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Impacts of Earnings Management and Institutional-financial Development on Capital Structure Choice in Latin-American Markets

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ABSTRACT

We analyzed the effects of accruals-based earnings management practices and institutional-financial qualities of countries on the financing policy of Latin American companies. We used panel data on a sample of 983 companies between 1995 and 2017. Our results indicate that positive discretionary accruals reduce leverage and increase debt maturity. These findings suggest that accounting manipulation activities favor managerial entrenchment and seek to avoid external supervision and liquidity risk. The institutional and financial development of countries promotes leverage and long-term debt issuances. However, its effects do not mitigate the impact of accounting manipulation activities on this policy. The IFRS adoption is an effective means of control that attenuates the effects of earnings management on capital structure. These results are relevant for investors and policymakers due to their implications for firms' corporate governance and financial policy design.

KEYWORDS

Capital structure; earnings management; institutional environment; financial development

JEL

G32; G33; G38

1. Introduction

Capital structure is a relevant topic in the field of corporate finance. Agency conflicts between insiders and outsiders, and the information asymmetry between them, positions accruals-based earnings management (EM) practices as a key factor in capital structure. This fact is more relevant for emerging markets such as Latin America. This market is characterized by firms issuing less corporate debt in relation to other emerging countries (Booth et al. 2001) and by low financial and institutional development (Muñoz et al. 2021b). Although these features encourage more aggressive EM practices compared to other similar markets (Leuz, Nanda, and Wysocki 2003), their impacts on firms' capital structure have not yet been researched. In addition, empirical evidence has also established that factors such as profitability, sales and firm size are determinants of the capital structure (Ramli, Latan, and Solovida 2019). As these factors depend on the quality of the financial information disclosed by companies, we present another reason why EM would determine the financing structure.

The empirical and theoretical literature has corroborated the relationship between EM and firms' capital structure. Nevertheless, there are limitations associated with the direction of this relationship in two aspects. First, most studies have shown that firms' capital structure affects EM practices. Although there is no clear consensus on the nature of the relationship, several studies conducted in Anglo-Saxon markets propose that companies with higher leverage develop positive discretionary accruals to increase subsequent indebtedness under more flexible conditions and mitigate the default risk (An, Li, and Yu 2016; Sweeney 1994). Others support a contrary view, asserting

that less-leveraged firms artificially adjust their earnings upward to weaken the control of corporate governments and create more spaces for wealth expropriation (Ashbaugh, LaFond, and Mayhew 2003). This evidence reveals that debt is a key factor on EM practices. Even similar empirical arguments reveal that the debt maturity would also affect these accounting manipulation activities (Muñoz et al. 2021b). However, it is possible that the causal relationship also goes in the opposite direction. Then, managers could use these practices as a strategy aimed to altering the capital structure and particularly weakening corporate governance and its controlling effect on management (Okyere, Fiador, and Sarpong-Kumankoma 2021; Sercu, Vander-Bauwhede, and Willekens 2006). The empirical evidence is scarcer in this topic, and it has not been researched in Latin America, and its scope would be relevant for firms, entrepreneurs and policymakers because of the idiosyncratic traits of the region.

Second, wide evidence has highlighted that greater institutional and financial development promotes corporate leverage and long-term debt by reducing information asymmetries in a systematic way (Kirch and Soares 2012). Along the same lines, the adoption of IFRS can also promote indebtedness and its maturity by imposing stricter and more transparent accounting criteria (Khurana and Wang 2015). However, the institutional and financial environment, as well as IFRS, can affect EM practices, and thus can generate an indirect channel that affects the firms' capital structure. This fact remains an empirical gap in the literature and would also have relevant systemic implications for policymakers and corporate governance of the firms.

Our article addresses these empirical gaps for a sample of 983 non-financial Latin American companies between 1995 and 2017. The main contribution of our article focuses on studying the impact of EM practices on the capital structure decision, as well as the indirect channel through which the institutional and financial development and the IFRS adoption condition the effect of EM on such structure. Methodologically, it also provides a deeper analysis of the impact of EM on the capital structure by simultaneously and dynamically modeling the leverage and debt maturity (Barclay, Marx, and Smith 2003; Kirch and Soares 2012). Our main results reveal that firms develop positive discretionary accruals to reduce leverage and increase debt maturity to avoid external monitoring by investors, entrench corporate management and reduce the liquidity risk. The IFRS adoption reverses the EM effect on leverage and intensifies its positive effect on debt maturity. Institutional and financial development facilitates firms' access to corporate debt market and long-term debt issuance, allowing them to mitigate financial constraints. However, the indirect channel indicates that institutional and financial development are not capable of mitigating the impact of EM on the capital structure. These novel results are empirically relevant for investors and firms, as they allow them to infer the firms' degree of accounting manipulation based on their capital structure and strengthen corporate governments. For regulators, these results are relevant for the design of policies aimed at institutional and financial strengthening.

This article is structured as follows. After this introduction, [section 2](#) presents a literature review regarding the effects of EM practices and institutional and financial development on capital structure choice. This section also presents the research hypotheses. [Section 3](#) indicates the data and methodologies, while [section 4](#) reveals the results. Finally, [section 5](#) discusses the conclusions and their implications.

2. Theoretical Framework and Hypothesis

2.1. Effects of EM Practices and IFRS Adoption on Capital Structure

Capital structure is a widely discussed subject in modern corporate finance. Agency conflicts and information asymmetries between insiders and outsiders would determine the firms' capital structure (Myers and Majluf 1984). This context favors EM practices from managers. EM corresponds to accounting manipulation activities that managers develop motivated by maintaining firm' private control, expropriating wealth from investors, and avoiding the costs of default among other reasons (Gopalan and Jayaraman 2012; Muñoz et al. 2021b). According to agency and asymmetric information perspective, EM could explain the firms' capital structure.

