EARNINGS MANAGEMENT AND INTERNAL MECHANISMS OF CORPORATE GOVERNANCE: EMPIRICAL EVIDENCE FROM CHILEAN FIRMS

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Abstract

We analyze the ability of the capital structure and the ownership structure as mechanisms of control of the managers of the firms and to reduce their accounting discretionary power for a sample of Chilean firms. Using earnings management and abnormal accruals as indicators of discretionary behavior, our results show that both debt and ownership concentration reduce the managers' discretionary behavior, so we corroborate the outstanding role both mechanisms play in a country with low protection of investors' rights. At the same time, we find that earnings management is fostered by institutional investor ownership.

Keywords: Accruals, capital structure, corporate governance, earnings management, ownership structure.

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1. Introduction

As pointed by Jensen and Meckling (1976), the managerial relation is one of the key agency problems since shareholders and managers can have fairly different interests and a conflict of interests is likely to arise between them (Fama and Jensen, 1983).

Whereas shareholders seek the maximization of their wealth and encourage the maximization of the firm's value, managers' interests are usually linked to the compensation both with money and perquisites. In turn, managers could be prone to run the company even in detriment of the firm's value provided that they could satisfy their own utility function through some decisions such as overinvestment (Stulz, 1990), over-optimal diversification (Lang and Stulz, 1994; Denis *et al.*, 1996) or taking risks beyond the optimal level for the company (Amihud and Lev, 1981).

This conflict of interests requires some mechanisms to ensure the protection of investors' rights and, therefore, corporate governance arises as a set of constraints to shape the bargaining over the quasi-rents generated (Zingales, 1998) or the way used by the suppliers of finance in order to assure the return on their investment (Shleifer and Vishny, 1997). More specifically, corporate governance focuses on the mechanisms to reduce the array of agency costs originated by the nexus of contracts in the firm.

The concept of corporate governance is broad and so are the mechanisms to protect investors' rights. A usual classification scheme makes a difference between external and internal control mechanisms. Whereas the market for corporate control is widely known as being the most outstanding external mechanism (Jensen, 1986) there is a number of possible internal mechanisms such as capital structure, ownership structure, dividend policy and the board of directors which have been proved to discipline firm managers (Jensen, 1993).

Our paper analyses some of these internal mechanisms. In recent years, discussions on capital structure have merged with the consideration of financial funds as instruments of decision and control. As a result, the capital structure puzzle has been enriched with the inclusion of ownership structure and its relevance on financial decisions and corporate valuation (Morck *et al.*, 1989; McConnell and Servaes, 1995). Following this approach, our paper is concerned with the role of both capital structure and ownership structure as mechanisms of corporate governance and their ability to reduce the

managers' discretionary choices in the accounting area (Bushman and Smith, 2002; Bushman *et al.*, 2004). This can be said to be the first contribution of our paper since we introduce a modern and suitable indicator of managers' discretionary decisions in order to evaluate the performance of corporate governance mechanisms. Another contribution of the paper derives from the geographical and institutional framework of the sample. Chile and Chilean firms are an interesting benchmark since the legal origin and the weigh of their financial markets are quite different from the Anglo-Saxon pattern of corporate control on which most of the empirical evidence is focused. One of our key points is the use of earnings management as an indicator of managers' discretionary behaviour. Based on the idea that accruals could be one of the signs of earnings management, we study to what extent leverage and ownership structure are able to discipline firm managers and to reduce their ability to manage earnings. Our results support previous literature and underline the impact of capital and ownership structure on managers' decisions. On the one hand, debt financing seems to be a more constraining framework that equity financing and consequently it reduces the manager's discretionary behaviour. On the other hand, the equity ownership structure is relevant so that the more concentrated is ownership, the more in-depth the control of managers becomes. Additionally, our results point at the influence of the identity of the main shareholder on managers' discretionary power.

We divide our paper into six sections. After the Introduction, in Section 2 we revise the two main theoretical fields on which the paper grounds: the literature on earnings management and the functioning of the internal mechanisms of corporate governance. In that section we also present the hypotheses we will try to test. Section 3 includes the explanation of the Chilean corporate system, highlights its specific features and provides reasons for the analysis of that country. In Section 4 we describe the sample and the methodology, whereas in Section 5 we show and comment the main empirical results. There is a last Section with the most important conclusions and with some directions for future research.

2. Managers' Discretionary Behaviour, Earnings Management, Corporate Governance

One of the most common characteristics of modern firms is the separation between ownership and control. The agency relations originated by such separation imply an asymmetric distribution of information since shareholders cannot efficiently monitor all the decisions made by managers. As a result, managers have incentives to run the firm discretionarily and to pursue their own utility even at the expense of the shareholders' interest or the firms' valuation. This is why, in order to protect the shareholders' interests some mechanisms have been established to reduce asymmetric information, to assess the managers' performance and to set compensation schemes (Brickley *et al.*, 1995). One of the mechanisms to disclose reliable information are financial statements (Kothari, 2001). Those statements allow assessing firm performance and thus, are optimal means to assess managers' decisions. In fact, the assessment of managers' performance on the basis of the firm's performance is usual nowadays and a series of compensation schemes based on firm earnings have become general (Watts and Zimmerman, 1986; O'Byrne, 1990).

