EARNINGS MANAGEMENT AND DEBT OWNERSHIP STRUCTURE IN SPANISH FIRMS

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Abstract

The aim of this paper is to analyze the efficiency of debt ownership as a mechanism of corporate governance in reducing the discretionary behavior of managers. We use earnings management and discretionary accruals as indicators of managerial accounting discretion. Our results show that corporate debt has a prominent impact on reducing earnings management. Banking debt can foster the discretionary behavior of managers whereas public debt plays no relevant role. At the same time we test the complementary effect of some other mechanisms of corporate governance such as capital structure and ownership concentration.

Keywords: ownership structure, earnings management, Spain

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1. Introduction

The idea of the firm as a nexus of contracts (Jensen and Meckling, 1976) has led to the design of mechanisms of corporate governance in order to protect the interests of the providers of funds. Our paper relies on one of these mechanisms -the ownership structure of debt- and we analyze the ability of different kinds of corporate debt to reduce the discretionary accounting decisions of managers.

We base this on the idea of earnings management as an indicator of managerial accounting discretion. Earnings management can be implemented through a series of managerial practices such as discretionary accruals. Consequently, we study to what extent the ownership structure of debt (i.e. the banking *vs.* public debt structure) disciplines firms' managers and reduces their ability to manage earnings. This is one issue dealt with in this paper, namely the combination of the ownership structure of corporate debt with a modern and suitable way of detecting managerial accounting discretion. Another is the extension of the empirical evidence to a country like Spain, with an institutional structure quite different from the Anglo-Saxon area on which most of the existing research has focused (Giner and Mora, 2005).

Our results are consistent with previous research and stress the asymmetric role of debt in disciplining managers. On the one hand, corporate debt has a prominent effect in reducing managerial discretion. On the other, the impact of debt is conditional upon the type of creditor. While public debt usually constrains managers' discretionary behavior, banking debt can enhance their opportunistic accounting choices, irrespective of the term structure of the debt.

Our paper is divided into five sections. After the introduction, in Section 2 we review the two main theoretical foundations of our research: earnings management as a manifestation of managerial accounting discretion, and the role of debt as a mechanism of corporate control.. This review goes hand in hand with the presentation of the hypotheses to be empirically tested. In Section 3 we describe the samples and the methodology for the empirical analysis. In Section 4 we report the results of the study. The paper ends with some concluding remarks in which we indicate some directions for future research.

2. Earnings management and debt ownership structure: review of previous research and hypotheses

Most modern firms have in common a separation between a firm's ownership and its control or, in other words, a conflict between shareholders and managers. This agency relation implies an asymmetric distribution of information since shareholders are not able to efficiently monitor all the actions of managers and, consequently, managers have a wide range of discretionary behavior available to them. Managers are required to look after their own interests even though these might be at odds with the maximization of the firm's value aimed at by shareholders.

As a result, in order to protect shareholders' interests, some mechanisms have been implemented to reduce asymmetric information, to assess the efficiency of managers' decisions and to set up incentives systems (Brickley *et al.*, 1995). Among these mechanisms, aimed to convey reliable information to the least informed agents, we should highlight financial statements. Financial statements, particularly the balance sheet and the statement of income and expenses, disclose information about the

firm's performance and are therefore a suitable element to assess the efficiency of managers' financial decisions.

A plausible reaction of managers is to choose accounting procedures most consistent with their own interests, in order to modify the firm's earnings out of self-interest (Smith, 1976; Jensen, 2003). This is known as earnings management, namely the intervention of managers to modify accounting earnings to give a positive impression of managers' performance, rather than to convey reliable information about the firm.

Earnings management can be carried out in a number of alternative ways, such as the choice of accounting methods (Moses, 1987), the choice of the inventory valuation method (Niehaus, 1989), the extraordinary items (Beattie *et al.*, 1994), the R&D expenditures (Bange and DeBondt, 1998) or accruals (Bannister and Newman, 1996; DeFond and Park, 1997). Although there are a number of accounting procedures available to managers for discretionary manipulation of a firm's earnings, accruals play a prominent role and have been the focus of preferential attention in recent years (McNichols and Wilson, 1988; Jones, 1991; DeFond and Subramanyan, 1998; Erikson and Wang, 1999).

Accruals are supposed to improve the informational content of financial statements by avoiding a mismatch between payments, money collections, income and expenses. Although accruals can be properly used (Hansen and Noe, 1998; Barth *et al.*, 2001), a discretionary use of accruals is possible since they modify the moment of recognition of income and expenses, allowing transferal of positive or negative results between periods and, consequently, reducing the informational content of a firm's earnings. In fact, one of the reasons for the widespread use of accruals, compared to other ways of earnings management, is high flexibility due to their low cost and difficult detection (Healy, 1985). In addition, accruals are also used because they synthesize in one measure the joint effect of several accounting choices (Peasnell *et al.*, 2000b).

