

Reyna, Juan Manuel San Martin

**Article**

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# The effect of ownership composition on earnings management: evidence for the Mexican stock exchange

Effect of  
ownership  
composition

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Juan Manuel San Martin Reyna

*Department of Business Administration, Universidad de las Americas Puebla,  
Puebla, Mexico*

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## Abstract

**Purpose** – This paper aims to examine the relationship between different types of shareholders that command share ownership, family, institutions or external blockholders and earnings management. In addition, it examines the effect of company size on earnings management.

**Design/methodology/approach** – The sample includes 67 companies listed in the Mexican Stock Exchange for the period 2005-2015. The sample composition is quite industry-balanced. A cross-sectional version of the Jones model (1991) is used to measure the earnings management. The GMM (generalized method of moments) model is also estimated.

**Findings** – The results show that family and institutional ownership reduce the earnings management, but the impact is different depending on the company size.

**Research limitations/implications** – The results show that there is a clear relationship between increasing participation of family and institutional investors and a reduction in earnings management. This is consistent with the literature that establishes that ownership is an effective regulatory mechanism that limits earnings management through closer supervision and involvement in management.

**Practical implications** – For companies' corporate governance and regulatory authorities, the results of this study may serve to improve the decision-making.

**Originality/value** – This study shows that 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.

**Keywords** Corporate governance, Earnings management, Ownership concentration

**Paper type** Research paper

## Introduction

The financial 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 (Al-Fayoumi *et al.*, 2010; Bar-Yosef and Annalisa, 2013;

**JEL classification** – G01, G32, G34

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Castrillo and San Martín, 2008; Jin, 2013; San Martín-Reyna, 2012). The managers of public companies, given the crisis, have a greater need to attract investors as a way to strengthen their leverage structure and other financial measures. According to the cited research, this situation may tempt managers to show results of questionable quality to ensure company stability, as well as to ensure the necessary funds for the firms' investments. Earnings management is a key device for managers to influence investor perception as measured by the discretion that managers are able to have in their financial reporting (Macey, 1998). Therefore, there is a clear need for greater oversight of management practices in companies listed on the stock market because investors' perceptions are essential for the market value of publicly traded companies.

Previous research has focused on the influence of family ownership concentration on earnings management (Anderson *et al.*, 2002; Bartholomeusz and Tanewski, 2006; López and Saona, 2005; San Martín-Reyna, 2012; Stiglitz, 1985; Warfield *et al.*, 1994). This study extends previous research by including the relationship between other types of shareholders on earnings management. Specifically, this research will include the influence of institutional and other relevant blockholders on earnings management. It can be expected that in Mexico, given an emerging capital market where corporate government regulations are still in an evolving stage, the influence of some shareholders on the firm's decision-making processes is still limited. In Mexico, the Best Corporate Practices Code came into effect in 2006, with a reviewed version in 2010. The Consejo Coordinador Empresarial had been since 1999 a promoter of this code, based on the criteria of OECD. Moreover, there is an interest to examine how that influence is exercised in the Mexican context, where the level of family ownership in public companies is visibly high. Therefore, our main research question is as follows:

*RQ.* To what extent institutional or significant blockholders are able to reduce earnings management, and how the level of family ownership moderates this influence?

This research found that the increasing ownership participation of family and institutional shareholders affects earnings management, and that the degree of influence changes with the level of ownership concentration. Additionally, the findings show that the impact of institutional and significant blockholders varies depending on the degree of family shareholding participation. The particular institutional Mexican context and the visibly high participation of families in shareholding explain to a large extent these results.

This study is divided into five sections, including the introduction. In the following sections a review of previous research is presented, followed by the research methodology used in the study, presentation of the results with conclusions and implications for further research.

