. Earnings management response to debt covenant violations and debt restructuring. *Journal of Accounting, Auditing and Finance*, Vol. 17(4): 295-324.
- Lennox, C., P. Lisowsky and J. Pittman. 2013. Tax aggressiveness and accounting fraud. *Journal of Accounting Research*, Vol. 51(4): 739-778.
- Phillips, J., M. Pincus, and S. Rego. 2003. Earnings management: New evidence based on deferred tax expense. *The Accounting Review* 78 (2): 491-521.
- Noga, T. and A. Schnader. 2013. Book-tax differences as an indicator of Financial Distress. *Accounting Horizons*, Vol. 27(3): 469-489.
- Rego, S. and R. Wilson. 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research*, Vol. 50(3): 775-810.
- Rosner, R. 2003. Earnings manipulation in failing firms. *Contemporary Accounting Research* 20(2) 361 – 408.
- Saleh, N. and K. Ahmed. 2005. Earnings management of distressed firms during debt renegotiations. *Accounting and Business Research*, Vol. 35(1): 69-86.
- Summers, L. 2000. Tackling the growth of corporate tax shelters. U.S. Department of Treasury. Available at <http://www.treasury.gov/press-center/press-releases/Pages/ls421.aspx>.
- Wilson, R. 2009. An examination of corporate tax shelter participants. *The Accounting Review* 84 (3): forthcoming.

BIOGRAPHY

Dr. Wendy Heltzer is an associate professor at DePaul University. She received her B.S. in Economics from the Wharton School at the University of Pennsylvania, and her M.B.A. and Ph.D. from the Booth School of Business at the University of Chicago. She has published papers in the *Journal of Accounting, Auditing & Finance*, *Advances in Accounting*, *Managerial Auditing Journal*, and *The CPA Journal*.

Dr. Mary Mindak is an assistant professor at DePaul University. She graduated from Miami University with a B.S. in Accountancy in 1999 and a Masters of Accountancy in 2000. She attended the University

of Cincinnati and achieved her Ph.D. in 2009. She has published in the *Issues in Accounting Education*, *Research in Accounting Regulation*, *Managerial Auditing Journal*, the *Journal of Accounting, Ethics and Public Policy*, the *CMA Magazine* and *The CPA Journal*.

Dr. Mingjun Zhou is an assistant professor at DePaul University. He received his Bachelor of Economics degree from East China Normal University, a university diploma from Université du Littoral in Dunkirk, France. He then graduated with a Master of Accountancy from Truman State University and earned his Ph.D. from Texas Tech University in 2009. He has published in *Public Finance Review*, *Review of Business of Information Systems*, *Research in Accounting Regulation*, the *Journal of Accounting, Ethics and Public Policy*, the *Journal of Applied Business Research* and *Accounting and Taxation*.

DEBT REPAYMENT CAPACITY OF LOCAL GOVERNMENT SECTOR IN POLAND DURING THE 2008-2013 ECONOMIC SLOWDOWN PERIOD

Krzysztof Kluza, Warsaw School of Economics (SGH)

ABSTRACT

The crisis, which began in 2008, had a negative impact on the financial condition of local governments across the European Union. In Poland, the debt of the local government sector increased from 2.3% of GDP in 2008 to 4.2% of GDP in 2013. The growing indebtedness influenced the scope of countercyclical policies of local governments. At present, such policies appear as hardly sustainable in the context of future debt repayments and the required deleveraging process. The paper shows simulations concerning the ability of local governments to service their accumulated debt. In a moderately optimistic scenario when there is no new borrowing, over 25% of local governments will need more than 15 years to repay their existing debts. Although in 2013 the financial indicators showed sufficient space for debt servicing for 95% of local governments, the sector remains highly vulnerable to future adverse scenarios. The use of random sampling computational algorithms (Monte Carlo method) applied to the local government financial ratios based on free operating cash flow and net debt confirms the sector's negative credit risk exposure. Even modestly adverse scenarios show that ca. 20% of local governments will reach alarmingly low levels of their debt service indicators in the near future. The larger municipalities appear to be the local government subcategory with the highest credit risk exposure.

JEL: C15, H72, H74, R50

KEYWORDS: Local Governments, Local Government Risk, Debt Repayment Capacity, Monte Carlo Method

INTRODUCTION

The crisis which began in 2008 had a negative impact on the financial condition of local governments (LGs) across the European Union. Their debt/GDP ratio grew from an average of 5.5% in 2008 to 7.7% in 2013. The adverse economic environment influenced in a negative way the financial standing of LGs and their ability to repay existing debts. As a result, some LGs may encounter difficulties in providing public services. This situation may hinder future economic growth from three basic perspectives: investment demand decrease, fiscal consolidation negative side effects and growth of credit risk and financial costs.

This paper investigates the ability of Polish local governments to repay their debts as well as their vulnerability to adverse economic scenarios. It shows LGs' credit risk exposure across different LGs' subcategories. The paper is organized in a following way. Firstly, there is a brief literature overview related to the topic. Secondly, the data and methodologies used in the research are described. Then, the research is presented, split in two parts. The first part is devoted to assessment of financial standing of LGs both from the perspective of statutory ratios and financial ratios based on operating surplus. It shows also a time horizon required to repay existing debts by specific LG subcategories. The second part of the research presents the simulations of LGs risk profile changes under specific scenarios. These involve different

patterns of changes in their revenues and expenses. The modelling is conducted with the use of the Monte Carlo method, developed by Metropolis and Ulam (1949).

LITERATURE REVIEW AND BACKGROUND

Several pieces of research shows that LGs' spendings have relatively high productivity (Blöchliger 2013), (Blöchliger, Égert 2013), (Fredriksen 2013) and thus effectively support economic growth. However, the historically high levels of LG investments became no longer sustainable – in relation to GDP they already dropped from 2.0% in 2009 to 1.6% in 2013, i.e. the lowest level since 2005. In addition, the current situation may require the implementation of stricter fiscal consolidation policies. The debate on how to implement fiscal consolidation to favor long-term growth is ongoing. The impact of fiscal policy tightening on growth is analyzed in (Barrell et al. 2012). It shows the possible adverse impact of fiscal consolidation on growth in the short-term horizon. Macroeconomic risks associated with deleveraging, including their impact on consumption, are modelled in (Eggertsson, Krugman 2012). There is also indicated a risk that increased productivity can reduce output in the case of the deleveraging process. Flaws of the fiscal austerity model for municipalities as a response to the crisis are shown (Peck 2014) and (Donald et al. 2014).

The economic slowdown also worsened the risk profile of local governments (Vammalle, Hulbert 2013). Since 2010, the local government sector in the European Union countries has experienced an overall decrease of its productivity, accompanied by a relative deterioration of its financial standing (Kluza 2014). This research further investigates the consequences of economic slowdown on the LG ability to service their current debt burden. Firstly, it conducts analysis of the financial standing of Polish LGs from the corporate finance perspective. That includes the calculation of ratios based on free operating cash flow, which are seldom considered by public sector entities. The constructed risk measures are based on (Palepu et al. 2004, ch. 9 and 14) and (Jajuga 2009) as well as (Peterson 1998), who describes a dedicated approach to measure and manage LG credit risk. The research also presents assessment of existing debt repayment capacity of LGs in Poland.

Simulations of changes in financial parameters are often conducted with the Monte Carlo method. This method is employed inter alia for estimating the value of real estate investments (Kelliher, Mahoney, 2000), risk of investments projects (Pawlak, 2012), valuation of companies (Białas 2012) as well as public sector policies evaluation for example in health care sector (CP Yeh et al. 2014). The method has also vast application in the banking sector in credit risk assessment (Chyliński, 1999). The method involves random sampling of variables representing probability distributions for particular financial parameters. In this research, it allows us to measure future changes of debt repayment capacity for LGs and their vulnerability to certain parameters.

DATA AND METHODOLOGY

The analysis encompasses all local governments (LGs) in Poland, i.e. 2,809 entities: rural boroughs (RB), municipal-rural boroughs (MRB), municipal boroughs (MB), towns with county rights (TWCR), counties and provinces. All data about Polish LGs used in this research comes from the BESTI@ system run by the Ministry of Finance of Poland. Data regarding the European Union countries comes from the Eurostat online database. Note that the analyzed debt of LGs does not include the liabilities of LGs' public health care entities which amounted to PLN 3.9 bn at the end of 2013 as well as liabilities of cultural entities and similar institutions (PLN 0.5 bn). Including these contingent liabilities in LG debt would raise the debt/revenue ratio in 2013 from 37.7% to 40.1% (without increasing the denominator by the revenues of these entities). The debt ratios also do not include the debt of utilities and other municipal companies which are separate legal entities.

Simulations of changes in the financial standing of LGs were carried out with the Monte Carlo method. A detailed description of the method and its vast applications can be found, for example, in (Hendry, 1984) and (Niemi, 2013). In short, the method, instead of solving a numerical problem, is based on estimating a solution with the use of a random variable. The variable is chosen n times in a series of independent drawings. With the increasing number of repetitions, an obtained solution tends to be an effective estimator of a mean of simulated phenomenon. The random numbers used in simulations should reflect a relevant distribution consistent with the properties of the analyzed process. Calculations for the Monte Carlo method were conducted with Microsoft Excel 2010 and Microsoft Visual Basic for Applications 7.0. Random numbers were generated with the Excel RAND function (pseudorandom number generator).

ASSESSMENT OF FINANCIAL STANDING OF LOCAL GOVERNMENTS IN POLAND

During the recent economic slowdown, the debt of the local government sector in Poland increased from PLN 28.8 bn in 2008 to PLN 69.2 bn in 2013 with an annual growth rate (CAGR) of 19%. In relative terms, it grew from 2.3% of GDP in 2008 to 4.2% of GDP in 2013. This was a result of systematic factors such as a slowdown of revenue growth combined with an increased amount of carried out commissioned tasks as well as individual policies of each entity in both cost management and implementation of environmental and infrastructural projects.

Polish local governments implemented vast countercyclical policies. Their direct investments amounted on average to 13% of total investment in the Polish economy in the 2008-2013 period. However, the peak stage of investment spending took place in the 2009-2010 period with their 3.2% share in GDP. In 2013, LG investments dropped to 2.1% of GDP, the lowest for the last eight years. This trend confirms that former sizable investment policies of LGs appeared to be unsustainable in the context of servicing the accumulated debt burden. Higher debt is typically associated with increased credit risk. The standard approach to evaluate LG sector risk is by using the gross debt to total revenue ratios – see Table 1. However, such an approach delivers little information on debt repayment capacity.

Table 1: Ratio of Gross Debt to Total Revenues for Local Governments in Poland

	2008	2009	2010	2011	2012	2013	CAGR 2008-2013
MB	19.9%	26.7%	33.3%	36.5%	36.3%	35.0%	13.3%
MRB	19.2%	25.2%	33.2%	37.4%	36.4%	35.4%	12.0%
RB	14.5%	18.3%	26.6%	30.8%	29.5%	28.7%	13.0%
TWCR	25.8%	37.2%	43.5%	49.4%	48.3%	48.0%	14.6%
Counties	15.9%	19.5%	24.2%	26.1%	26.5%	25.5%	13.2%
Provinces	18.1%	15.6%	30.4%	36.9%	40.1%	41.1%	9.9%
Poland	20.2%	26.0%	33.8%	38.4%	38.2%	37.7%	17.8%

This table shows the growth of indebtedness of Polish LGs since 2008. The highest debt to revenue ratio persists in the towns with county rights
 Source: (Kluza, 2013) updated

For the purpose of the LG financial standing assessment, two alternative indicators are proposed in this paper. They take into account the operating flows in LGs. They could be calculated using official budgetary reports presented by LGs as at the end of each quarter, LGs in Poland are obliged to prepare comprehensive financial statements such as RbNDS (the report on revenues, expenditures and financing flows), RbN (receivables), RbZ (liabilities), Rb27S (detailed revenues), Rb28S (detailed expenditures) etc. To allow exact reference, the formulas are also described with the use of this notation.

a. EBITDA / Gross Interest (EBITDA/GI ratio)

$$\frac{EBITDA}{Gross\ Interest} = \frac{RbNDS,A1 - RbNDS,B1 + Rb28S,par.801_806_807_808_809_811_812_813_814}{Rb28S,par.801_806_807_808_809_811_812_813_814} \quad (1)$$

Note, that in the case of LGs, EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization) is equal to EBIT (Earnings before Interest and Taxes) since LG reporting in Poland is based on a cash basis. The typical warning signal is generated if this indicator is below the value of 2.0 for a given entity. Values below 1.0 show alarmingly low debt service capacity, approaching Ponzi-schemes.

b. FOCF / Net Debt (FOCF/ND ratio)

$$\frac{FOCF}{Net\ Debt} = \frac{RbNDS,A1-RbNDS,B1+Rb28S,par.801_806_807_808_809_811_812_813_814}{RbZ,E-(RbN,N1+RbN,N3)} \quad (2)$$

In this indicator, the net debt should include only interest bearing liabilities. FOCF (Free Operating Cash Flow) is the equivalent of operating surplus as defined in par. 242 of Public Finance Law excluding accumulated historical budget surpluses, if any. For financially sound entities this indicator should amount to at least 20%. Indicators based on total debt service (encompassing both principal and interest payments), e.g. debt service to recurring revenues as proposed by (Peterson 1998), are not recommended due to the high level of refinancing loans and bonds each year by LGs in Poland. As a result, such indicators are highly distorted.

Table 2: Alternative Financial Ratios for the Local Government Sector

	2008	2011	2013
EBITDA/GI	13.76	4.94	5.96
% of LGs with EBITDA/GI below 2.0	5%	16%	5%
FOCF/ND	1.75	0.27	0.31
% of LGs with FOCF/ND below 0.2	7%	36%	21%
Net debt / total revenues	7.7%	29.3%	30.3%

This table shows weakening financial position of Polish LGs since 2008 from the perspective of debt service and related indicators.

The indicators in Table 2 show that the worst financial situation of Polish LGs was in 2011. Although in 2013 there was some improvement of indicators based on operational surpluses, yet the free resources of LGs were systematically reduced as the net debt grew, and in 2013 for the first time it exceeded 30% of their revenues. In addition, the improvement between the years 2011 and 2013 was to a large extent the effect of a drop in market interest rates. In 2011, the average WIBOR 1M rate amounted to 4.37% compared to 3.04% in 2013, which had a direct impact on EBITDTA/GI ratios.

The financial standing of LGs strongly differs between LG subcategories as presented in Table 3 below. Notably, the rural boroughs, which hold relatively low debt as well as adequately large operating surpluses to service it, have the best risk profile. The second subcategory of LGs with a relatively safe financial situation are the provinces. Like the rural boroughs, they have large operational surpluses compared to debt service levels. Data shows that TWCR have the worst financial standing among LGs from the perspective of debt service capacity. Their ND/R ratio already reached 40% in 2013 and their average FOCF/ND ratio is dangerously low – for the last four years it has fluctuated around the 20% level. As a result, more than half of TWCR do not exceed the 0.2 threshold regarded as a safe level for the FOCF/ND ratio. Moreover, 17% of TWCR have an EBITDA/GI ratio below 2.0.

The accumulated debt may be repaid by LGs with either operational surpluses or sale of fixed assets. The analysis of LGs' financial reports and long-term financial plans reveals that numerous LGs will not be able to repay fully their debts within a 15-year time horizon based on their current historical financial flows. Indirectly, this confirms that LGs need to diminish their investment activities. The results of this debt repayment simulation are presented in Table 4 and Table 5. In the very optimistic scenario, it is assumed that each entity will spend its total annual operating surplus and proceedings from sales of fixed assets on debt repayments and, in addition, it will not borrow any new debt. In the more realistic scenario, it is assumed that 40% of these resources will be spent on debt repayment and there will be no new borrowing.

For both scenarios, the annual operating surpluses and sales of assets are calculated as an average from the 2011-2013 values.

Table 3: Financial Standing Changes – Break Down by Local Government Subcategories

	2008	2011	2013	2008	2011	2013
	TWCR (65 entities)			RB (1571 entities)		
EBITDA/Gross Interest	10.39	3.42	4.33	24.06	7.84	10.05
% of LGs with EBITDA/GI below 2.0	3%	22%	17%	3%	14%	2%
FOCF/Net Debt	0.90	0.18	0.21	11.58	0.44	0.59
% of LGs with FOCF/Net Debt below 0.2	5%	62%	57%	5%	32%	15%
	MB (241 entities)			Counties (314 entities)		
EBITDA/Gross Interest	14.10	4.46	5.57	6.69	5.23	5.71
% of LGs with EBITDA/GI below 2.0	8%	22%	10%	15%	12%	9%
FOCF/Net Debt	2.15	0.25	0.30	1.58	0.39	0.35
% of LGs with FOCF/Net Debt below 0.2	8%	44%	31%	13%	25%	26%
	MRB (602 entities)			Provinces (16 entities)		
EBITDA/Gross Interest	14.33	5.05	6.50	32.77	7.52	7.20
% of LGs with EBITDA/GI below 2.0	4%	20%	5%	0%	6%	0%
FOCF/Net Debt	1.54	0.27	0.34	-	0.43	0.35
% of LGs with FOCF/Net Debt below 0.2	8%	44%	26%	0%	12%	12%

This table shows that financial standing is strongly differentiated among specific LG subcategories. The rural borough are the most sound subcategory. The towns with county rights and the municipal boroughs have the most inferior risk profile.

Even in the very optimistic scenario regarding budgetary policy of individual entities, it turns out that 112 LGs will require more than 15 years to repay their gross debts. This group is over-represented by the counties. Switching to the more realistic scenario (with 40% of free financial resources spent on debt repayment), reveals that over 600 Polish LGs, including 50% of towns with county rights, would not be able to repay their debt in the 15-year horizon.

Table 4: Minimal Period Required to Repay Existing Debts – the ‘Very’ Optimistic Scenario (100% of Annual Operating Surplus and Proceedings from Sale of Assets Spent on Debt Repayment and No New Borrowing)

	No. of LGs	Below 3 years	3-5 years	5-10 years	10-15 years	15-20 years	Above 20 years
MB	241	32%	29%	30%	6%	2%	1%
MRB	602	33%	28%	28%	8%	2%	2%
RB	1571	50%	23%	21%	4%	2%	2%
TWCR	65	12%	28%	45%	11%	2%	3%
Counties	314	37%	24%	24%	8%	2%	6%
Provinces	16	31%	44%	25%	0%	0%	0%
Poland	2809	42%	25%	24%	5%	2%	2%

Table 5: Min. Period Required to Repay Existing Debts – The Moderately Realistic Scenario (40% of Annual Operating Surplus and Proceedings from Sale of Assets Spent on Debt Repayment and No New Borrowing)

	No. of LGs	Below 3 years	3-5 years	5-10 years	10-15 years	15-20 years	Above 20 years
MB	241	7%	10%	33%	20%	13%	17%
MRB	602	10%	10%	28%	20%	13%	18%
RB	1571	19%	14%	29%	17%	9%	12%
TWCR	65	2%	5%	18%	25%	23%	28%
Counties	314	14%	9%	27%	16%	11%	23%
Provinces	16	6%	0%	44%	38%	13%	0%
Poland	2809	15%	12%	29%	18%	11%	15%

The Table 4 and Table 5 present the results of static simulation. They show how many years are required to repay existing debts by specific LGs subcategories under two distinctive scenarios. The simulations prove that the weakest operational surplus is in 6% of the counties, and in fact these entities are close to insolvency. In addition, the towns with county rights are strongly vulnerable to adverse scenario changes.

MONTE-CARLO SIMULATIONS OF DEBT SERVICE INDICATORS FOR LGs

The above analyses show that several local governments have a relatively constrained financial standing at the end of 2013. The important question is how their situation may change with different future economic scenarios. This could be modelled with Monte Carlo simulations. In this research, triangular distributions of variables were implemented in the simulations. Such distributions are preferred in simulating many phenomena in finance and risk areas due to their natural easiness of reflecting scenarios for which there are predicted both the asymmetric changes of variables and the most likely outcome (Chyliński, 1999). A triangular distribution is a continuous probability distribution with a probability density function shaped like a triangle. It is defined by three values: the minimum value (*min*), the maximum value (*max*), and the peak value (*mode*), where $min \leq mode \leq max$.

The probability density function is defined as:

$$f(x) = \begin{cases} \frac{2(x-min)}{(max-min)(mode-min)} & , \quad min \leq x < mode \\ 1 - \frac{2(max-x)}{(max-min)(max-mode)} & , \quad mode \leq x \leq max \end{cases} \quad (3)$$

The cumulative distribution function is defined as:

$$F(x) = \begin{cases} \frac{(x-min)^2}{(max-min)(mode-min)} & , \quad min \leq x < mode \\ 1 - \frac{(max-x)^2}{(max-min)(max-mode)} & , \quad mode \leq x \leq max \end{cases} \quad (4)$$

For the purpose of conducting the simulations, the inverse function of the cumulative distribution function is used. It has a form as follows:

$$F^{-1}(P) = \begin{cases} min + \sqrt{P(max-min)(mode-min)} & , \quad P < \frac{mode-min}{max-min} \\ max - \sqrt{(1-P)(max-min)(max-mode)} & , \quad P \geq \frac{mode-min}{max-min} \end{cases} \quad (5)$$

In the simulations P is drawn randomly from the $<0, 1>$ uniform distribution. In the case of the Monte Carlo method it is also important to determine the adequate number of iterations. The method assesses the estimation error based on the number of repetitions. So using the standard equation for the total error ($\varepsilon = \frac{3\sigma}{\sqrt{N}}$), where σ is the standard deviation of the random variable and N is the number of repetitions it is possible to derive the minimal required number of repetitions for a specific error level. For the triangular distribution the variance (σ) and the mean (\bar{x}) are defined as:

$$\bar{x} = \frac{min+mode+max}{3}, \quad \sigma = \frac{min^2+mode^2+max^2+min\cdot mode+min\cdot max+mode\cdot max}{18} \quad (6)$$

The distributions analyzed in this paper are generally within the range $<80\% \cdot mode; 140\% \cdot mode>$. That brings the required number of iterations to $N = 49$ for 5% expected value error, $N = 308$ for 2% expected value error or $N = 1230$ for 1% expected value error. Since this research is devoted to depicting some general trends in credit standing changes for local governments, it does not require the top precision (i.e. a very high number of iterations) which is time and capacity consuming. However, 50 iterations may not adequately reflect the desired distribution. To find an acceptably small value for the number of iterations there were conducted goodness of fit tests (χ^2) - the 5000-iteration distribution was compared with the distributions obtained with fewer iterations. The results of the tests, presented in Table 6, demonstrate that

50-iteration distribution is close to significant difference from a model distribution (5000 iterations): p -value 0.078, thus it does not have the properties of a desired triangular distribution. Increasing the number of iterations to 100 significantly increases certainty that the obtained distribution is not statistically different from the model distribution (p -value 0.222). As a result, all simulations of local government financial ratios were conducted with 100 drawings of the random variable.

Table 6: The Results of Goodness of Fit Tests (χ^2) between the Model Distribution (5000 Iterations) and Distributions Obtained with Smaller Number of Iterations

5000-iteration distribution compared to:	χ^2 statistics	p -value
50-iteration distribution	15.52	0.0777
100-iteration distribution	11.84	0.2224
200-iteration distribution	7.70	0.5645

Note: all analyzed distributions have the same parameters, i.e. $mode = 100$ and the range: $\langle 80\% \cdot mode; 140\% \cdot mode \rangle$. Degrees of freedom = 9. This table shows that 50 iterations in the Monte Carlo simulation may not be adequate to obtain an adequate triangular distribution. The proper number of iterations should amount to 100.

The Monte Carlo simulations were run for four financial categories: operating revenues, operating expenses (excl. debt service expense), debt service expenses, cash and cash equivalents (balance sheet category). Based on the simulation results, the ratios of $EBITDA/GI$ and $FOCF/ND$ were calculated for the next year. The simulated financial categories are independent from each other. In practice, some indirect dependence takes place between operating revenues and operating expenses, as decision makers take into consideration operating deficit among other key indicators during a budgeting process. However, the interdependence of these two categories is not strict since usually a larger proportion of expenses is fixed (in nominal terms or as indexed categories) compared to revenues, which are more flexible and subject to current managerial and political decisions.

Table 7 shows assumptions for each scenario. The basic scenario is relatively conservative, leading to an improved financial standing of local governments compared to the previous year. Other scenarios assume more relaxed spending policy of local governments, although the growths of expenses are also relatively modest, within realistic ranges. In addition, all scenarios assume a decrease of debt service costs, which reflects the current cycle of interest rates drops in Poland. The simulations for the scenarios in Table 7 were conducted for each local government in Poland. As a result 2 809 000 observations were obtained (for ratios $EBITDA/GI$ and $FOCF/ND$).

Table 7: Scenario Assumptions for Monte Carlo Simulations

	1. Basic scenario			2.A Scenario			2.B Scenario		
	<i>min</i>	<i>mode*</i>	<i>max</i>	<i>min</i>	<i>mode*</i>	<i>max</i>	<i>min</i>	<i>mode*</i>	<i>max</i>
Operating revenues	-10%	100	20%	-10%	100	20%	-10%	100	20%
Operating expenses (excl. debt service expenses)	-10%	100	20%	-10%	100	25%	-10%	100	33%
Debt service expenses	-10%	100	5%	-10%	100	5%	-10%	100	5%
Cash and cash equivalents	-20%	100	10%	-20%	100	10%	-20%	100	10%
	3.A Scenario			3.B Scenario					
	<i>min</i>	<i>mode*</i>	<i>max</i>	<i>min</i>	<i>mode*</i>	<i>max</i>			
Operating revenues	-10%	100	20%	-10%	100	20%			
Operating expenses (excl. debt service expenses)	-10%	102	20%	-10%	102	28%			
Debt service expenses	-10%	100	5%	-10%	100	5%			
Cash and cash equivalents	-20%	100	10%	-20%	100	10%			

* $mode = 100$ denotes using as a mode the value from the previous year for the given financial category; $mode = 102$ denotes using as a mode the value from the previous year increased by 2%.

Note: *min* and *max* parameters are presented as % difference from mode value.

This table contains comparison of parameters for the simulations. The difference between scenarios is only in the operating expenses category.

The summary of simulation results is in Table 8. There are presented proportions of local governments which exceed warning levels for *EBITDA/GI* and *FOCF/ND* indicators. The warning levels of 2.0 and 0.2 for *EBITDA/GI* and *FOCF/ND*, respectively, are typical thresholds which, in the case of commercial entities, indicate high risk of non-repayment of the existing debt. However, in the case of public sector entities, which by definition do not face market risk and have legislative instruments to secure additional revenues, these levels are rather of an indicative nature, showing the overall financial strength of the sector. Thus, as it is presented in Table 8, even with modestly negative scenarios, like Scenario 2B and 3B, there will be created noticeable financial strains in ca. 40% of local governments.

The alarming levels for *EBITDA/GI* and *FOCF/ND* ratios amount to 1.0 and 0.1 respectively. As the Monte Carlo simulations show such levels may be crossed by 10%-20% of local governments, depending on the scenario. Comparing this with the current proportion amounting to ca. 2%-4%, the analysis indicates the potential for a deep credit risk deterioration of the local government sector in Poland. Comparison between the *EBITDA/GI* ratio distributions in the scenarios is presented in Figure 1. As the simulations reveal, for the 20th percentile the *EBITDA/GI* ratio is more than 2.5 times lower in Scenario 2B and 3B than in the basic scenario.

This indicates a high vulnerability of local governments with a currently weak financial standing to any adverse changes in their budgets. The adverse changes may be caused by, for example, interest rates increases, future macroeconomic slowdown, growth of local unemployment, increased local migrations or similar and quite likely events.

Table 8: Results of Monte Carlo Simulations for All Local Governments

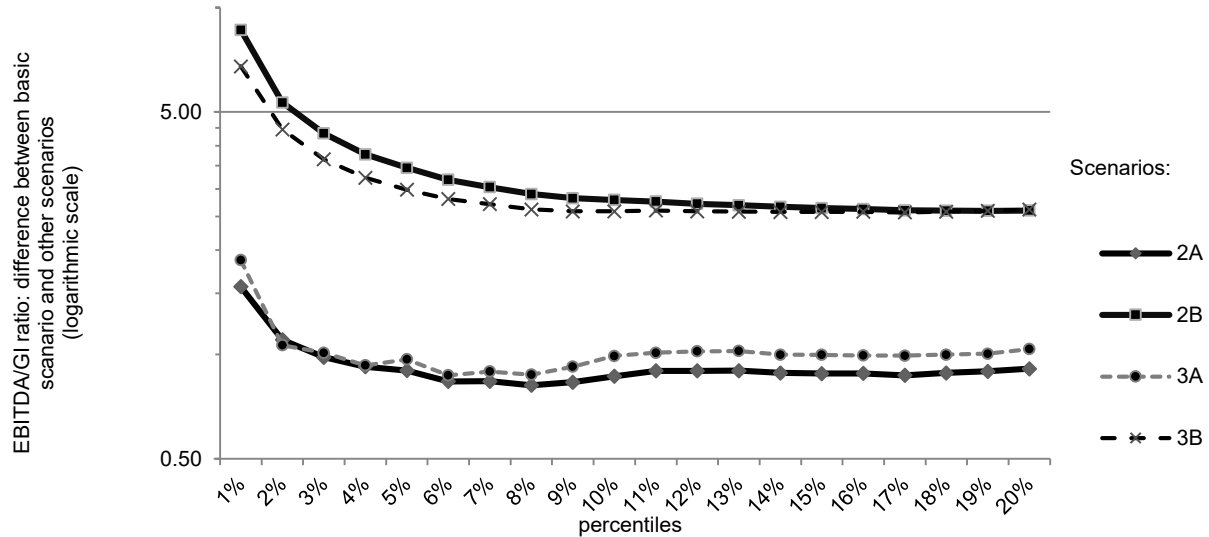
% of all LGs	EBITDA/GI				FOCF/ND			
	ratio below 1.0	hitting the 1.0 barrier	ratio below 2.0	hitting the 2.0 barrier	ratio below 0.1	hitting the 0.1 barrier	ratio below 0.2	hitting the 0.2 barrier
Initial situation (real data for 2013)	1.4%	-	4.7%	-	4.8%	-	21.0%	-
1. Basic scenario	1.4%	1.4%	4.3%	4.7%	4.8%	6.1%	20.2%	25.6%
2.A Scenario	3.6%	10.0%	9.0%	17.8%	9.7%	17.4%	28.4%	35.2%
2.B Scenario	12.5%	22.2%	53.4%	62.3%	23.4%	59.9%	43.2%	70.7%
3.A Scenario	4.0%	4.4%	10.4%	11.1%	10.6%	13.3%	29.7%	35.4%
3.B Scenario	13.8%	39.1%	23.5%	48.9%	25.0%	47.0%	44.0%	60.8%

This table shows the results of the Monte Carlo simulations for all analyzed scenarios. The "hitting the barrier" ratios indicate the percentage of entities which have in their ratio simulated distributions at least one observation below the indicated ratio level. Although the average value of a given ratio for such entities may be above the warning level, there exists a perceptible probability that a specific scenario may end up for them with falling below the warning level. The simulations show that in the scenarios 2B and 3B ca. 40% of LGs may reach alarmingly low levels.

Note: the statistics are shown for the mean values of each entity's distribution.

