Chapter 9

Earnings Quality and Market Performance in LATAM Corporations: A Combined Agency and Cognitive Approach to Investors' Perceptions of Managerial Information

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Additional information is available at the end of the chapter

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Abstract

This chapter studies the impact of financial reporting quality on firms' market performance in a sample of LATAM corporations. We infer that, especially in contexts of high information asymmetry, investors are not able to effectively discern the quality of the information they are provided with and can therefore be misled in their investment decisions by managerial opportunism. Our theoretical framework is built upon a combined agency theory and cognitive approach. We thereby seek to provide a valuable method to better understand how investors could be making suboptimal choices as a consequence of managers' opportunistic behaviour. Empirically, we use the Generalized Method of Moments (GMM) model, hypothesizing that a positive relationship should be observed between the opportunistic manipulation of earnings (that is, the misuse of accounting accruals) and the firm's market performance (that is, the consequential behaviour of investors). Through this 'pioneering' methodology, applied to the relatively under-researched LATAM region, we find that: (1) Financial data are identifiably and consistently manipulated through discretionary accruals in these countries. (2) As manipulation increases, markets do tend to appear more attractive to investors. (3) The elasticity of the market reaction to this manipulation is higher in what we term 'opaque' countries.

Keywords: corporate governance, earnings quality, market performance, LATAM, agency theory, social cognitive approach

1. Introduction

The best plan is… to profit by the folly of others. Taken from Pliny the Elder, by John Bartlett,

Familiar Quotations, 10th ed. 1909.

Recent corporate scandals across the globe have drawn attention to the field of corporate governance. Users of financial information such as investors, governments and regulators are increasingly concerned about how earnings numbers are derived [1]. This is due in large part to the countless examples of managers who have used their discretionary decision-making power to misreport their firms' profits. Petrobras in Brazil, which overpriced contracts for private benefits, or Disco in Argentina, which was found to have inappropriately recorded the financial results from several joint ventures, are just two examples of high profile firms that have inflated their earnings, to the detriment of investors and in direct contradiction to the provisions of governments and regulators.

This chapter studies the impact of financial reporting quality on firms' market performance in a sample of LATAM corporations, using these data to examine the perception processes of investors as a mediating variable between reporting quality and market performance. Specifically, we address whether the perceived performance of an organization is in reality based upon actual organizational performance, or is instead more a function of the results overtly exhibited in the organization's financial reporting structures, which may have been discretionally manipulated. We propose that, especially in contexts of high asymmetry of information, investors are not able to effectively discern the quality of information provided to them for decision-making purposes and can therefore be easily 'fooled' by managerial opportunism.

Empirically, we base this upon data collected in six Latin American countries by applying the Generalized Method of Moments (GMM) model [2], thereby hypothesizing that a positive relationship will be observed between the opportunistic manipulation of earnings and the firm's market performance. We then examine these results using a lens that combines agency theory with a social cognitive approach, to analyse the manipulated perception process that occurs as a result of that relationship.

There are a number of principal contributions from this chapter. We begin by viewing the process of manipulation with a holistic approach that integrates both a cognitive and agency perspective and allows us to better understand the relationship between earnings management, financial reporting quality and market performance as a whole, thereby providing a more comprehensive vision of the entire process. This contribution is even more valuable because we have situated our study in the under-researched context of Latin America. We also believe that we are the first to apply the GMM methodology in this context, empirically showing how financial manipulation occurs and then impacts upon investor decisions, thus influencing the organization's market valuation. By doing so we have created an algorithm and adapted an overall model that can be more generally used to rank the quality of any earnings reports, thereby contributing to a more transparent market information system. Finally, we hope that our research will go on to inform and serve decision-makers who analyse firms'

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financial statements, as well as act as a catalyst to governments, institutions and policy-makers in deriving policy and promoting market efficiency.

Our most important findings can be summarized to be the following. Our results show: (1) Financial data are identifiably and consistently manipulated through discretionary accruals in these countries. (2) As manipulation increases, markets do tend to appear more attractive to investors. (3) The elasticity of the market reaction to this manipulation is higher in what we term 'opaque' countries.

The steps we take in this chapter begin with our theoretical framework, where we review the relevant literature, illustrate this with a comprehensive model of the overall process and then state our hypothesis. As a second step, we then proceed with the empirical analysis through the operationalization of our baseline model and the construction of our variables. In our third step, we present and discuss our results. We do this by displaying and analysing both the univariate and multivariate analysis and by segmenting the sample into clusters based on the country-level governance system, calling them 'opaque' (lower level of governance) or 'transparent' (higher level of governance) countries. Our conclusions and final remarks are presented at the end of the chapter, where we also address policy recommendations.