## Literature review

### *Ownership concentration and convergence*

Agency theory suggests that a separation between ownership and control leads to a divergence between manager and owner interests (Jensen and Meckling, 1976). However, the ownership structure has been suggested as a mechanism to reduce agency conflicts through the alignment of interests between management and shareholders, according to the convergence of interest theory (Demsetz and Lehn, 1985; Shleifer and Vishny, 1997). The concentration of shareholder ownership, especially within the family, can reduce managerial incentives to consume perquisites, expropriate shareholder wealth and engage in other non-maximizing behavior (Demsetz and Lehn, 1985; Jensen and Meckling, 1976). Ownership concentration can be an effective regulatory mechanism for managers owing to closer supervision and/or direct shareholder involvement in management (Jensen, 1986; Jensen and

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Meckling, 1976; Shleifer and Vishny, 1997; Stiglitz, 1985). Moreover, Stein (1988, 1989) finds that family firms which have higher ownership concentration and higher investment horizons are more focused on maximizing long-term results.

Given that the separation of ownership and management is among the most important forces driving earnings management, a vast amount of research has examined the relationship between ownership structure and earnings management and the manipulation of accounting practice to create a more positive picture of a company's financial results (Al-Fayoumi *et al.*, 2010; Amihud *et al.*, 1983; DeFond and Jambalvo, 1991; Dhaliwal *et al.*, 1982; Koch, 1981; Salamon and Smith, 1979; San Martín-Reyna, 2012; Smith, 1976).

### *Earnings management*

Although there is some consensus about the earnings management concept, researchers have seen their efforts limited by the difficulty to measure both the motivations of managers and their decision-making processes, given that accounting discretion cannot be directly observed (García and Gill, 2005). Seminal work by Healy (1985) and DeAngelo (1986) represented a breakthrough in this field through the estimation of the non-discretionary part in total accrual adjustments which was calculated as the difference between the accounting result and the operations cash flow. This identification provided a reference point from which the discretionary or abnormal part of accruals can be estimated, serving as a proxy for the measurement of earnings management (Poveda, 2001).

Subsequently, Jones (1991) developed a model that established a linear relationship between non-discretionary accruals and the changes in the reporting of revenue and fixed assets and by controlling for the firm's conditions introduced variability in discretionary adjustments. This was later modified by Dechow *et al.* (1995) by adjusting for changes in the reporting of account receivables, assuming this as part of discretionary adjustments. Guay, Kothari and Watts (1996) clarified that imprecision and poor specification of accruals reporting indicated measurement errors in the model.

Complications with the application of the model in situations of extreme levels of cash flow were recognized as well (Kang and Sivaramakrishnan, 1995; Jeter and Shivakumar, 1999; Peasnell, Pope and Young, 1998; Subramanyan, 1996), and the Jones model was modified with the use of instrumental variables and generalized method of moments (GMM). However, Garza-Gómez, Okumura and Kunimura (1999) proved that in the case of random samples, the Jones model is well specified.

### *Earnings management and ownership*

The presence of discretion in the management of earnings, within regulatory limits, may work to management advantage, promoting an opportunistic type of behavior that affects reporting of corporate profits (Delgado, 2003; Monterrey, 2004; Warfield *et al.*, 1995), and as the separation between ownership and control expands, management discretion is expected to increase (Warfield *et al.*, 1995). Family ownership concentration thus becomes a fundamental part of the control mechanism with which a company limits earning management (San Martín-Reyna, 2012).

Many empirical studies have concluded that both institutional investors and large equity blockholders can positively affect firm value (Barclay and Holderness, 1989; Friend and Lang, 1988; Holderness and Sheehan, 1988; Mehran, 1992; Mikkelsen and Ruback, 1985), especially when monitoring is cost-efficient (Jensen and Meckling, 1976), and there is the ability to lobby senior executives for corporate restructuring (Bethel and Liebeskind, 1993). Institutional shareholders, or intermediaries between lenders and borrowers, 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 such as Germany (Cable, 1985), Japan (Prowse, 1990) and Spain (Zoido, 1998). For institutional investors, the size of their investment justifies the supervision of management, and the incentives to monitor increase with larger investments (Brailsford *et al.*, 2002). Institutional investor 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 (Diaz, 2000). In situations in which a major lender extends its support over time, the threat of withdrawal of funds from the company, unless the management takes appropriate measures, becomes credible (Prowse, 1994). Thus, institutional investors effectively monitor earnings management (Bar-Yosef and Prencipe, 2013; Dechow *et al.*, 1996).

