



How do Family and Managerial Ownership Structure Effect Real Earnings Management?

M. Siraji^{1*} and M. C. A. Nazar²

¹Department of Accountancy, Sri Lanka Institute of Advanced Technological Education, Sri Lanka.

²Faculty of Management and Commerce, South Eastern University of Sri Lanka.

Authors' contributions

This work was carried out in collaboration between both authors. Author MS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MCAN managed the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

Despite several works on corporate governance examine the ownership structure on earnings management, the empirical research on Real Earnings Management (REM) is limited. Thus, the main purpose of the research is to examine the effect of family and managerial ownership on real earnings management of selected non-financial listed companies at Colombo Stock Exchange (CSE) in Sri Lanka. The researchers use quantitative approach to address this current issue, and the data were collected using a sample of 206 firms listed at the CSE during the highest market capitalization period from 2015/2016 to 2019/2020, and eliminated the companies listed in the industry of bank, finance and insurance because the companies are governing by rules and regulation. The study found that family and managerial ownership play a prominent role and negatively related with real earning management activity. The finding of the study contributes to knowledge in earnings management of agency theory literature in developing economies, and help the investors, supplier auditors and policy makers for their decision-making activities by detecting the real earning management in different ownership structure.

Keywords: Family ownership; managerial ownership; real earnings management; Sri Lanka.

*Corresponding author: E-mail: sirajim@gmail.com;

1. INTRODUCTION

In today's financial market, accounting manipulation, fraud, and scams are not new issues. In firms with previously managed earnings, financial fraud is significantly greater [1]. Earnings management occurs when, as a result of users relying on published accounting numbers, managers intentionally change their financial reports to mislead users or manipulate the results of their decisions [2]. Generally, these managers benefit from personal and business gains from the practice of earnings management. By managing firm-specific information, they have additional benefits over users of external financial information. Roychowdhury [3] states the managers are using Real Earnings Management (REM) or AEM to smooth earnings. Managers mostly prefer REM to AEM, perhaps because it is less detectable, even if participating firms are more expensive [4]. REM [5] is also considered less ethical than AEM and may decline its future value [6]. On the other hand, corporate accounting fraud demonstrated significant and high-profile corporate failures such as the American International Group, Enron, Freddie Mac, HealthSouth, Tyco and WorldCom that have occurred worldwide [7]. Large firms in Sri Lanka from 2002, such as Golden Key Card Company, Pramuka Savings, Development Bank, Lanka Marine Services Ltd and Vimukthi Corporation Services Ltd collapsed due to material financial manipulation due to poor accounting practices leading to a lack of stakeholder control [8]. Thus, regulators worldwide have begun to concentrate on corporate governance systems, particularly ownership structure aspects to enhance the quality of financial information and reporting [9]. Furthermore, recent research reveals that listed companies' specific characteristics in Sri Lanka, dominated by family and management ownership [10], and management ownership in Sri Lanka is far higher than institutional and foreign ownership [11]. Nevertheless, previous studies [12-17] of family and managerial ownership structure only conducted on AEM and the research on real earning management is limited.

Therefore, the main purpose of the study is to examine the effect of family and managerial ownership structure on REM of listed companies at CSE in Sri Lanka. This research contributes to a growing understanding of capital market earnings management and guides policymakers to strengthen corporate governance practice.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Earnings Management

The Earnings management is classified as the Accrual Earnings Management (AEM) and the Real Earnings Management (REM). The REM defines as the management activities that are different from normal procedure to reach such earnings thresholds [3]. Managers intend to mislead stakeholders in published reports to have confidence and use earnings information [3]. Thus, managers prefer REM since it is hard for external parties to find out about REM compared to AEM [5,18]. Also, REM has affected the company's actual performance compared to manipulating accruals [19]. In developed countries, earnings management has been studied extensively [14,20,21]. However, developing countries like Sri Lanka, where there are still weak investors' right and legal protections issues related to REM continue to deserve research attention and empirical investigation. Furthermore, previous research on earning management only investigate the composition of the board of directors, the size of the board of directors, the financial competence of the board of directors, stock return, and ownership structure on AEM [17,22]. Therefore, we contribute to the existing literature in earnings management by focus on family and managerial ownership structure in real earnings management.