2. Theoretical framework

The extent to which financial statements reflect actual operating fundamentals is of growing concern throughout the world, especially in emerging markets where managerial controls and practices can vary substantially from those in the USA or Europe. Some more economically developed countries have passed legislation to ensure better corporate governance and have adopted codes of good conduct in order to reduce the asymmetries of information between shareholders and the firm and to increase the rational component of the decision-making process around choosing one's investments [3, 4]. At the same time, a large difference in the quality of financial reporting across countries has been extensively documented [5]. This has led, according to the behavioural finance approach, to the conclusion that the perception of market participants is likely to be biased as a consequence of the lack of transparency in pricing and the poor quality of financial information [6]. Such losses in the quality of financial information have been modelled through earnings management [7].

Earnings management can be defined as the adjustment of a firm's reported economic performance by insiders, done either to mislead some stakeholders or to influence contractual outcomes [8, 9]. Earnings management is considered to be the most informative and trustworthy to investors if it is supported by what is perceived to be a good system of governance. However, the act of managing earnings does not necessarily reflect the true performance of the company, a situation that may contribute to shareholders and investors making inaccurate judgements about the company [9]. To examine this, we first turn to agency theory, well used in the financial arena, which holds that managerial behaviour can be opportunistic and fuelled by self-interest. Most importantly for our purposes, it accounts for the existence of asymmetries of information between managers and shareholders. Executives accept agent

status because they perceive an opportunity to maximize their own utility [10]. Consequently, agency theory holds that managers may take advantage of the information they have and their latitude in making accounting and reporting decisions to overstate financial information. They generally do this by acting in what they perceive to be in their own interest [11]. Reducing agency costs by imposing internal mechanisms of control should therefore encourage managers to behave in the best interest of shareholders instead of in their own interests. However, because controls are imperfect, we would expect some degree of opportunism to remain [10]. Since managers are widely paid based on firm's performance, it is plausible to expect that active earnings manipulation will occur in order to enhance managerial compensation packages [12]. This approach is highly focussed on bounded rational decision making around incentives, information and self-interest. Thus, it is a viewpoint that suggests that it may be necessary to limit managers' discretion with respect to accounting, since investors, as a consequence of asymmetrically distributed market information, cannot unravel the valuation effect of reported earnings in a timely manner under current reporting standards.

We suggest, however, that in addition to agency theory, a more cognitive viewpoint can also be used, to guide and further understand managerial behaviour. Social cognitive theory advocates that behaviour, cognitive and other personal factors and the external environment are the three main factors that drive the decision-making process [13]. These three factors are known to be asymmetrical, similar to the asymmetry of information in agency theory, in that they do not influence each other simultaneously, instantly or with equal strength, but they do influence each other multidirectionally. As a result, both investors and managers can be understood to be making decisions based upon a combination of factors that include a triad of perceptual, environmental and behavioural elements, all converging to ultimately produce an investment decision.

Regarding cognition, two of the most relevant elements related to decision making are managerial biases and heuristics. The most common biases that managers revert to using include representativeness, availability and anchoring-and-adjustment [14] although there are now many other biases and heuristics that have been studied at length in a financial context [15]. The use of heuristics is considered a necessary way for humans to cope with our more limited capacity to process information [16]. More specifically to our study, many researchers have identified the biases and heuristics used in making financial decisions as highly relevant to understand the human and cognitive elements of the processes involved [6, 17]. Thus, according to the social cognitive approach, the market may wrongly perceive the actual firm performance disclosed in financial reports, as a consequence of biases and heuristics held perceptually and socially, in addition to behavioural and environmental elements. Thus, when managers overstate a firm's earnings, due to their bounded rationality and to information asymmetries, they can be easily misled to overprice the firm's shares.

As described in **Figure 1**, by suggesting a complementary relation between agency and social cognition theories, we have produced a model that further explains how this process occurs and shows how the process is reinforced by the lack of sound corporate governance systems in the institutional context of Latin American countries, as is our case.

Financial markets in the region are still in a stage of early development, which allows managers to make use of accounting discretion to manipulate financial information. In immature financial

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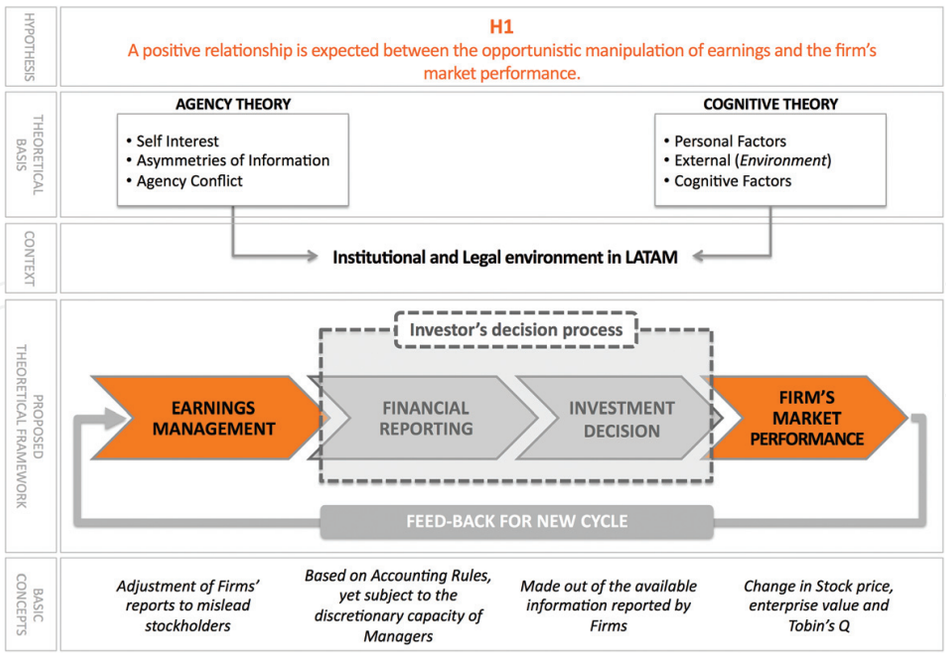