Since accruals are so appealing to managers, it makes sense that accounting research has proposed several ways of detecting their discretionary use. As shown by Azofra *et al.* (2003), although there are a number of methods to detect earnings management through accruals, most of them have in common a distinction between two components: the non-discretionary and the discretionary component (Dechow, 1994; Peasnell *et al.*, 2000a). While non-discretionary accruals aim to improve the informativeness of financial statements, discretionary accruals modify financial statements in managers' own interests.

This twofold motivation for accruals leads to two different determinants. Non-discretionary accruals are likely to depend on the usual business of the firm such as its turnover or the depreciation of fixed assets, whereas the discretionary component of total accruals is supposed to depend on the ability and the inclination of a firm's managers to alter financial statements and, therefore, depends on the ability of corporate governance to prevent such behavior. This is why the study of earnings management should run parallel with the analysis of the mechanisms of corporate governance. In fact, it has been proved that external directors (Peasnell *et al.*, 2001), the audit committee of the board of directors (Klein, 2002), the size of the board of directors (Beasley, 1996), the presence of institutional investors among shareholders (Jiambalvo *et al.*, 2002) and the ownership concentration (Azofra *et al.*, 2003) all reduce earnings management.

We follow a similar approach and focus on the relation between one of the mechanisms of corporate governance such as debt, and the discretionary accounting decisions of managers. This aim requires a double analysis because, in addition to the possible disciplinary role of debt, we must take into account the different kinds of financial debt, with the different structure of creditors' rights and the different monitoring ability of each sort of debt.

The theoretical foundation on which the paper is based is the ability of corporate debt to reduce managers' discretionary decisions due to the stricter schedule of financial engagements of debt (Grossman and Hart, 1982; Jensen, 1986; Harris and Raviv, 1991). From this point of view, there should be a negative relation between financial leverage and discretionary accruals because debt is usually related to a higher control of managers by creditors and a more detailed analysis of the information provided by financial statements. Nevertheless, some authors have found a positive relation between corporate debt and discretionary accruals (Azofra *et al.*, 2003) since the financial statements more favorable to managers allow borrowing in more favorable conditions, which increases the incentives of managers to manage earnings in their own interest. In turn, the impact of debt on earnings management seems to be an empirical question and there are reasons to explain both the positive and the negative influence.

Going more in-depth in the analysis of the ownership structure of debt, the firms in our sample can choose between borrowing from banks (private or arm's-length debt) or issuing bonds in financial markets (public debt). Private debt usually implies a relation with only one creditor or with quite a small number of creditors, whereas public debt is provided by a large number of small bondholders. Although both of them have some characteristics in common, they also have some specific characteristics and, in consequence, they have different implications for corporate governance and for managers' discretionary behavior.

Banks specialize in borrower-monitoring (Campbell and Kracaw, 1980), so banking debt is supposed to put managers under more scrutiny than other kinds of debt. Nevertheless, banking debt and public debt are very different in terms of the

possibility of rolling-over. Public debt is usually stricter than banking debt since banks are more prone to roll over corporate debt that public markets are (James and Smith, 2000). In consequence, public debt implies more discipline over managers than banking debt.

On top of this, banking debt usually implies closer and longer relations between borrowers and lenders. This is why banking debt tends to be long-term debt (Eber, 2001). If this is the case, borrowing firms do their best to earn a reputation as good borrowers (Diamond, 1991), so they can try to manipulate financial statements in order to make a good impression and to achieve better debt agreements (Datta *et al.*, 1999). Furthermore, since banking debt is more expensive than public debt, this higher managerial discretion could partially explain why firms still borrow from banks. In fact, asymmetric information has been proved to affect corporate banking debt (Johnson, 1997; James and Smith, 2000).

Analysis of debt ownership structure is even more interesting due to the prominent role played by banks compared to capital markets in Continental European countries. Like most of their Continental European counterparts, Spanish firms rely heavily on bank debt. As shown by Demirgüc-Kunt and Levine (2001), bank assets in Spain are three times higher than capital markets, whereas in the USA and the UK that ratio is 0.85 and 0.9 respectively. Similarly, the ownership structure of firms is quite different: while 14.5% of non-financial Spanish firms have a bank as the largest shareholder, only 5.5% and 4.3% of USA and UK firms respectively do so. As a consequence, both financial leverage and the kind of creditor play an outstanding role in affecting managerial discretion.