The relationship between EM and leverage is usually supported by various studies that have confronted the perspectives of agency and financial distress theories. Despite that these findings have confirmed the relationship between leverage and EM, their results have not yet been conclusive. Based on the financial distress approach, some empirical evidence has showed that firms that develop positive discretionary accruals have higher leverage. Sercu, Vander-Bauwhede, and Willekens (2006) analyzed 583 Belgian firms and showed that firms develop positive discretionary accruals in order to obtain more debt. This fact is an indicator of their financial difficulties. An, Li, and Yu (2016) conducted a larger study for 37 countries and also supported this relationship, mainly in firms with high levels of indebtedness. Other researchers also support the positive relationship between these variables, without explicitly analyzing the impact of EM on leverage. Sweeney (1994) concluded that the firms of the Anglo-Saxon markets that issued more debt, increased abnormally their profits even years before the issuance. Gupta, Khurana, and Pereira (2008) warn that these policies could have side effects because they would delay the symptoms of financial difficulties and increase uncertainty for the markets.

Other studies based on agency theory indicate a different viewpoint, supporting a negative relationship between EM and leverage. Mainly in firms with low leverage, this relationship implies that managers develop positive discretionary accruals to entrench corporate management (Ashbaugh, LaFond, and Mayhew 2003). Ahn (2004) argued that managers develop accounting manipulation activities in order to reduce leverage, and thereby weaken external monitoring on their decisions and facilitate wealth expropriation. Vakilifard and Mortazavi (2016) also describe this negative relationship and highlight the role of debt control over negative discretionary accrual practices.

In emerging markets, the empirical evidence has been scarce. Chen, Jevons, and Li (2008) showed that high-leveraged Chinese firms artificially increased their profits to increase their indebtedness. According to the authors, Chinese companies are characterized by high leverage and high state participation in their ownership structure, and these practices allowed them to access local subsidies and avoid central government regulations. Nagar and Sen (2016) corroborated this vision for Indian companies and added that this market has a weak institutional environment that affect this relationship. For Latin American markets, there is no existing empirical evidence in this topic. These markets are characterized by high ownership concentration, low legal protection for investors and low levels of institutional and financial development also would facilitate the wealth expropriation through more aggressive EM practices (Leuz, Nanda, and Wysocki 2003). Even these accounting manipulation activities could explain to the lower debt issued by Latin American firms in comparison to other emerging markets (Booth et al. 2001). Empirically, some studies have focused on the impact of leverage on EM, ignoring the causal relationship that quantifies the potential effect of these accounting manipulation activities on the debt ratio. For example, Saona and Muro (2018) suggested a positive relationship between these variables, while Muñoz et al. (2021b) argued that this relationship would not be consistent with the features of these markets and demonstrated a negative relationship between them. Ignoring this last direction of causality would imply that managers deliberately could use EM practices as a strategy aimed at modifying leverage and its corporate control effect on managerial management. This strategy would be consistent with the aforementioned features of Latin American markets. These arguments led us to believe that regional firms use EM to reduce their leverage ratio and entrench corporate management. Therefore, we formulated this hypothesis:

H1: Positive discretionary accruals have a negative effect on firms' leverage.

The empirical evidence that has analyzed the relationship between EM and debt maturity is also scarce, and it has also contrasted the approaches proposed by agency and financial distress theories. Based on agency and asymmetric information theories, seminal works have argued that short-term debt intensifies the controlling effect over corporate management, mitigates managers' opportunistic behavior and controls underinvestment problems (Myers and Majluf 1984). For these arguments EM practices could be relevant for debt maturity decision-making. Chou et al. (2011) analyzed 222 US

companies and showed that firms that developed positive discretionary accruals had issued long-term debt. The authors pointed out that managers who aggressively committed to these practices had tried to hide the firms' true performance and avoid external monitoring. According to Harford, Li, and Zhao (2008), the debt-term increase weakens its control effect, thereby favoring the managers' opportunistic behavior, higher agency costs and the entrenchment of corporate management. Despite this, a collateral benefit of long-term debt is the mitigation of liquidity risk (Johnson 2003).

Other studies based on financial distress theory have described a negative relationship between EM and debt maturity. Gupta, Khurana, and Pereira (2008) supported this relationship for firms from 33 countries. The authors argued that firms with high leverage manipulate their profits upwards in order to avoid defaulting on their debt contracts. In this context, short-term debt issuance is a credible signal for the market and could allow the firm to hide financial difficulties. Fung and Goodwin (2013) corroborated that a debt maturity reduction based on EM delays the markets' perception about firms' financial difficulties symptoms. However, this delay could worsen the liquidity risk of the firm (Lemma, Negash, and Mlilo 2013).

Recently, Muñoz et al. (2021b) showed that the relationship between debt maturity and EM is negative for Latin American firms. However, it is important to highlight two aspects regarding the previously discussed evidence. From a relational point of view, several studies have focused on the impact of debt maturity on EM (Chou et al. 2011; Fung and Goodwin 2013; Harford, Li, and Zhao 2008; Muñoz et al. 2021b), neglecting the possibility that causality direction could be the opposite. This fact would suggest that firms use these accounting manipulation practices to alter the debt maturity discretionally and opportunistically. From a methodological point of view, Barclay, Marx, and Smith (2003) and Kirch and Soares (2012) suggested that relationship between leverage and debt maturity is simultaneous. However, the most of the studies that have analyzed the relationship between EM and capital structure have ignored the in their analyzes. This fact biases the findings only to the debt maturity in the capital structure decision.