Figure 1. Theoretical and contextual framework, a basis for the operationalized model.

markets, where there are large imbalances of information and opacity, and where the markets are not integrated, investors may not be able to discriminate between companies that provide high or low quality information [18, 19]. Therefore, in the midst of inefficient financial markets in Latin America, managers have more room to manipulate financial statements. Leuz et al. [20] present evidence that the level of outside investor protection endogenously determines the quality of financial information reported to outsiders, showing how legal protection influences the agency conflicts between investors and controlling shareholders. In Latin America investor protection is weak, and this therefore gives insiders more incentives to manipulate earnings. In conclusion, in the institutional context of Latin America, investors suffer more acutely the consequences of earnings manipulation by managers when compared to more developed financial systems, and therefore they may not be able to make optimal investment decisions.

Therefore, based upon the previous arguments regarding agency theory, cognitive theory and the institutional setting in Latin America, we hypothesize that:

H1: A positive relationship is expected between the opportunistic manipulation of earnings and the firm's market performance.

3. Baseline model and empirical analysis

3.1. Sample

The sample we use corresponds to 896 representative large non-financial firms from Argentina, Brazil, Chile, Colombia, Mexico and Peru. Data at firm level are collected from the Thomson Reuters dataset and data at the country level are collected from Worldwide

Governance Indicators obtained from the updated work of Kaufmann et al. [21].[1] The sample corresponds to unbalanced panel data with a total of 9647 firm-year observations over the period from 1997 to 2013.

We use the Generalized Method of Moments (GMM) model to deal with the characteristic econometric problems of unobservable heterogeneity of individual firms and endogeneity [2, 22]. Several statistical contrasts are used as diagnostic tests for our panel data structures (e.g. the Hansen test for the validity of instruments, the second-order serial correlation test AR(2), the Wald test of joint significance of parameters, and the variance inflation factor (VIF) as a formal multicollinearity test). Additionally, non-linear restriction tests are used for those interacted (multiplicative) variables.

3.2. Variable construction

Key to this study is the definition and analysis of our proxy independent variable of earnings manipulation, which corresponds to our measure of managerial discretion and quality of financial reporting. Two alternative estimations of earnings management are used based on absolute discretionary accruals. Since total accruals are known, the discretionary accruals must be estimated. Based on Dechow et al. [23], the total accrual (ACC_{it}) denotes the component of earnings for each i firm during the t period computed as:

$$ACC_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - Dep_{it} \tag{1}$$

where CA denotes current assets, $Cash$ is the cash and cash equivalent, CL are current liabilities, STD stands for short-term debt and the current proportion of long-term debt, and Dep is the annual depreciation expense.

Thus, once the total accruals are calculated, we have to split them into their non-discretionary and discretionary components. Non-discretionary accruals are aimed to improve the informational content of financial statements. According to the Jones [24] model, total accruals are affected by the firm's usual business (which can affect non-cash current assets and liabilities) and by fixed assets (which can affect the depreciation expense). Consequently, ACC are regressed depending on the change in sales ($\Delta Sales_{it}$) and the gross level of property, plant and equipment (PPE_{it}) in the following equation:

$$\frac{ACC_{it}^{Mod1}}{A_{it-1}} = \beta_0 + \beta_1 \frac{\Delta Sales_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \tag{2}$$

Regarding the expected signs for $\beta_1$and β_2 it can be said that this is not trivial, except for β_2, where a negative sign is expected because depreciation has been included with a negative sign in the definition of total accruals (ACC). However, there is no clear prediction for the sign of β_1 because, on the one hand, a higher level of sales might imply higher accounts receivables but, on the other hand, increase in sales usually imply increase in short-term debt too, so the net effect on working capital may not be determined a priori.

[1]The latest update took place in September 2014. Information can be downloaded from www.govindicators.org.