The Spanish financial system has a number of characteristics in common with other Continental European countries and this makes our study more interesting and more extendable in the international arena. Spain belongs to the French tradition of civil law countries (La Porta *et al.*, 1998), in which investors' rights are not strongly protected. Due to the lack of legal protection in these kinds of countries, opportunistic behavior and agency costs are constrained by banks (La Porta *et al.*, 2000; Levine, 2002; Beck and Levine, 2002), and this explains the high proportion of banking debt in Spanish firms relative to that of Anglo-Saxon countries. Moreover, weak investor protection explains other features of both Spanish and other Continental European firms such as high ownership concentration and the pyramidal ownership structure designed to align the interests of managers and shareholders (Dewatripont and Tirole, 1994; La Porta *et al.*, 1997; Modigliani and Perotti, 1997; Shleifer and Vishny, 1997; John and Kedia, 2000).

Taking stock, let us present the hypotheses to be tested. Firstly, we aim to test the impact of corporate debt on one indicator of managers' accounting discretion such as discretionary accruals to manage earnings. Secondly, we test if banking debt and public debt have a differential influence on earnings management, following the idea that banking debt usually means more scrutiny and more flexibility. Nevertheless, the maturity of debt could shape this influence, so a differential long term *vs.* short term debt analysis should be performed.

3. Data and methodology

3.1. Sample and variables

Our sample includes 190 non-financial firms listed in Spanish capital markets between 1991 and 2001. The information has been obtained from the Register of Firms (*Registro de Empresas*) and from the register of Audited Financial Statements (*Estados Financieros Auditados*), all of them provided by the Spanish Stock Exchange Commission (*Comisión Nacional del Mercado de Valores*). Since firms are quoted in capital markets, most of them are medium-large sized.

The empirical analysis is performed through the analysis of regression with panel data. Panel data methodology is the most suitable technique to treat our panel of 1,279 observations as a consequence of the combination of time-series and cross-section data. Panel data have the advantage of allowing control of the individual heterogeneity of the observations (Arellano, 2003) and provide more efficient estimations (Baltagi, 1995). In addition, panel data allow the construction of more complex models than simple cross-sectional data.

The list of variables and the basic descriptive statistics of the sample are reported in Tables 1a and 1b. Table 1a shows the mean, maximum, minimum, median and variance of each variable and Table 1b is the correlation matrix of the variables. The dependent variable to proxy managerial accounting discretion is abnormal accruals (AA) as will be defined in the following section.

The explanatory variables, according to our theoretical framework, are different measures of financial leverage. The independent variables are the following ones: total debt over total assets (TDTA), banking debt over total assets (BDTA), banking debt over total debt (BDTD), public debt over total assets (PDTA), public debt over total debt (PDTD) and long-term debt over total debt (LTDTD).

Our control variables are ownership concentration -both in terms of the ownership held by the largest (C1) and the five largest (C5) shareholders-, the size of the firm (LNTAB) or log of total assets at book value, and the difference between the return on assets of the firm and the average ROA of the industry (DIFROA). These variables have been selected because they are the factors most likely to have a close relation with earnings management. Ownership concentration gives an incentive for managerial supervision and reduces managers' discretionary behavior (Shleifer and Vishny, 1986). Firm size is usually positively related to the agency

problems resulting from a separation between ownership and control (Ozkan, 2000). The underlying reason for the inclusion of DIFROA is that managers compare the performance of the firm with the performance of the firms in the same industry in order to show similar performance (Scharfstein and Stein, 1990). In turn, we could expect a negative influence of ownership concentration and ROA on earnings management, and a positive impact on the size of the firm.

Table 1a. Simple descriptive statistics

Main descriptive statistics of the sample. C1 and C5 stand for the ownership of the largest and five largest shareholders, AA stands for abnormal or discretionary accruals, TA for total accruals, TDTA for total debt to total assets ratio, BDTA and BDTD for banking debt over total assets and over total debt, PDTD and PDTA for public debt over total debt and total assets, LTDTD for long term debt over total debt, LNTAB for the log of total assets, ΔTURN stands for the relative increase in turnover and PPE for the proportion of gross Plant, Property and Equipment over total assets.