Therefore, we formulated our second hypothesis to cover the causal and methodological limitations of the previous studies. This hypothesis is supported on the information asymmetries and agency conflicts that characterize Latin American markets. We believe that firms that adjust their profits downward to expropriate wealth, issue more short-term debt. Likewise, they would issue more long-term debt if they adjust their earnings upwards to hide firm performance and avoid external supervision. The second hypothesis is:

H2: Positive discretionary accruals have a positive effect on firms' debt maturity.

The adoption of International Financial Reporting Standards (IFRS) is also relevant to companies' capital structure, although its effects could involve two possible channels. On one hand, the IFRS could generate a direct channel that facilitates debt issuance and more flexible terms for doing so because impose more transparent and conservative accounting criteria that reduce information asymmetries. Khurana and Wang (2015) argued that IFRS adoption increases leverage and the debt-term. The authors added that IFRS replaces the short-term debt controlling effect, thereby mitigating agency costs and information asymmetries. On the other hand, IFRS have an indirect channel because condition the EM practices effect on firms' capital structure. IFRS impose more stringent accounting criteria that mitigate EM practices (Muñoz et al. 2021b). This fact improves the quality of financial information and limits the discretionary use of accounting criteria especially in countries with significant differences between IFRS and local accounting criteria and lower protection to investors' rights (Lemma, Negash, and Mlilo 2013; Leuz, Nanda, and Wysocki 2003). In Latin American markets, several studies have confirmed that firms develop more EM activities in relation to developed markets (Leuz, Nanda, and Wysocki 2003). Given this finding, IFRS would have a regulatory role that mitigates the impact of EM activities on capital structure (Saona and Muro 2018). The qualities of these markets, added to the regulatory differences that separate them from developed markets, would transform IFRS into a means that promote the

indebtedness and long-term debt as well as mitigating agency costs and information asymmetries. These arguments led us to formulate the following hypotheses to analyze the two possible channels of IFRS on capital structure decision:

H3: IFRS have a positive effect on leverage and debt maturity.

H4: Since IFRS adoption, EM practices have a positive effect on leverage and debt maturity.

2.2. Effects of Institutional and Financial Development on Capital Structure

The country's institutional and financial development is a systematic quality that could affect capital structure decision-making. The institutional development involves various aspects associated with public institutions functions, a more democratic and stable political environment, higher control of corruption, the implementation of regulations to promote the disclosure of reliable information and investor rights protection. These conditions reduce the information asymmetries and systemic risk for investors (Roe and Siegel 2011). On the other hand, financial development is related to the different components of countries' financial systems such as capital markets, banks, or pension funds (Muñoz et al. 2021b; Saona and Muro 2018).

A wide variety of empirical studies have shown that institutional and financial development has a direct channel through which facilitates the leverage and issuance of long-term debt by firms. On the one hand, institutional development could facilitate companies' access to higher indebtedness and more flexible maturity conditions. Alves and Francisco (2015), in a study applied to firms from 43 countries, demonstrated that institutional development promotes leverage and long-term debt. An, Li, and Yu (2016) add that this relationship is due to the fact that institutional development complements the debt controlling effect and thus alleviates agency costs. On the other hand, Demirgüç-Kunt and Maksimovic (1999) pointed out that financial development increases leverage and corporate debt maturity. Later studies have added that this relationship is due to the fact that countries' financial development degree reduces information asymmetries and the firms' financial constraints, allowing them access to diverse financing sources, such as corporate debt (An, Li, and Yu 2016; Alves and Francisco 2015).

In Latin American markets, the empirical evidence has corroborated the direct channel of the institutional and financial development through which promotes leverage and long-term debt (Kirch and Soares 2012; Tresierra and Reyes 2018). However, institutional, and financial development could have an indirect channel through which they condition the impact of EM practices on the firms' capital structure, and that has not been studied by previous research. This moderating effect is based on the fact that institutional and financial development limits the managers' opportunistic behavior and mitigates EM practices (Lemma, Negash, and Mlilo 2013; Leuz, Nanda, and Wysocki 2003; Muñoz et al. 2021b; Saona and Muro 2018). Latin American markets have institutional and financial deficiencies that would facilitate these practices. The low levels of development of their financial markets, governments affected by corruption and episodes of political instability and regulations that encourage wealth expropriation from investors are some of these deficiencies. In the corporate context, these conditions led us to believe that the EM effect on capital structure would dominate over the impact of the countries' institutional and financial characteristics. This fact is a still unanswered question for the Latin American markets, and therefore we formulated the following hypotheses:

H5a: Even when countries have high levels of institutional development, EM has a negative effect on leverage.

H5b: Even when countries have high levels of institutional development, EM has a positive effect on debt maturity.

H6a: Even when countries have high levels of financial development, EM has a negative effect on leverage.

H6b: Even when countries have high levels of financial development, EM has a positive effect on debt maturity.

3. Data and Methods

3.1. Data

The data corresponds to 983 non-financial firms belonging to the markets of Argentina, Brazil, Chile, Colombia, Mexico, and Peru. The firms' financial information was compiled from the Economática®, while the institutional and financial qualities of the countries were obtained from the World Bank. These data were organized as panel data for the annual period 1995–2017.