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Hence, the value of (ACC) in Eq. (2) is the level of total accruals, depending on the firm's activity and the composition of the firm's assets. Therefore, the error term in the regression, which is the difference between observed and estimated accruals as stated in Eq. (3) would become the part of total accruals that is due to the discretionary behaviour of managers. So the first measure of discretionary accruals ($DACC1_{it}$) should take the form:

$$\left|\frac{DACC1_{it}}{A_{it-1}}\right| = \frac{ACC_{it}}{A_{it-1}} - \left(\hat{\beta}_0 \frac{1}{A_{it-1}} + \hat{\beta}_1 \frac{\Delta Sales_{it}}{A_{it-1}} + \hat{\beta}_2 \frac{PPE_{it}}{A_{it-1}}\right) \tag{3}$$

where $\hat{\beta}_0$, $\hat{\beta}_1$, and $\hat{\beta}_2$ are the estimators for β_0, β_1, and β_2 coefficients, respectively. Since the discretionary behaviour in earnings management may be used either to increase or reduce earnings, we follow Gabrielsen et al. [25] and calculate the absolute value for $DACC$ to measure the extent of this discretionary behaviour instead of its direction.

Similarly, and as stated earlier, our second proxy measure of discretionary accruals also follows a cross-sectional model based on the Jones [24] model as described by Dechow et al. [23] as:

$$\frac{ACC_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{\Delta Sales_{it} - \Delta AR_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \tag{4}$$

The coefficient estimates from Eq. (4) are used to estimate the firm-specific non-discretional accruals as:

$$NDACC_{it} = \hat{\beta}_0 \frac{1}{A_{it-1}} + \hat{\beta}_1 \frac{\Delta Sales_{it} - \Delta AR_{it}}{A_{it-1}} + \hat{\beta}_2 \frac{PPE_{it}}{A_{it-1}} \tag{5}$$

where ΔAR_{it} is the change in accounts receivable from the preceding year. Following Cohen et al. [26], while computing the non-discretionary accruals, we adjust the reported revenues on the sample of firms for the change in accounts receivable to capture any potential accounting discretion arising from sale credits. Then, the second measure of discretionary accruals is the difference between total accruals and the fitted non-discretionary accruals ($DACC2_{it}$), defined as:

$$\left|\frac{DACC2_{it}}{A_{it-1}}\right| = \frac{ACC_{it}}{A_{it-1}} - \left(\hat{\beta}_0 \frac{1}{A_{it-1}} + \hat{\beta}_1 \frac{\Delta Sales_{it} - \Delta AR_{it}}{A_{it-1}} + \hat{\beta}_2 \frac{PPE_{it}}{A_{it-1}}\right) \tag{6}$$

Similar to the first measure, we also compute discretionary accruals in their absolute values.

In our models, the firm market performance as a dependent variable is computed through a number of alternative measures. First, we use the market return ($MP1_{it}$) calculated as the annual change in the stock price for the firm i in the period t. The second measure of performance is based on the enterprise value ($MP2_{it}$) calculated as the market capitalization, plus debt, minority interests and preferred shares, minus cash and cash equivalent for the firm i in the period t. To avoid the bias produced by scale issues, the enterprise value is computed in logarithms, which is the usual transformation applied to positive values with high dispersion. Finally, in our third measure of market performance we used the Tobin's Q. Due to this

variable typically being unobservable by outsiders, a common practice is to rely on proxy variables. For doing so, we used the construct performed by Perfect and Wiles [27] which considers the reposition cost of total assets. Accordingly, the firm performance is:

$$MP3_{it} = \frac{MkCptz_{it} + TD_{it}}{K_{it}} \tag{7}$$

where $MkCptz_{it}$ is the market capitalization computed as the product between the year-end close price per share and the number of shares outstanding per i firm; TD_{it} is the total liabilities at the year t; and K_{it} is the replacement value of firms' assets which is estimated by Perfect and Wiles [27] as follows:

$$K_{it} = RNP_{it} + RINV_{it} + (TA_{it} - BNP_{it} - BINV_{it}) \tag{8}$$

where RNP_{it} is the replacement cost of net property, plant and equipment (net fixed assets); $RINV_{it}$ is the replacement value of inventories, TA_{it} is the total assets; BNP_{it} is the book value of net property, plant and equipment; and $BINV_{it}$ is the book value of inventories.

$$RNP_{it} = RNP_{it-1}\left[\frac{1+\phi_t}{1+\delta_{it}}\right] + I_{it} \tag{9}$$

For $t > t_0$ where t_0 is the first year of observations for a given company in this study; whilst $RNP_{it_0} = BNP_{it_0}$. Moreover, φ_t is the growth of capital good prices in year t which is defined by the Gross Domestic Product (GDP) deflactor. In other words, $\phi_t = \frac{NomGDP_t}{RealGDP_t}100$, where $NomGDP_t$ is the nominal GDP and $RealGDP_t$ is the real GDP, both reported by the National Institute of Statistics of Chile. δ_{it} is the real depreciation rate defined as $\delta_{it} = \frac{Dep_{it}}{BNP_{it}}$, where Dep_{it} is the annual book depreciation. I_{it} is the new investment in property, plant and equipment or capital expenditure which is defined as $I_{it} = BNP_{it} - BNP_{it-1} + Dep_{it}$.

$$RINV_{it} = BINV_{it}\left[\frac{2WPI_t}{WPI_t + WPI_{t-1}}\right] \tag{10}$$

where WPI_t is the wholesale price index by country reported by the World Bank. This estimation for the replacement value of inventories assumes that the inventory accounting method is the average cost. For this method, the value of inventories reported at time t is approximately equal to the average of the prices at $t-1$ and t.