The weakest financial standing is exhibited by TWCRs. These major municipalities are highly vulnerable to even mildly negative scenarios such as Scenario 2A and 3A. One third of them may have the analyzed indicators at alarming levels, regardless of the simulated scenario, and in the future they will require implementation of austerity plans or similar budgetary policies. Although this category consists of only 65 entities out of 2809 local governments, it covers 33% of Poland's population and 35% of all local government revenues. Thus, financial troubles of the towns with county rights may create systemic problems for the whole public sector. The simulation results for TWCR are shown in Table 9.

Figure 1: Comparison of EBITDA/GI Ratio between Basic Scenario and the Other Scenarios. Distribution of Results for the First 20 Percentiles



This figure shows differences between scenarios in the first 20 percentiles for total LG population. The comparison is presented for the simulated mean values of EBITDA/GI ratios.

Table 9: Results of Monte Carlo Simulations for the Towns with County Rights

% of All LGs	EBITDA/GI				FOCF/ND			
	Ratio below 1.0	Hitting the 1.0 Barrier	Ratio below 2.0	Hitting the 2.0 Barrier	Ratio below 0.1	Hitting the 0.1 Barrier	Ratio Below 0.2	Hitting the 0.2 Barrier
Initial situation (real data for 2013)	5%	-	17%	-	14%	-	57%	-
1. Basic scenario	3%	5%	17%	17%	14%	20%	55%	63%
2.A Scenario	12%	23%	25%	45%	32%	43%	65%	74%
2.B Scenario	29%	78%	51%	86%	55%	88%	82%	89%
3.A Scenario	14%	17%	29%	31%	34%	40%	65%	78%
3.B Scenario	32%	68%	52%	77%	58%	75%	82%	88%

This table shows the results of the Monte Carlo simulations for the towns with county rights. TWCRs' vulnerability to adverse economic scenarios is much bigger than in the case of other LG subcategories – see Table 8 for comparison.

CONCLUDING COMMENTS

The recent economic crisis had a negative influence on the financial standing of local governments. This paper investigates its impact on local governments' ability to repay the debts, which they accumulated as a result of their anticyclical policies during the economic slowdown. The analysis encompasses all local governments in Poland for the 2008-2013 period. The evaluation of their financial soundness is performed with the financial ratios based on operating surplus as well as the Monte Carlo simulations.

The research shows that over 25% of local governments in Poland will need more than 15 years to repay their debts even under relatively optimistic assumptions. Additionally, the conducted Monte Carlo simulations of the financial ratios based on free operating cash flow and net debt show that the sector remains highly vulnerable to future adverse scenarios such as an increase of operating expenses. Depending on the scenario, ca. 20% of Polish local governments cross significantly the warning levels for their EBITDA/GI and FOCF/ND ratios. The towns with county rights are the most unsafe entities from the credit risk perspective.

Weak operating surpluses combined with negative credit risk exposure indicate that local governments in Poland will not be able to continue their active investment policies which they carried out in the 2009-2012 period and the process of deleveraging is required. In addition, some local government categories like major municipalities may become a burden for central budget finances in the case of further negative macroeconomic shocks. This indicates a need of further research focused on both budgetary rules securing adequate financing for local governments as well on developing legal framework for municipal debt restructuring policies.

REFERENCES

Barrell R., Holland D., Hurst I. (2012) "Fiscal Consolidation: Part 2. Fiscal Multipliers and Fiscal Consolidations", *OECD Economics Department Working Papers*, OECD Publishing, No. 933.

Białas M. (2012) "Wykorzystanie symulacji Monte Carlo do wyceny przedsiębiorstwa metodą APV." *Zarządzanie i Finanse*, No. 4.1, pp. 23-35.

Blöchliger H. (2013) "Decentralisation and Economic Growth - Part 1: How Fiscal Federalism Affects Long-Term Development", *OECD Working Papers on Fiscal Federalism*, OECD Publishing, No. 14.

Blöchliger H., Égert B. (2013) "Decentralisation and Economic Growth - Part 2: The Impact on Economic Activity, Productivity and Investment", *OECD Working Papers on Fiscal Federalism*, OECD Publishing, No. 15.

Hendry D. (1984) "Monte Carlo experimentation in econometrics" in "Handbook of Econometrics", vol. II, (eds.) Z. Griliches, M.D. Intriligator, Elsevier Science Publishers BV, pp. 937-976.

Chyliński A. (1999) „Metoda Monte Carlo w bankowości”, Twigger SA, Warszawa.

Donald B., Glasmeier A., Gray M., Lobao L. (2014) "Austerity in the city: economic crisis and urban service decline?", *Cambridge Journal of Regions, Economy and Society*, No. 7.

Eggertsson B., Krugman P. (2012) "Debt, Deleveraging and the Liquidity Trap: a Fisher-Minsky-Koo Approach", *The Quarterly Journal of Economics*, p. 1469-1513.

Fredriksen K. (2013) "Decentralisation and Economic Growth - Part 3: Decentralisation, Infrastructure Investment and Educational Performance", *OECD Working Papers on Fiscal Federalism*, OECD Publishing, No. 16.

Jajuga K. (ed.) (2009), „Zarządzanie ryzykiem [*Risk management*]”, PWN, Warszawa.

Kelliher C. F., L. S. Mahoney (2000) „Using Monte Carlo simulation to improve long-term investment decisions”, *The Appraisal Journal*, Vol. 68, No. 1, pp. 44-56

Kluza K. (2013) „Przestrzenne zróżnicowanie zadłużenia jednostek samorządu terytorialnego w latach 2007-2012”, *Człowiek i Środowisko. Man and Environment*, no. 1-2/2013, Vol. 37, pp. 51-82.

Kluza K. (2014) „Impact of the economic slowdown on local government investments, debt and productivity in the EU countries”, *Journal of Economics and Management*, no. 18/2014.

Metropolis N., S. Ulam (1949) "The Monte Carlo Method", *Journal of the American Statistical Association*, Vol. 44, No. 247, pp. 335-341.

Niemiro W. (2013) „Symulacje stochastyczne i metody Monte Carlo”, University of Warsaw, Warszawa.

Palepu K., Healy P., Bernard V. (2004) “*Business Analysis and Valuation: Using Financial Statements, Text and Cases [chapters: Financial Analysis and Credit Analysis and Distress Prediction]*”, 3rd Edition, Southwestern.

Pawlak M. (2012) “Symulacja Monte Carlo w analizie ryzyka projektów inwestycyjnych”, *Zeszyty Naukowe Uniwersytetu Szczecińskiego*, no. 690, pp. 83-94.

Peck J. (2014) “Pushing austerity: state failure, municipal bankruptcy and the crises of fiscal federalism in the USA”, *Cambridge Journal of Regions, Economy and Society*, No. 7.

Peterson G. (1998) “Measuring Local Government Credit Risk and Improving Creditworthiness”, Prepared for World Bank, March.

Public Finance Law in Poland, August 27, 2009, *Journal of Laws* 2009, no. 157, pos. 1240 as amended.

Vammalle C., Hulbert C. (2013) “Sub-national Finances and Fiscal Consolidation: Walking on Thin Ice”, *OECD Regional Development Working Papers*, OECD, 2013/02.

Yeh CP., AC. Hsu, W. Hsien, KC. Chai (2014) “Neural Network Forecasts of Taiwan Bureau of National Health Insurance Expenditures”, *The International Journal of Business and Finance Research*, vol.8, no. 5, pp 95-114.

BIOGRAPHY

Krzysztof Kluza, PhD is Adjunct Professor at Warsaw School of Economics (SGH) in the Department of Quantitative Economics and a former Fulbright Scholar at Columbia University in New York. He teaches i.a. public finance and change management courses. He also held several managerial positions in banking and insurance institutions in Poland. Currently he is the Chief Financial Officer and Management Board Vice-President in a global industrial company. Contact: Warsaw School of Economics, Department of Quantitative Economics, Madalinskiego 6/8 Street, 02-513 Warsaw, Poland. E-mail: kkluz@yaho.com.

ROYAL FAMILY MEMBERS AND FIRM PERFORMANCE: EVIDENCE FROM KINGDOM OF SAUDI ARABIA

Abdullah Mohammed Alzahrani, Universiti Utara Malaysia
Ayoib Che-Ahmad, Universiti Utara Malaysia

ABSTRACT

This study examines the relationship between Royal family members on the board of directors and firm performance of 573 publicly listed in the Saudi Stock Exchange (Tadawul) during 2007-2011 periods. This study utilizes two measurements of the firm performance: (1) Tobin's Q and (2) ROE. Using the WLS, the result of this study shows that the existence of Royal family members on the board of Saudi-listed companies is significantly associated with firm performance. This study provides evidence on the role played by Royal family members in reducing agency conflicts and information asymmetries in Saudi Arabia where firms may be influenced by the cultural issues related to political ties and family involvement. The result of this study contributes to the existing theory and empirical evidence of how Royal family members add value to the firm. It offers policy-makers additional evidence on the positive impact of Royal family members on firm performance.

JEL: M48

KEYWORDS: Tobin's Q, ROE, Royal Family Members on the Board, Saudi Arabia

INTRODUCTION

The board of directors is assigned a number of key responsibilities and obligations, including establishing aims and goals, and overseeing and controlling the activities and operations of the organization, which is pivotal to the decision making process within the organization. In line with the agency theory, the key responsibilities of the board of directors are centered on management monitoring in increasing the value of the firms (Fama & Jensen, 1983). Moreover, a critical role is normally adopted by the board of directors with a focus directed towards protecting the shareholders' interests; thus, the controlling role is essential and therefore, needs to be followed by the service role. Despite the fact that the majority of management related decisions are assigned to managers, the board of directors is still considered as the main point of control through carrying out the ratification and monitoring of significant managerial decisions (Fama & Jensen, 1983). Accordingly, agency theory explains that the directors represent shareholders and the monitoring activities focus onto the decision making process in an attempt to circumvent issues between shareholders and management.

In order to improve the motivation of the board to supervise management, agency theory implies management ownership through aligning shareholder and manager interests, non-dual leadership and a higher proportion of external directors of the board in order to improve board independence (Muth & Donaldson, 1998). As advocated by the resource dependence theory, the main objective of an organization's board of directors is to act as a co-optation instrument for identifying access to external resources in order to achieve improvements in terms of business performance (Johnson, Daily & Ellstrand, 1996; Pfeffer, 1972, 1973). This theory further implies that the board's role needs to ensure involvement in corporate strategy

(Zahra & Pearce, 1989); thus, the board is recognized as being a strategy formulation/implementation facilitator (Baysinger & Butler, 1985). Moreover, the theory postulates that directors who have a link with outsiders are more likely to achieve access to other sources and means (Muth & Donaldson, 1998). The board's characteristics and the firm's performance are increasingly subjected to ongoing review, especially when there is a major legislative change or when codes of best practice are proposed or issued. Cicero, Wintoki and Yang (2010) showed evidence that U.S firms allowed target board panel of changes to the board. They found that as the economic and contracting environment change, firms are relatively quick to adapt their boards in response to these changes. Their results strongly support the idea that board structure is considered important to firm value by all parties in the firm's nexus of contracts. To make sure that firms are performing well, certain characteristics of the board of directors that influence its ability to function effectively should be taken into consideration by different codes of conduct and guidelines that would reflect compliance and accountability. Due to the unique setting of Kingdom of Saudi Arabia, this study argues that the existence of Royal family members on the board of directors apply more monitoring role to the best interest of shareholders. Al-Ghamdi (2012) indicates that many members of the Royal family are appointed as directors of boards and serve on boards as managerial members; therefore, they may monitor the management closely, thereby, decreasing possible mismanagement and wrongdoing. As a result, this may influence positively the firm value in the marketplace.

There is increasing openness and integration of Saudi Arabia with the global economy, which, in turn, has created push-and-pull factors that, contributes to the changing in the institutional framework environment, which, consequently, enhances companies' values in the Saudi marketplace. As a result from these recent developments, Saudi Arabia is found to be a profitable business environment for local, regional, and foreign investors (Bley & Chen, 2006; Al-Hussaini & Al-Sultan, 2008; Al-Shammari, Brown & Tarca, 2008; Gulf Base, 2009). There has been a surge of interest in Saudi Arabia about the firm performance issues. Several studies have been conducted in different contexts other than Saudi Arabia (Han, Lee & Suk, 1999; Kang & Zardkoohi, 2005; Haniffa & Hudaib, 2006; Aljifri & Moustafa, 2007). Therefore, the conflicting and inconclusive results evidenced by the prior studies on firm performance, the paucity of firm performance research in Kingdom of Saudi Arabia, and the recent incremental developments that have been coming to Saudi market provide the motivation for investigating the firm performance in the setting of Kingdom of Saudi Arabia. In particular, little is known and many questions remain unanswered about firm performance in Kingdom of Saudi Arabia. In line with the Hawkamah and IFC survey of 2008, almost half of all of the organizations listed in Middle East and North-African (MENA) countries, such as that of Saudi Arabia, view corporate governance policy responsibilities to be in line with the good practice of the board. However, the board's role is commonly misinterpreted within the Middle East and North-African (MENA) region.

As established through the survey, almost 90 percent of MENA banks and listed organizations highlight that the board, not management, was assigned the responsibility for establishing corporate management; this stands in contrast to the good practice developed by management, and the fact that the board guides and reviews corporate strategy. However, to the best of the researchers' knowledge, no empirical evidence using longitudinal data exists that allows more conclusive evidence about how companies incorporating in Kingdom of Saudi Arabia perform. Furthermore, this study contributes to the firm performance literature by addressing new evidence regarding the association of Royal family members on the board with firm performance. Therefore, the objective of this study is to provide empirical evidence on the determinants of companies' performance in the Kingdom of Saudi Arabia with specific reference to the role of Royal family members on the board. The remainder of the paper is organized as follows: Section 2 discusses the literature review and the hypotheses development while Section 3 describes the research methodology. The results and discussions have been highlighted in section 4. The final section provides conclusions and implications.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In specific regards to the agency theory, both agents and principals (i.e. managers or decision-makers and shareholders) are recognized as optimizing their own utilities (Jensen and Meckling, 1976 and Fama and Jensen, 1983). In the Saudi context, Board Royal family members (as decision-makers and owners) closely oversee management, which are likely to help and enhance firm performance. Previous studies provided evidence that a group encompasses particular characteristics plays a key role in much of the country's political and socio-economic environment. For example, Che-Ahmad, Houghton and Yusof, (2006) examined the effect of the major ethnicity groups in Malaysia on the choice of auditor among Malaysian publicly-listed companies and found that the ethnic groups have a substantial influence on the auditor selection process. Similarly, Richard (2000) examined the links between cultural (racial) diversity, firm performance and business strategy within the banking sector. In an attempt to measure firm performance, he found that cultural diversity has positive links with performance. In addition, Richard, Kirby and Chadwick (2013) found that participative strategy-making positively mediates the association between racial diversity in management and firm performance, as measured through ROA. The view has been postulated by a study by Abdul Rahman and Mohamed Ali (2006) and provides support validating the belief that disclosure and accounting practices are a function of the nation's cultural heritage and values, which influence attitudes towards business-related fraud. On the other hand, no impacts were recognized in line with Malay directors' characteristics on earnings management, with the view put forward that the presence of Malay directors on the board of the firm and on the auditing committee could hinder opportunistic earnings management.

In the Middle East region, one of the most common types of firm organization is that of Royal family ownership or Royal family controlled companies. According to paper documents by Thomson Reuters, all Arab states have made investments in publicly listed companies amounting to approximately US\$319 billion. The Royal families within the Arabian domain directly control in excess of US\$240 billion of investments in publicly listed firms, therefore, bettering sovereign wealth funds and government institutions (Zawya, 2013). In the context of Saudi Arabia, Royal families are known to have control of approximately 10 percent of all board seats amongst Saudi-listed companies. This research poses the view that there may be circumstances where a number of individuals are seen to be more powerful than others, meaning that some individuals with a greater degree of power affect the actions and views of others in such a way that it gets things done (Clark, 2004). A number of the Royal family members are assigned positions on the board and act as managerial associates, allowing them to oversee management very carefully, which helps to reduce the potential of wrongdoing and poor management (Al-Ghamdi, 2012). Consequently, there would be an increase in the value of the firm. Therefore, using the complementary suggestions by agency theory (monitoring) and resource dependence theory (a link with the external environment), this study argues that the existence of Royal family members on the boards of Saudi-listed companies would positively affect firm performance. The testable hypothesis is expressed in the following statement:

H₁: there is a positive relationship between board Royal family members on the board of directors and firm performance.

RESEARCH DESIGN AND METHODOLOGY

Sample and Data

This study used panel data to all publicly listed companies in Tadawul from 2007 to 2011. By using a panel data of five consecutive years, where the same companies served on the panel over five years, gives advantage to measurement of the changes that take place between points in time (Cavana, Delahaye & Sekaran, 2001). Choosing years between 2007 and 2011 encompasses many important events such as financial crisis (either locally or internationally) and introducing the Saudi CG code in 2006. The initial

sample in this study was 622 observations and the final sample was 573 observations, after 49 outlier observations were discarded. Furthermore, the results produced are more robust, consistent, and more stable to make a generalization to the population so that it is more representative and meaningful. For the other control variables, data are retrieved from annual reports and DATASTREAM. Table 1 shows the number of Saudi-listed companies in the Tadawul between years 2007- 2011.

Table 1: Sample Selection

Number of Observations Per Years	2007	2008	2009	2010	2011
Total observations	90	120	128	139	145
Observations discarded (outliers)					(49)
Final sample					573

This table shows the number of publicly listed companies per years in Tadawul from 2007 to 2011 and the outliers and the final sample. Outliers as a result of some observations have extreme value with Tobin's Q or ROE. Some observations have one variable or more contains extreme value such as leverage and company size

Model Specification and Variables Measurement

The economic model is used to develop a model of a firm performance. The variable proposed for inclusion in the model captures the differences in the costs of agency relationships. The dependent variables are continuous measurements. To estimate this model, *WLS* is used to capture if there is a significant association of the Royal family existence on the board and firm performance (Tobin's Q and ROE). The functional equation is expressed as following:

Model 1:

$$Tobin's\ Q_{it} = \beta_0 + \beta_1 BD_RFAMILY_{it} + \beta_2 BD_SIZE_{it} + \beta_3 BD_INDE_{it} + \beta_4 AC_SIZE_{it} + \beta_5 AC_INDE_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV_{it} + \beta_8 FAGE_{it} + e_i + u_{it}$$

Model 2:

$$ROE_{it} = \beta_0 + \beta_1 BD_RFAMILY_{it} + \beta_2 BD_SIZE_{it} + \beta_3 BD_INDE_{it} + \beta_4 AC_SIZE_{it} + \beta_5 AC_INDE_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV_{it} + \beta_8 FAGE_{it} + e_i + u_{it}$$

Where:

- Tobin's Q = the market value of equity plus the book value of the debt divided by the book value of the total assets
- ROE = return on equity,
- BD_RFAMILY = the number of Royal family members on the board of directors,
- BD_SIZE = total number of directors sitting on the board who are not on the audit committee,
- BD_INDE = the proportion of non-executive directors on the board who are not on the audit committee,
- AC_SIZE = total number of audit committee members sitting on the audit committee
- AC_INDE = the proportion of non-executive members on the audit committee
- FSIZE = log₁₀ of the total assets,
- LEV = total debt to total assets,
- FAGE = the number of years since the company was established,
- e = error term.
- u = composite error for the estimation.
- i = indicating data for the i firm
- t = time indicator

We also control for the effect of seven explanatory variables found in the literature for their potential confounding effects on firm performance. The results would be confused if their effects were not controlled

(Sharma, 2004; Aljifri & Moustafa, 2007). These controlled variables include board of director's size, board of director's independence, audit committee size, audit committee independence, firm size, leverage and firm age. As for board of director's size (*BD_SIZE*), it refers to the number of directors on the board. The Saudi Code (2006) Part 4, Article 12 Paragraph (a), requires that "*articles of association of the company shall specify the number of the board of Directors members, provided that such number shall not be less than three and not more than eleven.*" Thus, the size of the board of directors is recognized as an essential aspect of efficient governance (Pearce & Zahra, 1992). The board's size influences its ability to function effectively. Larger boards have generally been considered to be more effective in extracting critical resources from an environment such as the amount of budget, external funding and leverages (Pfeffer, 1972, 1973; Alexander, Fennell, & Halpern, 1993; Goodstein, Gautam & Boeker 1994). This view is consistent with Birnbaum (1984)'s report, which states that environmental uncertainty (lack of information and volatility) can lead to increased board size. In this case, the board size may be a measure of an organization's ability to form environmental links to secure critical resources. This will be associated with higher levels of firm performance (Alexander et al., 1993; Goodstein et al., 1994).

The resource dependence theory supports the view that firms normally establish links with the outside environment. According to this theory, larger board of director's size shows diversity in term of members' backgrounds, expertise, and skills, which can generate greater ideas that can provide higher levels of performance (Brown, Beekes & Verhoeven, 2011). Pearce and Zahra (1992) explain that larger boards provide counsel and advice regarding the strategic options of the firm. In addition, larger boards have more abilities to solve obstacles especially with large firms. The board's capacity for monitoring increases as more expert directors offer effective oversight duties on CEOs. Director independence (*BD_INDE*) is widely considered to be a key dimension of good corporate governance because it allows the board to properly fulfill its legal duty to oversee management and to protect the interests of other parties, primarily the shareholders. The agency theory posits that greater board independence allows restrictive monitoring of self-interest pursuits and thereby, minimizes opportunities for fraud and other opportunistic activities (Fama & Jensen, 1983). The degree of board independence is closely related to its composition. The board is presumed to be more independent as the number of non-executive independent directors increases proportionately (Hillman & Dalziel, 2003). Guidance is provided in governance codes for determining who is and who is not an independent director.

The definition of an independent director has become stricter over time and takes into account the background, experience and length of tenure of the individual. The Saudi Code (2006) Part 4, Article 12, Paragraphs (C) and (E) center on the board independence, with Paragraph (C) stating that "*The majority of the members of the board of Directors shall be non-executive members.*" Furthermore, paragraph (E) also notes that, "*The independent members of the board of Directors shall not be less than two members, or one-third of the members, whichever is greater.*" Zainal Abidin, Mustaffa Kamal and Jusoff (2009) found that a higher proportion of independent non-executive directors on the board have a positive impact on firm performance. This is because independent directors possess a diverse background, attributes, characteristics and expertise, which may improve board processes and decision-makings, and consequently firm performance. Uadiale (2010) found a strong positive correlation between board independence and performance. In the context of the USA, Byrd and Hickman (1992) have established that, the larger percentage of outside directors, the greater the response of the stock market to the firm's tenders offers for other firms. Furthermore, additional support is garnered by Rosenstein and Wyatt (1997) in regards to stock prices, which are seen to increase by approximately 0.2 percent upon the appointment of an additional non-executive director by the firm.

Those entities that significantly enlarged the number of independent directors have above-average stock price returns. In the context of India, Jackling and Johl (2009) highlighted that a large number of external directors present on the company board were linked with greater firm performance. As for the audit committee size (*AC_SIZE*), the Saudi-listed companies have been required to adopt an audit committee made

up of at least three individuals. The audit committee size has a proxy for efficiency, as noted by Kalbers & Fogarty (1993) owing to the fact that the audit committee size is taken as the authority on the company's financial and internal control system. According to Kiger and Scheiner (1997), a larger numbers of people involved with a particular activity significantly decrease the potential for committing conspiracy due to difficulties and potential errors in execution. Moreover, it has been acknowledged that audit committees that are larger in size improve financial reporting quality (Yatim, Kent & Clarkson, 2006) and further reduce debt-financing costs (Anderson, Mansi & Reeb, 2004).

Regarding audit committee independence (*AC_INDE*), in line with the agency theory, audit committees are recognized as one of the fundamental monitoring tools, where the board, its representatives or other principals, are willing to fund the use of financial reports in order to assess the performance of management (Jensen & Meckling, 1976; Goddard, & Masters, 2000). Previous studies have focused on independence of audit committee since establishing audit committees provide better financial reporting and ensure continual improvement in management performance and this is generally confirmed by previous empirical studies (Rickard, 1993; Klein, 2002; Krishnan, 2005; Byard, Li & Weintrop, 2006; Donoher, Reed & Storrud-Barnes, 2007; Raghunandan & Rama, 2007; Rainsbury, Bradbury & Cahan, 2009).

It is generally considered imperative that the audit committee be confined to non-executive independent directors if it is to carry out its duties effectively. The independence of the audit committee members is important as the monitoring they provide affects audit quality (Abbott & Parker, 2000) and auditor independence (Abbott, Parker, Peters & Raghunandan, 2003). Independent audit committees are associated with higher disclosure quality (Karamanou & Vafeas, 2005) and a lower cost of debt finance (Anderson et al., 2004). Bronson, Carcello, Hollingsworth and Neal (2009) found the benefits of audit committees are limited unless the committee comprises non-executive independent directors only. Markedly, a research was carried out by Hawkamah & IFC in 2008, which suggests a significant presence of audit committees (77.8 percent) in MENA countries; however, notably, only 26.4 percent of these committees are made up of a number of independent directors, in line with good CG. Furthermore, a report was published by AL Majlis, The GCC Board Directors Institute in 2011, which implies that as much as 67 percent of GCC companies encompass an audit committee, which is a percentage that has increased from 20 percent in just a two-year period. Regardless the fact that literature on the independence of the audit committee has delivered a number of reasons justifying the independence of the audit committee, inconclusive and mixed findings have been found across different sectors.

With respect to firm size (*F_SIZE*), the variable has been adopted as a control variable impacting the performance of the firm (Aljifri & Moustafa, 2007; Alzahrani, Che-Ahmad & Aljaaidi, 2011). Ghosh (2001) suggested that larger firms perform better than smaller ones owing to their capacity to achieve risk diversification. Helmich (1977) and Kumar (2004) both share the same view in that larger entities are more effective than smaller ones due to skills of staff, economies of scale, and market power. Moreover, Haniffa and Hudaib (2006) further noted that larger organizations have more analysts available who are centered on the performance of the firm and, as such, are under greater pressure to perform well. Similarly, a positive link between firm performance and firm size is empirically reported by Aljifri and Moustafa (2007). Furthermore, Pfeffer and Salancik (1978) suggest that larger firms are more influential over their environments in comparison to smaller ones, and are concurrently more likely to recruit the assistance of larger resources and fundamental constituencies in order to involve outside consultants for support in enabling the succession planning. As such, in the present study, firm size (*F_SIZE*) is measured as Log_{10} of the total assets, and is hypothesised to positively affect firm performance.

As for leverage (*LEV*), leverage or debt is the utilization of borrowed funds in an attempt to enhance firm performance. This could decrease agency costs by lessening the cash flows available for the expropriation of negative net present value projects and opening the business to greater supervision by the market especially the banks and other creditors. This could increase management pressure in terms of enhancing

firm performance as it decreases the moral risk through lessening free cash flow at the disposal of management (Alzahrani et al., 2011; Jensen, 1986; Harris & Raviv, 1991; Myers & Majluf, 1984). For instance, Grossman and Hart (1982) detailed the fact that debt financing means management is more aware of consuming fewer perks, and ultimately become more effective in circumventing bankruptcy, and thus, the loss of reputation and control. Moreover, the risks are apparent as a result of failure to pay off debts acts as an efficient motivational force and means firms are more effective (Bhandari & Weiss, 1996). Nickell, Nicolitsas and Dryden (1997) noted a positive association between productivity development and financial pressure. Moreover, a positive link between leverage and firm performance is detailed by Hurdle (1974). In this study, leverage *LEV*, which is measured as total debt to total assets, has a positive link with the performance of the firm. In terms of firm age (*FAGE*), it is argued that the age of the firm is a critical factor in firm development, firm dissolution likelihood, and the variability of business growth (Evans, 1987a). The link between firm performance and firm age has been detailed well, with some research utilizing age as a proxy for the experience a firm has gained through its business (Geroski, 1995). With the increase of firm age, management garners much more insight into their abilities and skills over time (Stinchcombe, 1965; Evans, 1987b). Younger firms are more vulnerable with firm age expected to last only between five and 10 years, as noted by Ward and Mendoza (1996). However, there is a competing view that suggests that older firm is negatively associated with firm performance. The main point to be made in this regard is that established approaches, organizational norms, and routines in older firms restrict the translation of entrepreneurial actions and activities into positive performance outcomes. This implies that longer-established entities may experience problems in overcoming age-related contextual factors, regardless of their implementation of a strategy-making approach that is otherwise encouraging in fulfilling positive firm development. The present study, therefore, predicts that there is a significant link between firm performance and firm age (*FAGE*), as measured as the number of years since the establishment of the company. However, the expected sign of the results could not be determined.

EMPIRICAL RESULTS AND DISCUSSIONS

Table 2 depicts the mean, standard deviation, minimum and maximum of each variable in the sample data set. There is a significant range of variation among the considered variables of this study. The results reveal that the range of *Tobin's Q* is from 0.002 to 6.309 with a mean of 1.50 and standard deviation of 0.96. The range of *ROE* is from -41.250 to 41.640 with a mean of 9.18 and a standard deviation of 13.04. In addition, Table 2 indicates that the maximum number of Royal family members *BD_RFAMILY* is 4 and the minimum is 0 with a standard deviation of 0.641.

Table 2: Descriptive Statistics of Continuous Variables

Variables	N	Mean	Std. Deviation	Minimum	Maximum
TOBINS_Q	573	1.497	0.959	0.002	6.309
ROE	573	9.178	13.035	-41.250	41.640
BD_RFAMILY	573	0.257	0.641	0	4
BD_SIZE	573	6.580	1.838	2	11
BD_INDE	573	0.433	0.241	0	1
AC_SIZE	573	3.161	0.927	0	6
AC_INDE	573	0.408	0.336	0	1
FSIZE (S.R Mil)	573	18.2212	46.1683	0.065319	332.784
LEV	573	16.085	18.159	0.000	69.170
FAGE	573	21.239	14.139	0.553	56.986

This table shows summary statistics: mean, standard deviation, minimum and maximum of each variable in the sample data set.

The mean number of board size *BD_SIZE* is 6.58 ranging from 2.000 to 11.000. The mean of board independence *BD_INDE* is 0.43, ranging from 0.000 to 1.000. In addition, audit committee size *AC_SIZE* ranges from 0 to 6 with a mean of 3.16. The range of the audit committee independence *AC_INDE* is from 0 to 1 with a mean of 0.41. Firm size *FSIZE* of firms in the sample ranges from S.R 65.319 to S.R 33.278.4000 with a mean of S.R 18.221.200 leverage *LEV* has a range from 0.000 to 69.170 with a mean

of 16.09. Moreover, firm age *FAGE* ranges from 0.553 to 56.986 with a mean of 21.24. In addition, to examine the correlation between independent variables, a Pearson product correlation (*r*) was computed as shown in Table 3.

Table 3: Pearson Correlation Analysis of Variables on 573 Observations for 2007-2011

	Tobin's Q	ROE	BD_RFAMILY	BD_SIZE	BD_INDE	AC_SIZE	AC_INDE	FSIZE	LEV	FAGE
Tobin's Q	1.000									
ROE	0.090*	1.000								
BD_RFAMILY	0.179**	0.106*	1.000							
BD_SIZE	-0.110**	0.019	0.004	1.000						
BD_INDE	0.003	-0.012	0.047	0.075	1.000					
AC_SIZE	-0.226**	-0.005	-0.040	0.195**	0.032	1.000				
AC_INDE	-0.165**	0.044	0.026	-0.175**	0.160**	0.163**	1.000			
FSIZE	-0.491**	0.275**	-0.054	0.244**	-0.047	0.218**	0.153**	1.000		
LEV	-0.117**	0.132**	-0.028	-0.130**	-0.113**	0.047	-0.040	0.404*	1.000	
FAGE	0.021	0.434**	0.197**	-0.124**	0.114**	0.066	0.248**	0.129*	-0.004	1.000

Correlation Matrix Was Employed to Examine the Existence of Multicollinearity Among the Variables. ** Significant at 1 Percent Level (2-tailed) and *Significant at 5 Percent Level (2-tailed).