The dependent variable is the firms' capital structure. This variable was measured through leverage (LEV), as the debt to total assets ratio, and debt maturity (MAT), as the long-term debt to total debt ratio. These measures have been used by several empirical studies associated with the analysis of firms' financing policy (Fung and Goodwin 2013; Kirch and Soares 2012).

Earnings management variables were quantified in two ways. The *EM1* variable is the measure proposed by Dechow, Sloan, and Sweeney (1995):

$$\frac{TA_{it}}{TAS_{it-1}} = \beta_0 + \beta_1 \left(\frac{1}{TAS_{it-1}} \right) + \beta_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TAS_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{TAS_{it-1}} \right) + \varepsilon_{it} \quad (1)$$

Where the dependent variable corresponds to total accruals (TA_{it}) to total assets in $t-1$ (TAS_{it-1}) ratio. Total accruals are the difference between operating income and operating cash flow. The variable ΔREC_{it} is the revenue variation between t and $t-1$ periods, η_i is the accounts receivable change, and PPE_{it} corresponds to properties, plants and equipment.

The variable *EM2* corresponds to the measure proposed by Kothari, Leone, and Wasley (2005), which includes the return on assets (ROA_{it}) in the modified Jones model:

$$\frac{TA_{it}}{TAS_{it-1}} = \beta_0 + \beta_1 \left(\frac{1}{TAS_{it-1}} \right) + \beta_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TAS_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{TAS_{it-1}} \right) + \beta_4 ROA_{it} + \varepsilon_{it} \quad (2)$$

Models (1) and (2) were rescaled by TAS_{it-1} in order to control the heteroskedasticity problem. The residuals of these regressions represent the discretionary component of the total accruals (TA_{it}/TAS_{it-1}) associated with EM practices. These measures are similar because the manipulation originates in operational accounts. These measurements have been widely used in other empirical studies about EM (Muñoz et al. 2021b; Saona and Muro 2018).

The institutional environment (*IE*) development was measured by corruption control (*COR*), political stability (*PS*), government effectiveness (*GOV*), quality of regulation (*REG*), rule of law (*LAW*) and accountability (*ACC*). These measurements oscillate between -2.58 and $+2.58$, where positive (negative) values indicate high (low) institutional development for the respective indicator (Saona and Muro 2018; Tresierra and Reyes 2018). These indicators evaluate the public-political and private-regulatory spheres of countries' institutional environment.

The countries' financial development was measured by the degree of development of bond (*BOND*), stock (*STOCK*), banking (*BANK*) and pension fund (*PENS*) markets as percentage of GDP. These measures cover different markets that belong to countries' financial systems and have been suggested by other works (Saona and Muro 2018; Tresierra and Reyes 2018).

Finally, we used control variables such as the percentage of controlling shareholder ownership (P1), the sum from the second to fifth largest shareholders as blockholder ownership (BLOCK), the Tobin's Q as growth opportunities (GO) proxy, long-term assets to total assets ratio as tangibility (TANG), natural logarithm of total assets as firm size (SIZE), assets turnover ratio as agency costs (AC) measure and return on assets as profitability (PROF) measure.

3.2. Econometric Methodology

In order to analyze the effect of EM practices, the adoption IFRS and its moderating impact on the effect of EM practices on firms' capital structure, we used these empirical models:

$$LEV_{it} = \beta_0 + \alpha_1 LEV_{it-1} + \alpha_2 MAT_{it} + \beta_1 EM_{it} + \beta_2 (EM_{it} \times IFRS) + \beta_3 IFRS + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (3)$$

$$MAT_{it} = \beta_0 + \alpha_1 MAT_{it-1} + \alpha_2 LEV_{it} + \beta_1 EM_{it} + \beta_2 (EM_{it} \times IFRS) + \beta_3 IFRS + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (4)$$

Where leverage (LEV_{it}) and debt maturity (MAT_{it}) are the dependent variables for models (3) and (4), which represent the capital structure for company i in period t . Both variables are endogenous due to simultaneity of the capital structure decision (Barclay, Marx, and Smith 2003; Kirch and Soares 2012). The variable EM_{it} represents the earnings management measured on their original value because we are interested on analyzing the effect of accounting manipulation direction on capital structure. These models include the IFRS dummy variable and the interactive variable ($EM_{it} \times IFRS$), which measures the effect of EM since IFRS adoption.

In order to analyze the impact of institutional development and how this factor conditions the effects of EM practices on capital structure, we estimated these models:

$$LEV_{it} = \beta_0 + \alpha_1 LEV_{it-1} + \alpha_2 MAT_{it} + \beta_1 IE_{jt} + \beta_2 (EM_{it} \times HIQ) + \beta_3 EM_{it} + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (5)$$

$$MAT_{it} = \beta_0 + \alpha_1 MAT_{it-1} + \alpha_2 LEV_{it} + \beta_1 IE_{jt} + \beta_2 (EM_{it} \times HIQ) + \beta_3 EM_{it} + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (6)$$

Where leverage (LEV_{it}) and debt maturity (MAT_{it}) are the dependent variables for models (5) and (6), which are endogenous and represent the capital structure of company i in period t . These models include the institutional environment variable (IE_{jt}) of country j in period t , which is measured by corruption control (COR), political stability (PS), government effectiveness (GOV), quality of regulation (REG), rule of law (LAW) and accountability (ACC). Also, we included the interactive variable ($EM_{it} \times HIQ$) that measures the effect of EM practices in countries with high institutional development, where HIQ is a dummy variable that adopts a value of 1 when the value of each institutional development indicator is positive and 0 otherwise. We used this dummy variable to mitigate the multicollinearity problem, mainly because IE_{jt} indicators have lower time variability. In addition, we used discretionary accruals proposed by Kothari, Leone, and Wasley (2005) as EM measure.