Variable	Mean	Median	Minimum	Maximum	Variance
AA	0.000	-0.008	-0.619	3.412	0.033
TA	-0.017	-0.027	-0.798	3.739	0.224
TDTA	0.310	0.294	0.000	3.331	0.047
BDTA	0.167	0.133	0.000	1.000	0.023
BDTD	0.511	0.540	0.000	1.000	0.121
LTDTD	0.402	0.389	0.000	1.000	0.128
PDTA	0.011	0.000	0.000	0.671	0.002
PDTD	0.032	0.000	0.000	0.999	0.014
C5	0.592	0.597	0.011	1.000	0.060
C1	0.386	0.325	0.011	0.992	0.066
LNTAB	10.229	10.082	6.043	15.987	2.874
DIFROA	0.000	-0.004	-0.437	1.176	0.007
ROA	0.026	0.034	-1.263	0.396	0.091
□TURN	0.031	0.007	-5.251	5.366	0.382
PPE	0.305	0.239	0.000	0.999	0.259

Tabla 1b. Correlation matrix

	AA	TA	TDTA	BDTA	BDTD	LTDTD	PDTA	PDTD	C1	LNTAB	DIFROA	ROA	ΔTURN	PPE
AA	1.00													
TA	0.80	1.00												
TDTA	-0.01	0.01	1.000											
BDTA	0.08	0.03	0.65	1.00										
BDTD	0.10	0.02	0.11	0.67	1.00									
LTDTD	0.08	0.04	0.20	0.34	0.36	1.00								
PDTA	-0.03	-0.07	0.29	0.04	-0.12	0.09	1.00							
PDTD	0.02	-0.05	0.04	-0.08	-0.17	0.05	0.78	1.00						
C1	-0.07	-0.09	0.01	-0.08	-0.12	-0.02	-0.03	-0.01	1.00					
LNTAB	0.05	0.06	0.12	0.03	-0.03	0.31	0.25	0.22	0.10	1.00				
DIFROA	-0.04	-0.07	0.39	0.28	0.07	-0.01	0.17	0.03	0.00	-0.06	1.00			
ROA	0.06	0.10	-0.37	-0.32	-0.15	0.01	-0.17	-0.03	-0.01	0.08	-0.92	1.00		
ΔTURN	0.04	0.58	-0.01	-0.03	-0.04	0.03	-0.05	-0.09	-0.02	0.08	-0.08	0.10	1.00	
PPE	0.16	-0.09	-0.08	0.05	0.14	0.18	0.05	0.09	0.09	0.13	-0.03	0.03	0.02	1.000

3.2. Methodology

We follow a two-stage methodology: firstly we calculate total accruals and split total accruals into discretionary (or abnormal) accruals and non-discretionary (normal) accruals. Secondly, we test the impact of the variables describing the debt ownership structure on abnormal accruals.

As far as the calculation of total accruals is concerned, we use Jones' (1991) model.. This model is the most popular one and on which most of the research on earnings management has relied. In any case, the choice of the model of accruals estimation does not produce any bias in the results (Dechow *et al.*, 1995). Furthermore, later on we will introduce alternative ways of estimating total accruals to test the robustness of our results.

The keystone of Jones' model is the assertion that it is easier to manage non-monetary current assets and current liabilities than flows of money[8]. In addition, there are alternative ways of calculating the depreciation and amortization of fixed assets, so managers can make discretionary choices about them.

[8] It implicitly assumes that earnings management is implemented by modifying the valuation of inventories or managing the accounts of receivables, commercial debtors and suppliers.

Consistently, total accruals (i.e.,TA) are defined as the variation in non-monetary current assets (receivables, inventories and time adjustments) minus current liabilities (suppliers, commercial creditors and provisions) and the amortization of tangible and intangible long term assets.

Once we have calculated total accruals, we must split the discretionary *vs.* the non-discretionary component of total accruals. As previously stated, accruals are supposed to improve the informativeness of financial statements, so they should be affected by the sales of the firm (which lead to changes in both current assets and current liabilities) and by the fixed assets (which influence amortizations).

Hence, we estimate equation [1], in which total accruals (AA) have been made to depend on the variation of turnover related to the previous year, (ΔTURN) and to the Plant, Property and Equipment (PPE). This equation is expressed as follows, where all variables are scaled by total assets and η_i stands for the fixed individual term.

$$TA_{it} = \alpha + \beta_1 \Delta TURN_{it} + \beta_2 PEE_{it} + \eta_i + \varepsilon_{it}. \quad (1)$$

Regarding the expected sign of the two explanatory variables, PPE should have a negative influence on total accruals since they are defined as the variation in the non-monetary working capital minus the amortization and depreciation. The higher the PPE, the higher the amortizations, and the lower the TA. In actual fact, the sign of ΔTURN is uncertain: an increase in a firm's turnover increases both current assets and current liabilities, so ΔTURN could have a positive or negative relation with TA.