A plausible reaction of managers is the choice of accounting methods according to their own interests to manage earnings (Smith, 1976; Jensen, 2003). The result of this process is the so-called earnings management or modification of accounting earnings to make a positive impression about managers' performance instead of conveying reliable information to markets. These decisions cover a wide range such as the choice of accounting methods (Moses, 1987), inventories valuation criteria (Niehaus, 1989), extraordinary expenses and incomes (Beattie *et al.*, 1994), R&D expenditures (Bange and DeBondt, 1998) or accruals (Bannister and Newman, 1996; DeFond and Park, 1997). One of the most outstanding of these procedures are accruals and literature has paid a special attention to them in recent years (Jones, 1991; DeFond and Subramanyan, 1998; Erikson and Wang, 1999; Healy and Wahlen, 1999). The aim of that kind of accounting adjustments is to improve the informational content of financial statements and to avoid the mismatching between cash flows and the flow of income and expenses. Despite this appropriate purpose (Hansen y Noe, 1998; Barth *et al.*, 2001), there is also a discretionary use of accruals because they enable to transfer positive or negative results through time and, in turn, to manipulate the information of financial statements. In fact, this is the most usual way to modify earnings due to their low cost and their difficult detection (Healy, 1985). In addition, another advantage of accruals is the ability to gather the joint effect of a set of accountant decisions (Peasnell *et al.*, 2000b).

Given the appealing of accruals, several means have been designed to identify the possible abnormal or discretionary use. As stated by Delgado (2003), there are a number of methods of earnings management through the use of accruals, although most of them have in common the distinction between two components: the abnormal or discretionary one and the normal or non-discretionary one (Dechow, 1994; Peasnell *et al.*, 2000a). Whereas non-discretionary accruals aim to improve the informational content of earnings, the abnormal accruals are means to manipulate earnings in favour of managers' interests. Since there are two

kinds of accruals, there are two different kinds of justifications of accruals.

Non-discretionary accruals are often related to the usual business of the firm and -as will be stated in Section 4.2- are frequently a function of the firm turnover and the depreciation of long-term tangible assets. On the contrary, abnormal accruals should be affected by the ability and incentives of managers to manipulate earnings and are likely to depend on the efficiency of corporate governance mechanisms. Indeed, literature shows that earnings management can be reduced by outside directors (Peasnell *et al.*, 2001), the auditing committee of the board of directors (Klein, 2002), institutional investors (Jiambalvo *et al.*, 2002) or the active role of inside shareholders (Delgado, 2003). This is the approach of our paper since we try to analyze the relation between the discretionary behaviour of directors and two mechanisms of corporate governance such as capital and ownership structure.

Regarding the effect of capital structure, it is widely known that debt financing reduces managers' power by reducing the cash flow available for spending at the discretion of managers (Grossman and Hart, 1982; Jensen, 1986; Harris and Raviv, 1991). From this point of view, a negative relation should be expected between financial leverage and the use of abnormal accruals since the higher the leverage the more in-depth is the control undertaken by lenders. Furthermore, the informational content of financial statements could play a less relevant role in this case because lenders are interested in debt service rather than in accounting information. Consequently, managers would have fewer incentives to manage earnings in the most leveraged firms. In spite of this, there is also empirical evidence which documents a positive relation between financial leverage and earnings management (Azofra *et al.*, 2002). These authors show that the impression made by financial statements can be useful to loose restrictive loan convenants and to raise funds in better conditions so that managers have incentives to manipulate earnings (Mohrman, 1996). Consequently, the fostering or constraining role of debt on earnings management seems to be an empirical issue and both a positive and a negative effect can be justified.

Regarding the link between abnormal accruals and ownership structure, the empirical evidence is scarce and can be divided into two main fields: the weigh of internal shareholders on the whole ownership and the identity of the main shareholder.

As far as the ownership of insiders is concerned, Warfield *et al.* (1995) show that it has a significant and non-monotonic effect on managers discretionary decisions. Consistent with Morck *et al*. (1988), in the lowest levels of insiders' ownership there is an alignment of interests which means a negative relation between abnormal accruals and insiders' ownership. Nevertheless, an entrenchment effect is found for the highest levels of insiders' ownership so that the higher the insiders' proportion of ownership, the more frequent abnormal accruals become.

Concerning the nature of the main shareholders, it has been proved to have an outstanding influence on the quality of accounting information. For instance, abnormal accruals are less usual when there are institutional investors (Jiambalvo *et al.*, 2002) or *block-holders* (Yeo *et al.*, 2002) among the shareholders. According to this literature, we try to test the possible influence of both the concentration of ownership and the nature of the main shareholder (Denis and McConnell, 2003) on the accounting decisions taken by managers. Ownership concentration is the most direct way to align ownership and control rights. In fact, in the countries with the lowest protection of investors' rights (La Porta *et al*., 1998 and 2000) firm performance runs parallel to ownership concentration (Gorton and Schmid, 2000; Yafeh and Yosha, 2003). Large shareholdings allow coping with some problems of collective action such as the traditional free-rider problem and foster a more active monitoring so that managers' turnover could become more frequent. This is the core of our paper since we are interested in assessing the ability of ownership concentration as a mechanism of corporate governance in Chile, a country with a deficient protection of shareholders' rights. We aim to test to what extent ownership concentration can reduce managers' discretionary power and, in turn, earnings management. Our research relates to the some other papers which study the effect on earnings management of some factors such as legal tradition (Leuz *et al.*, 2003) and the role of capital markets (Gabrielsen *et al.*, 2002).