2.2 Family Ownership and Real Earnings Management

As family owners often have an active role in managing companies [23], they are autonomous to adjust their regular operations and investment activities. Family companies more often implement REM in developing countries than AEM [6]. Although earnings management studied in recent decades, research in the family-based business is still limited [24]. Based on the agency theory (owners-managers), Fama and Jensen [25] presumed a significant role of family ownership in reducing agency problems. Also, Gomez- Mejia et al. [26] introduced a "Socio-Emotional Wealth Theory," revealing that family ownership would embrace business success irrespective of achieving the objective of Socio-Emotional Wealth for future generations. The existence of controlled stakeholders is a high level of ownership in Sri Lanka, and a number of

businesses are family-owned enterprises [27]. Furthermore, family ownership has been related to higher earnings quality and a negative association between family businesses and REM [28,29]. Similarly, according to Achleitner et al. [29], family businesses in the United States are less likely to manage earnings than non-family businesses, and family businesses in Indonesia have a negative impact on REM. In the same vein, Achleitner et al. [29] provided evidence that Bangladesh's family firms are engaged in REM. Chen et al. [28] also found that REM is lower for family firms than non-family firms. Thus, we propose the first hypothesis as follows:

H1: The level of real earning management relates negatively to the percentage of family ownership structure

2.3 Managerial Ownership and Real Earnings Management

Managerial ownership is the second key factor in ownership structure of the firm. Morck, Shleifer and Vishny [30] suggest that if management owns a large proportion of its ownership, its market value should increase. In other words, if management ownership increases as a firm stock, they will be more likely to align their strategic goals with shareholders' goals gradually. Previous literature on managerial ownership structure on earnings management shows that managerial ownership is positively linked to earnings management [10,31,32], while Warfield et al. [33] claim that managerial ownership affects managerial earnings management practices. Consequently, earnings management activities expected a significantly negative association with management ownership. According to Banderlipe [34], high managerial ownership decreases earnings management and increases in manager stakes discourage managers from managing earnings. Managerial ownership and accrual earnings have a favorable and meaningful association [33]. However, the findings of the previous studies only look at the effect of ownership on AEM, not REM. According to the theories of agency, management ownership allows management to maximize the valuation of companies and balance the goals of managers and shareholders. Therefore, greater ownership of management limits motivation for income management to rise short-term incomes and higher the proportion of management, the greater the negative effect on earnings management

[35,36]. As a result, we suggest the hypothesis as:

H2: The percentage of managerial ownership structure negatively relates to the real earnings management.

3. RESEARCH METHODS

3.1 Data and Sample

The current study investigates Sri Lanka's real earnings management phenomenon, and family and management ownership structure. Secondary data from the published annual CSE reports form the population for this study. All 206 companies take part in the sample, based on the availability of the data other than 15 Bank, 50 Finance and 11 Insurance sector companies which were eliminated from the sample since they are strongly regulated by strict laws and guidelines and follow a diversified system of financial accounting. Data collection coincide with the economic boom, recession, recovery and stabilisation of 2015/2016 to 2019/2020. This time, therefore, makes it possible to study the activities of REM under different economic conditions. This study uses a quantitative approach to measure family and management ownership's effects on REM activities.

3.2 Variables and Measurement

Main variables in this study and their measurement have been adopted from current literature, as confirmed by significant researchers in earning management. Roychowdhury [3] claims that manipulating operational cash flows in various ways has an uncertain net effect since irregular cash flows are only used as a robustness measure. Thus, the three REMs metrics proposed: Abnormal operating cash flow (ACFO), Abnormal cost of production (APROD) and Abnormal discretionary costs (ADISX). In addition, this study suggested measures for the structure of family ownership (OWNFAM); for the 'family in influence' where the group holds at least 10 per cent of all of the companies' stock [34]; and for the managerial ownership (OWNMAN); the percentage of common stock directly owned by the board of directors [37]. In Addition to the main variables, in this study we use control variables namely, Firm size (FSIZE) measured by natural logarithm of sales of firm [37], Firm growth (FGRWTH) measured by year-on-year change in total revenue [10], Return on

Assets (ROA) measured by earning after interest tax on total assets [38], Leverage (LEV) measured by total liabilities scaled by total assets [15] and Audit quality (ABIG4) measured by a dummy variable that equals 1 if the firm is being audited by a Big 4 auditors [38].

In the following formulas, We propose three matrices of cash flow from operations, reduction costs, and discretionary expenditures, as proposed by Roychowdhury [3], to calculate real earnings management forecasts for each firm and year.

