THE EFFECT OF OWNERSHIP COMPOSITION ON EARNINGS MANAGEMENT: EVIDENCE FROM THE MEXICAN STOCK EXCHANGE

Abstract

We aim to examine the relationship between different types of shareholders that command share ownership, family, institutions, or other blockholders, and earnings management. We also examine the effect of company size on earnings management. Our results show that family and institutional ownership reduce earnings management, but the impact is different depending on the company size. The ownership structure can provide corporate governance in Mexican listed companies with different monitoring and control capacities to influence companies' strategies, particularly in relation to the discretion of earnings management. For both companies' corporate governance and regulatory authorities, the results of this study may serve to better decision making in board supervision.

Keywords: Earnings management, Ownership concentration, Type of shareholder.

1. Introduction

The financial market crisis in 2009 generated a vast body of research on the quality of financial information submitted by public companies and the critical role that corporate governance plays as a control mechanism. The managers of this type of companies, given the crisis, have a greater need to attract investors. This situation may tempt managers to show results of questionable quality in order to ensure company stability, as well as ensure the necessary funds for the firm investments. However, this tends to reduce the possibilities for shareholders of an effective supervision and control of the management team. Therefore, there is a clear need for greater oversight of the management practices in companies listed on the stock market because investors'

perceptions about the companies' future are essential for their market value. Managers may engage in earnings management to influence investors' perceptions (Macey, 1998), which motivates the analysis of discretion in management's selection of accounting processes.

While prior research has focused on how family ownership concentration impacts earnings management, the purpose of this paper is to examine the relationship between different types of shareholders that have significant participation (above 5%), such as family, institutions, or other blockholders, and earnings management. Both, blockholders and institutions are active participants in corporate governance, they can improve the monitoring capacities of a firm´s strategy in order to ensure management responsiveness as well as enhance corporate performance (Hansen and Hill, 1991; Shleifer and Vishny, 1986).

To present the research, the paper is divided into five sections, including the introduction. In section 2 we review previous research and present the theoretical foundations of the work. Then, in section 3 we describe the methodological issues, along with the sample and variables. Next, in section 4 we comment on the results achieved and conduct a sensitivity analysis to examine alternative specifications of the model. The final section draws some conclusions from the most outstanding results and points to some future research directions.

2. Literature review

Given that the separation of ownership and management is among the most important forces driving earnings management, a large amount of research has studied the relationship between ownership structure and earnings management (Smith, 1976; Salamon and Smith, 1979; Koch, 1981; Dhaliwal, Salamon, and Smith, 1982; Amihud, Kamin, and Ronen, 1983; DeFond and Jiambalvo, 1991; Abuzayed, Al-Fayoumi, and Alexander, 2010; San Martin-Reyna, 2012).

2.1 Ownership Structure

The goal of every business is profit maximization, but when there is separation between ownership and management control, monitoring costs arise. An incomplete control by the shareholders and the associated costs this represents triggers the possibility of profit deviation by managers. Ownership structure has been suggested as a mechanism to reduce agency conflicts through the alignment of interests between management and shareholders. Authors, such Jensen and Meckling (1976) and Shleifer and Vishny (1997), consider ownership concentration as an effective regulatory mechanism for managers because of closer supervision and/or direct shareholder involvement in management. The concentration of share ownership can reduce managerial incentives to consume perquisites, expropriate shareholders' wealth and engage in other non-maximizing behavior (Jensen and Meckling 1976). However, at high levels of managerial ownership, substantial risk from the pursuit of self-interest arises, that is, at some point management entrenchment occurs (Fama and Jensen, 1983; Shleifer and Vishny, 1997; Gomez-Mejia, Nuñez-Nickel, and Gutierrez, 2001; Faccio and Lang, 2001). In the family business field, this relationship between family ownership concentration and managerial performance has been studied from two main different approaches: convergence of interests (Johnson, Magee, Nagarajan, and Newman; 1985; Demsetz and Lehn, 1985; Stiglitz, 1985; Jensen; 1986; Stein, 1988, 1989; Friend and Lang, 1988; Shleifer and Vishny, 1986, 1997; Singell, 1997; James, 1999; Claessens and Djankov, 1999; DeAngelo and DeAngelo, 2000; Faccio and Lang, 2001; Wang, 2006; Bartholomeusz and Tanewski, 2006; and Castrillo and San Martín, 2007) and entrenchment hypotheses (Fama and Jensen, 1983; Yeo, Tan, Ho, and Chen, 2002; Morck, Stangeland, and Yeung, 2000, 2003; Perez-Gonzalez, 2001; Anderson, Mansi, and Reeb, 2002; Velury and Jenkins, 2006; Siregar and Utama; 2008; Arosa, Iturralde, and Maseda, 2010).