We are also concerned with another aspect of ownership structure such as the nature of the shareholder. Specifically, we try to test to what extent institutional investors or another kind of shareholders may affect the efficiency of corporate governance. There are two opposite approaches on this question (Rajgopal and Venkatachalam, 1997). On the one hand, institutional investors specialize in monitoring and are able to control managers more in depth than small shareholders (Black, 1992; Pound, 1992). On the other hand, institutional investors are most of the times *short-termed* and concerned with quarterly returns (Graves, 1988). This kind of investors does not engage in managers' control and they prefer selling their stakes instead of monitoring or removing inefficient managers (Coffee, 1991; Jacobs, 1991). Accordingly, institutional investors would be too lenient to monitor managers and their presence could even encourage their power.

As a summary and in order to introduce the hypotheses to be tested, we try to analyze the influence of two mechanisms of corporate control (capital structure and ownership structure) on earnings management, which reflects the managerial accounting discretionary power. Firstly, we study the effect of debt. It is an empirical question since there are theoretical explanations both for a positive and

for a negative influence. Secondly, we study the relevance of two issues of ownership structure: ownership concentration and the nature of the main shareholder. We expect a negative relation between ownership concentration and abnormal accruals since the more concentrated the ownership, the more in depth the monitoring and control of managers. Regarding the identity of the main shareholders, there are theoretical reasons both for a positive and for a negative impact on abnormal accruals when the main shareholder is an institutional investor.

The contribution or our paper is twofold. First, we introduce the concentration of ownership and the nature of the shareholders as mechanisms to reduce earnings management. Second, we expand the benchmark further than the Anglo-Saxon corporate system, on which most of the previous literature has focused. We analyse the Chilean corporate system due to its very different legal origin where investors' rights are not fully protected what could explain why the ownership structure and the capital structure of firms in this kind of countries are so different from those of British or U.S. firms.

3. The Chilean Corporate System

Unlike U.S. or U.K., to which most of the literature has paid attention, Chilean companies belong to the French branch of civil-law countries (La Porta *et al.,* 1998; Demirgüç-Kunt and Levine, 1999). In this framework, banks play an outstanding role in the allocation of financial resources in detriment of capital markets (Allen and Gale, 2001; Beck and Levine, 2004) and can even become reference shareholders in many firms (Krozner and Strahan, 1999). As a consequence of the failure of the civil-law system to protect the interests of minority shareholders, Chilean firms rely on internal control mechanisms (Filatotchev and Mickiewicz, 2001). This could explain why, as shown by Majluf *et al.* (1998), the ownership structure of Chilean firms is highly concentrated. In institutional frameworks where the hostile take-overs are not very effective and the banking system is well developed, firms with highly concentrated ownership often borrow from banks since banking debt and ownership concentration are complementary mechanisms of corporate governance (Dewatripont and Tirole, 1994; John and Kedia, 2000). This could explain why the banking system is dominant over capital markets in the allocation of capital in most civil-law countries.

To obtain a broad view of the Chilean corporate system, in Table 1 we report some data in order to establish a comparison with countries which belong to different legal roots and different corporate systems. Our data refer to the importance of banks in the whole financial system (bank credits to GDP), the importance of capital markets (market capitalization to GDP) and the financial structure ratio or relation between banks and markets (market capitalization to bank credits).

Table 1. Main characteristics of the Chilean corporate system

Country	Bank credits to GDP	Market capitalizatio n to GDP	Financial structure	Bank concentra tion	Shareholder s ownership	Debt to total assets	Short term debt to total assets	Long term debt to total assets
Chile	0.488	0.610	1.253	0.620	0.450	0.281	0.149	0.131
Germany	1.018	0.315	0.298	0.390	0.480	0.560	0.496	0.062
Japan	0.835	0.744	0.683	0.320	0.180	0.727	0.432	0.294
France	0.849	0.427	0.502	0.440	0.340	0.656	0.386	0.269
UK	1.043	1.108	1.062	0.650	0.190	0.166	0.084	0.082
USA	0.674	0.865	1.276	0.200	0.200	0.474	0.262	0.211

Source: Beck *et al.* (1999), Carlin and Mayer (2003), La Porta *et al.* (1998), Antoniou *et al*. (2003 and 2004) and BACH database.

Although in civil-law countries banks play usually a prevailing role over markets, that is not the Chilean case. As shown in the three left columns in Table 1, capital markets are more important than banks in financial allocation in Chile throughout the period 1987-2001. From this point of view, Chile would follow a similar pattern to common-law countries. This fact could be explained on the basis of the increasing opening and growth of Chilean economics in the 80's (Gallego and Loayza, 2000), which has led to a parallel development of capital markets and, in turn, of the whole financial system (Rajan and Zingales, 2003).