3.3 Estimation Model

$$CFO_{it}/A_{it-1} = \alpha_0 + \alpha_1 (1/A_{it-1}) + \beta_1 (Sit/A_{it-1}) + \beta_2 (\Delta S_{it}/A_{it-1}) + \epsilon_t, \tag{1}$$

$$PROD_{it}/A_{it-1} = \alpha_0 + \alpha_1 (1/A_{it-1}) + \beta_1 (Sit/A_{it-1}) + \beta_2 (\Delta S_{it}/A_{it-1}) + \beta_3 (\Delta S_{it-1}/A_{it-1}) + \epsilon_t, \tag{2}$$

$$DISX_{it}/A_{it-1} = \alpha_0 + \alpha_1 (1/A_{it-1}) + \beta (S_{it-1}/A_{it-1}) + \epsilon_t, \tag{3}$$

At-1 denotes the lagged total assets; Sit, Si, and Si-1 denote the level, shift, and lagged change in gross revenue from normal operations, respectively. The above regression equations' company-year residuals are calculated as abnormal cash flow (ACFO), abnormal output costs (APROD), and abnormal discretionary costs (ADISX) in REM calculation [3]. The three actual measurements of activity manipulation are then combined into one surrogate, AREMit, by adding their sums:

$$AREM_{it} = ACF_{it} + APROD_{it} + ADISX_{it} \tag{4}$$

Then, we propose the following models to estimate the model in order to find the association between family ownership, managerial ownership, and real earning management:

$$AREM_{it} = \beta_0 + \beta_1 OWNFAM_{it} + \beta_2 OWNMGT_{it} + \epsilon_i \tag{5}$$

$$AREM_{it} = \beta_0 + \beta_1 OWNFAM_{it} + \beta_2 OWNMGT_{it} + \beta_3 FSIZE_{it} + \beta_4 FGRWTH_{it} + \beta_5 FLIV_{it} + \beta_6 ROA_{it} + \beta_7 ABIG4_{it} + \epsilon_i \tag{6}$$

4. EMPIRICAL RESULTS OF THE STUDY

The results obtained from the statistical analytical methods proposed under Section 3.3 are presented in this section. The results of the descriptive analysis and the analysis of the association and the least square regression analysis, along with the subsequent discussion, are therefore presented in this section.

Table I. Descriptive statistics (206)

Variables	Mean	Maximum	Minimum	Standard deviation
AREM _{it} ^a	0.1823	0.7521	0.000	0.301
ACFO _{it}	0.0392	0.0012	0.000	0.132
APRO _{it}	0.0521	0.0432	0.0125	0.125
ADISXP _{it}	-0.032	0.0241	-0.0625	0.062
OWNFAM _{it}	0.435	0.825	0.000	0.232
OWNMAN _{it}	0.512	0.821	0.000	0.256
FSIZE _{it}	15.126	19.142	13.12	0.198
FGRWTH _{it}	0.042	0.452	-0.058	2.212
FLIV _{it}	0.288	0.825	0.000	0.321
ROA _{it}	0.110	-0.112	0	0.058
ABIG4 _{it}	0.925	1.00	0.000	0.282

Note: ^a = Aggregate Real Earnings Management (AREM)

Table II. OLS Regression Analysis (Dependent Variable is AREM)

Variables	Model 1		Model 2	
	Coefficient	t-statics	Coefficient	t-statics
Constant	-0.251	3.251***	-0.521	-2.457***
OWNFAMit	-0.008	-0.238***	-0.032	-0.482***
OWNMANit	-0.061	0.182***	-0.081	-0.232***
FSIZEit			0.001	3.250*
FGRWTHit			0.0182	2.151*
FLIVit			0.212	0.312
ROAit			-0.085	-3.215**
ABIG4it			- 0.001	-1.256**
F Value	7.645***		9.801***	
Durbin-Watson	1.56		1.68	
Adjusted R2	0.289		0.502	
VIF	1.002		1.834	
N			206	

Note: *, ** and *** denote significance levels by * $P < 0.10$; ** $P < 0.05$; *** $P < 0.01$

4.1 Descriptive Statistics

Descriptive statistics findings are presented in Table I, the table presents the mean, minimum, maximums and standard deviation of dependent and independent variable of the study. The mean value of Real Earnings Management value (AREM_{it}) is 0.1823 and the standard deviation is 0.301. The results show that there is a substantial variation. The mean value of family ownership (OWNFAM) is 0.435 and managerial ownership (OWNMAN) is 0.512. The logarithm of total assets (FSIZE) has a mean of 8.126, Firm Growth (FGRWTH) is 0.0421. Firm's average leverage (FLIV) ratio is 0.288 whereas the sample firms are profitable with a mean ROA of 0.110 and Audit Quality (BIG4) is 0.925.

4.2 Correlation Matrix

Pearson correlation matrix is tested to find the association among the variables in this study. The result show that Family Ownership (OWNFAM_{it}) and managerial ownership (OWNMAN_{it}) negatively associate with REM (AREM_{it}) at a significance level of $P < 0.01$. Furthermore, at the $P < 0.05$ level of significance, Firm Size (FSIZE_{it}), Firm Growth (FGRWTH_{it}), and Firm Leverage (FLEV) all showed a positive association AREM_{it}. It shows that earnings management is most likely to occur when the company is large and revenue is rapidly increasing. Meanwhile, REM is less likely to arise if there is a record of high rate Return on Assets (ROA_{it}), and firm audited by the Big 4 auditors (BIG4_{it}) shows a clear systemic negative correlation with Real Earnings Management

(AREM_{it}) at significant level of $p < 0.05$. Finally, we search for multicollinearity; the result shows that the variance inflation factor (VIF) is less than 5, confirming the absence of multicollinearity, and does not breach or compromise the regression model.