Blockholders are considered as those shareholders that possess a relevant ownership participation in the company but who do not form part of the dominant family (Al-Fayoumi *et al.*, 2010). According to previous research, these blockholders also encourage managers to fully report financial information and hold a greater threat of intervention than minority shareholders (Barclay *et al.*, 1991; Holderness and Sheehan, 1988; McEachern, 1975; Shleifer and Vishny, 1986), thus creating incentives for managers to reduce earnings management, especially when the firm experiences declining or poor performance (Zhong *et al.*, 2007). Additionally, in a country characterized by high family ownership concentration, such as Mexico, the market relies on blockholders to monitor managers on issues such as earnings management, thus increasing company value (Earle *et al.*, 2004), given their power as well as their separation from the controlling family that better enables them to supervise and reduce earnings management (Bar-Yosef and Prencipe, 2013).

Based on the review of the relevant literature, the following hypothesis is presented:

*H1:* The degree of earnings management tends to diminish as the level ownership concentration (family, institutional or blockholder) increases.

#### *Family ownership as a moderating factor*

It is likely that when there are high levels of family ownership, substantial risk from the pursuit of self-interest arises, that is, at some point, management entrenchment or expropriation may cause controlling shareholders to maximize their own benefits at the expense of other shareholders (Faccio and Lang, 2001; Fama and Jensen, 1983; Gómez-Mejía *et al.*, 2001; Shleifer and Vishny, 1997). Paradoxically, at this point, controlling shareholders may find it convenient not to eliminate management discretion altogether, given that this discretion may work to their favor (Ball, 1989).

Castrillo and San Martín (2007), Claessens and Djankov (1999), DeAngelo and DeAngelo (2000), Faccio and Lang (2001), Friend and Lang (1988), Johnson *et al.* (1985), Singell (1997) and Wang (2006) argue that large shareholders can mitigate the managerial expropriation, or agency problems, in companies with concentrated ownership and control. Bar-Yosef and Prencipe (2013), Demsetz and Lehn (1985), Jin (2013), Morck *et al.* (1988), Pedersen and Thomsen (1997) and Shleifer and Vishny (1986) argue that the presence of blockholders limits earnings management. Blockholder supervision of managers potentially reduces earnings management by restricting management discretion in financial reporting, thus decreasing their incentive to manage earnings (Zhong *et al.*, 2007). On the other hand, it is also argued that financial statements tend to be less important in detecting information asymmetry problems, resulting in less aversion towards earnings management, and the market relies on majority shareholders to monitor management behavior and thus may not consider earnings management risky (Bar-Yosef and Prencipe, 2013; Jin, 2013).

Therefore, it is important to study the degree to which institutional investors and blockholders mitigate the problem of earnings management, considering the level of family ownership concentration. Therefore, the following hypotheses are presented:

- H2:* Institutional investors moderate the effect of family ownership concentration on earnings management.
- H3:* Blockholder investors moderate the effect of family ownership concentration on earnings management.

Another important aspect of the study is the control variables. Financial leverage is included because managers are more likely to use earnings management techniques when companies are closer to default on debt contracts (Fernández, 1999; Press and Weintrop, 1990; Prowse, 1994). The size of the firms is also considered as its market visibility may pressure larger firms to incur in earnings management (Al-Fayoumi *et al.*, 2010; Watts and Zimmerman, 1986). Profitability is also considered because listed firms with lower profitability tend to show higher earnings management (Al-Fayoumi *et al.*, 2010; Chen *et al.*, 2006). Finally, growth opportunities are included as a control mechanism for demand conditions. (La Porta *et al.*, 2000; McConnell and Servaes, 1990).

## Methodology

### *Sample composition*

The sample includes companies listed in the Mexican Stock Exchange for the period 2005-2015. Out of 132 listed companies, non-profit companies, companies that do not include enough information in its financial statements and financial institutions were excluded, resulting in a total number of 67 firms. The final sample for the empirical analysis consists of 737 observations over a 10-year period. The annual reports and financial indicators from Economática and ISI Emerging Markets were obtained. Information on the industrial sector was obtained from company annual reports published by the Mexican Stock Exchange on its website. The firms selected are from the most important players in the different sectors of Mexican economy. Table I shows the companies that make up our sample according to the sectors to which they belong.