In spite of the fact that banks are not so important in Chile as in other civil-law countries, one cannot neglect their prominent role. The fourth column in Table 1 presents the banking concentration –measured as the market share of the five largest banks (Cetorelli and Gambera, 2001). As we can see, the banking concentration and, therefore, the market power of the largest banks in Chile are fairly higher than the concentration of their counterparts in the other countries with the exception of British banks. Chilean legal origins have also some influence on the ownership structure of Chilean firms. Table 1 shows that, consistent with the classification scheme by La Porta *et al.* (1998), after Germany, the French branch of civil-law countries have the most concentrated ownership – measured as the ownership of the three main

shareholders in the ten largest non-financial firms. This highly concentrated ownership is a feature of Chilean firms to which we will refer again later on.

The financial structure of the firms is another interesting feature of the Chilean corporate system. Table 1 reports that these firms are low-leveraged and that they are closer to Anglo-Saxon firms than to Continental ones. This similarity holds both for the short and the long-term debt. Whereas civil-law firms are prone to borrow short term funds, Chilean and Anglo-Saxon firms have a more balanced structure in terms of short *vs*. long-term debt.

In sum, we could say that the Chilean corporate system, in spite of being a civil-law system, deviates from the model of other civil-law countries such as Germany, France or Japan. At the same time, it has some characteristics in common with the Anglo-Saxon system of common-law. To some extent, Chile is a hybrid system amid the two main models: although it is bank-oriented, capital markets play a prominent role and firms are inclined to a concentrated ownership and low financial leverage.

4. Data and Methodology

4.1. Sample and Variables

Our sample is made up of 185 quoted Chilean non-financial firms throughout the period 1991-2001. Financial information was obtained from the audited financial statements supplied by the *Ficha Estadística Codificada Uniforme* (FECU) from the *Superintendencia de Valores y Seguros de Chile*, the Chilean Securities Exchange Commission. Since all the firms are listed, most of them are supposed to be large or medium-large firms.

The variables to be used and the main descriptive statistics are shown in Table 2. The variable which proxies managers' discretionary accounting power is abnormal accruals (AA) and is explained in Section 4.2. The explanatory variables, as previously stated, are financial leverage (LEV) -defined as the ratio of total debt to total assets (book value), and OC1 or the proportion of ownership owned by the largest shareholder. The first variable is aimed to measure capital structure while the second one should proxy ownership concentration. Five dummy variables related to ownership structure have been defined on the basis of the nature of the largest shareholder: a family (FAM), an institutional investor (INST) as mutual funds, assurance companies or pension funds, a domestic firm (DOM), a multinational firm (MULT) and the State (STA). Although five dummy variables have been defined, we will include only four variables in the regressions to avoid multicollinearity.

Table 2. Descriptive statistics of variables

Main descriptive statistics of the sample. We report mean, median, minimum and maximum values along with the variance of each variable. AA stands for abnormal accruals, TA for total accruals, LEV for leverage or total debt to total assets ratio, OC1 and OC5 for the proportion of shares owned by the largest and the five largest shareholders, DIFROA for the difference between firm performance and the average industry performance, ΔTURN1 for the firm's turnover growth and PPE for plant, property and equipment scaled to total assets.

Variable	Mean	Median	Minimum	Maximum	Variance
AA	0.000	-0.005	-1.352	3.158	0.136
TA	0.030	-0.009	-1.029	4.651	0.080
LEV	0.252	0.232	0.000	0.908	0.036
OC1	0.452	0.449	0.000	100	0.064
OC5	0.706	0.746	0.000	100	0.054
LNSIZE	17.369	17.441	11.728	22.058	3.585
DIFROA	-0.002	-0.006	-0.460	0.584	0.008
ΔTURN1	0.034	0.000	-3.521	5.070	0.084
PPE	0.639	0.586	-1.736	3.693	0.338

Table 3 shows the main features of Chilean firms that we have emphasized dependent on the nature of the main shareholder: ownership structure and capital structure. We report the proportion of firms in the sample according to the identity of the largest shareholder, the average size of the firms, the average proportion of shares owned by the largest shareholder and the average capital structure of the firms. Again we can see that Chile is a mixed corporate system since the main shareholders are domestic firms (as usual in the Continental model) and institutional investors (as often in the Anglo-Saxon model). The average size of the firms is quite similar among groups but we can appreciate big differences concerning the ownership of the largest shareholder (especially for State-owned firms) and financial leverage.

We have included some other variables which, from our point of view, are likely to be related to earnings management: firm size and firm performance. We measure firm size (LNSIZE) with the logarithm of total assets at book value[1] and firm performance with the return on assets or, more specifically, the difference between the firm's ROA

[1] Total assets are measured in thousands of Chilean *pesos* (logarithm). At the end of 2001, the exchange rate was one U.S. dollar for 679 *pesos* (one euro for 557.40 pesos).

and the average return of the firm's industry (DIFROA). The size of the firm can exacerbate agency problems from the separation of ownership and control (Ozkan, 2000) and incentive earnings management. In addition, earnings management should not be so usual when firm performance is high enough or when it exceeds the performance of the firm's competitors. Thus, one could expect a positive relation of firm size and a negative relation of firm performance with abnormal accruals.