4.3 Multiple Regression Analysis using Ordinary Least Square Model

To examine the effect of ownership structure variables on REM, the analysis used pooled Ordinary Least Square regression (OLS). Table II depicts the OLS regression results. The regression model is constructed by main variable of the study as dependent variable is real earnings management and ownership structure variables as independent variables. Further, the analysis includes five control variables to predict the main results.

The Table II shows the findings for the effect of managerial and family ownership structure on aggregate real earnings management (AREM_{it}). The total explanatory powers of the AREM in models 1 and 2 are about 29% and 50%, respectively. The average VIF for the two regressions is 1.002 and 1.834, respectively, with the highest VIF value of the ownership structure variables and control variables reports being less than 3. Table II contains the coefficients of ownership factors, which we analyze first. Ordinary least square regression analysis shows that the coefficients effect of both managerial (OWNMAN_{it}) and family ownership (OWNFAM_{it}) structure are statistically negatively significant for AREM at $P < 0.01$. This indicates that increase in managerial and family ownership in firm

ownership structure helps to reduce the real earnings management among Sri Lankan listed firms. The results of the finding is supportive for hypothesis 1 and 2, which is consistent with the findings of Dong, Wang, Zhang, & Zhou [35] and Chen et al. [28]. The results reveal that increase in family and managerial ownership is reducing agency problems and ensuring to publish quality financial report. In terms of control variables, except Firm Leverage (FLIV), all other variables such as Firm size (FSIZE_{it}), Firm Growth (FGRWT_{it}) are show a significant positive relationship with AEM at significant level of P<0.1. In contrast, the variables Big 4 Auditors (ABIG4_{it}) and Return on Assets (ROA_{it}) are show the systematic negative relationship with AEM at significant level of P<0.05.

5. CONCLUSION

Despite the introduction of many new control mechanisms, it has expected that the general trend of financial fraud will continue to increase, particularly in developing countries. Then it is essential and timely to consider the factors that affect the intentions of REM expropriation. For two key reasons, REM is a very critical financial issue for any business firm. First, it entails cash flow implications, and second, it is tough to detect than AEM. Thus, this research is organized in the summary of the literature and addresses the current research gap in the literature by investigating whether family and managerial ownership significantly effect REM. The findings of this study reported that the significance of family and managerial ownership structure reducing the real earnings activities in publishing the financial report of Sri Lankan listed companies and help to enhance the quality and value relevance of reported financial information. The result contributes to the existing literature by presenting new data on REM practice and thorough family and managerial ownership structure research. The findings are also significant in reducing the risk of protecting shareholders, debt holders and suppliers of financial capital from earnings mismanagement. The findings can guide analysts, investors, and fund managers in their investment decisions. The research findings will help them identify firms in their investment portfolio with a low risk of future expropriation. Finally, this study would also improve auditors' knowledge of detecting REM activities. This study only focusses on family and managerial ownership structure in real earnings management, while other type of ownership such as, foreign ownership and institutional ownership

also may affect the real earnings management activities. Therefore, the future research could look at the effect of foreign ownership and institutional ownership on real earnings management activities.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Appendix 01

	AREM	ACFO	APRO	ADISXP	OWNFAM	OWNMAN	FSIZE	FGRWTH	FLEV	ROA	ABIG4
AREM	1										
ACFO	-0.158***	1									
APRO	0.812**	0.542 [†]	1								
ADISXP	-0.342***	-0.128*	-0.146*	1							
OWNFAM	-0.0425***	-0.0510**	-0.028**	-0.012**	1						
OWNMAN	-0.0521***	-0.056***	-0.072*	-0.125**	-0.021**	1					
FSIZE	0.0128**	0.0145*	0.012**	-0.021**	-0.0731	-0.312**	1				
FGRWTH	0.185**	0.114**	0.185**	0.011**	0.021*	-0.055*	-0.145**	1			
FLEV	0.285**	0.218**	0.285*	0.245**	0.217	-0.011*	-0.251	0.185*	1		
ROA	-0.244**	-0.245**	-0.021**	-0.062**	0.236*	0.213**	0.201*	-0.025	0.021*	1	
ABIG4	-0.085**	-0.032**	-0.072**	0.285**	0.385*	0.025	0.018	0.215*	0.012	0.582*	1

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