Table 3 illustrates that the existence of Royal family members (*BD_RFAMILY*) on the board is associated positively with firm performance. This association is greater for the *Tobin's Q* more than that with the *ROE* at 1% and 5% levels, respectively. This result gives support to the association of Saudi Royal family power on firm's monitoring process and how this can positively influence the firm's value in the marketplace. Furthermore, the result suggests a negative association of board size (*BD_SIZE*) with *Tobin's Q* at 1% level and an insignificant association of board size with *ROE*. In addition, board independence (*BD_INDE*) is not associated with firm performance. Surprisingly, audit committee size *AC_SIZE* and audit committee independence *AC_INDE* are negatively associated with *Tobin's Q* and it has no association with *ROE*. Interestingly, firm size (*FSIZE*) and leverage (*LEV*) are negatively associated with *Tobin's Q* at 1% level and they are positively associated with *ROE* at 1% level. As for firm age (*FAGE*), an insignificant association has been revealed between firm age and *Tobin's Q* and a significantly positive association is documented between firm age and *ROE*.

With respect to the correlation among variables, the correlation matrix confirms that no multicollinearity exists between the independent variables as none of the variables correlates above 0.80 or 0.90. In fact, all variables have a correlation of less than 0.491 (Myers & Majluf, 1984). It is worth mentioning that the correlation matrix has been considered as a limited analysis because it ignores the interrelationships among the variables. Table 4 provides the results of the hypothesis testing. It shows that the coefficient of determination (*R*²) for *Tobin's Q* and *ROE* are equal to 43.60 and 48.10 percent respectively. The adjusted *R*² are equal to 42.80 and 47.40 percent, respectively, which are quite comparable with the previous studies such as Aljifri and Moustafa (2007). Table 4 also depicts that the *Tobin's Q* and *ROE* models are statistically significant where the *F*-test statistics are 54.52 and 65.43, respectively with a *p*-value < 0.001 for both estimations. The table also shows that the beta coefficients for the independent variables.

The largest *t*-statistics for the *Tobin's Q* is -14.12 (*p*-value < 0.001) which is for the controlled variable namely firm size (*FSIZE*). The largest *t*-statistics for the *ROE* model is 17.77 (*p*-value < 0.001) which is the controlled variable for firm age (*FAGE*). This indicates to a degree that *FSIZE* is importance in the model 1 in term of explaining the variation in firm performance (*Tobin's Q*) model. On the other hand, *FAGE* has a degree of importance in the model 2 in term of explaining the variation in firm performance (*ROE*) model. More importantly, the *WLS* estimations in Table 4 reveals that consistent with the

expectation, the existence of Royal family members on the board (*BD_RFAMILY*) is significantly related to firm performance (*Tobin's Q*: p -value = 0.001; *ROE*: p -value = 0.001, one-tailed significance). This result provides support to the prediction of agency theory, suggesting that both decision-makers (agents) and shareholders (principals) are thought to maximize their own utilities. Royal family members (as decision-makers and owners) monitor the management closely, thereby, increasing the firm performance. Furthermore, this result suggests that the Royal family members on the board of Saudi companies practice more power than others.

Table 4: The Results of the Regression of Models 1 and 2

Model 1 (Tobin's Q)				
Variables	Expected sign	Coefficient	t-ratio	p-value
(Constant)		4.697	24.764	0.001***
BD_RFAMILY	+	0.221	5.961	0.001***
Control Variables				
BD_SIZE		-0.011	-0.828	0.408
BD_INDE		-0.005	-0.057	0.955
AC_SIZE		-0.109	-3.687	0.001***
AC_INDE		-0.215	-3.006	0.001***
FSIZE		-0.005	-14.118	0.001***
LEV		0.005	3.552	0.001***
FAGE		0.001	0.856	0.392
R^2	0.436			
Adjusted R^2	0.428			
Model F -stat.	54.524			
p -value	0.001			
No. of Observations	573			
Model 2 (ROE)				
Variables	Expected sign	Coefficient	t-ratio	p-value
(Constant)		-15.647	-5.395	0.001***
BD_RFAMILY	+	1.502	3.219	0.001***
Control Variables				
BD_SIZE		0.285	1.500	0.134
BD_INDE		-2.022	-1.505	0.133
AC_SIZE		-0.808	-2.210	0.028**
AC_INDE		-1.993	-1.958	0.051*
FSIZE		2.876	7.066	0.001***
LEV		0.023	1.176	0.240
FAGE		0.3.84	17.767	0.001***
R^2	0.481			
Adjusted R^2	0.474			
Model F -stat.	65.426			
p -value	0.001			
No. of Observations	573			

This table shows mean difference analysis. Model 1 (*Tobin's Q*) and model 2 (*ROE*) show results for Royal family members on the board is significantly related to firm performance. *** significant at 1%, **significant at 5% and *significant at 10%. One-tailed test where direction is predicted, otherwise two-tail.

According to Clark (2004), their greater powers have strong influence on the behavior of others in getting things done. Since the Royal family serve on Saudi boards as managerial members, they may monitor the management closely, hence, decreasing possible mismanagement and wrongdoing which, consequently, influence positively the Saudi' companies' performance. Therefore, hypothesis H_1 is strongly supported.

CONCLUSIONS AND IMPLICATIONS

The main objective of this study is to examine the relationship between the existence of Royal family members on the boards of Saudi firms and firm performance, using two proxies of company performance (*Tobin's Q* and *ROE*). A sample of 573 publicly listed companies on Tadawual for the period expanding from 2007 to 2011 is used. Using *WLS*, this study finds that the existence of Royal family members on the board of Saudi firms is associated with firm performance. Limitations of the present study lie on the firm

performance models which is based on market and accounting measures of firm performance (Tobin's Q and ROE) in the setting of Saudi Arabia. There are several other firm performance measurements that have been used in previous studies. It would be good if we can also use other alternative measurements to test for any sensitivity of the results to different measurement. In addition, there are several unique issues in Saudi Arabia to be addressed by future research in the context of firm performance such as the family power using the CEO position. Future line of research should be put towards an effort to introduce a number of other independent variables particularly the inclusion of other corporate governance mechanisms. Further research should also replicate this model to determine its validity in different contexts of GCC countries, in different periods, and with different sample sizes. These limitations may motivate more future research in the GCC market.

One important implication of these findings is related to the issue of firm performance in of Saudi Arabia. Saudi government, stock market, companies and accounting and auditing regulators would gain some new insights from the present study in terms of the understanding the determinants influencing companies' performance. The results of this study would benefit banks in the way that they can assess the creditworthiness of incorporating companies in Kingdom of Saudi Arabia through annual reports. As firm value are of the utmost important for any lending institution, they may asses the firm's future performance by regressing the data from audited financial statements. Investors and financial analysts also depend on audited financial statements to make decisions related to bonds, bond rating, interest rate, and all other decisions related to investments in Kingdom of Saudi Arabia market. Accordingly, increased understanding and prediction of companies' events is important to this user group. Furthermore, the results of this study will be of interest to the researchers and academic community due to a lack of formal research body addressing the issues of firm performance in Kingdom of Saudi Arabia.

REFERENCES

- Abbott, L. J., and Parker, S. (2000), Auditor Selection and Audit Committee Characteristics. *Auditing: A Journal of Practice and Theory*, 19(2), 47-66.
- Abbott, L. J., Parker, S., Peters, G. F., and Raghunandan, K. (2003), An Empirical Investigation of Audit Fees, Non-Audit Fees, and Audit Committees. *Contemporary Accounting Research*, 20(2), 215-234.
- Abdul Rahman, R. A., and Ali, F. H. M. (2006), Board, Audit Committee, Culture and Earnings Management: Malaysian Evidence. *Managerial Auditing Journal*, 21(7), 783-804.
- Alexander, J. A., Fennell, M. L., and Halpern, M. T. (1993), Leadership Instability in Hospitals: the Influence of Board-CEO Relations and Organizational Growth and Decline. *Administrative Science Quarterly*, 74-99.
- Al-Hussaini, A., and Al-Sultan, W. (2008), Development of Enforcement Mechanisms Following Adoption of International Accounting Standards in the Gulf Co-Operation Council Member States. *International Journal Of Business Strategy*, 8(3), 50-71.
- Aljifri, K., and Moustafa, M. (2007), the Impact of Corporate Governance Mechanisms on the Performance of UAE Firms: an Empirical Analysis. *Journal of Economic and Administrative Sciences*, 23(2), 71-93.
- Al-Shammari, B., Brown, P., and Tarca, A. (2008), an Investigation of Compliance with International Accounting Standards by Listed Companies in the Gulf Co-Operation Council Member States. *The International Journal of Accounting*, 43(4), 425-447.

Alzahrani, A. M., Che Ahmad, A. B., and Aljaaaidi, K., S. (2011), an Empirical Investigation of Factors Associated with Firm Performance: Evidence from kingdom of Saudi Arabia. *International Conference on E-business, Management and Economics*, 25, 30-36.

Anderson, R. C., Mansi, S. A., and Reeb, D. M. (2004), Board Characteristics, Accounting Report Integrity, and the Cost of Debt. *Journal of Accounting and Economics*, 37(3), 315-342.

Baysinger, B. D., and Butler, H. N. (1985), Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition. *Journal of Law, Economics, and Organization*, 1(1), 101-124.

Bhandari, S., and Weiss, L. (1996), Corporate Bankruptcy. *Cambridge University Press*.

Birnbaum, P. H. (1984), the Choice of Strategic Alternatives under Increasing Regulation in High Technology Companies. *Academy of Management Journal*, 27(3), 489-510.

Bley, J., and Chen, K. H. (2006), Gulf Cooperation Council (GCC) Stock markets: the Dawn of a New Era. *Global Finance Journal*, 17(1), 75-91.

Bronson, S. N., Carcello, J. V., Hollingsworth, C. W., and Neal, T. L. (2009), are Fully Independent Audit Committees Really Necessary? *Journal of Accounting and Public Policy*, 28(4), 265-280.

Brown, P., Beekes, W., and Verhoeven, P. (2011), Corporate Governance, Accounting and Finance: A Review. *Accounting and finance*, 51(1), 96-172.

Byard, D., Li, Y., and Weintrop, J. (2006), Corporate Governance and the Quality of Financial Analysts' Information. *Journal of Accounting and Public Policy*, 25(5), 609-625.

Byrd, J. W., and Hickman, K. A. (1992), Do Outside Directors Monitor Managers? : Evidence from Tender Offer Bids. *Journal of Financial Economics*, 32(2), 195-221.

Cavana, R. Y., Delahaye, B. L., and Sekaran, U. (2001), *Applied Business Research: Qualitative and Quantitative Methods*. Singapore: John Wiley and Sons.

Che-Ahmad, C., Houghton, K. A., and Yusof, N. Z. M. (2006), the Malaysian Market for Audit Services: Ethnicity, Multinational Companies and Auditor Choice. *Managerial Auditing Journal*, 21(7), 702-723.

Cicero, D., Wintoki, M., and Yang, T. (2010), Do Firms Adjust to a Target Board Structure? In *CELS 2009 4th Annual Conference on Empirical Legal Studies Paper*, is Available Online at <http://corporategovernancecenter.org/Research/CirMay11.pdf>.

Clark, T. (Ed.) (2004), *Theories of Corporate Governance* (pp. 1-31), New York: Routledge.
Code of Corporate Governance in Saudi Arabia. Available at: http://www.cma.org.sa/Ar/Pages/Implementing_

Donoher, W. J., Reed, R., and Storrud-Barnes, S. F. (2007), Incentive Alignment, Control, and the Issue of Misleading Financial Disclosures. *Journal of Management*, 33(4), 547-569.

Evans, D. S. (1987a), the Relationships between Firm Growth, Size and Age: Estimates for 100 Manufacturing Industries. *Journal of Industrial Economics*, 35(A), 567-581.

- Evans, D. S. (1987b), Tests of Alternative Theories of Firm Growth. *Journal of Political Economy*, 95(A), 657-674.
- Fama, E. F., and Jensen, M. C. (1983), Separation of Ownership and Control. *Journal of law and economics*, 26(2), 301-325.
- Geroski, P. A. (1995), What Do We Know About Entry? *International Journal of Industrial Organization*, 13(4), 421-440.
- Ghosh, A. (2001), Does Operating Performance Really Improve Following Corporate Acquisitions? *Journal of corporate finance*, 7(2), 151-178.
- Goddard, A. R., and Mastcers, C. (2000), Audit Committees, Cadbury Code and Audit Fees: an Empirical Analysis of UK Companies. *Managerial Auditing Journal*, 15(7), 358-371.
- Goodstein, J., Gautam, K., and Boeker, W. (1994), the Effects of Board Size and Diversity on Strategic Change. *Strategic Management Journal*, 15(3), 241-250.
- Grossman, S. J., and Hart, O. D. (1982), Corporate Financial Structure and Managerial Incentives. In the Economics of Information and Uncertainty. *University of Chicago Press*, 107-140.
- Gulf Base. (2009), *GCC Economic Overview*. Retrieved September 2009, from <http://www.gulfbase.com/Site/Interface/TheGCC/gccoverview.html>.
- Han, K. C., Lee, S. H., and Suk, D. Y. (1999), Ownership Structure and Firm Performance: International Evidence. *Multinational Business Review*, 7, 92-97.
- Haniffa, R., and Hudaib, M. (2006), Corporate Governance Structure and Performance of Malaysian Listed Companies. *Journal of Business Finance and Accounting*, 33(7-8), 1034-1062.
- Harris, M., and Raviv, A. (1991), the Theory of Capital Structure. *Journal of Finance*, 46(1), 297-355.
- Helmich, D. (1977), Executive succession in the corporate organization: A current integration. *The Academy of Management Review*, 2(2), 252-266.
- Hillman, A. J., and Dalziel, T. (2003), Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396.
- Hurdle, G. J. (1974), Leverage, Risk, Market Structure and Profitability. *The Review of Economics and Statistics*, 56(4), 478-485.
- Jackling, B., and Johl, S. (2009), Board Structure and Firm Performance: Evidence from India's Top Companies. *Corporate Governance: An International Review*, 17(4), 492-509.
- Jensen, M. C. (1986), Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. *The American Economic Review*, 76(2), 323-329.
- Jensen, M. C., and Meckling, W. H. (1976), Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of financial economics*, 3(4), 305-360.

- Johnson, J. L., Daily, C. M., and Ellstrand, A. E. (1996), Boards of Directors: A Review and Research Agenda. *Journal of Management*, 22(3), 409-438.
- Kalbers, L. P., and Fogarty, T. J. (1993), Audit Committee Effectiveness-an Empirical-Investigation of the Contribution of Power. *Auditing-a Journal of Practice and Theory*, 12(1), 24-49.
- Kang, E., and Zardkoohi, A. (2005), Board Leadership Structure and Firm Performance. *Corporate Governance: An International Review*, 13(6), 785-799.
- Karamanou, I., and Vafeas, N. (2005), the Association between Corporate Boards, Audit Committees, and Management Earnings Forecasts: an Empirical Analysis. *Journal of Accounting research*, 43(3), 453-486.
- Kiger, J.E., and Scheiner, J.H. (1997), *Auditing* (2nd ed.), Boston, M.A: Houghton Mifflin Company.
- Klein, A. (2002), Audit committee, Board of Director Characteristics, and Earnings Management. *Journal of accounting and economics*, 33(3), 375-400.
- Krishnan, J. (2005), Audit Committee Quality and Internal Control: an Empirical Analysis. *The Accounting Review*, 80(2), 649-675.
- Kumar, J. (2004), Does Ownership Structure Influence Firm Value? Evidence From India. *The Journal of Entrepreneurial Finance and Business Ventures*, 9(2), 61-93.
- Muth, M., and Donaldson, L. (1998), Stewardship Theory and Board Structure: a Contingency Approach. *Corporate Governance: An International Review*, 6(1), 5-28.
- Myers, S. C., and Majluf, N. S. (1984), Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. *Journal of Financial Economics*, 13(2), 187-221.
- Nickell, S. J., Nicolitsas, D., and Dryden, N. (1997), What Makes Firms Perform Well? *European Economic Review*, 41, 783-796.
- Pearce, J. A., and Zahra, S. A. (1992), Board Composition from a Strategic Contingency Perspective. *Journal of management studies*, 29(4), 411-438.
- Pfeffer, J. (1972), Size and Composition of Corporate Boards of Directors: the Organization and Its Environment. *Administrative Science Quarterly*, 218-228.
- Pfeffer, J. (1973), Size, Composition, and Function of Hospital Boards of Directors: a Study of Organization-Environment Linkage. *Administrative Science Quarterly*, 349-364.
- Pfeffer, J., and Salancik, G. (1978), the External Control of Organizations: a Resource Dependence Perspective. *The External Control of Organizations: a Resource Dependence Perspective*.
- Raghunandan, K., and Rama, D. V. (2007), Determinants of Audit Committee Diligence. *Accounting Horizons*, 21(3), 265-279.
- Rainsbury, E. A., Bradbury, M., and Cahan, S. F. (2009), the Impact of Audit Committee Quality on Financial Reporting Quality and Audit Fees. *Journal of Contemporary Accounting and Economics*, 5(1), 20-33.

Richard, O. C. (2000), Racial Diversity, Business Strategy, and Firm Performance: a Resource-Based View. *Academy of Management Journal*, 43(2), 164-177.

Richard, O. C., Kirby, S. L., and Chadwick, K. (2013), the Impact of Racial and Gender Diversity in Management on Financial Performance: How Participative Strategy Making Features Can Unleash a Diversity Advantage. *The International Journal of Human Resource Management*, (ahead-of-print), 1-12.

Rickard, P. (1993), Audit Committees - the Next Generation, *Australian Accountant*, 63(10), 35-38.

Rosenstein, S., and Wyatt, J. G. (1997), Inside Directors, Board Effectiveness, and Shareholder Wealth. *Journal of Financial Economics*, 44(2), 229-250.

Sharma, V. D. (2004), Board of Director Characteristics, Institutional Ownership, and Fraud: Evidence from Australia. *Auditing: A Journal of Practice and Theory*, 23(2), 105-117.

Stinchcombe, A.L. (1965), Social Structure and Organizations. In J.G. March (Ed.), *Handbook of Organizations* (pp. 142–193), Chicago, IL: Rand McNally.

The Institute for Corporate Governance. (2009, January-February), *Hawkamah Newsletter, Special Hawkamah 2008 Conference Edition*. Retrieved October 15, 2009, from the Institute for Corporate Governance (Hawkamah) at <http://www.hawkamah.org/base/newsletter/files/09.pdf>.

Uadiale, O. M. (2010), the Impact of Board Structure on Corporate Financial Performance in Nigeria. *International Journal of Business and Management*, 5(10), P155.

Ward, J., and Mendoza, D. (1996), Work in the Family Business. *Current Research Occupations and Professions*, 9, 167-188.

Yatim, P., Kent, P., and Clarkson, P. (2006), Governance Structures, Ethnicity, and Audit Fees of Malaysian Listed Firms. *Managerial Auditing Journal*, 21(7), 757-782.

Zahra, S. A., and Pearce, J. A. (1989), Board Composition from a Strategic Contingency Perspective. *Journal of Management Studies*, 29(4), 411-438.

Zainal Abidin, Z., Mustaffa Kamal, N. and Jusoff, K. (2009), Board Structure and Corporate Performance in Malaysia. *International Journal of Economics and Finance*, 1(1), P150.

Zawya. (2013), Royal Investments. Available at <http://www.zawya.com/story/ZAWYA20110307052017/>.

BIOGRAPHY

Abdullah Mohammed Alzahrani, PhD Graduate from School of Accounting, College of Business, Universiti Utara Malaysia, (<http://www.uum.edu.my/index.php/en/>). Working as a lecturer of Accounting and Managerial Technology at Riyadh Technology College, Administrative Technical Department. P.O. BOX 395071 Riyadh 11375 Saudi Arabia. Mobil :00966505225275, Email: zahrani1422@yahoo.com

Ayoib Che-Ahmad, Professor School of Accounting, College of Business, Universiti Utara Malaysia (<http://www.uum.edu.my/index.php/en/>), 06010 UUM Sintok, Kedah Malaysia Phone Number: +6019 451 8080. Email: ayoib@uum.edu.my

A TEST OF THE PECKING ORDER THEORY OF CAPITAL STRUCTURE IN CORPORATE FINANCE

Ali Shakil Khan, Swinburne University of Technology Sarawak
Awang Yusop Adom, Swinburne University of Technology Sarawak

ABSTRACT

This paper utilises a cross section of 12,244 publicly traded corporations in the U.S. from the time period 1999 to 2009 to test the pecking order theory of capital structure. Applying the methodology of Frank and Goyal (2003), limited evidence to support pecking order theory is found. Consistent with Frank and Goyal (2003), a much stronger relationship between net equity issued and financing deficit is observed than net debt issuance and financing deficit. Whereas, the pecking order theory suggests that firms should exhaust all debt issuing capacity before they issue any equity and equity should only be used as a last resort.

JEL: G3

KEYWORDS: Pecking Order Theory, Capital Structure, Financing Deficit

INTRODUCTION

Pecking order theory is a prominent hypothesis put forward to explain corporate financing flows. The main purpose of this paper is to test how well the pecking order theory can actually explain the corporate financing patterns during the testing period. The data is obtained from the Compustat database which contains all financial statements of US public-listed companies for 1999-2009. The formal tests are based on the methodologies used by Frank and Goyal (2003), and the dataset begins at the approximate time at which theirs concluded. The correlation coefficients between net equity, debt financing and firm financing deficit are examined and it is found that equity financing is highly correlated with financing deficit (0.87). As a starting point for formal testing, separate regressions were ran for net debt and net equity on financing deficit, and being essentially a difference in means test, the result is consistent with our first correlation test. The coefficient ratio and R^2 of the net equity issues on financing deficit regression are much higher than the net debt issues on financing deficit regression. Overall, neither test shows significant support for pecking order theory as the primary hypothesis to explain corporate financing flows. This conclusion is consistent with the testing of Frank and Goyal (2003) for the sample period of 1971-1998.

LITERATURE REVIEW

The pecking order theory developed by Myers and Majluf (1984) hypothesises that firms faced with a financing need follow a financial hierarchy which dictates that firms will rank funding sources based on cost. Internal funds would be used first until exhausted, and then firms would seek out external debt and finally equity issuance as a last resort. Debt would be considered a relatively “cheap” source of capital due to the value of the tax shield, while equity a more expensive source. According to Myers and Majluf (1984), the cost of equity is further exacerbated due to the information asymmetry between managers and investors. Due to this informational asymmetry, investors are unable to ascertain the true value the company and its projects and therefore, undervalue the stock. Hence, it will not be in the interest of existing shareholders to sell stock undervalued by the market, and issuing additional equity will be viewed by the firm as the most

expensive source of capital. Shyam-Sunder and Myers (1999) propose that if costs of financial distress are ignored, keeping in mind the information asymmetry and pecking order hierarchy, firms will first issue the safest possible security i.e. investment grade debt before issuing any equity. However, if costs of financial distress are non-trivial, equity will be issued to finance favourable projects or pay off debt. If the market price of equity issue is too low, the manager's may forego the issue and this will lead to persistence in overwhelmingly high debt ratios and curtailing of profitable investment for the firm. They add that lesser optimistic managers will issue highly under-priced equity just to stay afloat. Furthermore, Shyam-Sunder and Myers (1999) develop a simple model to define financing deficit on which they then regress net debt to formally test for evidence of pecking order theory. This model forms the cornerstone of further testing done by Frank and Goyal (2003). Chirinko and Singha (2000) point out a potential pitfall in this regression model and how it may lead to misinterpretation of the results.

When regressing net debt on financing deficit and the estimated coefficient for financing deficit is high, one may conclude that indeed debt is preferred over equity and pecking order holds. However, it may just be the case that in fact static trade off theory holds and the optimal capital structure being maintained by the firm is largely composed of debt. Leary and Roberts (2008), develop a novel empirical model which has higher statistical power and eradicates some of the issues cited by Chirinko and Singha (2000). In their approach they take a more liberal modified form of the pecking order where equity issuances are allowed beyond a certain threshold debt level.

However, even after making an allowance for the liberal form, they find the model is unable to explain more than 50% of the financing decisions of firms. Fama and French (2005) show that over 50% of firms in the U.S. issue equity in such a manner that implies a violation of pecking order theory. They observe cases in which firms issue net equity even when capital expenditure can be covered by internal funds or debt financing. Firms with moderate leverage, financing surpluses (earnings exceed dividends and investment) still issue equity each year and this is a difficult result to reconcile with pecking order theory. Their argument is that information asymmetry is not always significant enough to deter firms from issuing equity. Rather than issuing ordinary stock, firms can issue equity through private placements, mergers, convertible debt, rights issues, warrants, employee options to name a few, which can reduce the company's cost of equity. From the above literature, we can see that pecking order theory is at best, an incomplete explanation of what drives corporate financing behaviour.

DATA AND METHODOLOGY

We observe a sample of 12,244 firms from the Compustat database over the period of 1999 - 2009. The sample contains monthly data, however each firm reports on a yearly basis, with some minor exceptions. To allow for comparison across firms we eliminate observations with missing book value of assets and those firms which report in Canadian dollars. Consistent with adjustments made by Frank and Goyal (2003), we subsequently replace selected items on each respective firm's balance sheet and income statement with zero in instances where there are missing values. Financial firms (SIC codes 6000-6999) and regulated utilities (SIC codes 4900-4999) have been excluded, consistent with standard practice, as their capital structure decisions are different and utilities are often influenced by regulatory concerns.

Furthermore, the agricultural, forestry and fishing industries (SIC codes 0001-0999) are highly subsidized within the United States. We acknowledge that these subsidies may have an effect on the firm's capital structure decisions. As a result, to avoid any potential bias in our sample we have excluded these firms from our analysis. To avoid nonsensical results, similar to Peter and Welch (2010) we have eliminated observations in which both equity and debt are equal to zero. In addition, we have set the book value of equity to be the largest of: Zero, 1% of the firm's debt, 0.1% of the firm's assets or 0.01% of the reported

book value. The pecking order theory, as described by Myers (1994), states that a firm's choice of funding source is a result of adverse selection problems due to informational asymmetries between potential investors and the firm. In this simplified example a firm has three sources of funding available: retained earnings, debt and equity. In the case of retained earnings, there are no information asymmetries leading to adverse selection problems, hence this is the preferred source of funding. In the case of equity, investors require a relatively large premium due to potential risk and informational asymmetries. Debt also commands a similar premium, however this premium is generally smaller in magnitude. As a result, if there are inadequate retained earnings to finance the required investments, the firm will exhaust its debt funding before finally attempting to raise equity. In order to explore this theory, we employ a similar disaggregation technique as used by Frank and Goyal (2003), with notation defined as follows:

DIV_t : Cash dividends in year t;

I_t : Net investment in year t (i.e. $I_t =$ capital expenditures + increase in investments + acquisitions + other use of funds – sale of PPE – sale of investments)

ΔW_t : Change in working capital in ear t ($\Delta W_t =$ change in operation working capital + change in cash and cash equivalents + change in current debt)

C_t : Cash flow after interest and taxes ($C_t =$ income before extraordinary items + depreciation and amortisation + extraordinary items and discontinued operations + deferred taxes + equity in net loss – earnings + other funds from operations + gain (loss) from sales of PPE and other investments)

ΔD_t : Net debt issued in year t ($\Delta D_t =$ debt issuance – debt reduction) (long term only)

ΔEt : Net equity issued in year t ($\Delta Et =$ sale of common stock - stock repurchases)

We can hence define financial deficit in year t (DEF_t) as follows, representing a partially aggregated form of the accounting cash flow identity:

$$DEF_t = DIV_t + I_t + \Delta W_t - C_t = \Delta D_t + \Delta Et \quad (1)$$

In line with Shyam-Sunder and Myers (1999), under the pecking order hypothesis, after an Initial Public Offering (IPO), debt and retained earnings are generally used as sources of funds, with equity only being raised in extreme circumstances. This can be empirically represented as follows:

$$\Delta D_t = a + b * DEF_t + e_t \quad (2)$$

The hypothesis under the pecking order theory is that $a = 0$ and $b = 1$.

Also, since the theory implies that equity issuance should be a last resort, the relationship is:

$$\Delta Et = a + b * DEF_t + e_t \quad (3)$$

Where, $b \approx 0$, i.e. 'b' should be approximately 0.

When the regressions on equations 2 and 3 are run, we should obtain the respective values of regression constant 'a' and coefficient 'b' as implied by the pecking order theory. We note that Shyam-Sunder and Myers (1999) include the current portion of long-term debt as an additional variable in the financing deficit equation. However, we further note that Frank and Goyal (2003) concluded that the current portion of

long-term debt does not appear to belong to the definition of DEF_t . As a result, we have subsequently excluded the current portion of long-term debt from our measure of financing deficit. Taking equation 2 and substituting the value of DEF_t in equation 2 with the value of DEF_t from equation 1, we obtain the following equation which will be the basis of our empirical test regression:

$$\Delta D_t = a + b_{div}DIV_t + b_I I_t + b_{\Delta W} \Delta W_t - b_C C_t + e_t \tag{4}$$

This regression will calculate the coefficient b_{div} , b_I , $b_{\Delta W}$ and b_C respectively and will tell us how much of the financing deficit is actually funded using debt and what role debt has in the hierarchy of financing required by firms. If Pecking order theory were to hold we should obtain a high R^2 for the regression. Also, we will analyse each coefficient to further infer the applicability of the pecking order theory.

The empirical tests will be performed in three phases on sample data of 12244 U.S. firms from 1999-2009. Phase 1 will run pair wise correlation of net debt issued, net equity issued and financing deficit respectively. Phase 2 will run separate regressions of net debt issued (Equation 1) and net equity issued (Equation 2) on financing deficit. Phase 3 will run the regression on Equation 4, which is the regression of net debt issued and gross debt issued on the components of the financing deficit.

RESULTS

Table 1 provides pairwise correlation coefficients of net debt issued, net equity issued and financing deficit. For the pecking order theory to hold, we would expect the correlation of net debt issued and financing deficit to be close to one. The results in the table 1 below, however, provide evidence against the pecking order theory as the correlation between net debt issued and the financing deficit is only 0.45.

Table 1: Pairwise Correlation tests

	Net Equity Issued	Net Debt Issued	Financing Deficit
Net equity issued	1.0000		
Net debt issued	0.0464	1.0000	
Financing deficit	0.8732	0.4477	1.0000

Table 1 shows pairwise correlation tests for net equity issued and financing deficit, net debt issued and financing deficit and net debt issued and net equity issued. The results are for a sample of 12244 U.S. firms obtained from Compustat database for the time period 1999-2009. Financial firms and regulated utilities have been excluded from the sample. The data is winsorised at 1st and 99th percentile.

Furthermore, the correlation of net equity issued and financing deficit is 0.87, which is significantly larger than that of net debt issued. From these results we can conclude that those firms within our sample are more likely to issue equity than debt to fund their financing deficit, providing strong evidence against the pecking order theory. The next table (Table 2) shows results of the regression of net debt issued ($\Delta D_t = a + b * DEF_t + e_t$) and net equity issued ($\Delta E_t = a + b * DEF_t + e_t$) on financing deficit. According to the pecking order theory, the coefficient ‘b’ obtained for regression of net debt on financing deficit should be equal to 1 and it should be extremely small or zero for regression of net equity issued on financing deficit. However, as we see here, the empirical findings suggest quite the opposite. The coefficient of regression ‘b’ is bigger (0.69) for net equity and smaller for net debt (0.14).