However, institutions such as banks, for example, through the establishment of long term business relationship with the firms, supervise the actions of management. As suggested by the empirical evidence, some benefits of institutional shareholders are reported in countries like Germany (Cable, 1985), Japan (Prowse, 1990) or Spain (Zoido, 1998). For institutional investors, the size of their investment justifies the supervision of management. Their power comes partly from the variety of control rights that institutions have when firms do not pay or violate the terms of debt contracts, and partly because they tend to provide funds in the short-term, so borrowers will have to procure new funds for short periods of time (Díaz, 2000). Thus, in situations in which a major lender extends its condition over time, the threat of withdrawal of funds from the company, unless the management takes appropriate measures, becomes credible (Prowse, 1994). Some empirical studies, such as the ones conducted by Mikkelson and Ruback (1985), Holderness and Sheehan (1985), and Barclay and Holderness (1989), have concluded that both institutional investors and large equity blockholders (excluding family business dominant coalition) can positively affect firm value.

Blockholders' ownership plays a significant role in monitoring the behavior of management, resulting in lower managerial opportunism. The literature strongly suggests that blockholders have incentives to monitor and influence management to protect their significant investments (Friend and Lang, 1988; Mehran, 1992). They have more incentives to monitor the actions of managers than small shareholders because monitoring is more cost-efficient for them (Jensen and Meckling, 1976; Koch 1981; Mikkelson and Ruback 1985; Shleifer and Vishny 1986; Barclay and Holderness, 1989; Bethel and Liebeskind, 1993; Dechow, Sloan, and Sweeney,1996; Brailsford, Oliver, and Pua, 2002; and Zhong, Donald, and Zheng, 2007).

In addition, Abuzayed et al. (2010) argue that the size of the firm may have a differential effect on the capacity of shareholders, family, institutional investors, or blockholders, to control earnings management, suggesting that manipulation tends to be more likely in larger firms. This is based on Watts and Zimmerman (1986)'s argument that large firms are more visible to the investors market and therefore are more pressured towards earnings management.

2.2 Hypotheses

Based on the previous discussion, we propose the following hypotheses:

Hypothesis 1: The degree of earnings management tends to diminish as the level of ownership concentration increases, regardless of the type of shareholder that leads this concentration in the firm (family, institution, blockholder).

Hypothesis 2: The relationship between earnings management and concentrated ownership remains the same regardless of firm size.

3. METHODOLOGY

3.1 Sample

The sample includes companies listed in the Mexican Stock Exchange for the period 2005-2011. Out of 132 listed companies, non-profit companies, companies that do not include enough information in their financial statements, as well as financial institutions were excluded, resulting in a total number of 89 firms. The final sample for the empirical analysis consists of 623 observations or firm-years. We obtained the annual reports and financial indicators from Economatica and Isi Emerging Markets. Industry specific information was obtained from company annual reports published by the Mexican Stock Exchange on its website. The firms selected are the most important players in the different sectors of Mexican economy.