Among the available statistical procedures, we have opted for the panel data regression. Our sample combines time series for 11 years with cross-section data from 185 firms allowing us to optimally make use of the panel data advantages. In our case, we have built an unbalanced panel data with 1,656 observations. Panel data methodology enhances the control of the so-called unobservable constant heterogeneity (Arellano and Bover, 1990), that is, some specific features of each firm which are kept along time and allow optimally exploiting the firm-level dimension. Additionally, panel data estimators are more efficient than ordinary least-squares estimators due to the lower collinearity among the variables and the higher number of degrees of freedom (Baltagi, 1995).

Table 3. Ownership, size and leverage of the firms in the sample according to the main shareholder

	Family	Institutional investor	Domestic non-financial firm	Multinational firm	State	Whole sample
% firms	7.91	39.43	44.02	6.28	2.36	100
Average firms' size (log)	15.57	17.36	17.71	17.18	17.59	17.37
Largest shareholder's ownership (%)	38.97	38.62	50.91	48.05	62.37	45.21
Debt to total assets ratio (%)	25.59	24.72	26.71	20.59	16.29	25.21

4.2. Methodology

As other authors, we use a two-stage approach to partition total accruals into their managed and non-managed components: we first estimate abnormal accruals as the residuals of total accruals regression and then we find out the impact of corporate governance on abnormal accruals. Total accruals are defined according to Jones' model (Jones, 1991). Although there are different alternative models of earnings management (Delgado, 2003), the choice of the model is not relevant since it does not bias the results (Dechow *et al.*, 1995). In any case, later on we will test the robustness of the results to alternative specifications of earnings management.

The departing point of Jones' accrual model is the idea that the manipulation of non-monetary current assets and liabilities is easier than the modification of payments which directly affects the firm's cash flow[2]. The calculation of depreciation can be also chosen among different methods and that is why total accruals are calculated as the variation of non-cash working capital minus amortization and depreciation of PPE.

Once we have obtained total accruals, we have to split them into normal and abnormal accruals. Non-discretionary accruals are aimed to improve the informational content of financial statement, so we could wonder about the factors that cause these normal adjustments. To answer this question we should keep in mind that, according to Jones' model, total accruals are affected by the firm's usual business –which can affect non-cash current assets and liabilities- and by plant, property and equipment –which can affect depreciation.

Consequently, we regress TA depending on the change in sales (□TURN) and the gross level of PPE. All the variables are scaled by total assets at book value. So we estimate the following equation

$$TA_{it} = \alpha + \beta_1 \Delta TURN_{it} + \beta_2 PPE_{it} + \eta_i + \varepsilon_{it}.$$

As regards the forecast sign of these variables, there is a clear difference: whereas the second one is obviously negative –since depreciation has been included with a negative sign in the definition of accruals-, it is not easy to predict any sign for the change in sales. On the one hand, the higher the sales revenues the higher the receivables but, on the other hand, increases in sales usually imply increases in short-term commercial debt, so the net effect on working capital is uncertain.

The value of TA in equation [1] could be considered as the level of normal accruals depending on the firm's activity and the composition of the firm's assets. Consequently, the error of the regression -the difference between observed and estimated TA as stated in equation [2]- would become the part of total accruals due to managers' discretionary decisions and will be identified with abnormal accruals:

$$AA_{it} = TA_{it} - (a + b_1 \Delta TURN_{it} + b_2 PPE_{it}).$$

where a, b_1 and b_2 are the estimators for □, $□_1$ and $□_2$ coefficients.

It is true that income-increasing accruals are not the only way to manage earnings and that firms can also try to reduce accruals when times are good. Nevertheless, as shown by Peasnell *et al*. (2001),

[2] This approach implicitly assumes that earnings management can be undertaken by modifying the assessment of inventories, receivables or current liabilities.

there are two reasons to explain why the role of the mechanisms of control is more pronounced for income-increasing accruals. Firstly, penalties linked to discretional increase of earnings are usually more costly that penalties from income-decreasing earnings management, so managers' control is more exhaustive in the first case. Secondly, it is more difficult to identify a critical threshold -which could evidence earnings discretionary manipulations- for downwards earnings management due to factors specific to each firm.

Abnormal accruals allow assessing managers' ability to modify financial statements in their own interests so they are very helpful to test the efficiency of corporate governance mechanisms. Therefore, we will test the influence of capital structure and ownership structure on discretionary accounting adjustments. Our second step will be, in turn, explaining abnormal accruals as a function of capital structure, ownership structure and control variables. That regression will be: *(see formula 3)*

5. Results

As previously stated, the first stage in the empirical analysis tends to measure discretionary accruals as the residuals of the estimation of equation [1]. Results reported in table 4 show, as theoretically forecast, a negative impact of PPE on total accruals and a positive effect of sales. These results, however, are not relevant here and have only instrumental interest as long as they proxy the manager's power as abnormal accruals.

$$AA_{it} = \alpha + \beta_1 LEV_{it} + \beta_2 OC1_{it} + \beta_3 LNSIZE_{it} + \beta_4 DIFROA_{it} + \beta_5 DUMMY\ INVESTOR_{it} + \eta_i + \varepsilon_{it} \quad [3]$$

where η_{it} is the fixed-effects term which is firm-specific and ε_{it} represents the random component.