The results in table 2 show that the net equity issued during the period 1999-2009 is much higher than the net debt issued when regressed on the financing deficit. Similar to Frank and Goyal (2003), this does not support the pecking order theory. According to Myers, a major advantage of the pecking order theory is that it can explain why firms are more willing to finance externally through debt as opposed to equity issues. However, from the data reported in table 2, the coefficient for net equity is 0.69 and R^2 is 0.76 which provides strong evidence that firms in this period preferred to issue equity as opposed to debt. The coefficient for debt issued is 0.14 and R^2 is 0.20 which suggests that only a small amount of external

financing takes the form of debt. Moving on to the third phase of our empirical testing, Table 3 provides results of the regression with net debt issued and gross debt issued as the dependant variable; which is in turn a function of the components of the financing deficit. As you can see in table 1, R^2 is only 0.1679 and 0.0696 for Net debt issued and Gross debt issued respectively. This is to say that below 20% of the financing deficit is covered through debt issuance. This is particularly not supportive of the Pecking order theory.

Table 2: Separate Regressions of Net Debt and Net Equity on Financing Deficit

	Net Debt Issued (1)	Net Equity Issued (2)
Constant	0.0025	0.0156
Financing Deficit	0.1367**	0.6882**
N	66576	68311
R ²	0.2005	0.7625

Table 2 – Separate regressions of net debt issued and net equity issued on financing deficit are run. All variables are scaled by total assets. Net debt issued is given by the equation $\Delta D_t = a + b * DEF_t + e_t$ and net equity issued is given by the equation $\Delta E_t = a + b * DEF_t + e_t$. ** is used to indicate significance at 5% level. The results are for a sample of 12244 U.S. firms obtained from Compustat database for the time period 1999-2009. Financial firms and regulated utilities have been excluded from the sample. The figure in each row of column 1 and 2 is the regression coefficient.

Table 3: Regression of Debt Issued on Disaggregated Financing Deficit

Components of Financing Deficit	Net Debt Issued (1)	Gross Debt Issued (2)
Constant	-0.0018** (0.0006)	0.0874** (0.0012)
Cash dividends	0.3946** (0.0250)	0.5948** (0.0494)
Investments	0.2386** (0.0029)	0.2076** (0.0057)
Δ Working Capital	0.0949** (0.0013)	0.1205** (0.0025)
Internal Cash flow	-0.0786** (0.0008)	-0.1056** (0.0016)
Number of Observations	66576	66576
R ²	0.1679	0.0696

Table 3 shows the regression estimates of the equation: $\Delta D_t = a + b_{div}DIV_t + b_{I_t}I_t + b_{\Delta W}\Delta W_t - b_C C_t + e_t$ where, ΔD_t is the amount of net or gross debt issued, DIV_t is the amount of cash dividends paid, I_t is the investments, ΔW_t is the change in working capital, C_t is the cash flow after interest and taxes. The dependant variable in column 1 is the net debt issued and in column 2 is the gross debt issued. The results are for a sample of 12244 U.S. firms obtained from Compustat database for the time period 1999-2009. Financial firms and regulated utilities have been excluded from the sample. The first figure in each row of column 1 and 2 is the regression coefficient; the figure in parentheses beneath each regression coefficient indicates the standard errors. ** is used to indicate significance at 5% level.

Analysing the coefficients of the above regression, it should be noted that the coefficient on investments is positive. The pecking order theory predicts a positive coefficient for investments in fixed assets, as seen in the above regression. According to the pecking order theory, once internal cash flows are taken into account, investments in fixed assets should correspond on a one-for-one basis with increase in debt. The negative coefficient of internal cash flow as seen in the above regression is supportive of the pecking order theory.

This can be explained by the notion that if retained earnings are the preferred source of capital, an increase in internally generated funds will decrease the need to draw down debt to fund the firm’s activities. Although, the coefficients do provide some support for the pecking order theory, the low R^2 falters the case for a strong form of pecking order theory. We do acknowledge seeing some support for the theory.

CONCLUDING COMMENTS

The main goal of this paper was to empirically test a sample of 12244 firm data from 1999-2009 for potential adherence to the pecking order theory. In Phase 1, we ran pair wise correlation of net debt issued, net equity issued and financing deficit respectively. Phase 2 ran separate regressions of net debt issued (Equation 1) and net equity issued (Equation 2) on financing deficit. Phase 3 ran the regression on Equation 4, which is the regression of net debt issued and gross debt issued on the components of the financing deficit. For Phase 1 of testing, we found net equity almost twice as highly correlated to financing deficit as opposed to net debt. In Phase 2, the regression coefficient for net equity on financing deficit was found to be 0.69 and R^2 is 0.76 as opposed to a coefficient of 0.14 and an R^2 of 0.2 for the regression of net debt on financing deficit. This evidence alone is enough to prove that pecking order theory doesn't hold and not only that, but equity issuance is a preferred method of raising funds. Our dataset commences precisely where that of Frank and Goyal (2003) concludes, and unsurprisingly we find that their conclusions roughly hold in the following decade. There is a lack of evidence that firm's behaviour when raising capital is solely determined according to pecking order theory. We find in fact, that firms are more likely to raise equity to fund capital expenditure than the "cheaper" debt financing. These results are puzzling and there are likely still some other undetermined factors that influence firm capital structure.

REFERENCES

- Chirinko R.S., and Singha, A.R., 2000. Testing static tradeoff against pecking order models of capital structure: a critical comment, *Journal of Financial Economics*, Vol. 58, 417-425
- Fama, Eugene and French, Kenneth, 2005. Financing decisions: who issues stock? *Journal of Financial Economics* 76, (June 2005), 549-582
- Frank, Murray Z., and Goyal, Vidhan K., 2003. Testing the pecking order of capital structure. *Journal of Financial Economics*
- Iliev, Peter and Welch, Ivo. Reconciling Estimates of the Speed of Adjustment of Leverage Ratios (October 20, 2010). Available at SSRN: <http://ssrn.com/abstract=1542691> or <http://dx.doi.org/10.2139/ssrn.1542691>
- Leary, Mark T. and Roberts, Michael R. The Pecking Order, Debt Capacity, and Information Asymmetry (December 18, 2008). Available at SSRN: <http://ssrn.com/abstract=555805>
- Myers, Stewart C. and Majluf, Nicholas S., 1984. Corporate financing and investment decisions when firms have information that investors don't have, *Journal of Financial Economics*, Vol. 13, 187-221
- Shyam-Sunder, Lakshmi and Myers, Stewart C., 1999. Testing static trade off against pecking order models of capital structure, *Journal of Financial Economics*, *Journal of Financial Economics*, Vol. 51, 219-244

BIOGRAPHY

Ali Shakil Khan is a lecturer in Finance at The Swinburne University of Technology Sarawak. He has been lecturing for the past three years. He has a Master's in Finance from UNSW, Sydney, Australia. His Bachelor's degree was also in Finance from the University of Nebraska at Lincoln. His research interests include corporate finance, asset pricing and risk management. He can be contacted at B-334, Swinburne Sarawak, Jalan Simpang Tiga, Kuching, Sarawak, Malaysia. Post code: 93050. Email: askhan@swinburne.edu.my

Awang Yusop Adom holds a DBA in Retailing from Asia e University, Malaysia for his thesis on Consumers' Behaviour towards Modern and Traditional Retailing, a Master in Business Administration majoring in Marketing, and Bachelor of Science Business Administration from Oklahoma City University, Oklahoma, USA. Dr Awang is a lecturer in Integrated Management at the Faculty of Business and Design at Swinburne University of Technology Sarawak. He has been actively involved in teaching of MBA programs for the past 14 years in private universities and colleges in Malaysia. Email: ayaa@swinburne.edu.my

EARNINGS MANAGEMENT, WEAK INTERNAL CONTROLS, AND FIRM SIZE

Yousef Jahmani, Savannah State University
Suman Niranjani, Savannah State University

ABSTRACT

We investigate the association between earnings management and internal control weaknesses as well as the association between earnings management and firm size. We use two samples: one from large accelerated filers, matched with the same number of firms with strong internal control, and the other from accelerated filers with internal control weaknesses, matched with the same number of firms with strong internal control. Using a modified Jones model, we determine that firms with weak internal control manage their earnings more than do those with strong internal control. The test result is robust for accelerated filers but only modest for large accelerated filers, suggesting that large firms manage their earnings less than do other firms. The results suggest that firm size is an important factor in determining earnings management. The findings are important for (1) regulators who may consider additional disclosure requirements for accelerated filers, non-accelerated filers, and smaller firms and (2) auditors who may increase their scrutiny of financial statements of these firms.

JIL: M41

KEY WORDS: Earnings Management, Internal Control, Discretionary Accruals, Firm Size

INTRODUCTION

The Sarbanes-Oxley Act (SOX) of 2002 requires each registrant to establish and maintain effective internal control. Section 404 of SOX requires company's management to assess and to report on the effectiveness of internal control over financial reporting. A system of internal control consists of policies and procedures that are designed to provide reasonable assurance that the firm achieves its objectives. Auditors are required to attest to and to issue an opinion on the fairness of the management report and the design and operation of internal control over financial reporting. The purpose of these requirements is to enhance the reliability of financial statements and to make these statements reflect the economic reality of the company's performance. Auditing Standard No. 2 indicates that a material weakness is a significant deficiency or combination of significant deficiencies that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected. The emphasis on internal control reflects the perception that effective internal control may reduce or prevent misrepresentation of the company's actual economic performance. Thus, weak internal control may provide an opportunity for earnings management.

Earnings management involves managers' using judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Research on internal control indicates that weak internal control may increase the probability of errors in accounting numbers (Hagerty, 2005; McDonald and Francis, 2005) and may lead to low-quality accounting accruals from both unintentional and intentional errors (Ashbaugh-Skaife, Collins, and Kinney, 2007; Doyle, Ge, and McVay, 2007a). Research on earnings management has focused on a

number of areas, including the association between earnings management and the components of the firm's governance system. Nevertheless, there is limited research on the impact of weak internal control on earnings management, and the only known study in this regard is that of Chan et al. (2008), who compared a sample of accelerated filers category with weak internal control to those with strong internal control from the same category and found modest evidence that firms with weak internal control have more positive discretionary accruals and absolute discretionary accruals than do the other firms. Our research expands that of Chan et al. to include the earnings management in the large accelerated filers with weak internal control and with strong internal control. As such, firm size is introduced as a factor in this paper. Kim, Liu, and Rhee (2003) tested whether firm size has an impact on earnings management but did not control for weak internal control in their sample. Our research, however, tests samples from accelerated filers and large accelerated filers, taking into account the strength of internal control. The remainder of this paper is organized as follows. Section II presents related literature, followed by our research hypotheses. Section III consists of a discussion of sample selection and methodology. Section IV presents the empirical findings of our research, and section V provides a summary and conclusions.

LITERATURE REVIEW

A number of studies has tested the association between earnings management and the components of corporate governance. Corporate governance is the system by which companies are directed and controlled. Rezaei and Roshani (2012) find that the higher the proportion of institutional ownership, the greater the independence of the board of directors and the higher the use of efficient earnings management. Bowen, Rajgopal, and Venkatachalam (2008) findings suggest some evidence that discretion accruals due to poor governance are positively associated with future operating cash flows and return on assets, which indicates that shareholders may benefit from earnings management because it signals future performance. Beasley (1996), Chtourou et al. (2001) show that the characteristics of the board of directors have an important impact on the quality of financial reporting. Specifically, the experience of the independent board members as directors of both the firm and other firms reduces the probability of high earnings management.

Further, Klein (2002a) and Dechow, Sloan, and Sweeney (1996) indicate that, with a higher level of board independence, companies will reduce earnings management. Klein (2002a) tested whether both audit committee characteristics and board characteristics were associated with earnings management. She finds that there is a negative relationship between the independence of both and the presence of abnormal accruals. Jenkins (2002) investigates the relation between earnings management and audit committee effectiveness as a factor score that is passively associated with four characteristics of audit committee: percentage of outside directors, the percentage of financial experts, number meetings a year, and the committee size. Her results suggest that outside members mitigate earnings management. Yang and Krishnan [2005], testing the magnitude of quarterly earnings management during 1996-2000, report insignificant effects with respect to the presence of a financial expert as a member of the audit committee.

Prawitt, Smith, and Wood (2009) investigated the relationship between internal audit function quality and earnings management. They used a measure of the internal audit function quality that is based on the six internal audit principles found in SAS No. 65. They find that internal audit function quality is associated with a moderate level of earnings management. But Davidson, Goodwin-Stewart, and Kent (2005) find no evidence if an internal audit function is associated with a lower level of earnings management. Bradshaw, et al. (2001) investigate the relationship between the external auditors turnover and earnings management. They find no evidence of greater turnover of external auditors after higher levels of accruals. Brown and Pinello (2007) results suggest that a year-end financial audit by external auditors reduces manager's opportunities to manage earnings if the fourth quarter. Frankel, et al. (2002) results suggest that there is a negative association between audit fees and indicators of earnings management. In contrast, they find no association between total fees and any indicators of earnings management, indicating that combining audit and non-audit fees into a single measure covers their differential incentive effects

Krishnan et al. (2011) examined the relationship between CFO/CEO-board social ties and earnings management over the 2000–2007 period. Their results suggest that CFO/CEOs chose more socially connected directors in the post-SOX period, possibly as a way out of the mandated independence requirements. The results also suggest a positive relationship between CFO/CEO-board social ties and earnings management. Dichiv, et al. (2013) administered a survey to CEOs about earnings quality and earnings management. The CEOs indicate that about 60% of earnings management is income-increasing, while 40% is income decreasing. The CEOs also point out to the signs of earnings management such as “paying attention the top managers running the company, the lack of correlation between earnings and cash flows, and significant deviation between firm and peer experience”.

Chan et al. (2008) tested whether firms that report material weaknesses under Section 404 of SOX have more earnings management than do other firms. Their results provide weak evidence that there are more positive and absolute discretionary accruals for firms with weak internal control than for firms with strong internal control. Wu, Liu, and Frederick (2011) provide evidence that, after the remediation of internal control deficiencies, the proportion of income from managers’ earnings management activities in information value will decline, leading to improvement of the firm’s reporting. Burgstahler and Dichiv (1997) find both large and small firms engaged in earning management. Kim, Liu, and Rhee (2003) argue that large firms may take into consideration reputation costs when they engage in earnings management, while small firms may engage in earnings management to avoid reporting losses. The related literature shows there is limited research on the association between earnings management and internal control weaknesses as well as firm size. Thus, the present research contributes to the literature by introducing firm size as a factor and exploring the aforementioned associations.

HYPOTHESES

SOX requires each registrant to establish and maintain effective internal controls over financial reporting. One of the main objectives of internal controls is to enhance the reliability of financial statements. Strong internal control systems prevent fraud and safeguard a company’s assets. Because management compensation is, to some extent, based on a company’s performance, management may attempt to inflate revenues and overstate assets and/or decrease expenses and understate liabilities and to do so, in particular, when net income is low, negative, or does not meet analysts’ expectation as a means to maximize the compensation to management. Effective internal control may reduce or prevent such management manipulation. If management is to pursue the goal of maximizing its compensation, it may relax some controls in an attempt to manage earnings as a means to implement its scheme. Therefore, we expect that weak internal control will be associated with earning management in all firms. Thus, we posit the following;

H₁: Accelerated filers with weak internal control tend to manage their earnings

H₂: Large accelerated filers with weak internal control tend to manage their earnings.

Large accelerated filers tend to have access to additional resources and to have a well-developed infrastructure; as such, they have more sophisticated internal control than do accelerated filers. Moreover, large accelerated filers are normally audited by big four audit firms. These firms usually have more qualified personnel than do other firms. Gore et al. (2001) find that non-big audit firms allow more earnings management than do big audit firms. Lennox (1999) finds that the audit reports issued by large firms are more accurate and more informative and, thus, that the size of audit firms is positively associated with financial statements accuracy. Finally, large accelerated filers tend to have more effective audit committee than do accelerated filers, given that the large firm usually are audited by large audit firms. For these reasons large accelerated filers may engage in less earnings management than do accelerated filers.

Some research, however, suggests the opposite, namely, that there is a positive relationship between firm size and discretionary accruals. Larger firms with more capital market pressure and more bargaining power are more likely to manage their earnings than are small firms (Myers and Skinner, 2000; Nelson et al., 2002). Thus, our third hypothesis is:

H₃: Large accelerated filers manage their earnings less than do accelerated filers.

DATA and METHODOLOGY

Data

The objective of this paper is to test whether firms with weak internal control manage their earnings more than do firms with strong internal control. To do so, we used two samples: one from accelerated filers with weak internal control matched with the same number of firms with strong internal control and the other from large accelerated filers with weak internal control matched with the same number of firms with strong internal control. We utilized Accounting Research Manager to identify these firms. We restricted our search to accelerated and large accelerated filers. The Securities and Exchange Commission (SEC) categorizes firms that are required to file 10-Ks into four categories based on firm size: large accelerated, accelerated, non-accelerated, and small reporting companies. Accelerated filers generally include companies with an aggregate market value of voting and non-voting common equity held by non-affiliates of the issuer (referred to as “public float”) of \$75 million but less than \$700 million as of the last business day of the issuer’s most recently completed second fiscal quarter. Large accelerated filers, in contrast, are firms with an aggregate market value of voting and non-voting common equity held by non-affiliates of the issuer (referred to as “public float”) as over \$700 million as of the last business day of the issuer’s most recently completed second fiscal quarter.

Sample selection consists of a database search followed by the screening of the 10-Ks. The database contains 1,851 and 4,210 companies identified as large accelerated filers and accelerated filers, respectively. In the first phase, the authors searched the database for large accelerated filers with material weaknesses disclosed in their 10-Ks between January 2005 and January 2009. Then the same search was made for accelerated filers for the same period. This period was chosen for two reasons: first, to avoid the recession period as a confounding variable and, second, the earlier period was excluded on the assumption that, during that period, these companies would not have sufficient experience to maintain effective internal controls.

The term “adverse opinion” is used to search the database. The search produced 183 and 226 large accelerated filers and accelerated filers, respectively, which had the term in their 10-Ks. The 10-Ks of these firms were individually screened. Specifically, the management report on internal controls and the auditor’s opinion on the weaknesses of internal controls. From these firms, 90 firms were randomly selected from large accelerated filers and 90 firms from accelerated filers. We matched these firms with the same number of firms (and years) of the same two-digit code with effective internal control. The total number of observation is 360. Tables 1 and 2 show the distribution of these companies across industries. It is worth noting that more than one-third of the experimental group comes from the technology sector and business services. This finding is consistent with previous research (Bulkeley et al., 2005).

Table 1: Sample Distribution by Industry for Accelerated Filers

Industries (Based on 2-Digit SIC Codes)	ICW Firms	Non-ICW Firms
Oil and gas extraction	9	9
Paper and allied products	1	1
Printing, publishing & allied	2	2
Chemicals & allied products	8	8
Primary metal industries	1	1
Fabricated metal products, except machinery and transportation equip.	3	3
Industrial and commercial machinery and transportation equipment.	10	10
Electronic and other electrical equip. and computer equipment	16	16
Measuring, analyzing, and controlling Instruments; photographic; Medical and Optical goods; watches and clocks	12	12
Communications	5	5
Wholesale trade- durable goods	2	2
Business services	18	18
Engineering, accounting, research, management, and related services	3	3
Total	90	90

Table 2: Sample distribution by Industry for Large Accelerated Filers

Industries (Based on 2-Digit SIC Codes)	ICW Firms	Non-ICW Firms
Fabricated metal products, except machinery and transportation equip.	4	4
Electronic and other electrical equip. and computer equipment	12	12
Printing, publishing & allied	2	2
Business services	20	20
Oil and gas extraction	10	10
Engineering, accounting, research, management, and related services	3	3
Industrial and commercial machinery and transportation equipment.	12	12
Paper and allied products	1	1
Primary metal industries	1	1
Chemicals & allied products	13	13
Measuring, analyzing, and controlling Instru.; photographic; medical and Optical goods; watches and clocks	9	9
Wholesale trade- durable goods	3	3
Communications	2	2
Total	90	90

Model

Researchers use several models to detect earnings management. The earlier models estimate discretionary accruals by firm using time series data until year $t-1$ and predict the values of accruals for year t . This estimation assumes the stability of coefficients. Defond and Jiambalvo (1994) propose the use of cross-sectional data to estimate discretionary accruals to avoid the assumption of the stability of coefficients and to reduce the likelihood of the misspecification of the model. Bartov et al. (2001) find that the cross-sectional Jones model and the cross-sectional modified Jones model outperform time series models in detecting earnings management. Because we use cross-sectional data, we will use the modified Jones model. Dechow et al. (1995) find that the modified Jones model outperforms the Jones model in detecting earnings management. They argue that the Jones model implicitly assumes that discretion is not exercised over revenue in either the event period or the estimation period. The modified Jones model assumes that all changes in credit sales in the event period are caused by earnings management. The main difference between the Jones model and the modified Jones model is that the modified Jones model takes into account change in receivables as a result of change in revenues. Based on the above, this research utilizes the following modified Jones model.

$$TA1 = \beta_0 + \beta_1 (1/At - 1) + \beta_2 (\Delta REV_t - \Delta REC_t) + \beta_3 (PPE_t) + \varepsilon_t \quad (1)$$

Where TA is total accruals. Total accruals are calculated as the difference between net income before discontinued operation and extraordinary items and cash flows from operation. A_{t-1} denotes total assets at the beginning of the year. ΔREV_t , and ΔREC_t are change in revenues and account receivables, respectively, and PPE_t is gross property, plant, and equipment. ΔREV_t , ΔREC_t and PPE_t capture nondiscretionary accruals where the error term ε_t captures the discretionary accruals

RESULTS

Descriptive Statistics and Modified Jones Model for Large Accelerated Filers

As noted, the large accelerated filers are divided into weak and strong internal control. First half of table 3 provides the descriptive statistics and correlations for total accruals and several other measures for 90 large accelerated filers with strong internal control. The total accruals average is -0.0517; the primary reason for the negative accrual value is depreciation accrual. The interquartile range is -0.076 to -0.026, but the standard deviation is close to the value of the mean, at around 0.055, suggesting that the coefficient of variability is slightly over 1 and that the distribution does not seem to have a long tail relative to the normal distribution. Moreover, the mean and the median values of the total accruals are almost the same, suggesting that the distribution is symmetrical. The average *DEF* value is positive (0.122), suggesting that the companies' change in revenue is higher compared to their change in receivables, and the standard deviation of *DEF* is much larger in comparison to mean, suggesting that the coefficient of variability is twice as large as the mean and has a fat tail as compared to a normal distribution. The mean is larger than the median values of *DEF*, suggesting a positive skew. This is important for comparison purposes, as most of the large accelerated filers with strong internal control have a lower *DEF* value than what the average *DEF* suggests. The average *PPE* is positive as anticipated and appears to be close to a normal distribution (mean and median are not far apart). We find a significant and strong negative correlation between *DEF* and total accrual as well as between *PPE* and total accrual.

Table 3: Descriptive Statistics and Correlations

Large Accelerated Filers-Strong Internal Control										
N=90	Mean	Median	Std. Deviation	Variance	Q1	Q3	Total Accruals	1/Assets	DEF	PPE
Total Accruals	-0.0517	-0.050	0.0554	0.0030	-0.0761	-0.0264				
1/Assets	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.165			
DEF	0.1225	0.0720	0.2998	0.0899	0.0254	0.1251	-0.512**	0.127		
PPE	0.3907	0.3076	0.3122	0.0974	0.1636	0.6017	-0.315**	-0.163	0.184	
Large Accelerated Filers-Weak Internal Control										
Total Accruals	-0.0714	-0.0573	0.1196	0.0143	-0.0969	-0.0223				
1/Assets	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-0.08			
DEF	0.1165	0.0701	0.1572	0.0247	0.0274	0.1835	-0.03	0.12		
PPT	0.3051	0.1992	0.2705	0.0732	0.1078	0.4721	-0.05	-0.14	0.14	

**significant at 0.01 level (two-tail). This table provides descriptive statistics and correlations for total accrual and other measures for 90 large accelerated filers with weak and strong internal control. We find that the average total accrual for large accelerated filers with weak internal control is 29% larger (in terms of absolute values) than that of firms with strong internal control. We also find the coefficient of variability to be significantly larger for weak internal control in comparison to the strong internal control. These results could indicate that the earnings are managed when large accelerated filers have weak internal control.

Second half of Table 3 provides the descriptive statistics and correlations for total accrual and other measures for 90 large accelerated filers with weak internal control. The average value of total accrual

average is -0.0714, and the interquartile range is -0.097 to -0.022. The standard deviation, however, is close to twice the value of the mean total accrual, at around 0.12, suggesting that the coefficient of variability is close to 2, a long tail relative to the normal distribution. Moreover, the mean value is smaller than the median values of the total accrual, suggesting a negative skew distribution. The average *DEF* value as well as the *PPE*, as seen in lower half of Table 3, suggest a positive skew, and the standard deviations of *PPE* and *DEF* are slightly larger in comparison to the mean *PPE*, suggesting that the coefficient of variability is greater than 1. We find no significant correlations between the variables.

When comparing the descriptive statistics of large accelerated filers with strong internal control, we would anticipate the magnitude of the total accrual to be smaller in comparison to the weaker internal control. From the values provided in Tables 3, we find that the average total accrual for large accelerated filers with weak internal control is 29% larger (in terms of absolute values) than that of firms with strong internal control. We also find the coefficient of variability to be significantly larger for weak internal control in comparison to the strong internal control. These results could indicate that the earnings are managed when large accelerated filers have weak internal control.

In an attempt to get appropriate evidence to support the claim that earnings are managed due to weak internal control (and not just based on the mean and coefficient of variability), we use the modified Jones model. Based on the modified Jones model, as noted, we use a multiple linear regression with total accruals as the dependent variable and *1/assets*, *DEF*, and *PPE* as independent variables. The regression model summaries of both the weak and strong internal controls are provided in Table 4, whereas the coefficients of the predictors in both are provided in Table 5.

Table 4: Model Summary for Large Accelerated Filers

Model	R	R Square	Adjusted R Square	Residual	F
Large Accelerated Filers-Strong Internal Control	0.60	0.35	0.33	0.045	15.38**
Large Accelerated Filers-Weak Internal Control	0.1	0.01	-0.024	0.121	0.293

***significant at 0.01 level (two-tail). This table shows the regression model summary for large accelerated filers. Based on the results, we can say that the predictors that were employed by the strong internal control for the modified Jones model were able to predict the total accrual in a significant way; in contrast, for weak internal control, the predictors failed to explain any variability in total accrual*

As seen in Table 4, the model with weak internal control does not have a significant *F* value. The omnibus *F*-test for the overall model has failed; however, we see that the omnibus *F*-test for the strong internal control model is significant, which means that the overall model for strong internal control is valid. Taking a closer look at the *R*-Square (coefficient of determination), we see that amount of variability in the total accrual is better explained by the predictors of the strong internal control model. The *R*-Square value for strong internal control (35%) is significant, but because the model for weak internal control is not significant, we cannot compare the *R*-Square values. Based on the model summary, we can say that the predictors that were employed by the strong internal control for the modified Jones model were able to predict the total accrual in a significant way; in contrast, for weak internal control, the predictors failed to explain any variability in total accrual. This result is supported by the residual (error) in the regression; weak internal control has a residual value of more than twice that of strong internal control. The results presented in Table 5 show that all the coefficients of predictors are significant for strong internal control, and we do not find any multicollinearity issues. Specifically, according to the modified Jones model, large accelerated filers with weak internal control tend to manage their earnings. Thus, we find support for Hypothesis 2.

Table 5: Regression Coefficients Large Accelerated Filers

Large Accelerated Filers - Strong Internal Control					Large Accelerated Filers - Weak Internal Control				
Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value	Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value
(Constant)	-0.036	-3.942		0.001**	(Constant)	-0.051	-2.003		0.048*
1/Assets	25476.3	2.214	0.948	0.030*	1/Assets	-16174.6	-0.790	0.959	0.432
DEF	-0.093	-5.597	0.941	0.001**	DEF	-0.010	-0.121	0.961	0.904
PPT	-0.034	-2.104	0.930	0.038*	PPT	-0.026	-0.531	0.956	0.597

**significant at 0.01 level (two-tail); * significant at 0.05 level (two-tail). This table shows the regression coefficients for large accelerated filers. The results presented in the table show that all the coefficients of predictors are significant for strong internal control, and we do not find any multicollinearity issues. Specifically, according to the modified Jones model, large accelerated filers with weak internal control tend to manage their earnings.

Descriptive Statistics and the Modified Jones Model for Accelerated Filers

The second group considered in this paper is accelerated filers, which were further divided into weak and strong internal control. First half of Table 6 presents the descriptive statistics and correlations for total accrual and several other measures for 90 accelerated filers with strong internal control. The total accrual average is -0.188. The interquartile range is -0.123 to -0.008, but the standard deviation is close to the value of 1.025, suggesting that the coefficient of variability is slightly over 5 and that the distribution has a fat tail relative to the normal distribution. Moreover, the mean is significantly smaller compared to the median value, signifying that the distribution is negatively skewed and not symmetrical. We find that the average total accruals for large accelerated filers with strong internal control are significantly smaller in comparison to accelerated filers. We would anticipate that large accelerated filers have more stringent strong internal control in comparison to accelerated filers with strong internal control and, thus, manage their earnings less. The average DEF value is positive (0.1). The mean is larger than the median values of DEF, suggesting a positive skew. The average PPE is positive as anticipated and is close to the normal distribution (mean and median are not far apart). We find a significant and strong negative correlation between DEF and total accrual as well as between 1/Assets and total accrual. Although we find a strong positive correlation between 1/asset and DEF, we later find no multicollinearity issues (shown later in Table 8).

Table 6: Descriptive Statistics and Correlations

Accelerated Filers-Strong Internal Control										
N=90	Mean	Median	Std. Deviation	Variance	Q1	Q3	Total Accruals	1/Assets	DEF	PPE
Total Accruals	-0.188	-0.050	1.025	1.050	-0.123	-0.008				
1/Assets	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-0.72**			
DEF	0.100	0.030	0.245	0.060	-0.030	0.210	-0.57**	0.44**		
PPE	0.275	0.193	0.233	0.054	0.102	0.440	0.03	-0.06	-0.23	
Accelerated Filers-Weak Internal Control										
Total Accruals	-0.10	-0.07	0.67	0.45	-0.12	-0.02				
1/Assets	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-0.40**			
DEF	0.16	0.07	0.35	0.12	0.01	0.21	0.15	0.08		
PPT	0.25	0.15	0.25	0.06	0.07	0.34	0.03	-0.15	0.02	

**significant at 0.01 level (two-tail); Comparing the descriptive statistics of accelerated filers with strong internal control to weak control, we would anticipate the size of the total accrual to be smaller for strong in comparison to weak internal control. We find that the average total accrual for accelerated filers with strong internal control is 88% larger in comparison to weak internal control.

Second half of Table 6 presents the descriptive statistics and correlations for 90 large accelerated filers with weak internal control. The average value of total accrual average is -0.10. The interquartile range is -0.12 to -0.07, but the standard deviation is close to 7 times the value mean total accrual, at around 0.67, suggesting that the coefficient of variability is close to 7, a long tail relative to the normal distribution. Moreover the mean value is smaller than the median values of the total accrual, suggesting a negatively skewed distribution. We find that the average total accruals for large accelerated filers with weak internal control are smaller in comparison to accelerated filers. The average *DEF* value, as seen in second half of Table 6, suggests a positive skew, and the standard deviation of *DEF* is larger in comparison to the mean *DEF*, suggesting that the coefficient of variability is more than 1.