Finally, in order to determine the effect of financial development and how this factor conditions the effect of EM on capital structure, we estimated the following models:

$$LEV_{it} = \beta_0 + \alpha_1 LEV_{it-1} + \alpha_2 MAT_{it} + \beta_1 FD_{jt} + \beta_2 (EM_{it} \times HFD) + \beta_3 EM_{it} + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (7)$$

$$MAT_{it} = \beta_0 + \alpha_1 MAT_{it-1} + \alpha_2 LEV_{it} + \beta_1 FD_{jt} + \beta_2 (EM_{it} \times HFD) + \beta_3 EM_{it} + \sum_k^K \beta_k X_{kit} + \eta_t + \eta_i + \varepsilon_{it} \quad (8)$$

Where leverage (LEV_{it}) and debt maturity (MAT_{it}) are the dependent variables for models (7) and (8), which are endogenous and represent the capital structure of company i in period t . These models include the financial development variable (FD_{jt}) of country j in period t , which is measured by the degree of development for the bond (*BOND*), stock (*STOCK*), banking (*BANK*) and pension funds (*PENS*) markets. Also was included the interactive variable ($EM_{it} \times HFD$) that measures the effect of EM practices in countries with high levels of financial development, where HFD is a dummy variable that adopts a value of 1 when the country has a financial development level above the regional average of each indicator and 0 otherwise. Similarly, we used this dummy variable to mitigate the multicollinearity problem, mainly because FD_{jt} indicators have lower time variability. We also used the EM measure from Kothari, Leone, and Wasley (2005).

All of these models included individual unobservable effects associated with each firm (η_i) and temporary effects (η_t) linked to each year. In addition, all these models include firms' qualities grouped in the X_{kit} matrix as control variables and the lags LEV_{it-1} and MAT_{it-1} as endogenous dynamic regressors. They also included dummy variables by economic sector to control the heterogeneity within each country. We used the GMM-SYS estimator proposed by Arellano and Bover (1995) to correct the endogeneity problem associated with the lag of the dependent variable and the simultaneous relationship between leverage and debt maturity (Barclay, Marx, and Smith 2003). These endogenous variables were instrumentalized through their lags in $t-2$ and $t-3$ because they are correlated with the endogenous variables, but not with the error term. These models used robust variance to control the heteroskedasticity patterns.

4. Empirical Results

4.1. Sample Description

Table 1 shows the statistical analysis. Latin American companies financed 44.03% of their investments through debt (LEV), which indicate that firms use less debt compared to other emerging markets (Booth et al. 2001). In addition, 48.39% of this debt corresponded to long-term debt (MAT). These characteristics weaken the debt monitoring role, favoring agency conflicts, entrenched and opportunistic behavior by managers. In this context, EM measures revealed that firms practice accounting manipulation activities, mainly positive discretionary accruals.

Institutional qualities show that Latin American markets have significant fragilities in their public-political and private-regulatory environments. The averages figures were close to zero, and we observed common patterns among countries. Corruption control (*COR*) and political stability (*PS*) were the worst evaluated aspects in the public-political sphere with averages of 0.17 and -0.15 , respectively. At the private-regulatory sphere, these markets offer low protection for investors because the rule of law (*LAW*) had the lowest average. The financial development of Latin American markets is low and heterogeneous. The average penetration

Table 1. Descriptive statistics.

Variable	Statistical Summary by country													
	Argentina		Brazil		Chile		Colombia		Mexico		Peru		Full sample	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
<i>Dependent variable: Financing policy</i>														
LEV	35.77	33.93	51.46	23.26	46.75	57.24	39.92	21.27	49.14	31.05	41.14	19.40	44.03	31.03
MAT	53.75	26.86	51.84	27.53	49.98	27.12	39.03	28.62	49.80	24.45	40.50	26.09	48.39	27.43
<i>Earnings management variables</i>														
EM1	0.73	10.36	-0.60	4.20	0.43	0.40	0.34	0.48	0.46	0.43	0.44	0.52	0.30	2.73
EM2	0.03	0.97	-0.09	5.54	0.07	0.25	0.01	0.17	0.10	0.28	0.09	0.21	0.04	1.24
<i>Institutional environment variables</i>														
COR	-0.37	0.12	-0.06	0.16	1.43	0.11	-0.30	0.11	-0.39	0.19	-0.32	0.11	0.17	0.70
PS	-0.08	0.25	-0.14	0.21	0.54	0.22	-1.65	0.39	-0.57	0.26	-0.83	0.26	-0.15	0.54
GOV	-0.07	0.17	-0.08	0.11	1.19	0.08	-0.13	0.14	0.21	0.08	-0.28	0.21	0.21	0.55
REG	-0.57	0.48	0.10	0.17	1.45	0.05	0.19	0.19	0.32	0.10	0.36	0.17	0.42	0.61
LAW	-0.55	0.26	-0.19	0.14	1.30	0.08	-0.49	0.19	-0.48	0.10	-0.59	0.08	0.03	0.71
ACC	0.35	0.07	0.45	0.08	1.02	0.15	-0.20	0.16	0.13	0.12	0.01	0.25	0.47	0.37
<i>Financial development variables</i>														
BOND	0.33	0.16	1.35	0.61	2.22	1.01	0.94	0.77	1.65	0.85	0.92	0.62	1.49	0.90
STOCK	13.42	5.09	34.71	20.45	92.88	22.38	27.13	19.70	27.22	8.33	28.33	16.70	44.75	32.54
BANK	15.82	4.85	48.42	22.96	73.34	21.81	34.67	8.17	21.48	5.33	22.06	6.60	45.48	26.93
PENS	8.49	3.09	13.94	1.72	48.69	12.13	10.05	7.01	7.92	3.36	14.49	5.00	24.79	18.76

Source: Own elaboration.

of the banking (*BANK*) and capital (*STOCK*) markets was the highest, while the bond market (*BOND*) was the smallest. Chile has the highest institutional and financial development in Latin America.