Table 4. Panel data estimation of total accruals

Estimated coefficients and standard errors (in parentheses) of the estimation of equation [1]. TA stands for total accruals according to Jones' model. Explanatory variables are the growth of sales (ΔTURN1) and plant, property and equipment (PPE). Variables have been scaled by total asset. F-statistics is a test for the joint significance of all the independent variables. (***) stands for significant to a confidence level higher than 99%, (**) for a level higher than 95% and (*) for a level higher than 90%

Variable	Coefficient (Std. error)		Coefficient (Std. error)	
Intercept	0,4207	***	0,4187	***
	(0,0106)		(0,1063)	
ΔTURN	0,1566	***		
	(0,0184)			
ΔTURN2			0,1607	***
			(0,2009)	
PPE	-0,6205	***	-0,6159	***
	(0,0150)		(0,0150)	
F statistics	8,05	***	7,91	***
R^2	0,5407		0,5367	
# obs	1,656		1,656	

These results are the basis for estimating the effect of some mechanisms of corporate governance on managers' accounting decisions as presented in equation [3]. To do so, we have regressed abnormal accruals on capital structure (LEV) and ownership concentration (OC1). Results are displayed in table 5 and some issues should be stressed.

Concerning capital structure, column 1 in Table 5 shows a negative and significant influence of LEV on discretionary accruals. Consistent with our hypotheses, this relation underlines the disciplinary role of debt and stresses that financial leverage reduces the discretionary range of managers' accounting decisions. This fact could be understood as evidence that the service of debt discloses more and better information than financial statements and, as a result, managers have less incentive to manage earnings.

Column 1 in Table 5 is also informative about the effect of ownership concentration. Consistent with our hypothesis, OC1 has a negative coefficient so that higher ownership concentration reduces discretionary accruals. Moreover, LEV and OC1 are simultaneously significant, suggesting that capital structure and ownership structure work as complementary and not as alternative mechanisms of corporate governance.

This first impression about the ability of leverage and ownership concentration to limit the managers' discretionary accounting decisions is reinforced by a simple descriptive analysis. We have split the sample into three thirds depending on the

value of AA and we compare the mean values of LEV and OC1 between the upper and the lowest third (Table 6). One can see that firms in the group 1 (the firms with the largest earnings management) have significantly lower ownership concentration and financial leverage than firms in group 3 (the firms with the highest abnormal accruals).

Table 5. Discretionary accruals and corporate governance

Estimated coefficients and standard errors (in parentheses) of the within-groups estimation of equation [3]. The dependent variable is abnormal accruals (AA) according to Jones' model (1991). The explanatory variables are financial leverage (LEV), the proportion of shares owned by the main shareholder (OC1), the logarithm of total assets (LNSIZE), the differential ROA (DIFROA) and eight interacted variables (FAMLEV, INSTLEV, MULTLEV, STALEV, FAMSIZ, INSTSIZ, MULTSIZ, STASIZ) defined as a function of the nature of the main shareholder (family, institutional investor, multinational firm or the State). F-test of joint significance for all the estimated coefficients, adjusted-R^2 coefficient and Hausman test for the random *vs*. fixed effects hypothesis are reported too. (***) stands for significant to a confidence level higher than 99%, (**) for a level higher than 95% and (*) for a level higher than 90%

	(1)		(2)		(3)		(4)		(5)	
Intercept	0.0871	***	0.0839	***	0.7346	***	0.6658	***	0.6972	***
	(0.0252)		(0.0253)		(0.2337)		(0.2337)		(0.2353)	
LEV	-0.1999	***	-0.1808	***	-0.1289	**	-0.2178	***	-0.1318	**
	(0.0516)		(0.0534)		(0.0564)		(0.0638)		(0.0570)	
OC1	-0.0008	*	-0.0008	*	-0.0007		-0.0007		-0.0006	
	(0.0005)		(0.0005)		(0.0005)		(0.0005)		(0.0005)	
DIFROA			0.1044		0.1148		0.1173		0.1109	
			(0.0763)		(0.0762)		(0.0761)		(0.0765)	
LNSIZE					-0.0385	***	-0.0347	**	-0.0381	***
					(0.0137)		(0.0137)		(0.0138)	
FAMLEV							-0.0996			
							(0.1301)			
INSTLEV							0.2331	***		
							(0.0696)			
MULTLEV							0.0951			
							(0.1489)			
STALEV							0.0597			
							(0.2619)			
FAMSIZ									0.0026	
									(0.0026)	
INSTSIZ									0.0033	**
									(0.0015)	
MULTSIZ									0.0004	
									(0.0036)	
STASIZ									-0.0005	
									(0.0043)	
Adj.-R^2	0.0127		0.0139		0.0192		0.0294		0.0227	
F-test	22.90	***	22.87	***	20.11	***	19.34	***	18.60	***
Hausman test	17.57	***	21.22	***	23.01	***	61.87	***	51.05	***
# observations	1,656		1,656		1,656		1,656		1,656	

The simplest version of our model (column 1 in Table 5) has been broadened in order to introduce some other firms' features which could affect managers' discretionary accounting choices. So, column 2, on top of LEV and OC1, includes DIFROA. Despite the possible negative relation that we hypothesized, our empirical results do not support that idea, although both leverage and ownership concentration keep their impact.

Another feature to be considered is firm size, according to the hypothesis that larger size usually fosters earnings management and, thus, one could expect a positive coefficient. The results reported in column 3 of Table 4 are just the opposite: LNSIZE

has a negative and quite significant effect on discretionary accruals. Furthermore, the introduction of LNSIZE makes the effect of ownership concentration non significant and this could suggest some kind of link between ownership concentration and the size of Chilean firms.