The *PPE* seems to be symmetrical distributed, and, except for 1/assets' being related to total accrual, we find no significant correlations between the variables. Comparing the descriptive statistics of accelerated filers with strong internal control to weak control, we would anticipate the size of the total accrual to be smaller for strong in comparison to weak internal control. Based on the values provided in Tables 6, we find that the average total accrual for accelerated filers with strong internal control is 88% larger in comparison to weak internal control. This is not in support of our hypothesis, although caution must be exercised in interpreting this finding because a better understanding could be achieved through the use of the modified Jones model. We find the coefficient of variability slightly larger for weak internal control as compared to strong internal control. These results may not indicate clearly, however, whether earnings are managed when accelerated filers have weak internal control. We use the modified Jones model to gain more clarity on earnings management in accelerated filers. The regression model summaries of both the weak and strong internal controls are provided in Table 7, whereas the coefficients of the predictors for both are provided in Table 8.

Table 7: Model Summary for Accelerated Filers

Model	R	R Square	Adjusted R Square	Residual	F
Accelerated Filers- Strong Internal Control	0.78	0.61	0.59	0.66	43.93**
Accelerated Filers- Weak Internal Control	0.44	0.20	0.17	0.61	7.031**

***significant at 0.01 level (two-tail); This table shows the regression model summary for accelerated filers The R-Square value for strong internal control (61%) is much higher than R-square (20%) for weak internal control. The model summary indicates that the predictors that were employed by the strong internal control for the modified Jones model were able to predict the total accrual much better than could those for the weak internal control model, for which the predictors explained less variability in total accrual.*

The results in Table 7 indicate that both weak and strong internal control have a significant *F* value for the overall model. The omnibus *F*-test for the overall model is supported. A closer look at the *R*-Square (coefficient of determination) indicates that amount of variability in the total accrual is better explained by the predictors of the strong internal control model as compared to weak internal control. The *R*-Square value for strong internal control (61%) is much higher than *R*-square (20%) for weak internal control. The model summary indicates that the predictors that were employed by the strong internal control for the modified Jones model were able to predict the total accrual much better than could those for the weak internal control model, for which the predictors explained less variability in total accrual. However, the residuals (error) in the regression for weak internal control have a slightly lower residual value in comparison to the residuals in strong internal control. The results in Table 8 indicate that all coefficients, except the *PPE* coefficients of predictors, are significant for strong internal control, whereas only 1/assets have a significant coefficient for weak internal control. We did not find any multicollinearity issues in either model. These results indicate that, according to the modified Jones model, the accelerated filers with weak internal control tend to manage their earnings. Thus, we find support for Hypothesis 2.

Table 8: Regression Coefficients Accelerated Filers

Accelerated Filers – Strong Internal Control					Accelerated Filers – Weak Internal Control				
Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value	Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value
(Constant)	0.253	2.143		0.0345*	(Constant)	-0.033	-0.331		0.741
1/Assets	-11294.65	-7.747	0.803	0.001**	1/Assets	-6153.06	-4.319	0.972	0.001**
DEF	-1.354	-4.184	0.764	0.001**	DEF	0.349	1.885	0.993	0.063
PPT	-0.345	-1.129	0.946	0.262	PPT	-0.096	-0.365	0.977	0.716

**significant at 0.01 level (two-tail); * significant at 0.05 level (two-tail); This table shows the regression coefficients for accelerated filers. Table indicates that all coefficients, except the PPE coefficients of predictors, are significant for strong internal control, whereas only 1/assets have a significant coefficient for weak internal control

Modified Jones Model for a Comparison of Accelerated and Large Accelerated Filers

Again, we used the modified Jones model to draw comparisons between accelerated and large accelerated filers with both weak and strong internal control. The regression model summaries of both the accelerated and large accelerated filers are presented in Table 9, while the coefficients of the predictors for the two groups are presented in Table 10. The model summary in Table 9 indicates that both models are statistically significant. We observe that the residual value of large accelerated filers is almost 7 times smaller than that of accelerated filers, indicating that large accelerated filers manage their earnings less in comparison to accelerated filers. Thus, we find evidence to support Hypothesis 3. Additionally, we see that the *R*-square value of large accelerated filers is significantly smaller in comparison to that of accelerated filers, and, as noted, the *R*-square value of large accelerated filers for both strong and weak internal control is lower than that of accelerated filers. The results presented in Table 10 show that, for the modified Jones model, there is one significant independent variable for each group.

Table 9: Model Summary for Large Accelerated and Accelerated Filers

Model	R	R Square	Adjusted R Square	Residual	F	P-Value
Large Accelerated Filers	0.22	0.05	0.03	0.092	3.02	0.031*
Accelerated Filers	0.61	0.37	0.36	0.69	34.13	0.001**

**significant at 0.01 level (two-tail); *significant at 0.05 level (two-tail); The model summary in Table 9 indicates that both models are statistically significant. We observe that the residual value of large accelerated filers is almost 7 times smaller than that of accelerated filers, indicating that large accelerated filers manage their earnings less in comparison to accelerated filers.

Table 10: Regression Coefficients Large Accelerated and Accelerated Filers

Large Accelerated Filers					Accelerated Filers				
Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value	Independent Variables	Coefficient (Beta)	T-Value	Tolerance	p-value
(Constant)	-0.039	-2.932		0.004**	(Constant)	0.095	1.144		0.254
1/Assets	-7899.330	-0.635	.950	0.526	1/Assets	-10299.043	-9.570	0.940	0.001**
DEF	-0.071	-2.416	.955	0.017*	DEF	-0.118	-1.036	0.944	0.302
PPT	-0.028	-1.177	.934	0.241	PPT	-0.136	-0.627	0.986	0.532

**significant at 0.01 level (two-tail); * significant at 0.05 level (two-tail); The results presented in Table 10 show that, for the modified Jones model, there is one significant independent variable for each group.

DISCUSSION

Effective internal control over financial reporting is a significant part of an organization's commitment to good governance that ensures, among other things, that the company has the ability to prepare reliable

financial statements. In the absence of effective internal control, firms are able to manage their earnings. The results of this research support this hypothesis with different level of strength For accelerated filers, the result is robust, while, for large accelerated filers, the result is weak as compared to firms with strong internal control. This difference may be attributed to a variety of factors, e.g., large accelerated files have more resources that may be devoted to establishing strong internal control. Many large accelerated filers have begun to adopt continuous control monitoring, which will help them to better govern their activities and to avoid risk, therefore enhancing the reliability of their financial statements. Such a practice will make it difficult for them to manage their earnings. Warfield et al. (1995) documented that a good corporate governance system may mitigate earnings management and improve the quality of financial statements. In addition, these firms have the resources to hire a sufficient number of qualified internal auditors, which reduces the likelihood of earnings management. Moreover, large accelerated filers usually are audited by the big four, who have the most qualified and experienced auditors, which prevents or reduces the possibility of earnings management. Francis et al. (1999) documented that the big 6 (now big 4) auditors mitigate earnings management more than did non-big 6 auditors.

Moreover, large accelerated filers may incur additional cost in terms of reputation if they engage in earnings management. They build up success over time due to their good understanding of their processes, market, environment, customers, and financial conditions. It is difficult for these firms to sacrifice their success for earnings management. Further, in practice, there are many firms that receive unqualified opinions on their financial statements while they receive adverse opinions on their internal control. In some cases, one may find that both management and employees are working in good faith and avoiding misrepresentation. Their financial statements are reliable in the absence of strong internal control. In other cases, management may agree to make adjustments proposed by an external auditor that make the financial statements present fairly, in all material respects, the firm's financial position and the results of operation and cash flows. The findings of the research are partially consistent with the results of Chan et al. (2008), who found that large firms with strong internal control manage their earnings less than do smaller firms. However, their findings do not apply to large accelerated filers with weak internal control.

CONCLUDING COMMENTS

The objective of this paper is to investigate the association between earnings management and internal control weaknesses, as well as the association between earnings management and firm size. Accounting Research Manager Database was utilized to randomly select two samples: one from large accelerated filers with weak internal control matched with the same number of firm of large accelerated filers with strong internal control; the second sample is from accelerated filers with weak internal control matched with the same number of firm from accelerated filers with strong internal control. The modified Jones model was used to detect the earnings management in both samples.

The results provide evidence that both large accelerated and accelerated filers with weak internal control manage their earnings more than the large accelerated filers and accelerated filers with strong internal control. The evidence is robust for accelerated filers while it is weak for large accelerated filers. The results suggest that firm size has a positive impact on earnings management. The findings of this research provide empirical evidence that effective internal control enhances the reliability of financial statements, reduces earnings management, and emphasizes the potential benefits of section 404 of SOX. The findings are important for regulators who may consider additional disclosure requirements for accelerated filers, non-accelerated filers, and smaller firms and who may devise a policy that may help in reducing earnings management by these firms. The findings also are important for auditors who may increase their scrutiny of the financial statements of these firms. The limitation of this research is that it focuses on large accelerated filers and accelerated filers excluding non-accelerated filers and small firms. The results of this research may not apply to these firms. Future research may focus of the motivations for earnings

management such as corporate governance structure, the board size, CEO compensations, and board independence

REFERENCES

- Ashbaugh-Skaife, H., Collins, D., and Kinney, W. (2007). "The discovery and reporting of internal control deficiencies prior to SOX-mandated audits." *Journal of Accounting and Economics*, Volume 44, Issue 1-2. PP 16-192.
- Beasley, M. S. (1996), "An empirical analysis of the relationship between the board of director composition and financial fraud". *The Accounting Review* 71, (October) 433-465.
- Bowen, R., S. Rajgopal, and M. Venkatachalam. (2008), "Accounting discretion, corporate governance, and firm performance." *Contemporary Accounting Research* 25 (2): 351-405.
- Bradshaw, Mark T., Scott A. Richardson, and Richard G. Sloan, (2001) "Do analysts and investors use information in accruals?" *Journal of Accounting Research* 39, 45-74.
- Brown, L. D, and A. S. Pinello. (2007). "To what extent does the financial reporting process curb earnings surprise games?" *Journal of Accounting Research* 25 (5): 947-981.
- Bulkeley, William, M. and Robert Tomsho.(2005). "Kodak to Get Auditors' Adverse View." *Wall Street Journal*, January 27, p 7.
- Burgstahler, D., and I. Dichev. (1997), "Earnings Management to Avoid Earnings Decreases and Losses." *Journal of Accounting and Economics* 24 (1): 99-126.
- Chan, Kam C. and Farrell, Barbara R. and Lee, Picheng, (2008), "Earnings Management of Firms Reporting Material Internal Control Weaknesses Under Section 404 of the Sarbanes-Oxley Act." *Auditing: A Journal of Practice & Theory*, Volume 27, Issue 2 (November 2008) pp. 161-179.
- Chtourou, Sonda Marrakchi, Jean Bédard, and Lucie Courteau (2001) "Corporate governance and earnings management." *Working paper*, Université. Laval, Quebec City, Canada
- Davidson, R., J. Goodwin-Stewart, and P. Kent. (2005). Internal governance structures and earnings management." *Accounting and Finance* 45 (2): 241-267.
- Dechow, P.; R. Sloan, and A. Sweeney (1996), "Causes and consequences of earnings manipulations: An analysis of firms subject to enforcement actions by the SEC". *Contemporary Accounting Research*, Vol. 13, pp. 1-36.
- Dechow, P., Sloan, R., Sweeney, A., 1995. Detecting earnings management. *The Accounting Review* 70, 193-225.
- DeFond, M., and J. Jiambalvo. (1994). "Debt covenant violation and manipulation of accruals." *Journal of Accounting and Economics*, 17: 145-176
- Dichev Ilia, John Graham, Campbell R. Harvey, and Shiva Rajgopal (2013) "Earnings quality: evidence from the field". *Working paper*, Emory University.

Doyle, J., Ge, W. and McVay, S. (2007a). "Determinants of weaknesses in internal control over financial reporting and the implications for earnings quality." *Journal of Accounting & Economics*, September. Vol. 44, pp.193-223.

Francis, J.R., E.L. Maydew, and H.C. Sparks. (1999). "The Role of Big 6 Auditors in the Credible Reporting of Accruals." *Auditing*, 18 (2): 17-34.

Frankel, R. M., M. F. Johnson, and K. K. Nelson. (2002). "The relation between auditors' fees for nonaudit services and earnings management." *The Accounting Review* 77 (4): 71-105.

Gopal V. Krishnan, K. K. Raman, Ke Yang, and Wei Yu (2011) "CFO/CEO-Board Social Ties, Sarbanes-Oxley, and Earnings Management." *Accounting Horizons*: September 2011, Vol. 25, No. 3, pp. 537-557.

Gore, P., P. F. Pope, and A. K. Singh. (2001). "Non-Audit Services, Auditor Independence, and Earnings Management." *Working Paper*, Lancaster University.

Hagerty, J. (2005). "Fannie Mae is cited for 'deficiencies'; Regulator sets for conditions to correct internal controls; Office of Compliance created." *Wall Street Journal*, May 9, page. A.3.

Healy, P. M. & Wahlen, J. M., (1999). "A Review of the Earnings Management Literature and Its Implications for Standard Setting," *Accounting Horizons*, 13(4), pp. 365-383.

Hermanson. Dana R, Jason L. Smith, and Nathaniel M. Stephens (2012) "How Effective are Organizations' Internal Controls? Insights into Specific Internal Control Elements." *Current Issues in Auditing*: June 2012, Vol. 6, No. 1, pp. A31-A50.

Jenkins, N. T. (2002). "Auditor independence, audit committee effectiveness, and earnings management. *Ph.D. dissertation proposal*," Henry B. Tippie College of Business, The University of Iowa.

Kim, Y., Liu, C., & Rhee, S. G. (2003). "The Effect of Firm Size on Earnings Management." *Working paper*, College of Business Administration the University of Hawaii.

Klein, A. (2002a). "Audit committee, board of director characteristics, and earnings management," *Journal of Accounting and Economics* 33 (August): 375-400.

Kothari, S.P., A. J. Leone, and C. E. Wasley. (2005). "Performance matched discretionary accrual measures." *Journal of Accounting and Economics* 39: 163-197.

Krishnan, Gopal V., K. K. Raman, Ke Yang, Wei Yu, (2011), " CFO/CEO-Board Social Ties, Sarbanes-Oxley, and Earnings Management," *Accounting Horizons*, Vol. 25, No. 3. pp. 537-557, September 2011.

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

Lennox, C. (1999), "Are Large Auditors More Accurate Than Small Auditors?" *Accounting and Business Research* 29 (3): 217-227.

McDonald, I. and Francis, T. (2005), "AIG to restate over four years to fix errors; Move will reduce net worth of giant insurer by \$2.7 Billion; Range of accounting issues grows." *Wall Street Journal*, May 2, page C.1.

Myers, L., and D.J. Skinner. (2000). "Earnings Momentum and Earnings Management." *Working Paper*, University of Michigan.

Nelson, M. W., J. A. Elliott, and R. L. Tarpley. (2002), "Evidence from Auditors about Managers' and Auditors' Earnings-Management Decisions". *The Accounting*

Prawitt, D. F., J. L. Smith, and D. A. Wood (2009), "Internal audit function quality and earnings management". *The Accounting Review* 84 (4): 1255-1280. Review 77 (Supplement): 175-20

Rezaei, F. & Roshani, M., (2012). 'Efficient or opportunistic earnings management with regards to the role of firm size and corporate governance practices,' *Interdisciplinary Journal of Contemporary Research in Business*, 3(9).

Wu, Jia, Linxiao Liu, and Frederick Jones (2011) "Firm value and earnings management after internal control weakness remediation." *International Journal of Business Research*. Sept. Volume: 11 Issue: 5

Warfield, T. D., J. J. Wild, and K. L. Wild. (1995), "Managerial Ownership, Accounting Choices, and Informativeness of Earnings." *Journal of Accounting & Economics* (July): 61-92.

Yang, J. S. and J. Krishnan. (2005). "Audit committees and quarterly earnings management." *International Journal of Auditing* 9, 201–219.

ACKNOWLEDGMENT

The authors of this paper contributed equally

BIOGRAPHY

Yousef Jahmani (Ph.D., Accounting, and CPA) is a professor of accounting at College of Business Administration/ Savannah State University. His research appears in journals that include Issues in Contemporary Accounting Journal, Special Issues in Finance and Accounting, Academy of Accounting and Financial Studies Journal, International Journal of Commerce and Management, and Journal of business and Economic Research. He can be reached at jahmaniy@savannahstate.edu

Suman Niranjana (Ph.D., Engineering, Industrial and Human Systems) is an assistant professor of operations management at College of Business Administration/ Savannah State University. His research appears in journals that include Issues in Decision Sciences, International Journal of Advanced Operations Management, International Journal of Business Performance and Supply Chain Modelling, Journal of Leadership and Organizational Studies, and Journal of Managerial Issues. He can be reached at niranjans@savannahstate.edu

TRANSFER PRICING: INCREASING TENSION BETWEEN MULTINATIONAL FIRMS AND TAX AUTHORITIES

Wray Bradley, University of Tulsa

ABSTRACT

Transfer pricing taxation is a significant source of tension between Multinational Firms (MNFs) and tax authorities. The tension relates to the different perspectives of MNFs and tax authorities. MNFs view taxes related to transfer prices as costs to avoid. On the other hand, regulators and tax authorities view taxes related to transfer pricing from the perspective of making sure that MNFs pay their fair share of taxes to the country or territory where MNFs generate profits. Previously, the U.S. was the primary world leader in the area of transfer pricing taxation. The Organization of Economic Cooperation and Development (OECD) have replaced the U.S in this role. The new OECD project titled Base Erosion and Profit Shifting (BEPS) will dramatically change transfer pricing taxation, on a worldwide basis. It also has the potential to affect change in foreign direct investment (FDI). These changes will take place in both developed and underdeveloped countries. This article informs regulators, tax authorities, MNF management, academics, and tax professionals about several major emerging issues related to BEPS. The article also informs accounting and taxation academics about future research needs in this area.

JEL: F23, H26, K34, M48

KEYWORDS: Transfer Pricing, Tax Avoidance, Multinational Firms, Tax Regulation

INTRODUCTION

A Multinational Firm (MNF) has a taxation issue related to transfer pricing anytime the group produces goods or services in an entity located in one country or territory and then transfers those goods or services to a related entity in another territory or country. In some cases the second entity may add to the production process and even transfer the product or service to a third related entity before the product or service is sold to the final consumer. Each transfer results in marginal profit for tax purposes. This marginal profit becomes part of the tax base in each country where the related entities are located. In recent years, tax authorities have expanded transfer pricing to include not only goods and services but to include transfers of intangible property, rent, and loans as well.

Transfer pricing has always caused tension between government regulators and MNFs. However, in the current environment regulators and tax authorities exacerbate the tension in Organization of Economic Cooperation and Development (OECD) countries by seeking to limit tax base erosion and profit shifting. This movement is due to decreasing tax revenues, even as MNF profits increase. The foundational cause of tension is rooted in the different concepts of taxation held by government authorities and MNFs. Regulators and tax authorities view tax from MNF marginal transfer price profits as an important portion of government revenue. MNFs view the tax on transfer price marginal profit as a cost to avoid by strategic tax planning. This tax planning includes putting the transfer price marginal profit in the lowest tax country possible, and the use of tax havens and tax incentives. The use of tax havens and tax incentives by MNFs causes inter-

country tension. This tension is increasing between tax haven/tax incentive countries and OECD countries that view limiting tax base erosion by MNFs as a top priority.

The next section summarizes selected academic research on transfer pricing and related tax planning activities on the part of MNFs. A section that describes the OECD Base Erosion and Profit Shifting (BEPS) action plans designed to limit tax avoidance through transfer pricing and other tax planning strategies follow this. Then there is a discussion section followed by concluding remarks.

LITERATURE REVIEW

The concept of transfer pricing was originally a managerial accounting concept dating back to the late 1880s. As companies increasingly organized around divisions and segments, management designed a methodology that internally allocates profit among different divisions and segments (Levey & Wrappe, 2010). The concept of using transfer pricing for taxation purposes originated in the U.S. in 1928 when the IRS began to allocate profits among related parties in order to inhibit tax avoidance (Section 45, Revenue Act of 1928). In 1935, the U.S. introduced the arm's length standard as a means of determining intercompany marginal profit for transfer pricing tax purposes. This standard requires MNFs, on paper, to sell goods and services to related entities at a price that is close to the price that those same goods and services would sell to outside parties. The OECD adopted the standard in 1979 (Morris, 2011). Since that time, global tax regulators have enacted statutes that delineate how tax is determined on goods and services that transfer between MNF related parties. The current foundation of this worldwide system is still the arm's length standard. However, regulation of transfer pricing for tax purposes on a global basis has evolved into a very complex set of rules and regulations that can vary from country to country. The implementation of these diverse rules is complex due to the lack of comparable third party transaction arm's length data, and the desire of some countries or territories to attract MNF business by the use of tax incentives.

Tax authorities throughout the world impose the arm's length principle (ALP) to determine transfer prices for MNFs. However, Keuschnigg & Devereux (2013) show that the use of ALP does not reflect the economic reality of how a MNF works, and transfer prices set by the ALP often do not reflect what an actual third party would pay. ALP may increase the tax base in the corporate parent's country, but at the same time reduce tax revenue in countries where the subsidiaries are located. The overall impact is a reduction in total tax revenue available for government agencies in the different countries involved. Yao (2013) finds the same thing for the case where the subsidiary is located in the parent's country. That is, overall tax revenues do not increase by the imposition of ALP even when the parent and subsidiary are in the same country. These findings seem to be in contrast to what most tax authorities believe.

Hyde & Choe (2005) discuss the operational reality that MNFs keep two different sets of books for transfer pricing purposes. One set for management purposes to internally assess subunit profitability, and a second set to determine the overall lowest tax for each subunit. This implies that a change in tax policy influences the internal incentive cost structure of a MNF. Similarly, a change in cost structure affects MNF tax policy.

From an economic standpoint, Copithorne (1971) indicates that transfer pricing for a MNF is a two-stage process motivated by profit maximization. The first stage is to maximize pretax profit among related entities on a global basis. The second stage is to allocate transfer prices among the controlled entities in a way that minimizes the overall tax cost. As might be expected, the MNF will seek to allocate as much profit as possible to the countries or territories with the lowest transfer pricing tax rates. Grubert & Mutti (1991) empirically affirm that transfer pricing taxation results in the shifting of MNF income to low tax countries, as well as, the shifting of investment to these countries.

Taylor, Richardson & Lanis (2015), in a sample of 286 U.S. MNFs, empirically confirm that U.S. MNFs seek to reduce taxes paid by manipulating transfer pricing among related entities. They find that this occurs

when MNFs seek to take advantage of low tax rates and incentives offered by countries that they do business in. Often, the mechanism used involves transfer of goods or services that lack available comparable sales data that would support an arm's length transfer price, for example, intangibles. Even when dealing with goods and services other than intangibles, tax authorities have to use incomplete and indirect information to establish transfer prices because there often are no comparable market prices to determine an arm's length price.

There is some empirical evidence that a majority of tax managers involved in transfer pricing for MNFs focus on compliance rather than aggressive tax avoidance. Klassen, Lisowsky & Mescall, (2013) surveyed senior tax managers from 219 MNFs the survey asked 114 questions. The results of the survey indicate that a majority of the surveyed firms establish their transfer prices on a compliance basis versus an aggressive tax avoidance basis. Interestingly, the results show that nonmanufacturing firms use aggressive tax avoidance more than manufacturers.

In spite of the mixed motivations of MNF tax managers, the reality is that the public perception and the perception of regulators worldwide is that MNFs are abusing transfer pricing and not paying their fair share of taxes. The IRS started a major transfer pricing initiative in 2010 (Ossi & Sheperd, 2010). The Large and Mid-Size Business Division (LMSB) reorganized into the Large Business and International (LB&I) division. This division now has a separate Office of Transfer Pricing Operations, comprised of transfer pricing specialists. These specialists are from within the IRS as well as outside hires. There has been an increased emphasis on knowledge management within the LB&I. Initiatives include an intranet Transfer Pricing Center and a December 2014 release of 46 International Practice Units (IPUs). IPUs are training modules on various tax topics that will educate and assist IRS employees before and during an audit. Twenty of the 46 IPUs discuss transfer pricing. MNFs can expect a higher level of scrutiny and IRS auditors with more expertise.

Chan, Lo, & Mo (2015) indicate that Chinese tax authorities have gained much transfer pricing expertise over the last two decades. As a result, they have significantly increased their transfer pricing audits; especially targeting Western MNFs. Sakurai (2002) finds that there is a difference in the regulatory styles of tax authorities. The IRS tends to rely more on litigation and adversarial audits, whereas, the tax authorities in the U.K. prefer informal negotiation, and Japanese tax authorities prefer regular interaction with MNF personnel. Regardless of style, MNFs can expect a higher level of scrutiny and expertise from international tax authorities, as well as, U.S. tax authorities.

Sikka & Willmott (2010) report that the Chinese tax authorities believe that they are losing almost \$4 billion annually in tax revenue due to tax avoidance and wealth transfer related to transfer pricing. The authors also report that the loss of tax revenue from transfer pricing seems to be widespread in both developing and developed countries. In developed nations, as corporate profits have increased, in most cases, MNF effective tax rates have decreased. They suggest that this is due in large part to transfer pricing manipulation. They propose that future research should focus on the losses to society caused by lost taxes from transfer pricing manipulation. In an examination of 203 of the largest Australian corporations, Taylor & Richardson (2012) found that the firms use a combination of methods to avoid taxes. The top two methods for tax avoidance were the use of thin capitalization techniques and transfer pricing manipulation. They also found that the firms often combined the use of tax havens with both thin capitalization and transfer pricing.

There is long standing evidence that MNFs shift profits in response to tax rate increases in OECD countries. Bartelsman & Beetsma (2000) found that a tax increase on the part of individual OECD countries did not result in increased tax revenue from MNFs for those countries due to income shifting by transfer pricing on the part of MNFs. In a study of recent transfer pricing legislation of 26 European countries, Lohse & Riedel (2013) find that legislation that increases transfer pricing documentation and transparency, coupled with stiffer transfer pricing penalties does limit some income shifting on the part of MNFs. They hypothesize

that the revenue gained from these kinds of legislation is important in spite of increased administrative costs on the part of tax authorities.

Wells & Lowell (2014) discuss several different proposals to ameliorate tax base erosion and income shifting. They propose a system that requires confirmation of a transfer price from both parties to the transaction coupled with a refundable upfront surtax on the gross amount of tax reduction due to deductible expenses of affiliates. In the process of developing their proposal they examine the status quo, discuss a territorial system for transfer pricing, look at a formula based approach, discuss ending tax deferrals related to transfer prices, discuss increasing expense disallowance, discuss imposing a withholding tax based on gross transfer price, and discuss the recently proposed OECD Base Erosion and Income Shifting project (BEPS). They are critical of BEPS and indicate that foundational problems with transfer pricing are rooted in the long-standing OECD transfer pricing guidelines and the OECD Model Treaty transfer pricing provisions. They call for modification of these documents as a prerequisite for solving tax base erosion and profit shifting.

Harding & Javorcik (2012) find that attracting foreign direct investment (FDI) is an important economic strategy for developing countries. Buettner, Overesch & Wamser (2014), in an empirical analysis, show that imposition of thin capitalization rules and reducing deductibility of intercompany interest on debt results in a decline in MNF FDI for that country. They also found that regulation of transfer pricing has a neutral impact on FDI. They hypothesize that MNF management can offset new transfer pricing restrictions by other tax planning methods. Like Wells & Lowell (2014), they are critical of the BEPS proposals.

THE OECD'S BASE EROSION AND PROFIT SHIFTING (BEPS) ACTION PLANS

In September 2013, the G20 group of finance ministers and central bank governors endorsed the OECD's Base Erosion and Profit Shifting (BEPS) action plans. The G20 declared the following:

“Cross-border tax evasion and avoidance undermine our public finances and our people’s trust in the fairness of the tax system. Today, we endorsed plans to address these problems and committed to take steps to change our rules to tackle tax avoidance, harmful practices, and aggressive tax planning.” (OECD, 2014).

The endorsed plans include 15 action initiatives that range from dealing with challenges that tax authorities face in the digital economy to changes in the OECD Model Tax Convention. This section of the article focuses on four initiatives directly related to transfer pricing, two initiatives related to tax planning, and one initiative involving tax havens and tax incentives.

The four BEPS initiatives directly related to transfer pricing are contained in Action Plans 8, 9, 10, and 13. Action Plan 8 revises the transfer pricing rules related to intangibles, making transfer of intangibles more transparent and difficult to manipulate. Action plans 9 and 10 will limit the ability of MNFs to avoid tax by large allocations of capital and risk to low tax affiliates. Action Plan 13 will require more transparency and increased documentation of transfer pricing. In addition, this plan calls for electronic sharing of transfer pricing information among global tax authorities. Part of the information shared will be MNFs allocation of worldwide income and economic activity of each affiliate on a country-by-country basis. The IRS has already adopted this OECD action plan and will require MNFs to report activity related to transfer pricing on a country-by-country basis starting in late 2016.

Action Plan 4 will limit MNFs ability to shift income by using large intercompany interest deductions and other financial related payments as deductions to reduce income in high tax countries. Action Plan 5 affects MNFs that have historically used tax haven countries or countries that offer tax incentives to foster economic growth within their country. This action plan involves political pressure and more transparency

related to tax haven countries and those countries that use tax incentives to attract investment. Finally, and importantly, Action Plan 12 will require MNFs to disclose their tax planning methods.

DISCUSSION

As early as 1971, Copitthorne predicted that MNFs would seek to minimize tax by using existing tax rules and tax rate differences to shift taxable income to low tax countries. The problem for MNFs at this point in history is that the issue has received worldwide public attention in recent years. Tax revenue from MNFs, as a percentage of GDP, has declined in many countries, while MNF overall effective tax rates have declined. From a business perspective, the argument is that MNFs are more adept at effective international tax planning. From a tax authority and political perspective, the argument is that MNFs are abusing transfer pricing and not paying their fair share. From a sociologist or economist perspective, reduced tax revenues result in losses to world welfare. For the first time in history, large segments of the population around the globe view MNFs negatively. This has opened the door for increased tax regulation of MNFs, especially in the transfer pricing area.

An example of this is ongoing in the U.K. as Parliament debates how to deal with transfer pricing. In 2012, Starbucks had U.K. sales around 400 million pounds but paid no taxes to the U.K. (BBC News, 2013). The company shifted income to a Swiss subsidiary and used a special tax incentive offered by the Netherlands to get Starbucks to locate its European headquarters in the Netherlands. The U.K. operation paid royalties to the Swiss subsidiary and Dutch headquarters companies, these royalties were expenses for U.K. tax purposes resulting in no taxable U.K. income. In Switzerland, the royalty payments tax rate was as low as 2%, and the royalty tax rate for the Dutch headquarters was well below the Netherlands normal corporate tax rate, due to the special tax incentive deal. Google reduced its tax rate by locating its European headquarters in Ireland where the maximum corporate tax rate is 12.5%. Amazon located its European headquarters in Luxembourg where the tax on royalties is as low as 6%. These cases were widely reported in the U.K., causing public outcry and political pressure to pass laws that will prohibit such behavior in the future.