4.2. Effects of Earnings Management and IFRS Adoption on Capital Structure Choice

Table 2 shows the results from models (3) and (4). The GMM-SYS estimators were consistent because the AR1 test indicated the existence of first order autocorrelation, while the AR2 test revealed that there was no second order autocorrelation. The Sargan test indicated that the instruments used were exogenous and that the models were overidentified. The results for models (3) and (4) corroborate the finding that leverage (*LEV*) and debt maturity (*MAT*) are endogenous variables (Barclay, Marx, and Smith 2003; Kirch and Soares 2012). The relationship between both variables was positive and significant, which shows that firms extend the debt-term when they issue debt, mainly to control the liquidity risk (Johnson 2003).

EM practices had significant effects on capital structure. *EM* variable had a negative impact on leverage and a positive impact on debt maturity. These results validated hypotheses H1 and H2, respectively. The firms that manipulated earnings upwards reduced their debt ratio and increased their debt-term to weaken the controlling effect of debt. This strategy allows managers to entrench corporate management, hide the firm's true performance and facilitate the wealth expropriation (Ahn 2004; Chou et al. 2011). Given this relationship, negative discretionary accruals are associated with a higher leverage and a greater short-term debt, which are corporate means to control these practices (Myers and Majluf 1984; Vakilifard and Mortazavi 2016).

The IFRS adoption affected firms' capital structure through two channels. On one hand, the IFRS variable had a positive and significant effect on leverage and debt maturity. These results support the hypothesis H3 and confirm the direct channel through which IFRS affect the firms' capital structure. The IFRS improve the quality of financial information disclosed by companies. Thus, IFRS strengthen the debt control effect and reduce information asymmetries for investors, allowing for borrowing under more

Table 2. Impacts of earnings management and IFRS adoption on capital structure.

Coefficients	Dependent variable: Firm Leverage		Dependent variable: Debt maturity	
	$EM_{it} = EM1$	$EM_{it} = EM2$	$EM_{it} = EM1$	$EM_{it} = EM2$
LEV_{t-1}	0.4518*** (19.49)	0.5319*** (27.84)		
MAT_{t-1}			0.1468*** (5.13)	0.1964*** (6.82)
LEV_{it}			0.1444*** (3.11)	0.1065*** (4.26)
MAT_{it}	0.0927*** (5.15)	0.1036*** (5.29)		
<i>Earnings management and IFRS adoption effects</i>				
EM_{it}	-0.2139*** (-11.73)	-0.3011*** (-13.56)	0.1253*** (5.43)	0.1938*** (7.88)
$EM_{it} \times IFRS$	0.1483*** (4.37)	0.1120*** (2.72)	0.2723*** (2.67)	0.3584*** (3.37)
<i>IFRS</i>	0.3711*** (3.14)	0.3988*** (3.03)	0.1761*** (3.22)	0.1728*** (3.67)
Wald test	802.94***	834.41***	357.04***	348.99***
AR1	-4.23***	-4.35***	-3.84***	-4.03***
AR2	-1.16	-0.98	-0.85	-1.28
Sargan test	38.36	40.47	36.92	45.91

Notes: z-statistics in parenthesis. The firms' qualities such as P1, BLOCK, GO, TANG, SIZE, AC and PROF were included as control variables. These estimations include a constant term, individual and temporary fixed-effects, and dummy variables to control the unobservable heterogeneity across country and economic sector. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Source: Own elaboration.

flexible conditions (Khurana and Wang 2015; Leuz, Nanda, and Waddock 2003). On the other hand, IFRS condition the effect of EM on capital structure. This is the indirect channel. The variable ($EM \times IFRS$) had a positive and significant effect on leverage and debt maturity, which supports hypothesis H4.

4.3. Effect of Institutional and Financial Development on Capital Structure Choice

Table 3 (Panel A) shows the results for model (5), while Table 3 (Panel B) presents the results for model (6). According to AR1 and AR2 autocorrelation tests, the GMM-SYS estimators are consistent, while the Sargan test corroborated the overidentification condition.

According to Table 3, the institutional development had significant effects on capital structure. The variables control of corruption (*COR*), political stability (*PS*), government effectiveness (*GOV*), quality of regulation (*REG*), rule of law (*LAW*) and accountability (*ACC*) had a positive effect on leverage and debt maturity. These results suggest that higher levels of development in the public-political and private-regulatory institutional spheres allow companies to access greater leverage and longer debt-terms. Higher degree of institutional development reduces information asymmetry for investors and improves the systematic protection of their rights (An, Li, and Yu 2016; Alves and Francisco 2015; Kirch and Soares 2012). On the other hand, the interactive variable ($EM \times HIQ$) shows the effect of EM practices in countries with high institutional development. This variable had a negative effect on

Table 3. Impact of institutional environment and EM on capital structure.