The other independent variables correspond to control variables entered into the model in order to avoid problems of misspecification. The first control variable corresponds to the leverage at book value (LEV_{it}) measured as the total liabilities over total assets, the company size ($SIZE_{it}$) calculated as the logarithmic transformation of total assets, the firm's profitability (ROA_{it}) measured as the earnings before interest and taxes over total assets, and finally we include the company's default risk ($RISK_{it}$) which is measured through the alternative Altman [28] Z-Score which was specifically derived for developing countries computed as:

$$RISK_{it} = 6.56WC_{it} + 3.26RE_{it} + 6.72EBIT_{it} + 1.05BVE_{it} + 3.25 \tag{11}$$

where WC_{it} is the working capital over total assets, RE_{it} is the retained earnings over total assets, $EBIT_{it}$ is the earnings before interest and taxes and BVE_{it} is the book value of equity over total liabilities.

For country-level variables we use the Worldwide Governance Index[2] ($GOVINDEX_t$) computed by Kaufmann et al. [21] as a measure of transparency across countries. This index is a composite of six dimensions of governance including: (i) Voice and Accountability, which are the process by which governments are selected, monitored and replaced; (ii) Political Stability and Absence of Violence/Terrorism, which measure the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; (iii) Government Effectiveness corresponds to the quality of public and civil services, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; (iv) Regulatory Quality, which measures the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; (v) Rule of Law, which reflects the confidence that the agents will abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; and finally (vi) the Control of Corruption, which measures the perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests. All of these six individual indicators are between −2.5 and 2.5 with increasing values as the governance indicator improves. GOVINDEX therefore corresponds to the average value among these six governance indicators by country and year.

Therefore, our estimation model would take the following form:

$$MP_{it} = \beta_0 + \beta_1 DACC_{it-1} + \beta_2 CV_{it} + \eta_i + \mu_t + \varepsilon_{it}, \tag{12}$$

where MP_{it} is the market performance, $DACC_{it-1}$ is the one-period lagged discretionary accruals measure, CV_{it} is a vector of control variables (e.g. LEV_{it}, $SIZE_{it}$, ROA_{it}, and $RISK_{it}$), η_i is the individual fixed effect, μ_t is the time effect and ε_{it} is the stochastic error term. $GOVINDEX_t$ variable is used to split the sample and estimate separate regressions. Additionally, country, industry and time dummy variables are included in the model.

4. Empirical results

4.1. Univariate analysis

For the empirical results we proceed in two parts. As a starting point, in order to make the empirical analysis significant, we have to test the null hypothesis that the mean values of the discretionary accruals measures are statistically significant from zero. Previous literature suggests that managers of companies with weak governance structures have greater discretion to

[2]The latest update took place in September 2015. Information can be downloaded from www.govindicators.org.

engage in opportunistic earnings management [29]. A similar situation is observed when the regulatory environment does not efficiently constrain management's flexibility to misrepresent financial results [30]. The p-values reported in **Table 1** suggest that the mean values of our alternative measures of discretionary accruals are significantly different from zero. In accordance with the previous literate, therefore, this preliminary finding may be used as evidence that listed firms in our sample opportunistically manipulate their financial reports.

Additionally, we split the sample into two big groups depending on the average value of the GOVINDEX variable by country. Although not reported, the average values were negative for all the countries, except for Chile and Brazil. Consequently, we can state that for the group of countries comprised of Chile and Brazil the transparency and corporate governance rules are relatively more efficient than for Argentina, Colombia, Mexico and Peru. Thus, the sample slip corresponds to these two groups, namely 'Transparent Countries' for those countries with relatively better transparency and corporate governance, and 'Opaque Countries' corresponding to those with relatively worse transparency and corporate governance. As observed in **Table 2**, the mean difference test was applied to verify if the extent of discretionary accruals as a measure of financial overstatement is the same across the two groups. The null hypothesis is that there is no difference in discretionary accruals between the two groups and the alternative hypothesis is that discretionary accruals are greater in the group of countries with relatively weaker transparency and governance. As tabulated, DACC1 is statistically greater in the set of countries which are less transparent and where corporate governance is weaker (e.g. Argentina, Colombia, Mexico and Peru, all of which we call the 'Opaque Countries') than in the set of countries such as Chile and Brazil where institutional transparency and corporate governance are better, and which we term the 'Transparent Countries'. This is shown to provide evidence that more financial statement manipulation is present when institutions and governance are weaker.