3.2 Discretionary Accruals as Measure of Earnings Management

In accordance with the literature on this topic, we focus on accruals as a measure of earnings management. This variable is measured as discretionary accruals using cross-sectional version of the Jones´ model (1991) which is detailed below in equation (1). Importantly, we must emphasize that each variable is deflated by total assets before a period of time, to avoid heteroscedasticity problems, according to Chung, Firth and Kim (2005):

$$\frac{TAI_{it}}{TA_{it-1}} = \alpha_0(1/TA_{it-1}) + \alpha_1\left[(\Delta Rev_{it} - \Delta AR_{it})/TA_{it-1}\right] + \alpha_2(\Delta PPE_{it}/TA_{it-1}) + \varepsilon_{it} \quad (1)$$

Where:
TAI_{it}: Total accrual information for firm i in the yearly period t (calculated in equation 2)
TA_{it-1}: Total assets of firm i in the yearly period t-1,
ΔRev_{it}: Change in revenue (previous year) of firm i in the yearly period t,
ΔAR_{it}: Change in accounts receivable (previous year) of firm i in the yearly period t,
ΔPPE_{it}: Change in Property, Plant and Equipment Gross (previous year) of firm i in the yearly period t, and,
εit: Other relevant information of firm i in the yearly period t, being orthogonal to independent variables.

The Total Accrual Information variable for firm i in the yearly period t is calculated with the equation number (2):

$$TAI_{it} = (\Delta Current\ Assets_{it} - \Delta Cash_{it}) - (\Delta Short\ term\ liabilities_{it} - Short\ term\ debt_{it} - \Delta Taxes\ payable_{it}) - Depreciation_{it} \quad (2)$$

Where: Δ represents the change in year t-1 to year t of each concept identified in the financial statements of the company i in the yearly period t.

In order to identify the portion of the Discretionary Accrual Information we considered the total accrued information *(TAI)* as the sum of the accrued discretionary information *(DAI)* and accrued nondiscretionary *(NDA)*. That is, according to the equation number (3):

$$TAI_{it} = DAI_{it} + NDA_{it} \quad (3)$$

3.3 Ownership Structure and Variables

A key aspect of our study is to define ownership structure; therefore, family ownership *(Famown)* was defined as the percentage of shares held by family members. In this paper, for regression purposes, we consider a company a family firm as long as the family has 40 percent or more of ownership of the company, as this percentage gives the family the ability to control the decisions and management of the company (San-Martin-Reyna and Duran-Encalada, 2012)[1]. This is a reasonable threshold in this study as the ownership composition of companies in Mexico is highly concentrated. Blockholders ownership *(Blockholders)* was defined as the percentage of shares held by individual blockholders, excluding family members. Finally, we measure institutional ownership *(Institutional)* as the percentage of shares held by institutions like banks, insurance companies, pension funds and financial institutions. For the regression analysis, following Abuzayed et al. (2010), we define blockholders and institutional shareholders as those having an ownership of 5 percent or more of the firm´s equity share capital. For the firm size *(Size)* we used the natural logarithm of total assets as a proxy.

3.4 Control Variables

Another important aspect of the study is the control variables: leverage, profitability, and identification of the availability of growth opportunities. Leverage *(Debt)* is measured by total liabilities divided by total assets, and was included because managers are more likely to use earnings management techniques when companies are closer to default on debt contracts (Press and Weintrop, 1990; Prowse, 1994; Fernández, 1999). Profitability *(ROE)* was measured by return on equity, and this variable was included because listed firms with lower profitability tend to show a higher earnings management behavior (Chen, Firth, Gao, and Rui, 2006; Abuzayed et

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[1] Studies, such as Anderson and Reeb (2003), consider the ownership proportion of the founding family and family presence on the board. Similarly, authors such as McConaughy, Matthews, and Fialko (2001) consider a company as a family when the director is from the controlling family or descendant thereof.

al., 2010). Finally, growth opportunities *(Growth)* was measured as sales' annual rate of growth (McConnell and Servaes, 1990; La Porta et al., 2000), and this variable was included as a control mechanism for demand conditions on profitability.