The expected value of TA in equation [1] could be taken as non-discretionary or normal accruals according to the business of the firm and the structure of the assets. Therefore, the error of the regression, that is to say the difference between the observed value and the estimated value, are the accruals due to managerial discretion, and are known as abnormal or discretionary accruals (AA).

$$AA_{it} = TA_{it} - (a + b_1 \Delta TURN_{it} + b_2 PPE_{it}). \quad (2)$$

where a, b_1 and b_2 are the estimated coefficients of α, β_1 and β_2.Earnings management usually implies earnings smoothing, which can mean not only a discretionary upwards manipulation of earnings, but also a downwards one. Thus, the positive or negative sign of AA would be irrelevant and the most important feature of AA would be the absolute value. Nevertheless, as stated by Peasnell *et al.* (2001), managerial preference makes the earnings-increasing accruals much more important than the earnings-decreasing ones, so the first ones should be the core of the research.

Abnormal accruals allow testing of the ability of managers to alter financial statements in their own interest, so they are quite useful in assessing the efficiency of the mechanisms of corporate governance. As a consequence, we try to study the impact of debt ownership structure on discretionary accounting decisions. This is why the second empirical stage of the paper aims to explain abnormal accruals as a function of capital structure and of control variables. The equation to be tested is as follows:

$$AA_{it} = \alpha + \beta_1 BDTA_{it} + \beta_2 BDTD_{it} + \beta_3 C5_{it} + \beta_4 LNTAB_{it} + \beta_5 DIFROA_{it} + \eta_i + \varepsilon_{it} \quad [3]$$

4. Results

As previously stated, the first step is the estimation of abnormal accruals or the errors of equation [1]. The results of this estimation are shown in the first column of Table 2. Consistent with our expectations, both coefficients are significant, with a positive sign for ΔTURN and a negative sign for PPE.

Once we have calculated abnormal accruals we estimate the role of corporate debt in reducing managerial discretion. In so doing, we estimate discretionary accruals as a function of the different measures of capital structure as shown in Table 3. In that table we include not only the estimated coefficients but also the F-statistic for the joint significance of all the variables, the adjusted-R^2 coefficient and the Hausman test to choose the most suitable method of estimation. These statistics show that, in spite of the not very high adjusted-R^2, both the variables as a group, and most of them individually, are significant. The Hausman test suggests that the within-groups method is the most suitable one.

As shown in the first column of Table 3, financial leverage has a negative and significant influence on managers' accounting decisions (in brackets we report the p-value for the significance of the coefficient). This result, quite robust to different specifications of the model, corroborates our first hypothesis. Then, and consistent with previous research, our results support the idea that corporate debt plays a role as a mechanism of managerial discipline.

After having tested the broad effect of debt on managerial discretion, we analyze the impact of debt ownership structure. The typology of creditors allows us to distinguish between banking debt and public debt. Columns (2) and (3) in Table 3 shed some light on the issue by showing the positive relation between AA and banking debt. Both BDTD and BDTA have a significant and positive influence on abnormal accruals. Therefore, and consistent with the theoretical framework, banking debt encourages managers to discretionarily modify financial statements and roll debt over in more favorable conditions (Hege, 2003). This effect does not depend on the amount of banking debt and is compatible with the disciplinary role of total debt.

Table 2. Abnormal accruals estimation

Estimated coefficients and (p-value) of the estimation of equation [1]. The first column is the Jones model and the second column is the modified Jones model. In both cases the dependent variable is TA. ΔTURN is the variation of turnover, and PPE stands for Plant, Property and Equipment. F-statistics is a test of joint significance for all the variables. The Hausman test suggests the kind of estimation to use by testing the null hypothesis for a lack of correlation between the random-error and the fixed-effects term: within-groups estimation when the Hausman test is significant, and random estimation otherwise. *** for 99% confidence level and ** for 95% confidence level.

	(1)		(2)	
Intercept	0.0350	**	0.0239	
	(0.0360)		(0.1120)	
ΔTURN	0.3242	***		
	(0.0000)			
ΔTURNm			-0.0097	**
			(0.0130)	
PPE	-0.2019	***	-0.1099	***
	(0.0000)		(0.0020)	
F-stat	1.76	***	2.38	
	(0.0000)		(0.0000)	
Hausman test	11.35	***	1.26	
	(0.003)		(0.533)	
Adj.-R^2	0.3399		0.1120	
Observations	1279		1209	

Table 3. Regression results

Estimated coefficients and (p-value) of the within-groups estimation of equation [3]. The dependent variable is AA. The independent variables are total debt over total assets (TDTA), banking debt over total assets (BDTA), banking debt over total debt (BDTD), long term banking debt over total debt (LTDTD), public debt over total assets (PDTA), public debt over total debt (PDTD), the ownership held by the five largest shareholders (C5), the log of total assets (LNTAB) and the difference between a firm's ROA and the average ROA of the industry (DIFROA). P-value is the threshold of significance for each coefficient. F-stat is a test for the joint significance of all the coefficients. The Hausman test allows testing of the null hypothesis for a lack of correlation between the random-error and the fixed-effects term and, consequently, suggests the kind of panel data estimation. *** for 99% confidence level, ** for 95% confidence level and * for 90% confidence level.