The descriptive statistics in **Table 3** show that for our three measures of market performance (e.g. MP1, MP2 and MP3) there are positive average values for the companies included in the sample. Additionally, a typical company finances its total assets with about 48.73% of debt. In our sample, companies achieve an average rate of return of 4.27% on total assets. Finally, the average indicator of transparency and quality of corporate governance (GOVINDEX) is only 0.2146 with a maximum coefficient of 1.2482, which is still far away from its theoretical maximum achievable designated to be 2.5 [21].

The matrix of correlation coefficients is exhibited in **Table 4**. As would be expected, there is a high correlation for some measures of performance, such as the 0.533 correlation coefficient between MP2 and MP3. Similarly, high correlations are observed between the measures of discretionary accruals. On the other hand, we do not observe relatively high levels of correlation between the explanatory variables, with the exception of the correlation between the firm size (SIZE) and its leverage (LEV) (e.g. significant correlation of 0.408) and between firms' default risk (RISK) and the level of debt (LEV) (e.g. significant correlation of 0.691).[3] These slightly high correlations might eventually cause problems of multicollinearity in the

[3]Although the tabulated correlation is negative, its interpretation is in the opposite direction as a consequence of the construction of the RISK variable where the firm risk increases as the variable decreases.

Variables	Obs	Mean	Std. error	Std. dev.	*P*-value
DACC1	9635	0.0217	0.0002	0.0239	0.0000
DACC2	9635	0.0260	0.0004	0.0385	0.0000
DACC3	9635	0.0276	0.0003	0.0257	0.0000

This table shows the contrast to test the null hypothesis H_0 that mean values for discretionary accruals measures are zero. The alternative hypothesis H_a is that such values are positive.

Table 1. One-sample *t* test.

Variables	Countries	Obs	Mean	Std. error	Std. dev.	Difference	Ha: diff > 0
DACC1	Opaque countries	4002	0.0224	0.0004	0.0223	0.0012	0.0070
	Transparent countries	5633	0.0212	0.0003	0.0249		
DACC2	Opaque countries	4002	0.0262	0.0005	0.0316	0.0002	0.3770
	Transparent countries	5633	0.0259	0.0006	0.0428		
DACC3	Opaque countries	4002	0.0280	0.0004	0.0261	0.0006	0.1120
	Transparent countries	5633	0.0273	0.0003	0.0254		

This table tests the null hypothesis H_0 that the difference in mean values for discretionary accruals measures are the same between 'Other Countries' and 'Chile + Brazil' groups. The alternative hypothesis H_a is that this difference is positive.

Table 2. Two groups test with equal variances.

Variable	Mean	Std. dev.	Min	Max
MP1	0.1272	0.4908	−0.8700	1.9984
MP2	8.7660	3.2880	0.0010	16.9760
MP3	6.4865	2.0207	0.0058	11.9799
DACC1	0.0217	0.0239	0.0000	0.3838
DACC2	0.0260	0.0385	0.0000	0.7007
DACC3	0.0276	0.0257	0.0000	0.2895
LEV	0.4873	0.2349	0.0072	0.9467
SIZE	6.1524	2.0842	−2.0887	13.2225
ROA	0.0427	0.0945	−0.4515	0.4948
RISK	7.2761	5.3480	0.1667	33.0204
GOVINDEX	0.2146	0.5851	−0.6658	1.2482

This table shows the descriptive statistics (e.g. mean value, standard deviation, minimum and maximum) for the variables used in the empirical analysis.

Table 3. Descriptive statistics of variables.

Variables	MP1	MP2	MP3	DACC1	DACC2	DACC3	LEV	SIZE	ROA	RISK
MP2	0.040	1.000								
	(0.000)									
MP3	0.030	0.533	1.000							
	(0.004)	(0.000)								
DACC1	−0.028	0.025	−0.065	1.000						
	(0.007)	(0.019)	(0.000)							
DACC2	−0.033	0.015	−0.068	0.934	1.000					
	(0.001)	(0.168)	(0.000)	(0.000)						
DACC3	−0.036	−0.036	−0.121	0.859	0.839	1.000				
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)					
LEV	−0.014	0.016	0.358	−0.125	−0.080	−0.103	1.000			
	(0.165)	(0.135)	(0.000)	(0.000)	(0.000)	(0.000)				
SIZE	0.031	0.528	0.965	−0.085	−0.074	−0.136	0.408	1.000		
	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
ROA	0.184	0.115	0.012	−0.003	−0.005	−0.029	−0.274	0.004	1.000	
	(0.000)	(0.000)	(0.266)	(0.744)	(0.626)	(0.005)	(0.000)	(0.709)		
RISK	0.044	−0.015	−0.238	−0.041	−0.020	−0.0362	−0.691	−0.284	0.334	1.000
	(0.000)	(0.147)	(0.000)	(0.000)	(0.050)	(0.001)	(0.000)	(0.000)	(0.000)	
GOVINDEX	−0.050	0.535	−0.088	−0.065	0.060	0.042	−0.176	−0.115	0.057	0.139
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

The table reports the pairwise correlation coefficient matrix. The significance level of each correlation coefficient is in parenthesis.