As can be seen in Table I, the sample composition is quite industry-balanced, although there is a slight bias toward industrial and common consumer products firms at the expense

Sector	Total	(%)
Materials	16	23.8
Industrial	18	26.8
Non-basic consumer services and goods	12	18.3
Common consumer products	10	14.8
Health	4	5.9
Telecommunications services	7	10.4
Total	89	100.0
Number of observations	737	

**Notes:** Number and percentage of firms by sector according to the Mexican Stock Exchange classification code. Own elaboration

**Table I.**  
Firms by sector

of health or telecommunications companies that can be explained by the heavier concentration of the former in the Mexican market.

*Discretionary accruals as measure of earnings management*

As presented in the literature review, researchers have compared alternative accruals models to identify which ones provide more precise estimates of discretionary accruals. In general, the results of their research do not reveal the supremacy of any model over another, given that inclusion of “sophisticated” estimations as instrumental variables method or GMM, used, for example, in the [Kang and Sivaramakrishnan \(1995\)](#) model, even though theoretically justified, has not increased the quality of the estimates ([Thomas and Zhang, 2000](#)), and the original model of Jones still remains the most utilized.

Therefore, a cross-sectional version of the Jones model (1991) will be used which is detailed in [equation \(1\)](#). Importantly, it must be emphasized that each variable is deflated by total assets before a period of time, to avoid heteroskedasticity problems, according to [Chung, Firth and Kim \(2005\)](#):

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

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  $t - 1$ .

$\Delta Rev_{it}$  = Change in revenue of firm  $i$  in the year  $t$  compared to previous year.

$\Delta AR_{it}$  = Change in accounts receivable of firm  $i$  in the year  $t$  compared to previous year.

$\Delta PPE_{it}$  = Change in property, plant and equipment gross of firm  $i$  in the year  $t$  compared to previous year.

$\varepsilon_{it}$  = Other relevant information of firm  $i$  in the yearly period  $t$ , being orthogonal to independent variables.

Where  $\Delta$  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  $t$ . To identify the portion of the discretionary accrual information, the total accrued information ( $TAI$ ) as the sum of the accrued discretionary information ( $DAI$ ) and accrued nondiscretionary ( $NDA$ ) was considered. That is, according to [equation \(2\)](#):

$$TAI_{it} = DAI_{it} + NDA_{it} \tag{2}$$

where:

$DAI$  = is defined as the residual of equation (1), while

$NDA$  = is defined as the set values of [equation \(1\)](#).

This approach is consistent with the literature, where  $DAI$  is considered as the result of the opportunities for decision-makers to select alternative accounting methods.

**Variables**

Family ownership (*Famown*) was defined as the percentage of shares held by family members. Institutional ownership (*Inst*) was measured as the percentage of shares held by



institutions such as banks, insurance companies, pension funds and financial institutions. And blockholders ownership (*Ebh*) was defined as the percentage of shares held by individual blockholders who were not members of the dominant family. Following Al-Fayoumi *et al.* (2010), this research considers institutional shareholders and blockholders only when their ownership represents 5 per cent or more of a firm's equity share capital.

The control variables used in the regression were: *Debt*, *Size*, *ROE* and *Growth*. Leverage (*Debt*) was 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 (Fernández, 1999; Press and Weintrop, 1990; Prowse, 1994). For firm size (*Size*), the natural logarithm of total assets as a proxy for firm size was used. 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 (Al-Fayoumi *et al.*, 2010; Chen *et al.*, 2006). Growth opportunities (*Growth*) was measured as annual rate of sales growth (La Porta *et al.*, 2000; McConnell and Servaes, 1990), and this variable was included as a control mechanism for demand conditions; finally, *Crisis* is a dummy variable to control 2008 crisis effect.