Researchers suggest several different methods for dealing with tax base erosion and income shifting. Several researchers are critical of the OECD BEPS plan. However, the OECD is proceeding at a rapid pace with BEPS. Much of the preliminary work on the 15 BEPS Action Plans will be complete by December 2015. Seven countries including the U.S. have already enacted legislation or implemented tax rules based on the OECD action items. Australia recently enacted an anti-avoidance rule that requires MNFs who operate in low or no tax countries to prove that they have significant economic activity in those countries.

Prior academic research indicates that MNFs can expect increased audits of their transfer pricing, on a worldwide basis. In addition, tax auditors now have higher levels of expertise. The OECD even has a proposal to share experienced transfer pricing auditors among different jurisdictions. The changes for MNFs are real and substantial, the countries involved in BEPS account for over 80% of the world economy.

Most of the OECD discussion has focused on tax policies that will limit tax base erosion and profit shifting by transfer pricing. However, a related issue that has received little attention on the part of the OECD is the fact that MNFs have the ability to shift investment among countries when tax burdens become excessive. A recent survey indicates that a majority of respondent MNFs would consider changing corporate headquarters country if taxes increased by 5% in the home country (Taxand, 2015). BEPS action plans would limit deductibility of intercompany interest and impose more stringent thin capitalization rules (Action Plans 4, 10 and 11). Researchers have found that when this happens there is a decline in MNF direct investment for those countries that restrict this type of tax planning. Researchers also find that the use of tax incentives to attract foreign direct investment (FDI) is an important economic development tool for developing countries.

Apple provides us with an example of how tax policies affect the movement of capital and related FDI. Stewart (2015) reports that Apple holds liquid assets of \$158 billion of its \$178 billion total overseas. The U.S. is one of two countries in the world that taxes its corporate taxpayers on worldwide income. However, under the U.S. Controlled Foreign Corporation (CFC) rules, (IRS Code sections 951 through 965), a U.S. MNF can defer U.S. tax on certain types (not all types) of foreign income earned by controlled foreign subsidiaries. The tax is not due until cash from those earnings is repatriated to the U.S. in the form of dividends to the U.S. parent. The intent is to help U.S. firms be more tax competitive in foreign markets. For example, assume that foreign subsidiaries of a U.S. MNF use a combination of transfer pricing, tax havens, and tax incentives to reduce the overall effective tax paid to foreign countries to 10%. If the U.S. parent keeps the cash from deferral eligible subsidiary income overseas, the U.S. Corporate parent does not owe U.S. tax until the cash returns to the U.S. parent. In Apple's case, if it returned the \$158 billion cash held overseas to the U.S. parent it would have to pay substantial U.S. income tax. Using the example above, since the U.S. maximum corporate tax is 35%, Apple would have to pay 25% of the \$158 billion in U.S. tax after receiving a Foreign Tax Credit for the 10% tax paid to foreign countries. As might be expected, Apple is keeping the cash overseas and has gone so far as to borrow money for U.S. operations rather than repatriate cash from overseas. Apple and many other U.S. MNFs hold huge amounts of liquid assets overseas that they might invest in the U.S. but for the repatriation rules. These MNFs are in the position to move substantial amounts of capital and investment anywhere in the world if the tax system of a country becomes onerous. According to Stewart (2015), U.S. non-financial businesses have over \$1.7 trillion in cash or short-term securities held overseas.

BEPS action plan 5 addresses what the OECD calls "harmful tax practices." If implemented, this action plan will be another source of tension between tax authorities and MNFs as MNFs seek to use tax haven countries and tax incentives as an important part of their tax planning. It will also increase tension between OECD countries and tax haven/tax incentive countries. It will also increase tension among some of the OECD countries themselves. Japan, Spain, and the U.K. recently announced a reduction in their international tax rates. This seems contrary to Action Plan 5. It is important that regulators consider that MNFs may vote with their feet in the event the tax burden in any given OECD country becomes excessive. Additionally, putting political pressure on countries to not reduce tax rates or offer tax incentives or become tax havens seems overreaching, and not in the best interests of those countries. In recent years, developing countries have attracted more FDI than developed countries. This is an important part of their economic development and is due in large part to favorable tax rates and the use of tax incentives by developing countries.

The implication for tax regulators and authorities is that there is a need for a carefully integrated tax policy for MNF transfer pricing taxation and restriction of tax planning methods. An onerous transfer pricing policy makes the use of tax havens and tax incentives more attractive. MNFs will be motivated to accept tax incentives or move operations to tax havens to reduce overall costs, and to lower the tax burden. MNFs will also be motivated to transfer FDI to more tax friendly territories.

CONCLUDING COMMENTS

This article draws attention to the increasing tension between MNFs and tax authorities related to transfer pricing and the use of other tax planning techniques. The article also highlights the potential for increasing tension between tax haven/tax incentive countries and OECD countries, and tension among the OECD countries themselves.

The primary findings of this research are several. First, MNFs will use all the tax-planning techniques that are available to avoid tax. Empirical research shows that these tax-planning techniques include use of transfer pricing to shift income to low tax countries, use of thin capitalization, deducting intercompany

interest payments, use of tax havens, and the use of tax incentives. Secondly, there is a substantial global movement on the part of regulators and tax authorities to prohibit MNF use of aggressive tax planning. This movement focuses on transfer pricing. It includes more audits, the sharing of MNF information and auditor expertise between jurisdictions, and increasing regulation of transfer pricing. The movement also includes discussion about limiting thin capitalization, limiting deductibility of intercompany interest, and trying to stop countries from becoming tax havens or offering low tax rates and tax incentives. The OECD BEPS action plan orchestrates this movement.

Third, for many years, developing countries as well as certain OECD countries have used reduced tax rates and tax incentives to attract FDI. For many countries, FDI is an important part of their overall economic development plan. Research shows that limiting transfer pricing has a neutral effect of FDI. However, limiting thin capitalization and deductibility of intercompany debt can result in a decline of FDI for those countries that limit this type of tax planning. Research also shows that U.S. corporations have huge amounts of liquid assets held overseas that are easily moved between countries. This implies that MNFs can rapidly redeploy FDI to another country when a tax system becomes burdensome.

This research has a few limitations. An emerging research stream looks at the moral and ethical aspects of a MNF not paying a fair share of tax due to tax planning when they have significant sales and a physical presence in a country. Related to this, the digital economy poses significant challenges to tax authorities and regulators, and offers significant tax planning opportunities for MNFs. The issue of international digital nexus can have a significant impact on transfer pricing and other tax planning techniques in the future. This article does not address either of these issues. In addition, this article addresses seven BEPS action plans that directly apply to transfer pricing and tax planning. The remaining nine action plans include items such as preventing treaty shopping, strengthening CFC rules, improvement in dispute resolution, and modification of OECD model tax documents. These issues are important but they are beyond the scope of this article.

Most of the research on transfer pricing and taxation is by academics that are outside the accounting and taxation disciplines. There is a need for research that examines accounting and taxation perspectives on transfer pricing and tax avoidance planning. An immediate research need is to determine how the OECD proposals will change the way that MNFs handle internal transfer pricing for both managerial accounting and tax purposes. There is also a need for researchers to help regulators understand the issue of how the OECD proposals may result in the movement of FDI out of OECD countries. Additionally, new tax planning strategies proposed by tax advisors and University professors designed to circumvent the OECD proposals are of interest. As the pressure increases on MNFs, there is much opportunity for accounting and taxation researchers to examine the tension caused by BEPS and increasing tax regulation. BEPS not only causes tension for MNFs but it will also increase tension between the have and have not countries.

Buettner, Overesch & Wamser (2014, p.26) aptly describe the pivot point of tension: "...tax policy is facing a trade-off between limiting base erosion and increasing adverse tax effects on foreign direct investment."

REFERENCES

Bartelsman, E. & Beetsma, R. (2000) *Why Pay More? Corporate Tax Avoidance through Transfer Pricing in OECD Countries*. Tinbergen Institute Discussion Paper No. 00-54/2

BBC News. (2013) *Google, Amazon, Starbucks: The Rise of 'tax shaming'*. Retrieved from The BBC News Magazine website: www.bbc.com/news/magazine-20560359

Buettner, T., Overesch, M. & Wamser, G. (2014) *Anti Profit-Shifting Rules and Foreign Direct Investment*, CESifo Working Paper, No. 4710

- Chan, K., Lo, A. & Mo, P. (2015) “An Empirical Analysis of the Changes in Tax Audit Focus on International Transfer pricing,” *Journal of International Accounting, Auditing and Taxation*, vol. 24 (2015), p. 94-104
- Copitthorne, L. (1971) “International Corporate Transfer Prices and Government Policy,” *Canadian Journal of Economics*, vol. 4(3), p. 324-341
- Grubert, H. & Mutti, J. (1991) “Taxes, Tariffs and Transfer Pricing in Multinational Corporate decision Making,” *The Review of Economics and Statistics*, vol. 73(2), p. 285-293
- Harding, T. & Javorcik, B. (2012) “Foreign Direct Investment and Export Upgrading,” *The Review of Economics and Statistics*, vol. 94(4), p. 964-980
- Hyde, C. & Choe, C. (2005) “Keeping Two Sets of Books: The Relationship between Tax and Incentive Transfer Prices,” *Journal of Economics & Management Strategy*, vol. 14(1), Spring, p. 165-186
- Keuschnigg, C. & Devereux, M. (2013) “The Arm’s Length Principle and Distortions to Multinational Firm Organization,” *Journal of International Economics*, vol. 89(2013), p. 432-440
- Klassen, K., Lisowsky, P. & Mescall, D. (2013) *Transfer Pricing: Strategies, Practices, and Tax Minimization*. Retrieved from the SSRN website: ssrn.com/abstract=2216870 or <http://dx.doi.org/10.2139/ssrn.2216870>
- Levey, M. & Wrappe, S. (2010) *Transfer Pricing: Rules, Compliance and Controversy*. Chicago, IL: CCH publishers
- Lohse, T. & Riedel, N. (2013) *Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals*, CESifo Working Paper, No. 4404
- Morris, E. (2011) *Transfer Pricing: History and Application of Regulations*. Retrieved from the CliftonLarsonAllen website: www.claconnect.com/Tax/United-States-Transfer-Pricing-Tax-Regulations-Arms-Length-Standard-Tangible-Intangible-Property.aspx
- OECD. (2014) *Bringing the International Tax Rules into the 21st Century: Update on BEPS, Exchange of Information, and the Tax and Development Programme*. Retrieved from the OECD website: [www.oecd.org/tax/C-MIN\(2104\)8-ENG.pdf](http://www.oecd.org/tax/C-MIN(2104)8-ENG.pdf)
- Ossi, G. & Sheperd, M. (2010) “The IRS’s Renewed Emphasis on Transfer Pricing,” *Corporate Taxation*, Jul/Aug, p. 3-6
- Sakurai, Y. (2002) “Comparing Cross-cultural Regulatory Styles and Processes in Dealing with Transfer Pricing,” *International Journal of the Sociology of Law*, vol. 30 (2002), p. 173-199
- Sikka, P. & Willmott, H. (2010) “The Dark Side of Transfer Pricing: Its Role in Tax Avoidance and Wealth Retentiveness,” *Critical Perspectives on Accounting*, vol. 21(2010), p. 342-356
- Stewart, E. (2015) *How Apple, Google and 7 Other Cash-Hoarding Companies Will Spend Their Billions*. Retrieved from TheStreet Inc. website: www.thestreet.com/story/13194574/1/how-apple-google-and-other-cash-hoarding-companies-will-spend-their-billions.html

Taxand. (2015) *Taxand Global Survey 2015*. Retrieved from the Taxand website:
www.taxand.com/sites/default/files/taxand/documents/2015_taxand_global_survey.pdf

Taylor, G. & Richardson, G. (2012) “International Corporate Tax Avoidance Practices: Evidence from Australian Firms,” *The International Journal of Accounting*, vol. 47(2012), p. 469-496

Taylor, G., Richardson, G. & Lanis, R. (2015) “Multinationality, Tax Havens, Intangible Assets, and Transfer Pricing Aggressiveness: An Empirical Analysis,” *Journal of International Accounting Research*, vol. 14(1), p. 25-57

Wells, B. & Lowell, C. (2014) “Tax Base Erosion: Reformation of Section 482’s Arm’s Length Standard,” *Florida Tax Review*, vol. 15(10), p. 737-797

Yao, J. (2013) “The Arm’s Length Principle, Transfer Pricing, and Location Choices,” *Journal of Economics and Business*, vol. 65(2013), p. 1-13

BIOGRAPHY

Wray Bradley is an Associate Professor of Accounting in the School of Accounting and MIS at The University of Tulsa. His address and email are The University of Tulsa, 800 S. Tucker Dr., Tulsa, OK 74104, and wray-bradley@utulsa.edu

RELATIONSHIPS BETWEEN INSTITUTIONAL OWNERSHIP, CAPITAL STRUCTURE AND RESEARCH AND DEVELOPMENT INVESTMENT

Hsueh-En Hsu, Fortune Institute of Technology
Chiulien C Venezia, Frostburg State University
Chelsea Schrader, Frostburg State University

ABSTRACT

Research and development (R&D) is vital for an information technology (IT) firm's innovation. This study investigates the relationship among institutional ownership, capital structure, and research and development investment for 336 listed information technology firms from 2006 to 2009. Empirical evidence shows that there is no significant relationship between institutional ownership and research and development investment. The finding suggests that institutional investors may not influence management decision making on research and development investment. This study also finds that capital structure has a negative relationship with research and development investment. The result indicates that information technology firms may use less debt when the investment outcome is uncertain.

JEL: M400, M490

KEYWORDS: Research and Development, Institutional Ownership, Capital Structure, Information Technology

INTRODUCTION

High levels of institutional ownership of publicly held companies have led to concerns about the potential effects such ownership can have on research and development (R&D) investment. Another considerable factor deemed relevant in R&D investment decisions is capital structure. The choice of investments can influence the choice of financing (Williamson, 1988). The evidence for a negative relationship between institutional ownership and R&D is widely evident (Graves, 1988, Dong & Gou, 2010, White, 1987, Zahra, 1996). However, existing empirical work contradicts that thesis (Jarrel and Lehn, 1985, Graves 1990). Overall, the literature regarding capital structure paints the picture suggesting a firm's intensity of investments in R&D will influence capital structure (Simerly and Li, 2000, Long and Malitz, 1985, Vincente-Lorente, 2001).

Extending the work of previous literature, this study investigates the relationship between the institutional ownership, capital structure, and research and development (R&D) investments for 336 listed information technology (IT) companies in Taiwan. Taking an industry specific perspective, as well as international perspective, can provided interesting insights that will add to the current literature. We hypothesize that institutional ownership has a positive relationship with R&D investment. Empirical results find no association between institutional ownership and R&D expenditures, suggesting that institutional investors may not influence management decision making on R&D investment. We also hypothesize that capital structure has a negative relationship with R&D investment. Consistent with our hypothesis, an increase in R&D investment is associated with lower debt. The rest of this paper is structured as follows: We first describe the relevant literature and develop our hypotheses. Next, we discuss the sample data and methodology used in the study. Then we present the results of the tests and the primary conclusions.

LITERATURE REVIEW

For young innovative firms, the most important assets are intangible assets such as research and development (R&D). Efficient R&D investments result in advanced products or services, which enable a firm to generate persistent profits (Chauvin & Hirschey, 1993, Ho, Keh, & Ong, 2005). However, R&D investments are not reported in firms' financial statements under U.S. GAAP and their valuation is more complicated (Hirschey & Weygandt, 1985, Sougiannis, 1994). For example, U.S. GAAP requires the full expensing of R&D expenditures (Cañibano et.al., 2000, Han & Manry, 2004, Lev & Sougiannis, 1996).

R&D investments make significant contributions to information technology (IT) firms (Lee & O'Neill, 2003, Noriyuki, 1985). The development of IT plays a key role in Taiwan economic growth over the last decade. Since 1995, Taiwan has become the world's third-largest supplier in the IT industry after the United States and Japan. The IT industry is a group of companies involved in different industry sections. Depending on the industry section, these companies specialize in different activities from R&D to innovation, manufacturing and assembly.

Ownership structure has been recognized as one important determinant of R&D spending (Baysinger, Kosnik, & Turk, 1991, Lee & O'Neill, 2003). For the influence of ownership on R&D investment, some reports show that institutional investors are risk-averse and would not like to invest in R&D activities (Graves & Waddock, 1990). Others argue that institutional investors have the capability to diversify their investments and encourage the invested companies to pursue the projects with prospects (Bushee, 1998).

Capital structure (i.e., leverage) is also important for a firm to complete innovation and ensure the financial resources required to launch new products. R&D investment generally requires large amounts of capital. However, IT firms may have difficulty accessing debt markets because R&D investment is risky and cannot serve as good collateral (Simerly & Li, 2000, Vicente-Lorente, 2001).

Institutional Ownership and R&D Investment

Information asymmetry exists between investors and managers. Information asymmetry arises from the inability of managers to convey information and from the reluctance of investors to gather information. Institutional investors with large ownership have incentives to gather more information and reduce information asymmetry (Lee & O'Neill, 2003). Managers are hesitant to invest long term R&D because innovative projects have a high failure rate. Institutional ownership can diversify their investment portfolio to reduce R&D risk (Baysinger, Kosnik, & Turk, 1991). Some studies find that the recurrent trading and short-term focus of institutional investors encourage management to engage in prejudiced investment behavior. Others argue that the large stockholdings and sophistication of institutions allow managers to focus on long-term return rather than on short-term earnings.

Jarrell and Lehn (1985) studied the association between institutional ownership and R&D spending in 324 firms for the period 1980-83. They found a significantly positive relationship between the level of institutional ownership and R&D intensity, based on OLS regression equations with dummy variables for the 19 industries. Graves (1988) analyzed the relationship between institutional ownership and R&D spending using 10 years of data from Standard and Poor's Securities Owner's Stock Guide. The analysis showed that institutional ownership is negatively associated with R&D for the period of 1976-1985. Graves (1988) concluded that institutional ownership might continue growth as the decreased spending in R&D could seriously grind down the competitiveness of U.S. firms. Graves (1990) described the effect of institutional ownership on corporate R&D investment for 133 companies in six U.S. industries over the period 1965-1984. The result shows no significant relationship between institutional ownership and R&D investment. This study does not provide support for the hypothesis that higher levels of institutional ownership result in lower levels of R&D expenditure.

Bushee (1998) examined whether institutional investors increase or reduce incentives for managers to reduce investment in R&D expenditures to meet short-term earnings. The results indicated that managers are less likely to decrease R&D to reverse an earnings decline when institutional ownership is high. The study suggests that institutions are sophisticated investors and serve a monitoring role in reducing pressures for prejudiced behavior. Dong and Gou (2010) tested the hypotheses on the relations between R&D intensity and managerial discretion of CEOs, independent directors, and managerial ownership. The results show that the discretion of CEOs has a negative correlation with the firm R&D investment. Moreover, the proportion of independent directors has a positive influence on the R&D investment.

R&D investments are risky and may induce uncertain returns. Institutional investors are diversified and they can spread R&D risk (Baysinger, Kosink, & Turk, 1991). Additionally, Institutional investors provide their opinions on corporations and influence managers' decision-making. Particularly, the high levels of institutional ownership may inhibit long-term R&D investments to increase the competitiveness of IT firms (Chauvin & Hirschev, 1993). This expectation leads to the following hypothesis:

H1: The institutional ownership has a positive relationship with R&D investment.

Capital Structure and R&D Investment

A proper capital structure is a critical decision for any industry because an organization needs to maximize returns and deals with a competitive environment (Simerly & Li, 2000). Myers and Majluf (1984) developed the pecking order theory for financing decisions. Firms finance new investments first with retained earnings, followed by debt, and finally with equity. R&D investments create intangible assets and cannot serve as good collateral (Simerly & Li, 2000, Vincente-Lorente, 2001). Therefore, intense R&D is associated with lower leverage (Bhagat & Welch, 1995). Bhagat and Welch (1995) explored the determinants of R&D investment for U.S., Canadian, British, European, and Japanese firms. Bhagat and Welch suggested that high-technology firms are likely to be financially distressed and prefer not to presume large amounts of debt to maintain their R&D investments. They find that debt ratio is negatively correlated with R&D expenditures for U.S. firms. Nevertheless, the debt ratio is positively associated with R&D for Japanese firms. O'Brien (2003) proposed that financial slack (i.e., lower leverage) provides lagging against cash flow fluctuation and ensures sufficient financial resources. They found that R&D intensity is negatively associated with financial leverage. This finding suggests that firms competing on innovation should choose capital structures with financial slack.

Bougheas (2004) examined the financial decisions of small firms on R&D in the United States, United Kingdom and Canada. The result indicated that high ratio of R&D investments with the high risk nature are unlikely to raise debt in external capital markets. Moreover, financing R&D with bank loans may be possible, if banks are willing to monitor the investment activities. Singh and Faircloth (2005) examined the relationship between financial leverage and R&D expenditure by using a sample of large U.S. manufacturing firms. The results indicated that there is a negative relationship between financial leverage and R&D expenditure. In addition, financial leverage adversely influences future R&D investment and may in turn lead to negative impact on performance and future growth. R&D investment generally requires large amounts of capital. However, investments in R&D create intangible assets that will likely suffer from market failure and they cannot serve as effective collateral to support a high level of debt (O'Brien, 2003, Ou & Haynes, 2006). Therefore, IT firms may use less debt than other firms when innovation outcomes are uncertain. This expectation leads to the following hypothesis:

H2: The capital structure has a negative relationship with R&D investment.

DATA AND METHODOLOGY

The sample consists of IT firms listed on the Taiwan Stock Exchange (TSE) for the period 2006–2009. The IT firms were chosen because of their dependence on R&D for innovation (Tsai & Wang, 2004). Annual data was collected from a database, the Taiwan Economic Journal (TEJ), a leading research database in Taiwan. TEJ provides detailed company profiles and financial data of companies. The initial sample was 353 firms, which were continually listed on the TSE between 2006 and 2009. The final sample consisted of 336 firms by deleting the missing observations and data retrieved.

Model

The empirical model is as follows:

$$RD = \alpha + \beta_1 OWN + \beta_2 LEV + \beta_3 LIQ + \beta_4 FSIZE + \beta_5 CAPI + \beta_6 PFIRM + \varepsilon \tag{1}$$

R&D investment (RD) is measured by R&D expenditures to total sales (Baysinger et al. 1991; O’Brien, 2003). Institutional ownership (OWN) is measured as the percentage of the shares held by institutional investors. Leverage (LEV) represents capital structure and is measured as the ratio of total debt to total assets (Bah & Dumontier, 2001). Several control variables are included in the model. Liquidity (LIQ) is current assets divided by total assets. Firm size (FSIZE) is controlled by using the natural logarithm of the firm’s total assets to avoid the problems of extreme values. Capital intensity (CAPI) is calculated by net fixed assets to total assets. Prior firm performance (PFIRM) is measured by pre-ROA.

EMPIRICAL RESULTS

Table one reports the means, standard deviation, and Pearson correlations among the variables used in the analysis. The average (Std. Deviation) of the R&D ratio (RD) is 4.26 (4.67). The mean percentage of the shares held by institutional investors (OWN) is 0.36. The mean (Std. Deviation) of total debt to total assets (LEV) is approximately 34.31 (14.62). The model also includes control variables related to R&D investment. The average liquidity index (LIQ) is 244.23. Firm size (FSIZE), the natural log of total assets (in millions), has a mean of approximately 15.73 and a standard deviation of 1.32. The mean firm spends about 13 of its assets on capital expenditures (CAPI) is 0.13. Finally, the average prior ROA (PFIRM) is 5.35. The Pearson correlation analysis shows that the correlation coefficients of the independent variables are less than 0.8. The variance inflation factor (VIF) statistics for the independent variables are less than two. These results indicate that multicollinearity does not appear to be an issue.

Table 1: Means, Standard Deviations, and Correlations

Variables	Means	SD	RD	OWN	LEV	LIQ	FSIZE (In Log)	CAPI	PFIRM
RD	4.260	4.670	1	-0.103	-0.374**	0.276**	-0.168**	-0.020	0.033
OWN	0.360	0.220	-0.103	1	0.000	-0.003	0.519**	0.117*	0.299**
LEV	34.310	14.620	-0.374**	0.000	1	-0.466**	0.159**	0.020	-0.381**
LIQ	244.230	203.750	0.276**	-0.003	-0.466**	1	-0.218**	-0.031	0.198**
FSIZE(in log)	15.730	1.320	-0.168**	0.519**	0.159**	-0.218**	1	0.221**	0.152**
CAPI	0.130	0.120	-0.020	0.117*	0.020	-0.031	0.221**	1	-0.123*
PFIRM	5.350	7.730	0.033	0.299**	-0.381**	0.198**	0.152**	-0.123*	1

*This table shows the mean, standard deviation and Pearson correlations of the variables included in the study. ***, **, and * indicate significance at the .01, .05, and .10 levels respectively. RD= the ratio of R&D expenditures to sales, OWN= the percentage of the shares held by Institutional investors, LEV= the ratio of total debt to total assets, LIQ= the ratio of current assets to total assets, FSIZE= the natural logarithm of the total assets, CAPI= the ratio of net fixed assets to total assets, PFIRM= Pre-ROA*

Table 2 reports the statistical results, which examine the effects of institutional ownership and capital structure on R&D investments for IT companies in Taiwan.

Table 2: Regression Results for the Effects of Institutional Ownership and Capital Structure on R&D Investment

Variable	RD
Constant	10.501*** (3.167)
OWN	-1.064 (-0.083)
LEV	-0.111*** (-5.718)
LIQ	0.003** (2.162)
FSIZE	-0.150 (-0.680)
CAPI	-0.251 (-0.125)
PFIRM	-0.063* (-1.778)
Observations	336
Adjusted R Square	0.159
P-value of F-test	0.000

This table presents the statistical results of the regression estimates of the equation: $RD = \alpha + \beta_1 OWN + \beta_2 LEV + \beta_3 LIQ + \beta_4 FSIZE + \beta_5 CAPI + \beta_6 PFIRM$. The first figure is the regression coefficient and then the t statistic is presented in parenthesis. ***, **, and * indicate significance at the 1, 5, and 10 percent levels respectively. RD= the ratio of R&D expenditures to sales, OWN= the percentage of the shares held by institutional investors, LEV= the ratio of total debt to total assets, LIQ= the ratio of current assets to total assets, FSIZE= the natural logarithm of the total assets, CAPI= the ratio of net fixed assets to total assets, PFIRM= Pre-ROA.

Hypothesis 1 predicts a positive relationship between the institutional ownership and R&D investment. The regression model shows that there is no significant relationship between institutional ownership (OWN) and R&D investment (RD) (t= -0.083, p > 0.1). Therefore, Hypothesis 1 is not supported. The result is similar to Graves (1990), who find no association between institutional ownership and R&D investment. Hypothesis 2 predicts that the capital structure has a negative relationship with R&D investment. In the model, the relationship between capital structure (LEV) and R&D investment (RD) is negatively significant (t =-5.718, p < 0.01). Therefore, Hypothesis 2 is supported. The result is similar to Bougheas (2004) and Singh and Faircloth (2005), who find a negative association between capital structure and R&D investment.

CONCLUSIONS

This study investigates the relationship between institutional ownership, capital structure and R&D for 336 listed IT firms from 2006 to 2009 in Taiwan. The result shows that there is no significant relationship between institutional ownership and R&D investment. This is similar to Graves (1990), who finds no significant relationship between institutional ownership and R&D investment. The result suggests that institutional investors may not influence management decision making on R&D investment.

This study also finds that the capital structure has a negative relationship with R&D investment. This is similar to Bougheas (2004) and Singh and Faircloth (2005), who find a negative association between capital structure and R&D investment. The finding indicates that innovative firms will be less inclined to follow the mechanistic pecking order model and they will use equity capital instead of debt to avoid liquidity pressure. Thus, IT firms may use less debt when investment outcome is unsure.

The increasing number of institutional investors and their dominance as owners has a significant influence on corporate decisions. This study investigates whether institutional ownership as governance mechanics affects R&D activity. Future research may include other governance mechanics.

This study also examines whether firms involved in R&D activity show a specific financial behavior about their capital structures. To provide a better understanding of R&D- intensive firms' financial choices, further investigations may focus R&D and other corporate financial policy. Possible determinants would include dividend policies and cash on hand. While the results of this analysis draw a path toward a more

definitive study of the linkage between R&D investment, institutional ownership and capital structure, this study has its shortcomings. Perhaps extending to other industries over longer periods of time would provide a clearer perspective of the relationship between these three elements and the policy issues of management decision making and control.

REFERENCES

- Bah, R., and Dumontier (2001) "R&D intensity and corporate financial policy: Some international evidence," *Journal of Business Finance & Accounting* 28 5(6), p. 671-692.
- Bhagat, S. and I. Welch (1995) "Corporate research & development investments: International comparison," *Journal of Accounting and Economics* 19, p. 443-470.
- Bougheas, S. (2004) "Internal vs External Financing of R&D", *Small Business Economics* 22, p. 11-17.
- Baysinger, B. D., Kosnik, R. D., and T. A. Turk (1991) "Effects of board and ownership structure on corporate R&D strategy," *Academy of Management Journal* 34, p. 205-214.
- Bushee, B. J (1998) "The Influence of Institutional Investor on Myopic R&D Investment Behavior," *The Accounting Review* 73(3), p. 305-333.
- Cañibano, L., M. García-Ayuso, and M. P. Sánchez (2000) "Accounting for intangibles: A literature review," *Journal of Accounting Literature* 19, p.102-130.
- Chauvin, K. and W. Hirschey (1993) "Market advertising, R&D expenditures and the market value of the firm," *Financial Management* 22 (4), p. 128-140.
- Dong, J. and Y. Gou (2010) "Corporate governance structure, managerial discretion, and the R&D investment in China," *International Review of Economics and Finance* 19(2), p. 180-188.
- Graves, S. B. (1988) "Institutional ownership and corporate R&D in the computer industry," *Academy of Management Journal* 31, p. 417-427.
- Graves, S.B. (1990) "Institutional Ownership and Corporate R&D Investment: A Multi- Industry Study," *Technological Forecasting and Social Change* 37, p. 59
- Graves, S. A. and S. Waddock (1990) "Institutional ownership and control: Implication for long-term corporate strategy," *Academy of Management Executive* 4 (1), p. 75-83
- Han B. H. and D. Manry (2004) "The value-relevance of R&D and advertising expenditures: Evidence from Korea," *The International Journal of Accounting* 39 (2), p. 155-173.
- Hirschey and J.J.Weygandt (1985) "Amortization policy for advertising and research and development expenditures," *Journal of Accounting Research* 23 (1), p. 326-335.
- Ho, Y. K., H. T. Keh, and J. M. Ong (2005) "The effects of R&D and advertising on firm value: An examination of manufacturing and nonmanufacturing firms," *IEEE Transaction on Engineering Management* 52 (1), p. 3-14.
- Jarrell, G. A.. and K. Lehn (1985) "Institutional ownership, tender offers, and long-term investments," *Working paper*. Office of the Chief Economist, Securities and Exchange Commission, Washington, DC.