4. RESULTS

4.1 Descriptive data

Table 1 shows the descriptive statistics of the variables. As we can see, the mean of discretionary accruals is about 0.1. On average, the sample firms have positive discretionary accruals. These results suggest that Mexican companies in our sample are managing their earnings upwardly, as in other works (García and Gill, 2005; Wang, 2005; San Martin-Reyna, 2012). For the regression analysis we consider the absolute value of discretionary accruals information *(DAI)* a measure of the level of manipulation of earnings management. On the other hand, Table 2 shows the importance of family ownership concentration in the Mexican market, as the value varies from 0.02 to 0.98, with an average of 54 percent. Institutional investors, on average, hold around of 21 percent of ownership in the sample, while firms and blockholders hold only an average of 15 percent. These results are not surprising due to the nature of Mexican market, where listed firms are owned and controlled by families and institutions rather individual investors (Babatz, 1997; Khanna and Palepu, 1999; La Porta et al., 1999; Husted and Serrano, 2001; Castañeda, 2000; Barca and Becht, 2001; Faccio and Lang, 2002; Castrillo and San Martín, 2007; San Martin-Reyna and Duran-Encalada, 2012). The average debt of companies in the analysis period is 45 percent of total funding. Firm size (in terms of assets) is quite heterogeneous and highly dispersed around the mean value, so the results should not be biased by size issues. Profitability shows that companies have obtained an average return on equity of 7.5 percent, accompanied by an average annual sales growth of 15.3 percent from 2005-2011.

Table 1
Descriptive Statistics

Variables	Mean	Std. Dev.	Min	Max
DAI	0.0974	0.1680	-0.5370	0.5836
Famown	0.5433	0.2105	0.02	0.98
Institutional	0.2104	0.2311	0	0.90
Blockholders	0.1492	0.2029	0	0.83
Size	43,446.8	94,468.3	263.05	945,616.9
Debt	0.4504	0.2070	0.0152	0.9805
ROE	0.0751	0.7416	-8.48	9.36
Growth	0.1526	0.5010	-0.7785	9.0355

Source: Based on the Mexican Stock Exchange for the period 2005-20111, Economatica and Isi Emerging Markets.

4.2 Regression Analysis

As stated before, the sample combines 89 firms with seven cross-sections, creating a 623 observations panel data. Given the aim of the study, the panel data methodology seems to be the most accurate (Arellano and Bover, 1990; Arellano, 1993). However, this estimation assumes that the variables are exogenous, which incurs a heterogeneity bias. Therefore, we employ a dynamic panel, the generalized method of moments (GMM), following the Arellano and Bond (1991) methodology. According to these authors, the GMM is appropriate when the sample is large and the time section is small. In our case, the sample includes 89 firms and seven years, so it is appropriate to apply the GMM model. Under GMM, the consistency of the estimator depends on the validity of the instruments and the assumption that the difference error terms do not exhibit second order serial correlation. To test these assumptions, Arellano and Bond (1991) proposed a Sargan test of overidentifying restrictions, which tested the overall validity of the instruments by analyzing the sample along the moment conditions used in the estimation procedure (Liu and Hsu, 2006). Besides, they also tested the assumption of no second-order serial correlation. Failure to reject the null hypotheses of both tests gives support to our estimation procedure. All regressors are treated as strictly exogenous except for the lagged dependent

variables. These authors propose GMM as an instrument for the explanatory variables using lagged values of the original regressors and thus solving the endogeneity problem. The GMM model can control error correlation over time, heteroscedasticity among firms, simultaneity, and measurement errors caused by the use of orthogonal conditions covariance matrix (Espinosa, 2009). With regard to the basic model to be estimated, we constructed a multivariate regression model including most of the previously cited variables. This model can be expressed with the following equation, where i refers to the firms and t to the year ($i = 1….89$; $t = 1….7$)

$$DAI = \beta + \beta_1 Famown_{it} + \beta_2 External_{it} + \beta_3 Insitutional_{it} + \beta_4 Size + \beta_5 Debt_{it} + \beta_6 ROE_{it} + \beta_7 Growth_{it} + \varepsilon_{it}$$

The results of the panel data estimation are displayed in Table 2. The estimations were run not only for the basic specification but an interaction variable was also introduced to analyze the effect of size and ownership over earnings management (Table 3).