Table 6. Mean differences

Test of mean differences when the simple is divided according to AA. Group 1 stands for the lowest abnormal accruals and group 3 for the largest abnormal accruals.

Variables	Group	Media	p-value
OC1	1	42.396	0.0150
	3	46.139	
LEV	1	0.0865	0.0000
	3	0.1644	

To shed some light on this apparent paradox we should remember that Chilean legal system belongs to the French branch of civil law and has not very good investor protection. The shareholders' reaction to this weak protection is concentrated ownership so that shareholders are in better situation to assert themselves. In fact, Table 2 shows that the average ownership of the main shareholder in Chile is 45%, quite higher than their British and North-American common-law counterparts.

Therefore, to some extent, the ownership structure of Chilean firms seems to be an outcome of the Chilean legal system and is fairly different to the ownership structure of Anglo-Saxon firms. Additionally, unlike Anglo-Saxon firms, the largest firms in Chile are those with the most concentrated ownership (Majluf *et al.*, 1998) through pyramidal ownership structures which allow holding the control rights in large firms in spite of diminishing the cash flow rights. Consequently, and as far our results are concerned, we could assert that firm size and ownership concentration run parallel and are closely interrelated so that the inclusion of LNSIZE implies the drop of OC1 significance.

Thus, the results reported stress the relevance of capital and ownership structure as mechanisms of corporate governance to monitor managers' accounting discretionary decisions. It could be now pertinent to test whether the nature of the shareholders has any noticeable impact on these results. For this reason we have defined four interacted variables (FAMLEV, INSTLEV, MULTLEV and STALEV) as leverage times each one of the dummy variables about the nature of the main shareholder (family, institutional investor, multinational firm or the State). By doing so we can know whether financial structure has a differential effect on abnormal accruals depending on the identity of the main shareholder, with a special emphasis on the role of institutional investors.

The results of this regression are reported in column 4 in Table 5. Two facts should be underlined. Firstly, financial structure and firm size keep their influence. Secondly, when the main shareholder is an institutional investor, the role of debt changes so that it fails to be a disciplinary mechanism. Moreover, leverage in those companies owned by an institutional investor is positively related to earnings management. This fact corroborates the preference of institutional investors for financial statements with high returns even though it should be achieved by earnings management.

In the same way, four additional variables have been defined to test any differential effect of firm size depending on the nature of the shareholders (FAMSIZ, INSTSIZ, MULTSIZ and STASIZ). These interacted variables have been calculated as size times each one of the dummy variables about the nature of the main shareholder (family, institutional investor, multinational firm or the State). Results of this new specification are reported in column 5 of Table 5 and are very consistent with previous ones. Again, two comments are worthwhile. Firstly, both the financial structure and the size of the firm keep their sign and continue to be significant. Secondly, although firm size has a negative impact on earnings management, INSTSIZ shows a positive and significant coefficient. It could be understood in terms of the specific features of the institutional investors' ownership: institutional investors again seem to pay more attention to optimistic or positive financial statements than the other kind of shareholders and thus they are transient with earnings management[3].

In Table 5 we present the adjusted-R^2 coefficient, the F-test for the hypothesis of joint significance and the Hausman test for the random vs. fixed effects hypothesis. Although adjusted R^2 is very low, the explanatory variables are significant and the null hypothesis of lack of significance of the whole set of variables is rejected with a very high level of confidence[4]. The Hausman test allows rejecting the null hypothesis of random effects at a high confidence degree. It means that the random

[3] Another set of interacted variables was constructed to test whether ownership concentration has a differential effect depending on the nature of the shareholders. The results are irrelevant for this research but are available from the author.

[4] For a high number of observations (1,656 observations in our case), a high value of the F-test is compatible with low values of R^2 coefficient without any discredit about the significance of the explanatory variables.

component in equation [3] is correlated with the independent variables and, consequently, the within-groups panel data technique provides with consistent estimations.

Along with these basic results, some comments about their robustness seem pertinent. We like to test their sensitivity to different specifications of managers' accounting decisions or to new measures of the variables. Our purpose is to know to what extent the relations we have found can be due to methodological issues or, on the contrary, are robust and remain unaffected in a broader framework. That is why Table 7 presents a number of additional estimations.

OC1 has been replaced by the ownership of the five largest shareholders (OC5). Results of that estimation are reported in columns 1-3 in Table 7 and show that ownership concentration is no longer significant. Besides the link between firm size and ownership concentration to which we have already referred, this fact is also explained by the high concentration of ownership in Chile. Taking into account that ownership is so much concentrated, OC5 scarcely provides any significant information in comparison with OC1.