	(1)		(2)		(3)		(4)		(5)		(6)	
Intercept	-0.6122	***	-0.6415	***	-0.6021	***	-0.6120	***	-0.5976	***	-0.6057	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
TDTA	-0.1107	***	-0.1036	***	-0.1536	***	-0.1106	***	-0.0938	**		
	(0.0030)		(0.0060)		(0.0000)		(0.0030)		(0.0170)			
BDTD			0.0416	**							0.0513	***
			(0.0300)								(0.0100)	
BDTA					0.1293	**						
					(0.0320)							
PDTD							-0.0161					
							(0.7630)					
PDTA									-0.2127			
									(0.1740)			
LTDTD											-0.0200	
											(0.3590)	
C5	-0.0871	**	-0.0723	*	-0.0745	*	-0.0967	**	-0.0889	**	-0.0801	*
	(0.0420)		(0.0850)		(0.0910)		(0.0450)		(0.0470)		(0.0680)	
LNTAB	0.06827	***	0.0681	***	0.0657	***	0.0682	***	0.0664	***	0.0620	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
DIFROA	0.00244		0.0009		-0.0074		0.0035		0.0083		-0.0812	
	(0.9750)		(0.9910)		(0.9230)		(0.9640)		(0.9140)		(0.2540)	
Adj.-R^2	0.0319		0.0361		0.0360		0.0320		0.0336		0.0300	
Hausman test	31.03	***	28.830	***	26.000	***	31.790	***	28.090	***	23.590	***
	(0.0000)		(0.0000)		(0.0001)		(0.0000)		(0.0000)		(0.0003)	
Test F	2.14	***	2.0900	***	2.0700	***	2.1300	***	2.1300	***	2.0400	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
nº obs	1279		1279		1279		1279		1279		1279	

We have also studied the influence of public debt. As reported in columns (4) and (5) in Table 3, public debt (either as PDTD or PDTA) does not have any significant effect on the discretionary accounting decisions of managers. This result can be explained on the basis of the stricter agreements and the less frequent renovation of public debt relative to arm's length debt.

As a partial conclusion, corporate debt reduces managers' discretionary accounting decisions, but this effect is conditional upon the kind of debt. While banking debt could foster some managerial practices

in detriment of shareholders' interests, public debt does not seem to be affected by such a problem.

In relation to this problem, we should test if the maturity of debt can play any relevant role. Short-term banking debt requires rolling over more often than long term debt, hence we could expect a different influence of short term debt *vs.* long term debt. This is why column (6) in Table 3 includes LTDTD, the proportion of long term banking debt over total debt. The estimated coefficient is not significant and does not lend support to this hypothesis.

There are some other results that, although not the core of this paper, are related to previous research and concern the role of the control variables (Azofra *et al.*, 2003). Firstly, as regards equity ownership structure, ownership concentration reduces managerial discretion by giving the shareholders incentives to monitor managers (Shleifer and Vishny, 1986). Thus, C5 has a negative and significant relation with AA. Although it requires some caveats, this result supports ownership concentration as a mechanism of corporate governance.

Regarding the size of the firm, there is a clear positive relation between a firm's size and managerial accounting discretion. This link can be explained by the more prominent agency conflicts in large firms, and the greater difficulty of monitoring managers in these kinds of firms (Ozkan, 2000). Although the size of the firm could mask the influence of the ownership structure, there is a close and opposite link between them, and the joint inclusion of both variables does not reduce their statistical signification. Our last control variable is related to ROA and does not seem to have any significant impact on accounting discretion, although it was included for the sake of control.

Let us finish the presentation of our results with some comments about their robustness. We would like to test the sensitivity of the results to new specifications of managerial accounting discretion or to new measures of the variables in order to know whether our results can be generalized to a broader context. This is why we have run a number of additional estimations, the main results of which are reported in Table 4.