Table 2
Results of Estimations

	(1)	(2)	(3)
Constant	0.262481	0.278163	0.29949
	(2.93)**	(2.90)**	(4.23)***
L1	-0.19833	-0.13719	-0.17081
	(-2.25)*	(-0.61)	(-2.74)**
Famown	-1.65757		
	(-3.17)***		
Blockholders		-0.13648	
		(-1.03)	
Institutional			-0.31274
			(-1.80)†
Debt	0.30967	0.16482	0.14187
	(3.28)***	(3.67)***	(2.63)**
ROE	0.00622	0.00497	0.00321
	(1.32)	(1.19)	(0.68)
Growth	0.02256	0.02145	0.01996
	(1.22)	(1.24)	(1.04)
m1	-4.11***	-5.35***	-4.68***

m2	-0.73	-0.96	-0.63
Sargan Test	8.75	8.79	7.43
Wald Test	17.98*	11.66*	13.51*
Absolute value of t statistics in parentheses † significant at .10 * significant at 0.05 ** significant at 0.01 *** significant at 0.001			

Source: Based on the Mexican Stock Exchange for the period 2005-20111, Economatica and Isi Emerging Markets.
Notes: The table shows estimated *coefficients*, *t-statistics,* and indicators of *p-value*.All estimations are examined by using the GMM model. Wald test provides the joint significance of all explanatory variables. Sargan test contrasts overidentifying restrictions, and m1 and m2 statistics contrast the absence of serial correlation of first and second order in the residuals of the regression.

These results partly confirm hypothesis 1, the influence of ownership structure on earnings management. First, we find that family ownership *(Famown)* has a negative effect on earnings management; thus, higher concentration of ownership in families lowers discretional accruals in the Mexican market. Also, the institutional ownership variable *(Institutional)* shows a negative relationship with managerial discretion. This association shows that institutional and family investors have an important influence on earnings management strategy. Consequently, ownership concentration is a good monitoring mechanism in countries such as Mexico. However, the blockholders ownership variable *(Blockholders)* is not significant in any of the estimates. This supports the hypothesis of convergence of interests, that is to say, majority control by families or institutional investors serves to reduce the discretionary accruals (Fama and Jensen, 1983; Bartholomeusz and Tanewski, 2006; San Martin-Reyna and Duran-Encalada, 2012). The results for blockholders are not surprising, since in Mexico it is unusual for individual blockholders to hold a significant block of shares. High ownership concentration may offset to some extent the lower protection of investors within the institutional framework in the Mexican legal context, which causes the main owners or families to concentrate and seek an active participation in the

decision-making process (San Martin-Reyna and Duran-Encalada, 2012). Thus, principal shareholders, including institutional banks, do not lose the control of the company, unless they are able to maintain a considerable block of shares.

Regarding the other variables, we find that only leverage *(Debt)* and size *(Size)* are significant and have a positive effect on earnings management. As for the relationship between debt and the use of discretionary accruals, the results shown in the Table 2 are consistent with the debt hypothesis, which argues that firms with high debt ratios, and therefore with a greater likelihood of violating debt contracts, are associated with greater earnings management. On the other hand, we find that managers in large Mexican firms have more incentives to manage their incomes. Finally, growth opportunities and profitability variables are not significant.

Following Abuzayed et al. (2010), we introduced an interaction variable between ownership structure and size to analyze whether large firms have more earnings manipulation than small firms (Hypothesis 2). Results are shown in Table 3:

Table 3
Results of Estimations with Interaction

	4	5	6
Constant	0.5119101	0.5688414	.0488572
	(2.01)**	(2.14)**	(2.07)*
L1	0.111207	-0.135952	-0.110721
	(1.62)	(1.88)†	(0.08)*
Famown	-1.327253	-1.594232	-1.334849
	(-2.84)**	(3.17)***	(-2.78)**
Blockholders	-0.219694	-0.209371	-0.331455
	(-0.77)	(-0.71)	(-1.24)
Institutional	-0.60882	-0.629407	-0.556775
	(-2.54)*	(-2.52)*	(-2.36)*
Debt	0.439878	0.514869	0.3433315
	(3.77)***	(4.06)***	(3.35)***
ROE	0.006355	0.009921	0.0172116
	(1.21)	(1.72)†	(1.34)