Table 4. Pairwise correlation coefficients.

regression estimates. Nevertheless, as reported in the subsequent regression tables, the variance inflation factor (VIF) test allows us to accept the hypothesis of the inexistence of this econometric problem.

4.2. Multivariate analysis

Concerning the multivariate analysis, we interpret the outcomes of the model (12) for the whole sample according to the regression estimates shown in **Table 5**. This table includes nine regressions for our three alternative measures of the dependent variable (e.g. MP1, MP2 and MP3) explained by our three one-period lagged independent variables as measures of the quality of the financial reports and earnings manipulation (e.g. DACC1, DACC2 and DACC3). As a starting point for the interpretation of the coefficient estimates in our regression analysis, a battery of diagnostic tests is used to ensure the validity of our results in **Tables 5** and **6**. Robust standard errors were used in all the regression estimates. According to the Wald test, all the independent variables are jointly significant at the standard confidence levels. As mentioned

Variables	MP1	MP1	MP1	MP2	MP2	MP2	MP3	MP2	MP3
$DACC1_{t-1}$	2.1660			6.2290***			2.1726***		
	(1.3985)			(6.0160)			(4.6340)		
$DACC2_{t-1}$		6.0404***			5.1725***			0.3698	
		(3.6418)			(9.2875)			(1.6330)	
$DACC3_{t-1}$			6.6370***			0.5416			0.5009**
			(3.3999)			(1.0670)			(−2.3382)
LEV	−2.7174	−3.8098	9.3240	3.9353***	5.5361***	1.5004***	1.7003***	1.5353***	1.5901***
	(−0.7238)	(−0.9337)	(0.7826)	(11.4338)	(15.2080)	(5.6679)	(10.3436)	(10.6859)	(11.4474)
SIZE	−0.5093	−0.3941	−1.2559	1.1193***	1.2469***	1.0573***	0.9666***	0.9670***	0.9491***
	(−1.0917)	(−0.7404)	(−1.3556)	(25.8565)	(28.5999)	(29.8487)	(72.3698)	(69.9110)	(82.4417)
ROA	2.2433	8.8811***	7.1137***	0.0855	0.7537**	2.5251***	0.0410	0.4219***	0.5651***
	(0.4507)	(2.6688)	(4.2203)	(0.2407)	(−2.2683)	(8.2591)	(0.3049)	(3.0741)	(4.4991)
RISK	0.6709**	0.7802***	0.5878	−0.0101	0.0571***	0.0554***	0.0182***	0.0029	0.0145**
	(2.0610)	(2.6424)	(0.6086)	(−1.3095)	(5.6442)	(4.7087)	(2.9191)	(0.4227)	(2.4912)
Constant	−0.6884	−3.6828	−7.4544	3.7492***	4.1199***	3.1807***	−0.5662***	−0.3507***	−0.3625***
	(−0.1412)	(−0.6646)	(−0.5519)	(13.6469)	(14.1623)	(12.9888)	(−4.5775)	(−2.6674)	(−3.3534)
Observations	8848	8848	8848	8965	8965	8965	9608	9608	9608
Number of iden	886	886	886	908	908	908	895	895	895
Wald test	10.860***	15.337***	12.138***	577.000***	242.250***	671.023***	112.337***	62.253***	332.902***
AR(2)	0.202	0.170	0.148	0.423	0.396	0.477	0.860	0.510	0.578
Hansen test	49.950	112.740	96.312	276.400	161.599	130.220	325.322	161.830	147.520
VIF	1.73	1.03	1.29	1.15	0.98	1.29	1.18	1.17	1.30

This table includes the estimations of model (12). Variables construction is described in Section 3.2. Industry, time and country effects are included in the estimations but not tabulated. The Wald test of statistical significance of independent variables is reported at the bottom of the table. Similarly, the second-order autocorrelation test is reported (AR(2)). The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. The VIF test is used to formally examine the multicollinearity problem. Standard errors are in parentheses.
*Statistical significance at the 10% level.
**Statistical significance at the 5% level.
***Statistical significance at the 1% level.

Table 5. Multivariate analysis for the whole sample.

above, the variance inflation factor (VIF) reported at the bottom of **Tables 5** and **6** confirm that collinearity does not skew our estimation results since the VIFs are greater than 2. Regarding the moment conditions, the Hansen over-identification tests did not reject the over-identifying restrictions, meaning that we accept the null hypothesis of validity of the instruments in our estimations. Additionally, the AR(2) test proves the lack of second-order serial correlation. Consequently, our results are not biased by a possible incorrect choice of instruments or by autocorrelation and are robust, according to the standard diagnostic tests for panel data.