As shown in the first column of Table 3, financial leverage has a negative and significant influence on managers' accounting decisions (in brackets we report the p-value for the significance of the coefficient). This result, quite robust to different specifications of the model, corroborates our first hypothesis. Then, and consistent with previous research, our results support the idea that corporate debt plays a role as a mechanism of managerial discipline.

Columns (1) and (2) present the results when a firm's size is measured by the log of market value of total assets (LNTAM) and by the log of the firm's turnover (LNSALES). Basically, the results concerning capital structure variables remained unaffected. We have also tested the robustness of our estimations to the measures of a firm's performance by using ROA instead of DIFROA (Column (3) in Table 4). Since the results are consistent with previous ones, they do not require further comments. Likewise, we have used the ownership held by the largest shareholder (C1) instead of C5 and there are no significant changes in the results (column (4) in Table 4).

Column (5) in Table 4 shows a new estimation of total accruals. Instead of using the Jones model of accruals, we have used the modified version as proposed by DeAngelo (1986). In this model, abnormal accruals in any given year are the total accruals of the previous year. This new way of measuring managerial discretion does not have any notable effect on the estimated coefficients.

We have also tested another definition of abnormal accruals according to the modified Jones model (Dechow *et al.*, 1995). This model is suitable when managerial discretion is exercised over sales and therefore the firm's turnover is adjusted with the variation of receivables due to sales (□TURNm). Column (2) in Table 2 shows the results for the new estimation of equation [1] with the new variable[9]. Based on the error of this regression, we have run the model shown in column (6) in Table 4. The results are consistent with previous ones, corroborating the disciplinary role of debt and the positive relation between managerial accounting discretion and banking debt. Our final sensitivity analysis is a model in which we identify abnormal accruals with total accruals. The results of this new model are shown in Table 5 and are coherent with previous ones: total debt reduces managers' discretionary decisions and banking debt is positively related with managerial discretion.

5. Concluding remarks

A separation between ownership and control gives rise to a conflict of interest between shareholders and managers. When this is the case, the managers of the firm can run the firm pursuing their own interests in detriment of its corporate value. This divergence of interests may lead to the so-called earnings management, or the manipulation of financial statements to disclose information about the firm's performance in the managers' interest. Among the possible ways to manage earnings we focus on accruals, some accounting mechanisms to avoid the mismatch among payments, money collections, income and expenses.

Accruals have a non-discretionary component, aimed to improve the informational content of financial statements, and a discretionary (abnormal) component as a result of the discretionary accounting

[9] The most remarkable difference between columns (1) and (2) in Table 2 is the sign of ΔTURN. As we explained, there are reasons for both a positive and a negative relation between total accruals and sales, especially when sales are adjusted by receivables.

decisions of managers. Consequently, the abnormal component of accruals is a key factor in assessing the efficiency of corporate mechanisms in reducing managerial discretion. Our paper focuses on one of these mechanisms- corporate debt- and analyzes the impact of debt ownership structure on the discretionary accounting decisions of managers.

Based on a dichotomous classification of debt into bank debt and public debt, we have studied the role played by both sorts of debt in corporate governance. Our results show that corporate debt plays a disciplinary role on managers, so that a negative relation between abnormal accruals and financial leverage is found. However, these two kinds of debt do not have the same impact. Bank debt seems to be positively related to managerial discretion due to the characteristics of banks as creditors, the more likely roll over of bank debt and the incentives of managers to earn a reputation through a longer relationship with the bank. On the other hand, public debt has no significant influence on earnings management. This effect is not conditional upon the term structure of the debt.

Along with debt ownership structure, we have also tested the influence of some other mechanisms of corporate control. We find that managerial accounting discretion increases with a firm's size and that ownership concentration is an efficient way of monitoring managers. These results are robust to different ways of measuring earnings management and to alternative definitions of debt ownership structure, firm size and firm performance.

There are some directions for future research. For example, earnings management could be complemented with other measures of managerial discretion or with a more detailed description of ownership structure. In any case, our results are coherent with previous research and show the efficiency of corporate control mechanisms in improving firms' performance and value.

Table 4. Sensitivity analysis (I)

Estimated coefficients and (p-value) of the within-groups estimation of equation [3]. The dependent variable is AA. The independent variables are total debt over total assets (TDTA), banking debt over total assets (BDTA), banking debt over total debt (BDTD), the ownership held by the largest and the five largest shareholders (C1 and C5), the log of total assets (LNTAB), the log of firm's market value (LNTAM), the log of firm's turnover (LNV), the return on assets (ROA) and the difference between firm's ROA and the average ROA of the industry (DIFROA). p-value is the threshold of significance for each coefficient. F-stat is a test for the joint significance of all the coefficients. The Hausman test allows testing of the null hypothesis for a lack of correlation between the random-error and the fixed-effects term and, consequently, suggests the kind of panel data methodology.*** for 99% confidence level, ** for 95% confidence level and * for 90% confidence level.