- Lee, P. M., and H. M. O'Neill (2003) "Ownership structures and R&D investments of U.S. and Japanese firms: Agency and stewardship perspectives," *Academy of Management Journal* 46, p. 212-225
- Lev, B., and T. Sougiannis (1996) "The capitalization, amortization and value relevance of R&D," *Journal of Accounting and Economics* 21 (1), p. 107-138.
- Long, M., & Malitz, I. (1985). "The investment-financing nexus: Some empirical evidence," *Midland Corporate Finance Journal*, 3(3), p. 53-59.
- Myers, S. C., and N. S. Majluf (1984) "Corporate financing and investment decisions when firms have information those investors do not have," *Journal of Financial Economics* 13, p. 187-221.
- Noriyuki, D. (1985) "Diversification and R&D activity in Japanese manufacturing firms," *Managerial and Decision Economics* 6(3), p. 147-152.
- Ou, C., & G. W. Haynes (2006) "Acquisition of additional equity capital by small firms-findings from the National Survey of Small Business Finances," *Small Business Economics*, 27, p. 157-168.
- O'Brien, J. P. (2003) "The capital structure implications of pursuing a strategy of innovation," *Strategic Management Journal* 24(5), p. 415-431.
- Sougiannis, T. (1994) "The accounting based valuation of corporate R&D," *The Accounting Review* 69, p. 44-68.
- Simerly, R.L. and M. Li (2000) "Environmental dynamism, capital structure and performance: a theoretical integration and an empirical test," *Strategic Management Journal* 21(1), p. 31-49
- Singh, M., and S. Faircloth (2005) "The impact of corporate debt on long term investment and firm performance," *Applied Economics*, 37, p. 875-883.
- Tsai, K. H. and J. C. Wang (2004) "The R&D performance in Taiwan's electronics industry: A longitudinal examination," *R&D Management* 34, p. 179-189.
- Vincente-Lorente, J.D. (2001) "Specificity and opacity as resource-based determinants of capital structure: evidence for Spanish manufacturing firms," *Strategic Management Journal* 22(2), p. 157-177.
- White, J. R. (1987). "Corporate raiders, not Japan, are Detroit's greatest fear," *Boston Globe*, 17, p. 57.
- Williamson, O. E. (1988). "Corporate Finance and Corporate Governance," *Journal of Finance*, 43(3): p. 567-591.
- Zahra, S. A. (1996). "Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities," *Academy of Management Journal*, 39(6), p. 1713-1735.

BIOGRAPHY

Dr. Hsueh-En Hsu is a faculty at International College of Xiamen University. She was an Associate Professor of Finance at Fortune Institute of Technology, Taiwan. Her research areas are Corporate governance, Firm valuation and Initial public offerings. Her teaching interests primarily include Auditing,

Financial reporting, and Advanced accounting. She has published numerous articles in international journals. E-mail: hsuehen33@hotmail.com.

Chiulien C Venezia is an Associate Professor of Accounting at Frostburg State University, Maryland. Her research areas are Cross-cultural ethics, Earnings management, Financial performance and Behavior Accounting. She teaches Cost Accounting, Managerial Accounting, and Financial Accounting. She has published a number of research articles in international journals. E-mail: cvenezia@frostburg.edu. 101 Braddock Road, Frostburg, MD 21532. (Corresponding Author)

Chelsea Schrader is a lecturer in the Department of Management at Frostburg State University, Maryland and current doctoral student in the Accounting program at Morgan State University, Maryland. Her teaching interests primarily include Financial Accounting and Taxation. Email: clschrader@frostburg.edu. 101 Braddock Road, Frostburg, MD 21532.

ACCOUNTING KNOWLEDGE, PRACTICES, AND CONTROLS OF MICRO, SMALL AND MEDIUM ENTERPRISES: EVIDENCE FROM THE PHILIPPINES

Venus C. Ibarra, Ateneo de Manila University
Rodrigo M. Velasco, Gulf College

ABSTRACT

Of the business enterprises operating in the Philippines, 99.6% are micro, small, and medium enterprises (MSMEs). The Magna Carta of Small Enterprises (Republic Act 6977) governs these MSMEs. However, they are still subject to laws on the declaration of income and other regulations as imposed by the Bureau of Internal Revenue (BIR), including proper accounting in accordance with accounting standards. This paper looks at the accounting knowledge, practices and controls of MSMEs located in Metro Manila cities and in several Quezon Province towns. The study primary investigates whether or not MSMEs understand accounting principles, have acceptable accounting practices and controls. Majority of the MSMEs are either very knowledgeable or knowledgeable on accounting principles and concepts. MSMEs common accounting methods used are cash, accrual and installment. Common accounting practices used by MSMEs are manifested in their bad debt estimation, depreciation method used, net receivable estimation, business documents used and payment methods. MSMEs practice basic accounting controls; however, computers are not commonly used. ANOVA reveals that there are significant differences between MSMEs in Metro Manila and in Quezon Province on their knowledge of accounting principles, accounting practices and controls.

JEL: M40, M41, M48

KEYWORDS: Accounting, Practices, Controls, MSMEs

INTRODUCTION

Micro, small and medium sized enterprises (MSMEs) play a vital role not only in wealth creation but also in dispersing new industries to the countryside that contribute to a more equitable distribution of income, encouraging entrepreneurial development, and stimulating gainful employment, supporting export growth and a potent force in efforts against poverty. Given their economic and social importance, Philippine MSMEs are considered vital in the recovery of the national economy (Ibarra, 2012).

Table 1: Category of MSMEs in the Philippines

CATEGORY	TOTAL ASSET VALUE	EMPLOYEES
Micro enterprise	P3,000,000 or less	1 - 9
Small enterprise	P3,000,001 – P15,000,000	10 – 99
Medium enterprise	P15,000,001 – P100,000,000	100 – 199

Sources: Small and Medium Enterprise Development Council; RA 9501 Magna Carta for SME

In the Philippines, MSMEs are categorized by the number of their employees and the size of their assets excluding land. Table 1 shows the category of MSMEs in the Philippines in accordance with 2012 statistics of the Department of Trade and Industry (DTI). According to DTI, there were 944,897 business enterprises operating in

the Philippines in 2012; 99.6% (940,886) were MSMEs and the remaining 0.40% (4,011) were large enterprises. MSMEs generated 4,930,851 jobs in 2012 versus 2,658,740 for the large enterprises.

The Philippine government has embarked upon a comprehensive and integrated strategy for the sustainable growth and development of SMEs in the country. The strategy encompasses all critical factors - technology, product development, finance, training marketing, and so on (Leano, 2006). To encourage the development of SMEs, the Government of the Philippines enacted into law the Magna Carta of Small Enterprises (Republic Act 6977) which outlines the general policies for the development of SMEs.

In that regard, it is worth considering to what extent these MSMEs follow established accounting principles. Accounting forms a vital element of any business. It plays a critical role in the success or failure of contemporary business institutions (Smirat, 2013). Accounting systems are responsible for recording, analyzing, monitoring and evaluating the financial condition of companies, preparation of documents necessary for tax purposes, and providing information support to many other organizational functions. In the context of small and medium enterprises (SMEs), accounting information is important as it can help the firms manage their short-term problems in critical areas like costing, expenditure and cash flow (Mitchell et al., 2000).

The European Commission (2008) recommended accounting systems, which maybe considered appropriate for small enterprises according to their particular needs. However, not all of these practices will assist all businesses, e.g. firms that operate on a simpler business model may find only some of them useful. The following are the recommended accounting systems: (1) Use of financial records, such as the sales daybook, purchases daybook, cash receipt book, check payments book, petty cash book, general journal, nominal ledger, debtors' ledger and creditors' ledger and a payroll system; (2) use of double-entry bookkeeping; (3) use of simplified formats for financial statements; (4) preparing projected cash flow statements on a regular basis; (5) use of accrual basis accounting; (6) applying the matching principle; (7) applying the true and fair value principle; (8) using a standardized chart of accounts; and (9) applying the "only once" principle meaning an administrative simplification in supplying financial information to different or the same authorities for different or the same purposes (e.g. taxation, statistics, Basel II, banks).

The IASB issued the International Financial Reporting Standards (IFRS) for SMEs to respond to a need. The full IFRS were developed primarily for public traded entities. However, there are more privately held companies than publicly traded ones. Many private companies prepare financial statements but these statements are based on local requirements that differ from the full IFRS. Users of the financial statements of SMEs do not have the same needs, but are more focused on assessing shorter-term cash flows, liquidity and solvency. In addition, many SMEs have observed that the full IFRS imposes a burden on them that has grown as the IFRS has become more detailed and more countries have begun to use them. The IASB has, therefore developed the IFRS for SMEs with the twin goals of meeting user needs while balancing costs and benefits from a preparer perspective.

The Philippine scenario is not different from the rest of the world. In October 2005, in consideration of the needs of the users of financial statements of privately held companies, as well as the burden to preparers of financial statements, the then Accounting Standards Council (ASC), now the Financial Reporting Standard Council (FRSC) provided temporary relief to private companies, referred to as "non-publicly accountable entities" (or NPAEs), by permitting entities that qualified as NPAEs not to use the full PFRS. The temporary relief was given under Philippine Accounting Standards (PAS) 101, Financial Reporting Standards for Non-publicly Accountable Entities.

The new Philippine Financial Reporting Standards for Small and Medium-sized Entities (PFRS for SMEs) became effective on January 1, 2010. The standards were adapted by the Financial Reporting

Standards Council (FRSC). The Securities and Exchange Commission (SEC) made the PFRS for SMEs a part of its rules and regulations, requiring covered companies to implement the new standard starting with financial statements filed in 2010. The PFRS for SMEs provides a substantially simplified set of internationally recognized accounting principles for privately held businesses. Based on the full PFRSs, which were developed primarily for listed companies, the PFRS for SMEs will particularly benefit businesses that operate internationally (Punongbayan & Araullo 2010).

The new standard offers a unique opportunity to create a standardized accounting framework for privately held businesses in the country, and throughout the world as enterprises transition to IFRS from which the PFRS for SMEs is adapted. A complete set of financial statements of an entity reporting under the PFRS for SMEs is similar to that provided for by full PFRS. It requires the following documents: statement of financial positions; either single statement of comprehensive income, or a separate income statement and a separate statement of comprehensive income; statement of changes in equity; statement of cash flows; and notes including a summary of significant accounting policies.

With the current trends and progress in the accounting for MSMEs, this study aims to assess the accounting practices of MSMEs in urban (Metro Manila) and rural (Quezon Province) settings, to determine whether knowledge of accounting principles is comparable. The hypotheses for this study are:

HO1: There is no significant difference between MSMEs in Metro Manila and in Quezon Province on their knowledge of accounting principles and concepts.

HO2: There is no significant difference between MSMEs in Metro Manila and in Quezon Province on their accounting practices.

HO3: There is no significant difference between MSMEs in Metro Manila and in Quezon Province on their accounting controls.

This study will have important policy implications for the Philippine government, particularly with regard to MSMEs. It will also add to the literature on accounting practices of MSMEs, in general. Related studies on accounting practices and controls are included in the study, statistical analysis of data gathered through survey using questionnaires and test on hypotheses collaborate the conclusions of the study.

LITERATURE REVIEW

According to Hatteu (2012), the accounting system provides information for making decisions about small business. Hatteu stressed the importance of understanding which entry system should be used and how accounting equations work. Hatteu advocates that accounting system should be easy to use, accurate, timely, consistent, understandable, dependable and complete. The accounting record of small businesses needs to follow the standard of generally accepted accounting principles (GAAP). In addition, a good accounting system is not only judged by how well records are kept but also by how well it is able to meet the information needs of both internal and external decision – makers (Mbroh and Attom, 2011; Hussein, 1983).

Husin & Ibrahim (2013) cited in their conceptual paper that the critical financial information that is mostly needed by the SMEs to increase their competitiveness or success could be categorized into four groups: (1) taxation, (2) financial accounting, (3) management accounting and (4) strategic planning.

A previous study by Wichmann (1983) reveals that accounting and marketing pose major challenges to management of SMEs. Hence, it is important that managers or owners of SMEs learn accounting or hire experts. Ismail and King (2007) believe that development of a sound accounting information system in

SMEs depends on the owner's level of accounting knowledge. Likewise, Mahon (1999) advocates sophisticated financial reporting systems as necessary in order to ensure that SME's resources are used effectively and that information must be accurate and reliable in order to provide a platform for timely and sound decisions.

The studies of Dyt and Halabi (2007) and Zhou (2010) concluded that the main problem of business owner and managers of micro enterprises is mostly in their inability to keep sufficient records to aid them in their decision-making. Another problem is their difficulty in preparing proper financial statements because of poor or insufficient records. Results of their studies show that majority of micro businesses rely more heavily on manual methods, while small businesses are more likely to use computerized systems. They recommend the use of accounting software by owner-managers in SMEs to improve accounting practices.

Amoako (2013) conducted a case study on SMEs in Kumasi Metropolis in Ghana to look at their record keeping strategies. Based on the results obtained, the author concluded that SMEs do not maintain proper books of accounts because owners do not appreciate the need to keep accounting records, lack accounting knowledge and find the cost of hiring professionals prohibitive. He recommends specific guidelines for SMEs to be designed by the authorities. He suggests that accounting records in SMEs be mandatory and that the government should institute a regulatory body to ensure SMEs keep proper accounting books. He also suggests accounting training programs for SMEs that need further education to be initiated by the Ministry responsible for Trade and Industry.

Another study in Ghana was made by Amidu, Effah, and Abor (2011). They explored the e-accounting practices among SMEs in Ghana. They also looked at the expectations, realities and barriers in adopting e-accounting. The authors concluded that almost all of the SMEs sampled attached a lot of importance to financial information since they hired qualified people to handle their accounting information. The study showed that most of the respondents used accounting software. Even if the firms dealt with lack of electricity supply and frequent system breakdown, they were still satisfied with the computer systems they used. The authors also recommended that SMEs in Ghana adhere to good and standard accounting principles in their operations. The authors believes that adoption of e-accounting would ensure proper accounting practices.

Yason (2014) believed that SMEs, despite having different products, services and business strategies, have a common and immediate need for an adequate accounting infrastructure that will provide them with timely and accurate financial statements. According to Yason, many SMEs do not prioritize their finance and accounting infrastructure due to cost considerations and the way they are structured. Yason also stated that SMEs have insufficient finance personnel who are knowledgeable about the latest accounting standards and fast-changing tax regulations.

Mendoza (2014) aimed to look at the accountancy services that MSMEs commonly require from the public accountancy firms and/or individual CPA in public practice in the Philippines. The study noted that taxation service was the most commonly outsourced while internal audit was the least. The study also showed that micro and small enterprises differ from medium enterprises in terms of the level of complexity of accountancy services; the former having simpler ways of doing their tasks and are not into exploring the other relatively complex methods and processes. The business profile attributes of the MSMEs, specifically asset size, nature of business, form of business organizations, and employment had something to do with the type and extent of services they undertake and outsource to practicing CPAs.

The study of Cynthia Cudia (2008) in the Philippines revealed that 76% of her SME respondents used the accrual method while 6% used the cash method for record keeping and regularly converted to the accrual method for purposes of reporting to regulatory bodies. The remaining 18% used the cash method and their

external auditors were tasked to prepare year-end adjustments using accrual method in accordance with GAAP. The accounting method used by SMEs is based on the following factors: nature of their business, convenience of the method, complexity of accounting, tax compliance, cost, usefulness in decision-making, and other factors such as method required by Bureau of Internal Revenue (BIR), to support revenue during the period.

METHODOLOGY

A survey, using the questionnaire used by one of the researchers in a previous study, was used to record the perceptions of the respondents. The questionnaire is divided into three (3) portions: knowledge of accounting principles and concepts, accounting practices and accounting controls. Respondents included owners, finance officers, accountants, bookkeepers, managers, and employees who were knowledgeable in the operations of the business.

The questionnaire covers fundamental accounting concepts and principles, which are guides and bases for computations, report presentations and decisions concerning accounting amounts and matters. These concepts and principles aid in the proper accounting, reporting and presentation of the financial statements and other valuable reports needed by internal and external users. Entrepreneurs need to know that these concepts and principles help them evaluate accounting matters with confidence and justification. Some of these principles are briefly discussed below.

The historical cost principle states that all acquired assets are accounted for at their actual cost. The revenue recognition principle is concerned with the proper accounting of revenues or income earned during a specific period. The revenue should be recognized in the accounting period goods are delivered or services are rendered. The expense recognition principle states that expenses are to be recognized in the accounting period it is actually incurred and not when it is paid. Entity concept separates an organization or a firm from any other organization and individuals. They should always be treated as separate economic units. Going concern puts no limit on the life of the business. This assumes that businesses will operate on a continuous basis. This affects estimations and valuations. Relevance is concerned with the preparation of information that is meaningful and useful to the needs of the users. It is preparing the right report for the right user.

Understandability pertains to prepared financial reports that are understood by those who need it. Financial statements should be clearly understood by the business owners. Timeliness refers to the preparation of financial reports. Reports should be prepared when it is needed. Consistency refers to the usage of same accounting methods from period to period for comparability reasons. It is a concept that should be adapted by businesses if they want to obtain reliable data. Completeness supposes financial reports are composed of complete set of financial statements with corresponding basis and subsidiary reports. Residual theory relates to what is being left to the owners from the assets of the business. It is based on the equation owner's equity is equal to assets minus liabilities. Funds theory includes an asset restricted for designated purposes. This theory is useful in the management and control of cash and other assets.

Out of 350 questionnaires distributed in Quezon Province from August to November 2013, 310 completed surveys are used in the study, while 160 completed surveys out of 200 questionnaires distributed in Metro Manila from July to September 2014 were included in the study. The researchers used enumerators to distribute the survey instruments. Metro Manila cities include Manila, Quezon City, Makati City, Caloocan, Marikina, Paranaque and Pasig. The scope of Quezon Province includes Lucena, Tayabas, Pagbilao, Candelaria, Sariaya, and Lucban. These places were purposely selected because majority of the MSMEs are located in the National Capital Region (NCR) and Region 4-A (Calabarzon). Metro Manila belongs to the NCR and Quezon Province belongs to Region 4-A. Using Slovins (Guilford

1973) formula for the sample size, the margin of error for 310 samples is approximately 5.5% while for 160 samples it is approximately 8%. Acceptable sample size is within 5% to 10% margin of error.

Responses were tabulated and descriptive analyses were used for the computed mean, weighted mean and rank. Variables are the accounting principles, concepts, accounting practices and accounting controls. Analysis of variance (ANOVA) were used to investigate the hypotheses

RESULTS AND DISCUSSIONS

MSMEs Knowledge of Accounting Principles and Concepts

Results of the survey (Table 2) show that 41.7% of the MSMEs believe that they are either very knowledgeable or knowledgeable on accounting principles and concepts with knowledgeable representing the highest percentile of 29.1%; while 11.6% have insufficient knowledge and a high 22.9% have no knowledge at all. On their level of knowledge to the individual concepts, Table 2 shows that MSMEs rated *historical cost*, *understandability*, *timeliness*, *consistency* and *completeness* as their highest while *residual theory* is rated as the lowest, although MSMEs believe that they have sufficient knowledge on this concept.

Table 2: MSMEs Knowledge and Application of Accounting Principles and Concepts (n=470)

Accounting Principles and Concepts	Level of Knowledge					WT Mean	Interpretation
	Very Knowledgeable	Knowledgeable	Sufficient	Insufficient	None		
Historical cost	64	151	115	44	96	3.1	Knowledgeable
Revenue Recognition	51	152	116	35	116	3.0	Sufficient
Expense Recognition	44	127	118	68	113	2.8	Sufficient
Entity Concept	55	139	110	64	102	3.0	Sufficient
Going concern	66	142	111	51	100	3.0	Sufficient
Relevance	63	138	116	56	97	3.0	Sufficient
Understandability	77	166	102	34	91	3.2	Knowledgeable
Timeliness	75	157	98	42	98	3.1	Knowledgeable
Consistency	77	150	110	37	96	3.2	Knowledgeable
Completeness	82	138	113	43	94	3.2	Knowledgeable
Proprietary Theory	38	113	115	76	128	2.7	Sufficient
Residual Theory	33	103	115	80	139	2.6	Sufficient
Funds Theory	47	104	112	76	131	2.7	Sufficient
Total	772	1780	1451	706	1401	3.0	Sufficient
Percentile	12.6	29.1	23.8	11.6	22.9	100	

This table shows MSMEs in Metro Manila and Quezon Province knowledge and application of accounting principles and concepts; the weighted mean of their responses and the interpretation of the weighted mean.

MSMEs confirm that they understand financial statements, they use historical costs in recording, they adhere to timeliness in preparing financial statements for income tax purposes and they apply consistent principles in their preparation of financial statements. They rated residual theory as the lowest because, in practice, owners tend to neglect obligations from the computation of net worth.

In actual practice, MSMEs recognize revenues when the customers pay the full amount of goods or services availed. In the case of credit sales, revenues are recognized upon payment of goods and services. Small businesses equate revenue to money actually received regardless of when ownership of goods is transferred or when services are rendered.

Study reveals that MSMEs have sufficient knowledge of *entity concept*, *going concern* and *relevance*. Follow up interviews further show that entity concept is the most difficult to follow because owners of

business have the tendency to mix their personal accounts with business accounts. They adhere to the going concern concept and believe that they will continue their businesses as long as profit is good.

Comparative knowledge of accounting principles and concepts between MSMEs in Metro Manila and in Quezon Province is shown in Table 3. It shows that Metro Manila MSMEs have higher level of knowledge of accounting principles and concepts than MSMEs in Quezon Province. The highest weighted mean of 3.8 for Metro Manila are manifested in three concepts namely, *understandability, timeliness and consistency*. Quezon Province shows 2.9 highest mean on two concepts: *understandability and completeness*. Both Metro Manila and Quezon Province MSMEs registered their lowest knowledge on *residual theory* with weighted mean of 3.0 and 2.4, respectively.

Table 3: MSMEs Comparative Knowledge of Accounting Principles and Concepts

Accounting Principles and Concepts	Metro Manila		Quezon Province	
	WM	Interpretation	WM	Interpretation
Historical cost	3.7	Knowledgeable	2.8	Sufficient
Revenue Recognition	3.5	Knowledgeable	2.7	Sufficient
Expense Recognition	3.4	Knowledgeable	2.6	Sufficient
Entity Concept	3.6	Knowledgeable	2.6	Sufficient
Going concern	3.5	Knowledgeable	2.8	Sufficient
Relevance	3.7	Knowledgeable	2.7	Sufficient
Understandability	3.8	Knowledgeable	2.9	Sufficient
Timeliness	3.8	Knowledgeable	2.8	Sufficient
Consistency	3.8	Knowledgeable	2.8	Sufficient
Completeness	3.7	Knowledgeable	2.9	Sufficient
Proprietary Theory	3.2	Knowledgeable	2.5	Sufficient
Residual Theory	3.0	Knowledgeable	2.4	Sufficient
Funds Theory	3.1	Knowledgeable	2.5	Sufficient
Total	3.5	Knowledgeable	2.7	Sufficient

This table shows the Comparative weighted mean of between Metro Manila and Quezon Province MSMEs on their knowledge of Accounting principles and concept. Interpretations of the weighted mean are: "knowledgeable" for Metro Manila and "sufficient" for Quezon Province MSMEs.

Using one-way, analysis of variance (ANOVA) between MSMEs in Metro Manila and in Quezon Province, with 1 and 26 degree of freedom respectively, shows that the computed P value of 0 is less than the P value of 4.225 at 5% level of significance. Therefore, the hypothesis that there is no significant difference between MSMEs in Metro Manila and in Quezon Province on their knowledge of accounting principles and concepts is rejected. Differences on all areas of accounting principles and concepts exist. The sources of variation between and within the two groups at 5% level of significance are shown in Appendix A.

Common Accounting Practices and Control

As shown in Table 4, MSMEs common accounting methods used are cash, accrual and installment, in that order. Common accounting practices used by MSMEs are manifested in their bad debt estimation, depreciation method used, net receivable estimation, business documents used and payment methods.

On accounting method, majority or 68.1% of the MSMEs use *cash basis* (rank 1) followed by *accrual basis* at 21.9% (rank 2) and *installment basis* at 13.4% (rank 3). Most MSMEs do not know accrual basis of accounting. They operate on a cash basis. They deduct expenses from cash they received during the day and consider the balance as income. A portion of this amount is use as working capital the following day.

The bad debts estimation includes *percent of credit sales*, *aging of receivables* and *percent of receivables*. Businesses estimate the amount of uncollectible accounts to reflect the correct amount of receivable at the end of the accounting period. This is needed so that the net income for a particular period is not overstated. Aging considers the number of days an account remains unpaid and set a certain percentage of uncollectible. This is based on prior experiences of the company. Percent of receivable is another convenient way of estimating bad debts.

Table 4 MSMEs Accounting Practices

n=470			
Practices	Freq.	%	Rank
Accounting Method			
Cash basis	320	68.1	1
Accrual Basis	103	21.9	2
Installment Basis	63	13.4	3
No Answer	4	0.9	
Bad Debts Estimation			
Aging of Receivables	143	30.4	2
Percent of Credit Sales	167	35.5	1
Percent of Receivable	99	21.1	3
None	61	13.0	
Depreciation Method			
Straight-line	271	57.6	1
Composite	76	16.2	2
Group	58	12.4	3
None	65	13.8	
Net Receivable Estimation			
Allowance for Sale Discounts	139	29.6	2
Allowance for Sales Returns	160	34.0	1
Allowance for Freight Charges	83	17.7	4
Allowance for Bad Debts	96	20.4	3
Business Documents			
Official Receipt	348	74.0	1
Invoice	194	41.3	2
Voucher	120	25.5	3
Others: quotations, order form	7	15.0	4
Payment Method			
Cash	361	76.8	1
Check	124	26.4	2
Credit/Card	48	10.2	3
Others: debit, on-line	4	0.9	4

This table shows the accounting practices used by MSMEs in Metro Manila and in Quezon Province. Percentiles and ranks are used to indicate the differences in their responses.

Table 4 shows that one-third (35.5%) of MSMEs use *percentage of credit sales*, which ranks first, over the other methods. MSMEs prefer using *aging of accounts receivable*, ranks second or 30.4%, rather than *percentage of accounts receivable*, ranks third or 21.1%. MSMEs, particularly small businesses, have problems on credit sales because they do not have credit policies, personnel to do the collections and to maintain subsidiary accounts for individual receivables. An alarming 13% of the MSMEs do not estimate bad debts.

The various depreciation methods being used by the businesses are *straight-line*, *composite*, and *group*. Straight-line is the simplest method of depreciation that allocates the cost of an asset over its useful life. The simple formula made it convenient for use by MSME business owners. The composite method, on the other hand, groups and treats assets that are dissimilar in nature and vary in useful life as a single unit. This is specifically used in businesses where there are numerous fixed assets that make it impossible to account for individual depreciation. In the case of small businesses, grouping of assets eliminates accounting for individual assets and helps the owner compute the depreciation in a single easy way. This is similar in nature with the composite method.

The study shows that more than half or 57.6% of MSMEs use the *straight-line method* of computing depreciation, followed by *composite method* 16.2% and lastly, *group method* at 12.4%. A high 13.8% do not estimate depreciation of fixed assets. This portion of MSMEs claim that the costs of fixed assets were already paid for and that depreciation is not necessary to be shown as an expense.

The various net receivable estimation techniques used by MSMEs for credit sales include *allowance for sales discounts*, *allowance for sales returns*, *allowance for freight charges* and *allowance for bad debts*. Net receivable is computed by deducting from credit sales discounts, returns, freight charges or bad debts. Results show that majority (63.6%) of the MSMEs give discounts and accept returns. Almost one-third or 38.1% of the MSMEs recognize allowances for freight and bad debts as deductions to receivables.

Among the many business documents that the businesses are using, they are maintaining only three (3) business documents namely official receipt (OR), invoice and voucher. Majority of the businesses use *official receipts* imposed by the Bureau of Internal Revenue (BIR) regulations. Payment methods accepted by MSMEs owners are *cash*, *check* and *credit and/or card*. The most convenient payment method is cash at 76.8% followed by check payments at 26.4. Although credits cards are not widely acceptable by MSMEs, 10.2% accept credit cards to increase sales.

Table 5: Comparative MSMEs Accounting Practices

Accounting Practices	Metro Manila			Quezon Province		
Accounting Method	Freq.	%	Rank	Freq.	%	Rank
Cash basis	105	65.6	1	215	69.4	1
Accrual Basis	57	35.6	2	46	14.8	3
Installment Basis	10	6.3	3	53	17.1	2
No Answer	4	2.5		0		
Bad Debts Estimation	Freq.	%	Rank	Freq.	%	Rank
Aging of Receivables	57	35.6	1	86	27.7	2
Percent of Credit Sales	37	23.1	2	130	41.9	1
Percent of Receivable	31	19.4	3	68	22.0	3
None	35	21.9		26	8.4	
Depreciation Method	Freq.	%	Rank	Freq.	%	Rank
Straight-line	120	75.0	1	151	48.7	1
Composite	6	3.8	3	70	22.6	2
Group	9	5.6	2	49	15.8	3
None	25	15.6		40	12.9	
Net Receivable Estimation	Freq.	%	Rank	Freq.	%	Rank
Allowance for Sale Discounts	34	21.2	3	105	33.9	2
Allowance for Sales Returns	43	26.9	2	117	37.7	1
Allowance for Freight Charges	28	17.5	4	55	17.7	3
Allowance for Bad Debts	51	31.9	1	45	14.5	4
Business Documents	Freq.	%	Rank	Freq.	%	Rank
Official Receipt	138	86.3	1	210	67.7	1
Invoice	105	65.6	2	89	28.7	2
Voucher	72	45.0	3	48	15.5	3
Others: quotations, order form	7	4.4	4	0		
Payment Method	Freq.	%	Rank	Freq.	%	Rank
Cash	127	79.4	1	234	75.5	1
Check	72	45.0	2	52	16.8	2
Credit/Card	15	9.4	3	33	10.6	3
Others: debit, on-line	4	2.5	4	0		

This table shows the comparative accounting practices between MSMEs Metro Manila and Quezon Province. Percentile and rank are used to show the differences in their responses.

As shown in Table 5, MSMEs in Metro Manila and Quezon Province ranking of accounting practices do not show much difference; however, computed percentiles show differences. These differences were collaborated by chi-square, where P-values computed are less than the P values at 5% level of

significance. Therefore, the hypothesis that there is no significant difference in MSMEs accounting practices is rejected. The computed Chi-square P- values of the accounting practices are shown in Appendix B.

MSMEs Accounting Controls

Table 6: MSMEs Basic Accounting Control (n=470)

Accounting Controls	Always	Sometimes	Never	WT M	Interpret.
Company deposits cash/ maintains bank account	227	167	76	2.3	Always
Accountant prepares financial statements	220	142	108	2.2	Always
Business does financial planning and fund management	179	185	106	2.2	Always
Keep track of assets and liabilities	211	162	97	2.2	Always
Records daily expenditures	270	113	87	2.4	Always
Prepares budget	242	137	91	2.3	Always
Pays payable when due	226	131	113	2.2	Always
Use computers in accounting	158	128	184	1.9	Sometimes

This table shows the basic accounting controls practiced by MSMEs in Metro Manila and in Quezon provinces. Except for use of computers, MSMEs always adhere to these controls.

Depositing cash intact before the end of the day or at the morning of the next working day is a form of security and control as shown in Table 6. Maintaining a bank account is also advisable for small businesses so that misuse and embezzlement could be avoided. Results show that majority of the respondents always practice that particular control function. Follow up questions reveal that micro businesses do not usually maintain bank accounts because their daily income is just enough to sustain their day-to-day cash needs.

Financial statements for tax purposes are normally prepared by an accountant. MSMEs always hire non-accountants to prepare the financial statements. Business owners get the service of an accountant if his signature is needed for income tax purposes. Majority of the MSMEs prepare statements of income and expenses only because it is needed in the determination of tax due. Results show that they always prepare financial statements.