To introduce family ownership as a moderating variable and prove *H2* and *H3*, we create a dummy variable to interact with institutional and block holders' investors. For family firms the dummy variable takes the value of 1 if the family possesses 51 per cent or more of ownership and zero otherwise. For firms no family firms the dummy variable takes the value of 1 if family possesses is below that 51 per cent and zero otherwise. This level of family participation is evidently high as compared to thresholds used in other countries (Anderson and Reeb, 2003; Villalonga and Amit, 2006); however, given the presence of weak corporate government regulations in Mexico, this percentage may be used as a guarantee to maintain ultimate control of a firm (San Martín-Reyna and Durán-Encalada, 2012). Coincidentally, this percentage represents the median of family ownership in the sample.

### *Regression analysis*

As stated before, the sample combines 67 firms, with ten cross-sections producing 737 panel data observations. Given that aim of the study as well as the number of observations, 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 and incurs a certain heterogeneity bias. Therefore, a dynamic panel, the GMM, following the Arellano and Bond (1991) methodology, was added.

According to the authors, the GMM is appropriate when the sample is large and the time frame is small. In this study, the sample includes 67 firms over seven years, so it is appropriate to apply the GMM model. Applying the OLS model or panel with fixed or random effects can generate standards errors of parameters estimations that are inconsistent because, by construction, the unobservable effect is correlated with the lag of the dependent variable. To correct this problem, instrumental variables could be applied. Anderson and Hsiao (1981, 1992) propose using dependent lags. Arellano and Bond (1991) propose an estimator based on the GMM, which uses instrumental variables based on lags of all variables and especially for panels with many individuals and few periods. Under GMM, the consistency of the estimator depends on the validity of the instruments and the assumption that the difference in error terms does not exhibit second-order serial correlation. To test these assumptions, Arellano and Bond (1991) suggested a Sargan test of over-identifying 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), and they also tested the assumption of no second-order serial correlation.



Failure to reject the null hypotheses of both tests gives support to the estimation procedure. All regressors are treated as strictly exogenous except the lagged dependent variables. Previous research has proposed GMM as an instrument for the explanatory variables using lagged values of the original regressors and thus solving the endogeneity problem (Arellano and Bond, 1991). The GMM model can control the correlation of errors over time, the heteroskedasticity 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, a multivariate regression model has been built including the previously cited variables. This model can be expressed with the following equation, where  $i$  refers to the firms and  $t$  to the year ( $i = 1 \dots 0.89$ ;  $t = 1 \dots 0.7$ ):

$$DAI_{it} = \beta_1 + \beta_2 Famown_{it} + \beta_3 Inst_{it} + \beta_4 Ebh_{it} + \beta_4 Instfam_{it} + \beta_5 Ebhfam_{it} + \beta_6 Debt_{it} + \beta_7 Size_{it} + \beta_8 ROE_{it} + \beta_9 Growth_{it} + \beta_{10} Crisis_{it} + \varepsilon_{it}$$

Where:

*Famown* is the percentage of shares held by family members.

*Instfam* is interaction between family firms, the dummy variable (takes the value of 1 if family possesses 51 per cent or more of ownership and zero otherwise), and institutional investors.

*Ebhfam* is the interaction between family firms, the dummy variable (takes the value of 1 if family possesses 51 per cent or more of ownership and zero otherwise), and external blockholders investors.

*Inst* is the percentage of shares held by institutions such as banks, insurance companies, pension funds and financial institutions.

*Ebh* is the percentage of shares held by individual blockholders who were not members of the dominant family.

*Debt* is the total liabilities divided by total assets.

*Size* is the logarithm of total assets.

*ROE* is the return on equity.

*Growth* is the annual rate of sales growth.

*Crisis* is the dummy variable to control the crisis effect, which take the value of 1 if pre-crisis year (2005-2007) and zero otherwise.

## Results

### *Descriptive data*

Table II shows the descriptive statistics of the variables. As can be seen, the mean of discretionary accruals is close to 0.1. On average, the sample firms have positive discretionary accruals. This result suggests that Mexican companies in the sample are managing their earnings upwardly, as in other studies (García and Gill, 2005; San Martín-Reyna, 2012; Wang, 2006). For the regression analysis, the absolute value of discretionary accruals information (*DAI*) as a measure of the level of manipulation of earnings was used.