	(1)		(2)		(3)		(4)		(5)		(6)	
Intercept	0.0399		-0.2399	**	-0.6408	***	-0.6561	***	-1.2125	***	-1.6440	***
	(0.3640)		(0.0290)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
TDTA	-0.0636	*	-0.0891	**	-0.0979	***	-0.1049	***	-0.0201		-0.1845	***
	(0.0860)		(0.0200)		(0.0080)		(0.0050)		(0.6800)		(0.0000)	
BDTD	0.0426	**	0.0469	**	0.0426	**	0.0431	**	0.0599	**	0.0571	**
	(0.0300)		(0.0160)		(0.0270)		(0.0250)		(0.0190)		(0.0180)	
C5	-0.0601		-0.0623		-0.0745	*			-0.0956		-0.0678	
	(0.1550)		(0.1450)		(0.0870)				(0.1250)		(0.3010)	
C1							-0.0590					
							(0.3080)					
ROA					0.0308							
					(0.6650)							
LNTAB					(0.0677)	***	(0.0669)	***	(0.1193)	***	(0.1689)	***
					(0.0000)		(0.0000)		(0.0000)		(0.0000)	
LNTAM			0.0276	***								
			(0.0090)									
LNSALES	-0.0006											
	(0.8870)											
DIFROA	-0.0045		0.0114				0.0025		-0.1241		0.0342	
	(0.9540)		(0.8830)				(0.9740)		(0.2000)		(0.7250)	
Adj.-R^2	0.0116		0.0148		0.0363		0.0344		0.0561		0.0941	
Hausman test	6.64	***	10.95	***	30.08	***	26.87	***	34.01	***	28.83	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
F-statistics	1.9200	***	1.9600	***	2.0700	***	2.0700	***	2.2500	***	2.3800	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
Observations	1279		1279		1279		1279		1085		1205	

Table 5. Sensitivity analysis (II)

Estimated coefficients and (p-value) of the within-groups estimation of equation [3]. The dependent variable is TA. The independent variables are total debt to total assets ratio (TDTA), banking debt over total assets (BDTA), banking debt over total debt (BDTD), long term banking debt over total debt (LTDTD), public debt over total assets (PDTA), public debt over total debt (PDTD), the ownership held by the five largest shareholders (C5), the log of total assets (LNTAB) and the difference between firm's ROA and the average ROA of the industry (DIFROA). P-value is the threshold of significance for each coefficient. F-stat is a test for the joint significance of all the coefficients. The Hausman test allows testing of the null hypothesis for a lack of correlation between the random-error and the fixed-effects term and, consequently, suggests the kind of panel data methodology. *** for 99% confidence level, ** for 95% confidence level and * for 90% confidence level.

	(1)		(2)		(3)		(4)		(5)		(6)	
Intercept	-1.3427	***	-0.9750	***	-1.3357	***	-1.3406	***	-1.3283	***	-1.3235	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
TDTA	-0.1492	***	-0.1304	***	-0.1784	***	-0.1486	***	-0.1326	**		
	(0.0010)		(0.0000)		(0.0000)		(0.0010)		(0.0050)			
BDTD			0.0424	**							0.0552	***
			(0.0210)								(0.0220)	
BDTA					0.0880							
					(0.2270)							
PDTD							-0.1121					
							(0.0800)					
PDTA									-0.2090			
									(0.2680)			
LTDTD											-0.0300	
											(0.2520)	
C5	-0.0987	*	-0. 0865	*	-0.0943	*	-0.0821	**	-0. 0909	**	-0.0876	*
	(0.0650)		(0.0360)		(0.1000)		(0.0860)		(0.0700)		(0.0870)	
LNTAB	0.1397	***	0.1000	***	0.1379	***	0.1394	***	0.1379	***	0.1314	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
DIFROA	-0.0251		-0.0399		-0.0318		-0.0179		-0.0193		-0.1395	
	(0.7860)		(0.5870)		(0.7310)		(0.8470)		(0.8350)		(0.1040)	
Adj.-R^2	0.0731		0.0705		0.0743		0.0757		0.0741		0.0684	
Hausman test	91.50	***	84.48	***	91.83	***	89.04	***	83.50	***	73.16	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0003)	
F-statistics	2.31	***	1.89	***	2.31	***	2.30	***	2.25	***	2.28	***
	(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)	
Observations	1274		1272		1274		1274		1274		1274	

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