Financial planning is always a part of the managerial functions of MSMEs owners. Financial plans aid in the proper estimation and control of capital and operating expenses. Small businesses rely heavily on the contingent approach to management. What the nature of the situation dictates is what guides their decision-making. In connection to this, MSMEs always perform tracking of assets and liabilities.

The only record of daily expenditures for small businesses is a logbook or a list of cash paid for a particular day. Most of the owners maintain a list of daily expenses to reconcile cash balance for the day. This aids in the proper accounting of cash shortage or overage. MSMEs also always pay their payables when due. Most of the MSMEs always prepare a budget for their business. The budget serves a very vital function in determining future cash needs. This also reflects targets in numerical terms. Entrepreneurs normally prepare a budgeted income statement to help them set ceiling for expenses and a good target for income.

The use of computers makes accounting functions faster and easier. It facilitates the faster generation of financial reports. Results of the study revealed that majority of the MSMEs still use manual procedures in accounting. Only some of the MSMEs use computers for accounting purposes.

Table 7 shows that there are significant differences between MSMEs in Metro Manila and in Quezon Province on their accounting controls. Metro Manila MSMEs always have accounting controls, while MSMEs in Quezon Province always used accounting controls on depositing cash, recording daily

expenditures and in preparing budget and the other controls were used only “sometimes”. One-way analysis of variance (ANOVA) rejects the hypothesis that there is no significant difference on MSMEs accounting controls. The computed P value of zero is less than the 4.6 P value at 5% level of significance is shown in Appendix C.

Table 7: Comparative MSMEs Accounting Control

Accounting Controls	Metro Manila n=160		Quezon Province n=310	
	WM	Interp.	WM	Interp.
Company deposits cash/ maintains bank account	2.7	Always	2.1	Always
Accountant prepares financial statements	2.8	Always	1.9	Sometimes
Business does financial planning and fund management	2.5	Always	2.0	Sometimes
Keep track of assets and liabilities	2.7	Always	2.0	Sometimes
Records daily expenditures	2.9	Always	2.1	Always
Prepares budget	2.6	Always	2.2	Always
Pays payable when due	2.7	Always	2.0	Sometimes
Use computers in accounting	2.5	Always	1.6	Sometimes

This table shows the comparative responses of MSMEs in Metro Manila and in Quezon Province on their accounting controls. While MSMEs in Metro Manila shows “always” on all accounting controls, MSMEs in Quezon Province are not consistent on their accounting controls, showing “always” and more “sometimes” on their accounting controls.

CONCLUSIONS

The paper assessed the accounting knowledge, practices and controls of MSMEs in Metro Manila cities and in several towns in Quezon Province. It aimed to determine the level of accounting knowledge on the basic accounting terminologies and theories. Additionally, it investigated the acceptability of the accounting practices and controls employed by the small and medium enterprises. A self-made survey instrument divided into 3 portions: knowledge of accounting principles and concepts, accounting practices and accounting controls was used as the data gathering tool. A total of 470 respondents who were owners, finance officers, accountants, bookkeepers, managers, and employees completed the survey.

The results revealed three major findings: (1) MSMEs are knowledgeable on accounting principles and concepts; (2) the most common practices include cash basis accounting method, bad debt estimation based percent of credit sales, straight line method of depreciation, net receivable estimation based on allowance for sales returns, official receipt as business document and cash payment method; (3) commonly practiced accounting controls are daily deposit of cash, daily recording of expenses and regular budget preparation. ANOVA reveals that there are significant differences between MSMEs in Metro Manila and in Quezon Province on their knowledge of accounting principles, accounting practices and controls.

The exodus of accounting graduates to the metropolitan in quest for higher remuneration has been constantly on the rise. This tremendously affects the level of accounting knowledge due to the influx of accounting professionals to Metro Manila. Furthermore, the cost efficiency measures of rural entrepreneurs tend to neglect the fact that accounting data and reports are necessary for the reliability of the results of operations. These realities added much to the significant difference in the level of accounting knowledge, accounting practices and accounting controls of the MSMEs in Metro Manila and Quezon Province. The government should adhere to its mission to further develop and strengthen MSMEs in the country. To further develop its realms, continues programs should be formulated with concentration on seminars and training on the new PFRS for MSMEs, bookkeeping and recordkeeping. There are government agencies spearheading the thrust of MSMEs including the Department of Trade and Industry, Department of Science and Technology among others.

The paper partially presented a scenario on the accounting practices of MSMEs, which eventually disclosed some malfeasance. However, the study presented a self-assessment of the accounting

knowledge, practices and controls of MSMEs. This limits the generalization of the entire accounting practices in the Metro Manila and Quezon Province. Furthermore, the lack of intensive interview and personal observation tend to neglect the fact that papers and actual practices have tremendous differences. Accounting figures might not reflect a reality. Researchers are encouraged to further investigate on the actual accounting practices of MSMEs to verify the self-assessment. The compliance on the recently imposed PFRS for SMEs should be dealt with accordingly.

APPENDIX

Appendix A: Summary Analysis of Variance (ANOVA - One-Way) on Accounting Principles

Groups	Sample Size	Sum	Mean	Variance		
Metro Manila	14	49.300	3.521	0.070		
Quezon Province	14	37.700	2.693	0.024		
ANOVA						
Source of Variation	SS	Df	MS	F	p-level	F crit
Between Groups	4.806	1	4.806	103.020	0.000*	4.225**
Within Groups	1.213	26	0.047			
Total	6.019	27				

Appendix 1 shows analysis of one-way variance between group and within groups, at 5% level of significance, df 1 and 26 respectively. *computed p value is 0 is less than the P value of **4.225, rejecting hypothesis that there is no significant difference between MSMEs in Metro Manila and in Quezon Province on their knowledge of accounting principles and concepts.

Appendix B: Computed Chi-square P- values of the accounting practices

Accounting Practices	P-Value**
Accounting Method	0.00000006301
Bad Debts Estimation	0.00000402878
Depreciation Method	0.00000000083
Net Receivable Estimation	0.00001530690
Business Documents	0.00000555658
Payment Method	0.00000425346

** P-values computed are less than the P value of 5 at 5% level of significance. Therefore, the hypothesis that there is no significant difference in MSMEs accounting practices is rejected.

Appendix C: Summary Analysis of Variance (ANOVA One-way)

Groups	Sample Size	Sum	Mean	Variance		
Metro Manila	8	21.400	2.675	0.019		
Quezon Province	8	15.900	1.988	0.033		
ANOVA						
Source of Variation	SS	Df	MS	F	p-level**	F cri **t
Between Groups	1.891	1	1.891	72.766	0.000	4.600
Within Groups	0.364	14	0.026			
Total	2.254	15				

** Computed P value of zero is less than the P value of 4.6 at 5% level of significance, rejecting hypothesis that there is no significant difference between MSMEs in Metro Manila and in Quezon Province on their practice of accounting controls.

BIBLIOGRAPHY

Amidu, M., Effah, J., and Abor, J. (2011). E-Accounting Practices among Small and Medium Enterprises in Ghana. *Journal of Management Policy & Practice*, 12(4), Pp. 944–956.

Amoako, G.K. (2013). Accounting Practices of SMEs: A Case Study of Kumasi Metropolis in Ghana. *International Journal of Business and Management*, 8 (24). Pp. 73-83.

Cudia, C. P. (2008). Accounting (Analysis) Small and Medium Sized Companies *Journal of International Business Research*, 7 (1).

Dyt, R. and Halabi, A. K. (2007). Empirical evidence examining the accounting information systems and accounting reports of small and micro business in Australia, *Small Enterprise Research*, 15 (2), pp. 1-9.

European Commission (2008). Final report of the expert group: accounting system for small enterprises-recommendation and good practices. Retrieved September 8, 2014. Available on line: <http://ec.europa.eu/enterprise/policies/sme/files>

Guilford, J.P. and Fruchter, B (1973), *Fundamental Statistics in Psychology and Education* (6th ed.) New York: McGraw-Hill.

Hatteu, T.S. (2012). *Principles of small business management*. 5th edition. International edition. South Western Lenage Learning.

Husin, M.A., and Ibrahim, M.D. (2013). The Role of Accounting Services and Impact on Small Medium Enterprises (SMEs) Performance in Manufacturing Sector from East Coast, Region of Malaysia: A Conceptual Paper. *Procedia Social and Behavior Science*.

Ibarra, V. C. (2012) Bad Debts Practices of Selected Small and Medium Enterprises in the Philippines, *Integrated Business and Economics Research (RIBER)*, Volume 1, Issue 1.

International Accounting Standards Board (IASB). (2009). *Philippine Financial Reporting Standards Council (FRSC) for Small and Medium-sized Entities*.

Ismail, N. A. and King, M. (2007), Factors influencing the alignment of accounting information systems in small and medium sized Malaysian manufacturing firms, *Journal of Information Systems and Small Business*, 1,(1-2), pp. 1-20.

Leano, R.M. (2006). SMEs in the Philippines. Retrieved: August 28, 2014. Available on line: <http://www.cacci.org.tw/Journal/2006%20Vol%201/SMEs%20in%20the%20Philippines.pdf>

Mahon, R.G.P. (1999). Modeling the Extent of Financial Reporting practices amongst Australian Manufacturing SMEs, *Small Business Economics*, 13 (2), pp.81-96.

Mbroh, J. K., and Attom, B.E. (2011). Accounting and Control Systems Practiced By Small and Microenterprise Owners within the Cape Coast Metropolitan Area of Ghana. *Asian Journal of Business Management Sciences*. 1 (9), 28-47.

Mendoza, R.R. (2014). Accountancy Service Requirements of Micro, Small, and Medium Enterprises in the Philippines. *International Journal of Business, Economics and Law*, 4(1), Pp. 123 – 132.

Mitchell, F., & Reid, G. C. (2000). Editorial problems, challenges and opportunities: The small business as a setting for management accounting research. *Management Accounting Research*, 11, 385-390.

Punongbayan & Araullo. (2010). *Accounting Alert Philippine Financial Reporting Standard for Small and Medium-sized Entities*, 1st Edition, Makati City.

R.A. 9501 Magna Carta for Micro, Small and Medium Enterprises Republic of the Philippine Department of Trade and Industry. (2014, February 27). MSME Statistics. Retrieved from <http://www.dti.gov.ph/dti/index.php/msme/msme-statistics#_ftnref1>.

Velasco, R. M. (2014), Accounting Practices of MSMEs in Quezon Province.

Wichmann, H. (1983). Accounting and Marketing-Key Small Business Problems, *American Journal of Small Business*, 7(4), pp. 19-26.

Yason, S. (2014). Financial reporting: A challenge to SMEs; Association of CPAs in Public Practices PFRS for SMEs; IFRS Application Around the World; Jurisdiction Profile: Philippines.

Zhou, L. (2010). The Research on Issues and Countermeasures of Accounting Information of SMEs. *International Journal Business Management*, 5(3), 223-225.

BIOGRAPHY

Dr. Venus C. Ibarra is a Certified Public Accountant, a full-time faculty of Ateneo de Manila University, a lecturer in the Ateneo Graduate School of Business and in San Pablo Colleges. She has published in international journals several articles in Accounting. Her email address is vibarra@ateneo.edu.

Dr. Rodrigo M. Velasco is a full-time lecturer in the Faculty of Business Studies at Gulf College Oman. He is into various international researches on accounting and entrepreneurship. His email address is rvnogie@yahoo.com.

REVIEWERS

The IBFR would like to thank the following members of the academic community and industry for their much appreciated contribution as reviewers.

Hisham Abdelbaki, University of Mansoura - Egypt
Isaac Oluwajoba Abereijo, Obafemi Awolowo University
Naser Abughazaleh, Gulf University For Science And Technology
Nsiah Acheampong, University of Phoenix
Vera Adamchik, University of Houston-Victoria
Iyabo Adeoye, National Horticultural Research Institute, Ibadan, Nigeria.
Michael Adusei, Kwame Nkrumah University of Science And Technology
Mohd Ajlouni, Yarmouk University
Sylvester Akinbuli, University of Lagos
Anthony Akinlo, Obafemi Awolowo University
Yousuf Al-Busaidi, Sultan Qaboos University
Khaled Aljaaidi, Universiti Utara Malaysia
Hussein Al-tamimi, University of Sharjah
Paulo Alves, CMVM, ISCAL and Lusofona University
Ghazi Al-weshah, Albalqa Applied University
Glyn Atwal, Groupe Ecole Supérieure de Commerce de Rennes
Samar Baqer, Kuwait University College of Business Administration
Susan C. Baxter, Bethune-Cookman College
Nagib Bayoud, Tripoli University
Ahmet Bayraktar, Rutgers University
Kyle Brink, Western Michigan University
Giovanni Bronzetti, University of Calabria
Karel Bruna, University of Economics-Prague
Priyashni Chand, University of the South Pacific
Wan-Ju Chen, Diwan College of Management
Yahn-shir Chen, National Yunlin University of Science and Technology, Taiwan
Bea Chiang, The College of New Jersey
Te-kuang Chou, Southern Taiwan University
Shih Yung Chou, University of the Incarnate Word
Caryn Coatney, University of Southern Queensland
Iyanna College of Business Administration,
Michael Conyette, Okanagan College
Huang Department of Accounting, Economics & Finance,
Rajni Devi, The University of the South Pacific
Leonel Di Camillo, Universidad Austral
Steven Dunn, University of Wisconsin Oshkosh
Mahmoud Elgamal, Kuwait University
Ernesto Escobedo, Business Offices of Dr. Escobedo
Zaifeng Fan, University of Wisconsin whitewater
Perrine Ferauge University of Mons
Olga Ferraro, University of Calabria
William Francisco, Austin Peay State University
Peter Geczy, AIST
Lucia Gibilaro, University of Bergamo
Hongtao Guo, Salem State University
Danyelle Guyatt, University of Bath
Zulkifli Hasan, Islamic University College of Malaysia
Shahriar Hasan, Thompson Rivers University
Peng He, Investment Technology Group
Niall Hegarty, St. Johns University
Paulin Houanye, University of International Business and Education, School of Law
Daniel Hsiao, University of Minnesota Duluth
Xiaochu Hu, School of Public Policy, George Mason University
Jui-ying Hung, Chatoyang University of Technology
Fazeena Hussain, University of the South Pacific
Shilpa Iyanna, Abu Dhabi University
Sakshi Jain, University of Delhi
Raja Saquib Yusaf Janjua, CIIT
Yu Junye, Louisiana State University
Tejendra N. Kalia, Worcester State College
Gary Keller, Eastern Oregon University
Ann Galligan Kelley, Providence College
Ann Kelley, Providence college
Ifraz Khan, University of the South Pacific
Halil Kiyamaz, Rollins College
Susan Kowalewski, DYouville College
Bamini Kpd Balakrishnan, Universiti Malaysia Sabah
Bohumil Král, University of Economics-Prague
Jan Kruger, Unisa School for Business Leadership
Christopher B. Kummer, Webster University-Vienna
Mei-mei Kuo, JinWen University of Science & Technology
Mary Layfield Ledbetter, Nova Southeastern University
John Ledgerwood, Embry-Riddle Aeronautical University
Yen-hsien Lee, Chung Yuan Christian University
Shulin Lin, Hsiuping University of Science and Technology
Yingchou Lin, Missouri Univ. of Science and Technology
Melissa Lotter, Tshwane University of Technology
Xin (Robert) Luo, Virginia State University
Andy Lynch, Southern New Hampshire University
Abeer Mahrous, Cairo university
Gladys Marquez-Navarro, Saint Louis University
Cheryl G. Max, IBM
Romilda Mazzotta, University of Calabria
Mary Beth McCabe, National University
Avi Messica, Holon Institute of Technology
Scott Miller, Pepperdine University

Cameron Montgomery, Delta State University
Sandip Mukherji, Howard University
Tony Mutsue, Iowa Wesleyan College
Cheedradevi Narayanasamy, Graduate School of Business,
National University of Malaysia
Dennis Olson, Thompson Rivers University
Godwin Onyiaso, Shorter University
Bilge Kagan Ozdemir, Anadolu University
Dawn H. Percy, Eastern Michigan University
Pina Puntillo, University of Calabria (Italy)
Rahim Quazi, Prairie View A&M University
Anitha Ramachander, New Horizon College of Engineering
Charles Rambo, University Of Nairobi, Kenya
Prena Rani, University of the South Pacific
Kathleen Reddick, College of St. Elizabeth
Maurizio Rija, University of Calabria.
Matthew T. Royle, Valdosta State University
Tatsiana N. Rybak, Belarusian State Economic University
Rafiu Oyesola Salawu, Obafemi Awolowo University
Paul Allen Salisbury, York College, City University of
New York
Leire San Jose, University of Basque Country
I Putu Sugiarta Sanjaya, Atma Jaya Yogyakarta
University, Indonesia
Sunando Sengupta, Bowie State University
Brian W. Sloboda, University of Phoenix
Smita Mayuresh Sovani, Pune University
Alexandru Stancu, University of Geneva and IATA
(International Air Transport Association)
Jiří Strouhal, University of Economics-Prague
Vichet Sum, University of Maryland -- Eastern Shore
Qian Sun, Kutztown University
Diah Suryaningrum, Universitas Pembangunan Nasional
Veteran Jatim
Andree Swanson, Ashford University
James Tanoos, Saint Mary-of-the-Woods College
Jeannemarie Thorpe, Southern NH University
Ramona Toma, Lucian Blaga University of Sibiu-Romania
Alejandro Torres Mussatto Senado de la Republica &
Universidad de Valparaíso
Jorge Torres-Zorrilla, Pontificia Universidad Católica del
Perú
William Trainor, East Tennessee State University
Md Hamid Uddin, University Of Sharjah
Ozge Uygur, Rowan University
K.W. VanVuren, The University of Tennessee – Martin
Vijay Vishwakarma, St. Francis Xavier University
Ya-fang Wang, Providence University
Richard Zhe Wang, Eastern Illinois University
Jon Webber, University of Phoenix

Jason West, Griffith University
Wannapa Wichitchanya, Burapha University
Veronda Willis, The University of Texas at San Antonio
Bingqing Yin, University of Kansas
Fabiola Baltar, Universidad Nacional de Mar del Plata
Myrna Berrios, Modern Hairstyling Institute
Monica Clavel San Emeterio, University of La Rioja
Esther Enriquez, Instituto Tecnológico de Ciudad Juarez
Carmen Galve-górriz, Universidad de Zaragoza
Blanca Rosa Garcia Rivera, Universidad Autónoma De
Baja California
Carlos Alberto González Camargo, Universidad Jorge
Tadeo Lozano
Hector Alfonso Gonzalez Guerra, Universidad Autonoma
De Coahuila
Claudia Soledad Herrera Oliva, Universidad Autónoma De
Baja California
Eduardo Macias-Negrete, Instituto Tecnológico De Ciudad
Juarez
Jesús Apolinar Martínez Puebla, Universidad Autónoma
De Tamaulipas
Francisco Jose May Hernandez, Universidad Del Caribe
Aurora Irma Maynez Guaderrama, Universidad Autonoma
De Ciudad Juarez
Linda Margarita Medina Herrera, Tecnológico De
Monterrey. Campus Ciudad De México
Erwin Eduardo Navarrete Andrade, Universidad Central
De Chile
Gloria Alicia Nieves Bernal, Universidad Autónoma Del
Estado De Baja California
Julian Pando, University Of The Basque Country
Eloisa Perez, Macewan University
Iñaki Periañez, Universidad Del Pais Vasco (Spain)
Alma Ruth Rebolledo Mendoza, Universidad De Colima
Carmen Rios, Universidad del Este
Celsa G. Sánchez, CETYS Universidad
Adriana Patricia Soto Aguilar, Benemerita Universidad
Autonoma De Puebla
Amy Yeo, Tunku Abdul Rahman College
Vera Palea, University of Turin
Fabrizio Rossi, University of Cassino and Southern Lazio
Intiyas Utami , Satya Wacana Christian University
Ertambang Nahartyo, UGM
Julian Vulliez, University of Phoenix
Mario Jordi Maura, University of Puerto Rico
Surya Chelikani, Quinnipiac University
Firuza Madrakhimov, University of North America
Erica Okere, Beckfield College
Prince Ellis, Argosy University
Qianyun Huang, City University of New York-Queens
College

REVIEWERS

The IBFR would like to thank the following members of the academic community and industry for their much appreciated contribution as reviewers.

Haydeé Aguilar, Universidad Autónoma De Aguascalientes
Bustamante Valenzuela Ana Cecilia, Universidad
Autonoma De Baja California
María Antonieta Andrade Vallejo, Instituto Politécnico
Nacional
Olga Lucía Anzola Morales, Universidad Externado De
Colombia
Antonio Arbelo Alvarez, Universidad De La Laguna
Hector Luis Avila Baray, Instituto Tecnológico De Cd.
Cauahatemoc
Graciela Ayala Jiménez, Universidad Autónoma De
Querétaro
Albanelis Campos Coa, Universidad De Oriente
Carlos Alberto Cano Plata, Universidad De Bogotá Jorge
Tadeo Lozano
Alberto Cardenas, Instituto Tecnológico De Cd. Juarez
Edyamira Cardozo, Universidad Nacional Experimental De
Guayana
Sheila Nora Katia Carrillo Incháustegui, Universidad
Peruana Cayetano Heredia
Emma Casas Medina, Centro De Estudios Superiores Del
Estado De Sonora
Benjamin Castillo Osorio, Universidad Pontificia
Bolivariana UPB-Seccional Montería
María Antonia Cervilla De Olivieri, Universidad Simón
Bolívar
Cipriano Domingo Coronado García, Universidad Autónoma
De Baja California
Semei Leopoldo Coronado Ramírez, Universidad De
Guadalajara
Esther Eduvigis Corral Quintero, Universidad Autónoma
De Baja California
Dorie Cruz Ramirez, Universidad Autonoma Del Estado
De Hidalgo /Esc. Superior De Cd. Sahagún
Tomás J. Cuevas-Contreras, Universidad Autónoma De
Ciudad Juárez
Edna Isabel De La Garza Martinez, Universidad Autónoma
De Coahuila
Hilario De Latorre Perez, Universidad Autonoma De Baja
California
Javier De León Ledesma, Universidad De Las Palmas De
Gran Canaria - Campus Universitario De Tafira
Hilario Díaz Guzmán, Universidad Popular Autónoma Del
Estado De Puebla
Cesar Amador Díaz Pelayo, Universidad De Guadalajara,
Centro Universitario Costa Sur
Avilés Elizabeth, Cicese
Ernesto Geovani Figueroa González, Universidad Juárez
Del Estado De Durango
Ernesto Geovani Figueroa González, Universidad Juárez
Del Estado De Durango
Carlos Fong Reynoso, Universidad De Guadalajara
Ana Karen Fraire, Universidad De Gualdalajara
Teresa García López, Instituto De Investigaciones Y
Estudios Superiores De Las Ciencias Administrativas
Helbert Eli Gazca Santos, Instituto Tecnológico De Mérida
Denisse Gómez Bañuelos, Cesues
María Brenda González Herrera, Universidad Juárez Del
Estado De Durango
Ana Ma. Guillén Jiménez, Universidad Autónoma De Baja
California
Araceli Gutierrez, Universidad Autonoma De
Aguascalientes
Andreina Hernandez, Universidad Central De Venezuela
Arturo Hernández, Universidad Tecnológica
Centroamericana
Alejandro Hernández Trasobares, Universidad De Zaragoza
Alma Delia Inda, Universidad Autonoma Del Estado De
Baja California
Carmen Leticia Jiménez González, Université De Montréal
Montréal Qc Canadá.
Gaspar Alonso Jiménez Rentería, Instituto Tecnológico De
Chihuahua
Lourdes Jordán Sales, Universidad De Las Palmas De Gran
Canaria
Santiago León Ch., Universidad Marítima Del Caribe
Graciela López Méndez, Universidad De Guadalajara-
Jalisco
Virginia Guadalupe López Torres, Universidad Autónoma
De Baja California
Angel Machorro Rodríguez, Instituto Tecnológico De
Orizaba
Cruz Elda Macias Teran, Universidad Autonoma De Baja
California
Aracely Madrid, ITESM, Campus Chihuahua
Deneb Magaña Medina, Universidad Juárez Autónoma De
Tabasco
Carlos Manosalvas, Universidad Estatal Amazónica
Gladys Yaneth Mariño Becerra, Universidad Pedagógica Y
Tecnológica De Colombia
Omaira Cecilia Martínez Moreno, Universidad Autónoma
De Baja California-México
Jesus Carlos Martinez Ruiz, Universidad Autonoma De
Chihuahua
Alaitz Mendizabal, Universidad Del País Vasco
Alaitz Mendizabal Zubeldia, Universidad Del País Vasco/
Euskal Herriko Unibertsitatea
Fidel Antonio Mendoza Shaw, Universidad Estatal De
Sonora
Juan Nicolás Montoya Monsalve, Universidad Nacional De
Colombia-Manizales
Jennifer Mul Encalada, Universidad Autónoma De Yucatán

Gloria Muñoz Del Real, Universidad Autonoma De Baja California
Alberto Elías Muñoz Santiago, Fundación Universidad Del Norte
Bertha Guadalupe Ojeda García, Universidad Estatal De Sonora
Erika Olivas, Universidad Estatal De Sonora
Erick Orozco, Universidad Simon Bolivar
Rosa Martha Ortega Martínez, Universidad Juárez Del Estado De Durango
José Manuel Osorio Atondo, Centro De Estudios Superiores Del Estado De Sonora
Luz Stella Pemberthy Gallo, Universidad Del Cauca
Andres Pereyra Chan, Instituto Tecnológico De Merida
Andres Pereyra Chan, Instituto Tecnológico De Merida
Adrialy Perez, Universidad Estatal De Sonora
Hector Priego Huertas, Universidad De Colima
Juan Carlos Robledo Fernández, Universidad EAFIT-Medellin/Universidad Tecnológica De Bolivar-Cartagena
Natalia G. Romero Vivar, Universidad Estatal De Sonora
Humberto Rosso, Universidad Mayor De San Andres
José Gabriel Ruiz Andrade, Universidad Autónoma De Baja California-México
Antonio Salas, Universidad Autonoma De Chihuahua
Claudia Nora Salcido, Universidad Juarez Del Estado De Durango
Juan Manuel San Martín Reyna, Universidad Autónoma De Tamaulipas-México
Francisco Sanches Tomé, Instituto Politécnico da Guarda
Edelmira Sánchez, Universidad Autónoma de Ciudad Juárez
Deycy Janeth Sánchez Preciado, Universidad del Cauca
María Cristina Sánchez Romero, Instituto Tecnológico de Orizaba
María Dolores Sánchez-fernández, Universidade da Coruña

Luis Eduardo Sandoval Garrido, Universidad Militar de Nueva Granada
Pol Santandreu i Gràcia, Universitat de Barcelona, Santandreu Consultors
Victor Gustavo Sarasqueta, Universidad Argentina de la Empresa UADE
Jaime Andrés Sarmiento Espinel, Universidad Militar de Nueva Granada
Jesus Otoniel Sosa Rodriguez, Universidad De Colima
Edith Georgina Surdez Pérez, Universidad Juárez Autónoma De Tabasco
Jesús María Martín Terán Gastélum, Centro De Estudios Superiores Del Estado De Sonora
Jesus María Martín Terán Terán Gastélum, Centro De Estudios Superiores Del Estado De Sonora
Jesús María Martín Terán Gastélum, Centro De Estudios Superiores Del Estado De Sonora
Maria De La Paz Toldos Romero, Tecnológico De Monterrey, Campus Guadalajara
Abraham Vásquez Cruz, Universidad Veracruzana
Angel Wilhelm Vazquez, Universidad Autonoma Del Estado De Morelos
Lorena Vélez García, Universidad Autónoma De Baja California
Alejandro Villafañez Zamudio, Instituto Tecnológico de Matamoros
Hector Rosendo Villanueva Zamora, Universidad Mesoamericana
Oskar Villarreal Larrinaga, Universidad del País Vasco/Euskal Herriko Unibertsitatea
Delimiro Alberto Visbal Cadavid, Universidad del Magdalena
Rosalva Diamantina Vásquez Mireles, Universidad Autónoma de Coahuila
Oscar Bernardo Reyes Real, Universidad de Colima

HOW TO PUBLISH

Submission Instructions

The Journal welcomes submissions for publication consideration. Complete directions for manuscript submission are available at the Journal website www.theIBFR.com/journal.htm. Papers may be submitted for initial review in any format. However, authors should take special care to address spelling and grammar issues prior to submission. Authors of accepted papers are required to precisely format their document according to the journal guidelines.

There is no charge for standard paper reviews. The normal review time for submissions is 90-120 days. However, authors desiring a quicker review may elect to pay an expedited review fee, which guarantees an initial review within two weeks. Authors of accepted papers are required to pay a publication fee based on the manuscript length and number of authors. Please see our website for current publication and expedited review rates.

Authors submitting a manuscript for publication consideration must guarantee that the document contains the original work of the authors, has not been published elsewhere, and is not under publication consideration elsewhere. In addition, submission of a manuscript implies that the author is prepared to pay the publication fee should the manuscript be accepted.

Subscriptions

Individual and library subscriptions to the Journal are available. Please contact us by mail or by email to: admin@theibfr.com for updated information.

Contact Information

Mercedes Jalbert, Managing Editor
The IBFR
P.O. Box 4908
Hilo, HI 96720
editor@theIBFR.com

Website

www.theIBFR.org or www.theIBFR.com

PUBLICATION OPPORTUNITIES

REVIEW of BUSINESS & FINANCE STUDIES

Review of Business & Finance Studies

Review of Business & Finance Studies (ISSN: 2150-3338 print and 2156-8081 online) publishes high-quality studies in all areas of business, finance and related fields. Empirical, and theoretical papers as well as case studies are welcome. Cases can be based on real-world or hypothetical situations.

All papers submitted to the Journal are blind reviewed. The Journal is listed in Ulrich's Periodicals Directory. The Journal is distributed in print and through EBSCO*Host*, ProQuest ABI/Inform, SSRN and RePEc.

Business Education & Accreditation

Business Education and Accreditation (BEA)

Business Education & Accreditation publishes high-quality articles in all areas of business education, curriculum, educational methods, educational administration, advances in educational technology and accreditation. Theoretical, empirical and applied manuscripts are welcome for publication consideration.

All papers submitted to the Journal are blind reviewed. BEA is listed in Ulrich's Periodicals Directory. The Journal is distributed in print and through EBSCO*Host*, ProQuest ABI/Inform, SSRN and RePEc.

Accounting & Taxation

Accounting and Taxation (AT)

Accounting and Taxation (AT) publishes high-quality articles in all areas of accounting, auditing, taxation and related areas. Theoretical, empirical and applied manuscripts are welcome for publication consideration.

All papers submitted to the Journal are blind reviewed. AT is listed in Ulrich's Periodicals Directory. The Journal is distributed in print and through EBSCO*Host*, ProQuest ABI/Inform, SSRN and RePEc.

REVISTA GLOBAL de NEGOCIOS

Revista Global de Negocios

Revista Global de Negocios (RGN), a Spanish language Journal, publishes high-quality articles in all areas of business. Theoretical, empirical and applied manuscripts are welcome for publication consideration.

All papers submitted to the Journal are blind reviewed. RGN is distributed in print, through EBSCO*Host*, ProQuest ABI/Inform, SSRN and RePEc.

RGN will be submitted to Ulrich's Periodicals Directory, *colciencia*, etc. The Journal is distributed in print and through EBSCO*Host*, ProQuest ABI/Inform, SSRN and RePEc.