Growth	0.010988	0.043678	0.0179607
	(0.52)	(1.22)	(0.16)
Famownsize		1.07668	
		(1.92)*	
Institutionalsize			0.3487416
			(1.24)
m1	-4.49***	-4.99***	-4.15***
m2	-0.22	-0.54	0.56
Sargan Test	8.68	9.7	9.2
Wald Test	17.95*	10.65*	12.49*
Absolute value of t statistics in parentheses † significant at .10 * significant at 0.05 ** significant at 0.01 *** significant at 0.001			

Source: Based on the Mexican Stock Exchange for the period 2005-20111, Economatica and Isi Emerging Markets.
Notes: The table shows estimated *coefficients*, *t-statistics,* and indicators of *p-value*.All estimations are examined by using the GMM model. Wald test provides the joint significance of all explanatory variables. Sargan test contrasts overidentifying restrictions, and m1 and m2 statistics contrast the absence of serial correlation of first and second order in the residuals of the regression.

The coefficient in the model 5 shows a positive effect on discretion, thus, large firms with concentrated family ownership structure are associated with earnings manipulation; consequently Hypothesis 2 is rejected. This could be explained due to the fact that large corporations may feel compelled to provide favorable results in order to meet the expectations of their current investors or to attract new investors in the case of new share issues, consequently adopting a more aggressive earnings management strategy. For smaller companies, there is no pressure of "high visibility" from the market, and these companies tend to act more conservatively. With respect to the large institutional investors and earnings management, the relationship is positive, however, it is not statistically significant.

5. Conclusions

Agency theory suggests that earnings management may increase when managers have opportunities to promote their own self-interest at the shareholders' expense, as a result of information asymmetry and agency problems that exist between managers and shareholders. Mechanisms, such as ownership structure, increase as some factors preventing discretion of managers to take advantage of these opportunities for self-promotion. Essentially, these mechanisms are implemented to give managers the incentive to efficiently use firm cash flows. Our research differs from prior studies which investigate the relation between corporate governance characteristics and earnings management by incorporating the role of different types of ownership structure. As we have seen, the extent to which corporate governance can provide effective monitoring and control is likely to be dependent on ownership structure.

We examine the role of institutions, blockholders and family ownership, proposing two hypotheses on the effective monitoring of earnings management in the top executive team. We find that ownership structure affects earnings management and that the type of influence depends on the size of the company. Family and institutional ownership reduce earnings management, showing that institutional and family investors have an important influence on the earnings management strategy. However, the impact is different depending on the company size. Large firms with concentrated ownership tend to have problems with earnings management. Thus, we can argue that the higher exposure to potential investors of this type of firm creates greater pressures for adopting earnings manipulation. Regarding the control variables, we find that only leverage is significant and have a positive effect on earnings management. Thus, the results on debt are consistent with the debt hypothesis which states that firms with high debt ratios are associated with greater earnings management.

Our findings lead to new insights on literature in emerging markets and in the Latin American context, particularly in Mexico, given the limited number of studies about Mexican corporate governance. We focused on this market because we wanted to examine how far the large ownership concentration could potentially control management's discretion, and whether there was a place for other types of owners to exercise that control. We can see that, in fact, institutions are able to exert control on earnings management as well. However, the fact that as companies increase in size management increases discretion calls into play other factors that have not been analyzed in this work. We mentioned that markets pressure large companies' behavior. But, other factors, such as the complexity of companies' strategies and operations, given their larger size, may limit the capacity of the overseeing boards, mainly the family members, to control earnings management. The distance between the founders or family and the professionals in charge of managing the company may create this rise in management discretion. Whether this is something that will finally benefit the long-run results of the company is something that deserves further examination. Additionally, regarding the owners-management distance we mentioned, conflict between the majority and minority owners may be another relevant variable that could intervene in the growing earnings management revealed in larger firms. The use of corporate governance code self-assessment may improve companies' ability to reduce discretion on earnings management, given the high ownership concentration by families or institutions, to the detriment of smaller shareholders (Centro de Excelencia en Gobierno Corporativo, 2009).

A final issue we suggest for further research is the possible basis of alignment of family and institutional ownership. Is this based on similar interests about income use? Are their risk profiles different? Is their vision for companies' outcomes different? These and other questions relating to

board composition may provide a better perspective on the role of ownership structure in an emerging economy such as Mexico.

Bibliography

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