Table II shows the importance of family ownership (*Famown*) concentration in the Mexican market, as the value that varies from 0.5 to 90 per cent, with an average of 54 per cent. Institutional investors (*Inst*), on average, hold around of 21 per cent of ownership in the sampled firms, and external blockholders (*Ebh*) hold only an average of 15 per cent of

Variables	Mean	SD	Minimum	Maximum
<i>DAI</i>	0.0974	0.1680	-0.5370	0.5836
<i>Famown</i>	0.5433	0.2105	0.05	0.90
<i>Inst</i>	0.2104	0.2311	0.05	0.90
<i>Ebh</i>	0.1492	0.2029	0.05	0.83
<i>Debt</i>	0.4504	0.2070	0.0152	0.9805
<i>Size</i>	43,446.8	94,468.3	263.05	945,616.9
<i>ROE</i>	0.0751	0.7416	-8.48	9.36
<i>Growth</i>	0.1526	0.5010	-0.7785	9.0355
<i>Crisis</i>	0.5714	0.4953	0	1
Number of observations	737			

**Notes:** The table presents some descriptive statistics, including the mean, standard deviation and minimum and maximum values. Own elaboration

**Table II.**  
Descriptive statistics

shares. These results are not surprising owing to the nature of the Mexican market, where listed firms are owned and controlled by families and institutions rather than individual investors (Babatz, 1997; Barca and Becht, 2001; Castañeda, 2000; Castrillo and San Martín, 2007; Faccio and Lang, 2002; Husted and Serrano, 2001; Khanna and Palepu, 1999; La Porta *et al.*, 1999; San Martín-Reyna and Durán-Encalada, 2012). The average debt (*Debt*) of companies in the period analyzed is 45 per cent of total funding. Firm size (*Size*) is quite heterogeneous and highly dispersed around the mean value, so the results are not believed to be biased by size issues. Profitability (*ROE*) shows that companies have obtained an average return on equity of 7.5 per cent, accompanied by an average annual sales growth (*Growth*) of 15.3 per cent during the 2005-2015 period. The financial crisis dummy (*crisis*) is to control the pre- and post-2008 financial crisis period. Table III shows the correlation matrix among the variables.

*DAI* has a negative correlation with family (*Famown*) and institutional (*Inst*) investors, which is consistent with the idea that managers seem to engage less in manipulating their accounting information when ownership of those investors increases. On the other hand, external blockholder (*Ebh*) investors, size, growth, leverage and profitability have a positive correlation with the earnings management behavior of managers. *Size* (*Size*) is positively associated with leverage (*Debt*), consistent with Cootter's (1998) finding that larger firms have higher leverage

	<i>DAI</i>	<i>Famown</i>	<i>Inst</i>	<i>Ebh</i>	<i>Debt</i>	<i>Size</i>	<i>ROE</i>	<i>Growth</i>	<i>Crisis</i>
<i>DAI</i>	1								
<i>Famown</i>	-0.0145	1							
<i>Inst</i>	-0.0448	-0.2155***	1						
<i>Ebh</i>	0.0027	-0.3789***	-0.4185***	1					
<i>Debt</i>	0.1636***	-0.1243*	-0.0195**	0.2547***	1				
<i>Size</i>	0.0418	0.0470**	0.1082***	0.0605**	0.1049***	1			
<i>ROE</i>	0.0449	0.0568	-0.0938	0.0698	0.0344	0.0536	1		
<i>Growth</i>	0.0344	-0.0962	-0.0594**	-0.0525	0.0441*	-0.0717	-0.0186	1	
<i>Crisis</i>	0.0684	0.0310	0.0133	-0.0133	0.0261	0.0103	-0.0976	-0.0510	1

**Notes:** \* Significant at 0.10; \*\*significant at 0.05; and \*\*\*Significant at 0.000; The table shows estimated coefficients, *t*-statistics and indicators of the *p*-values. Own elaboration

**Table III.**  
Correlation matrix

constraint levels. A positive correlation between profitability (*ROE*) and *DAI* indicates that more profitable firms are more likely to incur into earnings management. A positive correlation between *Ebh* and *DAI* signifies that the more concentrated the external blockholder ownership, the more is the discretionary accrual. However, larger firms seem to be more profitable firms (positive and significant correlation between *Size* and *ROE*). The results of the panel data estimation are displayed in [Table IV](#).