Panel A. Dependent variable: Firm Leverage measured by total debt to total assets ratio						
Coefficients	$IE_{jt} = COR$	$IE_{jt} = PS$	$IE_{jt} = GOV$	$IE_{jt} = REG$	$IE_{jt} = LAW$	$IE_{jt} = ACC$
LEV_{t-1}	0.4790*** (19.05)	0.4648*** (14.08)	0.4734*** (14.24)	0.5304*** (21.26)	0.4692*** (14.30)	0.5775*** (23.84)
MAT_{it}	0.0923*** (2.88)	0.1209*** (3.59)	0.0866** (2.48)	0.0991*** (2.66)	0.1096*** (3.26)	0.1364*** (3.35)
<i>Institutional environment and earnings management variables</i>						
IE_{jt}	0.0367* (1.83)	0.0735*** (3.56)	0.0973** (2.37)	0.1589*** (5.41)	0.1307*** (3.58)	0.1629*** (2.64)
$EM_{it} \times HIQ$	-0.1402*** (-3.40)	-0.1059*** (-3.94)	-0.2899*** (-6.74)	-0.2640*** (-20.83)	-0.1405*** (-3.24)	-0.1568*** (-26.57)
EM_{it}	-0.2769*** (-12.43)	-0.2891*** (-13.71)	-0.3091*** (-12.96)	-0.2922*** (-14.48)	-0.2793*** (-13.77)	-0.2974*** (-13.61)
Wald test	494.20***	451.69***	484.21***	499.56***	448.51***	496.93***
AR1	-3.88***	-3.94***	-2.95***	-3.22***	-3.83***	-3.61***
AR2	-0.95	-1.03	-1.36	-1.17	-0.74	-0.98
Sargan test	33.06	35.96	34.72	38.01	39.97	32.69
Panel B. Dependent variable: Debt maturity measured by long-term debt to total debt ratio						
MAT_{t-1}	0.1717** (1.98)	0.1816** (1.99)	0.1646* (1.82)	0.1875** (2.33)	0.1720** (1.98)	0.1838** (2.27)
LEV_{it}	0.0834*** (2.76)	0.0923*** (2.93)	0.1144*** (3.73)	0.0988*** (2.73)	0.0880** (2.47)	0.0993*** (2.81)
<i>Institutional environment and earnings management variables</i>						
IE_{jt}	0.1201** (2.01)	0.1527*** (4.16)	0.1227*** (2.67)	0.1422*** (3.09)	0.1109*** (3.04)	0.1136*** (3.23)
$EM_{it} \times HIQ$	0.1817*** (7.84)	0.2061*** (4.84)	0.3510*** (10.17)	0.2370*** (2.77)	0.2185*** (8.31)	0.1964*** (6.81)
EM_{it}	0.1751*** (5.23)	0.1824*** (6.82)	0.1673*** (6.13)	0.1229*** (4.06)	0.1478*** (4.97)	0.1642*** (5.54)
Wald test	235.32***	242.07***	280.14***	296.16***	243.24***	239.43***
AR1	-3.95***	-4.01***	-4.23***	-3.84***	-3.91***	-4.12***
AR2	-1.11	-1.04	-0.97	-0.99	-1.00	-1.38
Sargan test	34.95	37.11	33.01	39.16	37.63	38.99

Notes: z-statistics in parenthesis. The firms' qualities such as P1, BLOCK, GO, TANG, SIZE, AC and PROF were included as control variables. These estimations include a constant term, individual and temporary fixed-effects, and dummy variables to control the unobservable heterogeneity across country and economic sector. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Source: Own elaboration

leverage and a positive effect on debt maturity. These results validated hypotheses H5a and H5b, suggesting that the effects of EM practices are dominant over institutional development. Although increased institutional development strengthens the debt controlling effect and alleviates agency costs, its impact is partial and does not mitigate the effects of EM on firms' capital structure. Therefore, Latin American countries have favorable institutional conditions for managers to entrench corporate management, expropriate investors' wealth and develop aggressive EM practices that cannot be mitigated by institutional development.

Table 4 shows the results for models (7) and (8). Our results reveal that financial development is relevant for firms' capital structure. The variables that quantify the financial development through bond markets (*BOND*), stock (*STOCK*), banking (*BANK*) and pension funds (*PENS*) had a positive and significant effect on leverage and debt maturity. This relationship describes the limitations imposed on managers' discretionary behavior and the lower financial constraints faced by firms as a result of higher financial development. This fact has been corroborated by previous studies in both developed and emerging markets (Alves and Francisco 2015; Demirgüç-Kunt and Maksimovic 1999; Tresierra and Reyes 2018). On the other hand, the interactive variable ($EM \times HFD$) showed the effect of EM practices on capital structure in countries with high levels of financial development. The hypotheses H6a and H6b were corroborated because this variable had a negative impact on leverage and a positive effect on debt maturity. Despite the advantages of higher financial development, the effects of managerial entrenchment policies based on EM activities cannot be counteracted.

4.4. Robustness Analysis

The robustness analysis follows the econometrics suggestions from some investigations about capital structure (Muñoz et al. 2021a; Narayan and Nasiri 2020) and it is based on two econometric methods: linear 2SLS panel data and multilevel mixed-effects models. The 2SLS estimator considers random effects and controls the endogeneity between leverage and debt maturity. The multilevel estimator

Table 4. Impact of financial development and EM on capital structure.