Table 6. Discretionary accruals and corporate governance: sensitivity analysis

Estimated coefficients and standard errors (in parenthesis) of the within-groups estimation of equation [3]. The dependent variable is always abnormal accruals (AA) according to Jones' model (1991) or Jones' modified model. The explanatory variables are financial leverage (LEV), the proportion of shares owned by the main or the five largest shareholders (OC1 and OC5), the logarithm of total assets (LNSIZE), the differential ROA (DIFROA), and four interacted variables (FAMLEV, INSTLEV, MULTLEV and STALEV) defined as leverage times each one of the dummy variables about the nature of the main shareholder (family, institutional investor, multinational firm or the State). F-test of joint significance of all the estimated coefficients, adjusted-R^2 coefficient and Hausman test for the random *vs*. fixed effects hypothesis are reported too. (***) stands for significant to a confidence level higher than 99%, (**) for a level higher than 95% and (*) for a level higher than 90%

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
Intercept	0.0921	**	0.0871	**	0.7252	***	0.0842	***	0.0809	***	0.7152	***	0.6499	***
	0.0426		(0.0427)		(0.2337)		(0.0253)		(0.0254)		(0.2349)		(0.2350)	
LEV	-0.2006	***	-0.1831	***	-0.1334	**	-0.1913	***	-0.1711	***	-0.1205	**	-0.2064	***
	0.0518		(0.0536)		(0.0564)		(0.0518)		(0.0537)		(0.0567)		(0.0642)	
OC1							-0.0008		-0.0008	*	-0.0007		-0.0007	
							(0.0005)		(0.0005)		(0.0005)		(0.0005)	
OC5	-0.0006		-0.0006		-0.0002									
	0.0006		(0.0006)		(0.0006)									
DIFROA			0.0972		0.1093				0.1102		0.1203		0.1224	
			(0.0762)		(0.0762)				(0.0766)		(0.0766)		(0.0766	
LNSIZE					-0.0391	***					-0.0375	***	-0.0339	**
					(0.0142)						(0.0138)		(0.0138)	
FAMLEV													-0.0884	
													(0.1308)	
INSTLEV													0.2242	***
													(0.0700)	
MULTLEV													0.0956	
													(0.1498)	
STALEV													0.0486	
													(0.2634)	
Adj.-R^2	0.0115		0.0126		0.0117		0.0116		0.013		0.018		0.0272	
F-test	22.45	***	22.43	***	19.98	***	22.36	***	22.33	***	19.62	***	18.84	***
Hausman test	21.93	***	24.61	***	24.75	***	17.12	***	20.64	***	22.49	***	59.75	***
# obs.	1,656		1,656		1,656		1,656		1,656		1,656		1,656	

Another proof of the robustness of our results refers to the method to measure abnormal accruals. We have replaced the traditional Jones' method (1991) with its modified one (Dechow *et al.*, 1995). This new model is especially suitable when abnormal accruals affect sales and that is why in this model total sales are modified by the variation in receivables due to sales (ΔTURN2). The new variable has been introduced in equation [1], whose estimation is reported in column 2 in Table 4. As previously explained, the residual of this regression identifies with abnormal accruals and is used as the dependent variable in columns 4-7 in Table 7. Broadly speaking, results remain unaffected and the significant impact of financial structure and ownership concentration is corroborated along with

the relevance of the institutional investors' ownership on earnings management.

6. Concluding Remarks

The conflict of interests between shareholders and managers due to the separation of ownership and control leads the managers to pursue their own utility instead of the firm's value maximization. The so-called earnings management is a consequence of that conflict of interests and can be understood as the discretionary alteration of income statements to convey information about the firm's performance with the aim of improving managers' recognition. Earnings can be managed in a number of ways and our paper focuses on accruals, that is, accounting adjustments to correct timing mismatches between payments and cash flows.

Accruals have a non-discretionary component, aimed to improve the informational content of financial statements, and a discretionary component as a result of managers' biased decisions. Consequently, discretionary or abnormal accruals are key to assess the efficiency of corporate governance mechanisms. Our paper focuses on two of those mechanisms, namely, capital structure and ownership structure. More specifically, we try to test the effect that financial structure, the concentration of ownership and the nature of the shareholders of Chilean firms have on managers' accounting decisions.

Chile is an interesting country to test the efficiency of corporate governance because of the features of the corporate system, quite different from the Anglo-Saxon framework, on which most of the research has focused. Chile belongs to the French branch of civil-law countries, with a substantial development of capital markets and with low leveraged firms whose ownership is highly concentrated. As regards the effect of leverage, our results show that debt plays a disciplinary role on managers so that financial leverage restrains earnings management. This evidence can be explained by the better informational content of debt financial commitments compared with accounting information. We have also tested the efficiency of ownership structure. Our findings show that ownership concentration encourages managers' monitoring and restrains earnings management. This fact could explain the high concentration of ownership in Chilean firms as a reaction to the lack of investors' protection endemic to this kind of countries. As a consequence, shareholders try to protect their interests by block-holders and majority shareholders.

Our results also deal with the influence of the nature of the shareholders since we have analysed the effect of the main shareholder as an institutional investor, a family, the State or another firm. Our findings support the view of institutional investors as excessively short-termed oriented and looking too much for quarterly returns, and show that debt has an opposite effect: financial leverage encourages earnings management when the main shareholder is a mutual fund, a pension fund or an assurance company. There are several directions for future research. For instance, it could be interesting to go on extending the analysis to a framework broader than the Anglo-Saxon one, to which most of the literature has paid attention. From this point of view, countries from the different branches of civil-law tradition are good institutional contexts. At the same time, future research should complement earnings management with some other measures of managers' power and test the influence of other mechanisms of corporate governance.

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