The results of Models 1 and 2 in [Table IV](#) confirm *H1* regarding the influence of family (*Famown*) and institutional (*Inst*) ownership on earnings management; as the levels of participation of family and institutional investors increase, there is a significant reduction in earnings management. However, in the case of blockholder ownership (*Ebh*), in Model 3, the result is not significant. To prove if the impact on earnings management of institutional and blockholders is affected by the level of family ownership, Models 4 and 5 present the results achieved considering the interaction between family firms and institutional and external blockholders.

The results confirming our results indicate that institutional investors (*Inst*) are able to control or reduce earnings management in family firms. These results prove the moderating role that the level of family ownership plays, thus confirming *H2*. In the case of external blockholders (*Ebh*), the results show their not influence to reduce earnings management. Thus our results cannot confirm a moderating effect of family ownership in firms with blockholders' presence. Considering the control variables, indebtedness (*Debt*) and size (*Size*) are positively related to the level of earning management in both cases of family and non-family firms. Regarding the control variables, it was found that leverage (*Debt*) and size (*Size*) are significant and have a positive effect on earnings management. The results on the relationship between debt and the use of discretionary accruals may be consistent with the argument that firms with high debt ratios have a greater likelihood of violating debt contracts and thus the association with greater earnings management. Finally, size is positively related to discretionary accruals, indicating that the larger the firm, the more pressure to incur in higher earnings management.

### Conclusions

The results show that there is a clear relationship between an increasing participation of family and institutional investors, and a reduction in earnings management. This is consistent with the literature that establishes that ownership is an effective regulatory mechanism that limits earnings management through closer supervision and involvement in management. In congruence with the convergence hypothesis of agency theory, a reduction in earning management is the result of a greater commitment of these investors who have a longer-term orientation of the firm. The fact that indebtedness level and firms size positively relates to earnings management highlights the importance that the role of family and institutional shareholders can have in influencing discretionary management behavior regarding the presentation of financial information to the investor market. In the case of external blockholders, the research shows that this type of shareholder lacks the capacity and power to reduce earnings management. The lower participation of these shareholders in comparison to other countries with a more developed capital market helps explain to a large extent these findings. In addition, the 2008-2009 economic crisis may have motivated investors to diversify their portfolios among a larger number of options, thus affecting their ability to effectively supervise and control management teams.

A very well-known case in Mexico evidences the unfortunate consequences of this type of behavior as management had to finally recognize losses whose potential

	Models					
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.4038 (5.34)***	0.4038 (5.43)***	0.2103 (2.55)**	0.1266 (2.15)**	0.2263 (2.70)**	0.3076 (3.12)***
L1	0.1785 (3.16)***	0.1785 (3.16)***	0.1233 (2.25)**	-0.1273 (-0.43)	-0.1461 (-0.87)	0.1268 (2.17)**
<i>Famown</i>	-0.1157 (-2.46)**					-0.3859 (-2.36)**
<i>Institutional</i>		-0.4777 (-3.72)***				-0.2607 (-1.32)
<i>Ebh</i>			-0.3054 (-1.05)			-0.1532 (-0.20)
<i>Instfam</i>				-0.5685 (-1.93)**		
<i>Ebhfam</i>					-0.3609 (-1.27)	
<i>Debt</i>	0.1945 (3.89)***	0.1619 (3.21)***	0.2752 (3.26)**	0.1583 (3.19)***	0.2314 (4.61)***	0.2607 (3.59)***
<i>Size</i>	0.0886 (1.77)*	0.0112 (2.10)**	0.0126 (2.05)*	0.0648 (1.21)	-0.0155 (-2.13)**	0.0238 (2.74)**
<i>ROE</i>	0.0395 (0.96)	0.0299 (0.72)	0.0494 (1.17)	-0.0362 (-0.86)	-0.0409 (-0.99)	0.0591 (1.32)
<i>Growth</i>	0.0251 (1.50)	0.0229 (1.34)	0.0231 (1.37)	0.0191 (1.09)*	0.0255 (1.50)	0.0163 (1.19)
<i>Crisis</i>	0.0411 (1.08)	0.0474 (1.87)	0.0429 (1.54)	0.0199 (0.93)	0.0192 (0.78)	0.0338 (1.46)
m1	-6.14***	-5.33***	-4.52***	-4.13***	-5.77***	-5.18***
m2	-0.39	-0.63	-0.60	-0.63	-0.64	-0.53
Sargan test	9.3	8.57	7.94	9.76	8.57	8.9
Wald test	14.21*	16.19*	11.32*	13.95*	13.96*	13.73**
Observations	663					