Coefficients	Dependent variable: Firm Leverage				Dependent variable: Debt maturity			
	$FD_{jt} = BOND$	$FD_{jt} = STOCK$	$FD_{jt} = BANK$	$FD_{jt} = PENS$	$FD_{jt} = BOND$	$FD_{jt} = STOCK$	$FD_{jt} = BANK$	$FD_{jt} = PENS$
LEV_{t-1}	0.5045*** (19.59)	0.4409*** (16.64)	0.5191*** (22.66)	0.4131*** (13.50)				
MAT_{t-1}					0.0595* (1.65)	0.0890*** (2.69)	0.0848** (2.57)	0.0704** (2.31)
LEV_{it}					0.0967*** (3.71)	0.1081*** (3.02)	0.1198*** (3.06)	0.0943*** (3.65)
MAT_{it}	0.1149*** (3.33)	0.1293*** (3.60)	0.1013*** (3.03)	0.1346*** (4.20)				
<i>Financial development measures</i>								
FD_{jt}	0.0132*** (2.91)	0.0255*** (2.97)	0.0202** (2.53)	0.0141*** (3.15)	0.0950** (2.50)	0.0227*** (3.12)	0.0403*** (3.74)	0.0791*** (4.28)
$EM_{it} \times HFD$	-0.1866*** (-20.36)	-0.1461*** (-5.35)	-0.1957*** (-21.12)	-0.2071*** (-4.92)	0.0536*** (3.32)	0.0892*** (6.93)	0.0652*** (3.80)	0.0601*** (10.30)
EM_{it}	-0.2591*** (-7.92)	-0.2365*** (-8.44)	-0.2402*** (-9.15)	-0.2701*** (-10.22)	0.1475*** (4.51)	0.1203*** (3.38)	0.1395*** (3.74)	0.1527*** (3.79)
Wald test	858.25***	838.14***	828.90***	867.36***	225.54***	253.19***	283.17***	245.72***
AR1	-4.03***	-4.46***	-4.25***	-4.17***	-3.79***	-4.06***	-3.92***	-4.05***
AR2	-0.99	-1.15	-1.12	-1.03	-0.87	-1.00	-1.35	-1.09
Sargan test	40.92	42.04	39.05	43.18	41.16	44.98	39.28	47.13

Notes: z-statistics in parenthesis. The firms' qualities such as P1, BLOCK, GO, TANG, SIZE, AC and PROF were included as control variables. These estimations include a constant term, individual and temporary fixed-effects, and dummy variables to control the unobservable heterogeneity across country and economic sector. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Source: Own elabora

used three levels: country, sector, and firm. The intraclass correlations showed the capital structure is positively correlated across the years in the same country and economic sector. All these results are detailed in supplementary documents and fully confirm previous results.

5. Conclusions and Discussion

Previous empirical studies had some limitations when analyzing the relationship between capital structure and EM. First, most of them had focused on studying only the impact of capital structure on EM practices. However, it is possible that this causal relationship is the opposite, and implies that these accounting manipulation activities are a determining factor on the leverage and debt maturity. If so, managers could use these practices as a deliberate activity to alter the capital structure of the companies. Second, a vast empirical literature has confirmed that the adoption of IFRS and institutional and financial development facilitate the access of firms to higher levels of leverage and debt maturity. However, the indirect channel through which these systematic factors condition the impact of EM practices on the capital structure decision had not been researched. All these facts have relevant implications for Latin American markets due to their features.

Our research analyzed these empirical gaps, focusing on the effects of EM practices, IFRS adoption and institutional and financial development on capital structure in Latin American firms. The contributions to the international literature and their implications can be summarized in three points. First, EM practices had a negative impact on leverage and a positive impact on debt maturity. These results reveal that firms artificially adjust their earnings upwards as part of a policy aimed at weakening the controlling role of leverage and short-term debt. EM practices allow managers to hide true firm performance and entrench corporate management. In the same sense, downward earnings adjustments lead companies to issue more debt and shorten debt-terms as a way to mitigate wealth expropriation and the non-optimal use of investment policy by managers.

Second, our results reveal that the IFRS affect the firms' capital structure through two channels, one direct and the other indirect. Through the direct channel, IFRS adoption increases leverage and debt maturity, while through an indirect channel, IFRS adoption reduces the effect of EM on leverage and strengthens its effect on debt maturity. These results suggest that IFRS improve the quality of financial information disclosed by firms and allow them to access sources of long-term debt. This fact is related with lower asymmetric information for investors and the strengthening of debt's control role. These novel results demonstrate that IFRS are an effective means for attenuating the effects of EM practice on leverage and alleviating the liquidity pressure on debt-term. Our results have important implications for investors and companies. For investors, these results will allow them to better recognize the relevance of accounting manipulation activities on firms' capital structure as well as to infer the direction of these practices from the debt-level and debt-term observed in these firms. For companies, these results are relevant to the strengthening of their corporate governments, as this study provides evidence regarding the need to control accounting manipulation practices in order to access new debt. The most important implication is that IFRS have the capability of attenuating the effect of EM on capital structure, promote external monitoring and control liquidity risk through longer term-debts.

Finally, higher quality institutional environment in the public-political and private-regulatory spheres and a higher financial development allow companies to issue more debt and to longer terms. These characteristics reflect greater investor confidence in State institutions, the legal protection of their rights, more effective regulations and a more relevant financial system within the economy. Such conditions reduce the firms' financial constraints and limit the discretion over corporate decision-making. However, these characteristics do not mitigate EM's effects on leverage, while they intensify their effects on debt maturity. Despite institutional and financial improvements of the Latin American countries, these results suggest that these are not enough and still generate spaces for discretionary behavior aimed at management entrenchment and wealth expropriation. These behaviors

would guide the capital structure choice. These results are also relevant for policymakers because show that improvements on institutional and financial conditions facilitate firms' access to corporate debt and limit the managerial discretion.

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