Notes: \* Significant at 0.10; \*\*significant at 0.05; \*\*\*significant at 0.000; Own elaboration

Table IV.  
Results of  
estimations

occurrence was concealed from investors in the financial reporting[1]. This example clearly justifies the need for research regarding the influence of institutional and blockholders on earnings management and the moderating effect of the level of family ownership. Our results confirm that family ownership moderates this relationship. In the case of institutional investors, it can be seen that in family firms, there is an association between their increasing participation and a reduction of discretionary management behavior. This means that the level of institutional involvement in this type of firms may exercise some counterbalance power to reduce expropriation by families through controlling earnings management. According to the control variables, institutional investors would mitigate the temptation in these firms to manage earnings to support growth strategies by means of higher financial leverage. However, for non-family firms, this influence disappears, reflecting that the impact on earnings management of these is more random. In the case of blockholders, the moderating effect works in the opposite direction. Whereas in family firms these shareholders do not influence earnings management, in the case of non-family firms, they are able to reduce it. The explanation for this is due to the low average participation of blockholders in Mexico. That is, only when the level of family ownership diminishes, being this the main ownership concentrator, this type of shareholder, given its relative low participation, is able to influence earnings management.

This research has examined the relationship of shareholders and earnings managements in Mexico and may have implications for government regulatory agencies in other emerging markets. Our findings have an important relevance toward new insights in the literature on emerging markets, suggesting the need for strengthening the application of the good corporate governance principles and effectively monitoring earnings management that could be exercised by the executive team of Mexican companies, especially the biggest ones, because these could lead to significant management problems. Owing to the experience of other countries, such as Peru, where an index has been developed for corporate governance practices (Mongrut *et al.*, 2013), we believe that Mexico should move forward in this aspect, to have a reference of the quality of corporate governance practices so as to reduce discretion on earnings management, given the high ownership concentration controlled by families or institutions, to the detriment of smaller or minority shareholders (Centro de Excelencia en Gobierno Corporativo, 2009).

This line of research can be strengthened with two important analyzes, the explication power of discretionary accrual information in the market performance, measured through the stock performance and the evaluation of the impact of the three types of ownership structure in dividends payment, as well as in the market performance. We identify these future research lines, with the interest of making the link between signals of stock market perceives (or not), about the impact of the variables used in this paper (related to discretionary accrual information and ownership structure). Moreover, as we used only public financial data, we were not able to address control-enhancing structures, such as pyramids and their effect on shareholder influence. This would require a more focused case study that would examine exactly how these types of mechanisms operate. Further research could also address the effect of board composition on earnings management, as influenced by shareholder voting and cash-flow rights. These and other questions relating to corporate governance may provide a better perspective on the role of ownership structure in an emerging market such as Mexico.

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**Note**

1. Controladora Comercial Mexicana SAB, Mexico's third-largest operator of food retailers, filed for Chapter 15 bankruptcy to aid its main restructuring in Mexico. The company defaulted on debt in 2008 after derivative transactions meant to protect it against fluctuations in the Mexican peso went awry. Arguably this situation had been concealed to public investors by the dominant family coalition that owns close to 70 per cent of total assets (McEvoy and Govier, 2009).

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**Corresponding author**

Juan Manuel San Martin Reyna can be contacted at: [juanm.sanmartin@udlap.mx](mailto:juanm.sanmartin@udlap.mx)

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