Variables	MP1	MP1	MP1	MP2	MP2	MP2	MP3	MP3	MP3
$DACC1_{t-1}$	7.059**			1.6018***			1.7355*		
	(0.9151)			(5.7779)			(1.8141)		
$DACC1_{t-1}$*SYS	−4.9041*			−0.4964***			−0.8013***		
	(−0.7209)			(−12.9280)			(−5.6391)		
*$DACC1_{t-1}$+$DACC1_{t-1}$*SYS*	*2.1549**			*1.1054****			*0.9342**		
$DACC2_{t-1}$		3.5026***			0.7596*			5.3086***	
		(3.2505)			(9.2927)			(5.2294)	
$DACC2_{t-1}$*SYST		−1.9704***			−0.6997**			−4.2790***	
		(−3.1764)			(−15.7794)			(−6.9984)	
*$DACC2_{t-1}$+$DACC2_{t-1}$*SYS*		*1.5322****			*0.0599***			*1.0296****	
$DACC3_{t-1}$			2.0647***			0.4148***			3.2447***
			(3.0704)			(9.9215)			(3.7770)
$DACC3_{t-1}$*SYST			−1.1733***			−0.1247*			−2.7271*
			(−2.7950)			(−11.9847)			(−3.6554)
*$DACC2_{t-1}$+$DACC2_{t-1}$*SYS*			*0.8914****			*0.2901**			*0.5176***
LEV	−1.6711	−10.1574	−3.8463	4.3005***	5.2190***	0.4523	1.6498***	1.7214***	1.6522***
	(−0.2296)	(−1.6045)	(−0.2746)	(11.3608)	(14.3559)	(1.2470)	(10.4653)	(11.5689)	(10.5313)
SIZE	−0.7768	0.6852	0.3946	1.0962***	1.1786***	1.0024***	0.9617***	0.9405***	0.9377***
	(−0.8334)	(0.7225)	(0.2922)	(25.2228)	(27.2567)	(25.3953)	(64.1562)	(63.9162)	(75.0594)
ROA	9.0907	17.2895**	42.4076**	−0.2355	0.6890**	2.4617***	0.0619	0.3948**	0.5256***
	(0.8169)	(2.1722)	(2.0678)	(−0.6157)	(−2.1810)	(6.4494)	(0.4093)	(2.3561)	(3.4411)
RISK	0.2831*	0.8423**	1.1136	−0.0159	0.0709***	0.0629***	0.0143**	0.0029	0.0109
	(0.5280)	(2.4286)	(1.0804)	(−1.4665)	(6.2080)	(4.0482)	(2.1930)	(0.3744)	(1.5524)
Constant	2.5543	−9.2934	−16.1757	4.0527***	4.5408***	3.1268***	−0.4891***	−0.2535*	−0.2807**
	(0.2844)	(−1.1314)	(−0.9620)	(13.4278)	(15.6612)	(10.2658)	(−3.9125)	(−1.8302)	(−2.2376)

Variables	MP1	MP1	MP1	MP2	MP2	MP2	MP3	MP3	MP3
Observations	8848	8848	8848	8965	8965	8965	9608	9608	9608
Number of iden	886	886	886	908	908	908	895	895	895
Wald test	762.470***	527.150***	649.033***	112.934***	270.732***	174.122***	133.826***	84.724***	137.590***
AR(2)	0.998	1.124	1.490	1.859	1.460	1.385	0.994	1.137	1.280
Hansen test	153.300	166.920	211.965	193.836	103.570	140.242	178.103	148.049	195.624
VIF	1.121	1.205	1.380	1.094	1.183	1.124	1.150	0.902	1.661

This table includes the estimations of model (12) including the interacted variables for discretionary accruals and the country-level governance index. The significance of the linear combinations of coefficients of these variables is tested and reported in the estimates in italics. The construction of variables is described in Section 3.2. Industry, time and country effects are included in the estimations but not tabulated. The Wald test of statistical significance of the independent variable is reported at the bottom of the table. Similarly, the second-order autocorrelation test is reported (AR(2)). The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. The VIF test is used to formally examine the multicollinearity problem. Standard errors are in parentheses.

*Statistical significance at the 10% level.

**Statistical significance at the 5% level.

***Statistical significance at the 1% level.

Table 6. Multivariate analysis by levels of governance.

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4.2.1. Discussion of results of the whole sample

Concerning the findings, the results systematically show that higher manipulation of financial reports (DACC1, DACC2 or DACC3) leads to greater firm market performance (MP1, MP2 and MP3). Although in regressions (1), (6) and (8) our measures of discretionary accruals are not statistically significant, the direction of the relationship is still positive (e.g. see **Table 5**). For instance, in the second regression, we observe that an increase by one percentage point in our first one-period lagged measure of discretionary accruals ($DACC1_{t-1}$) triggers an increase of 6.0404 times the market change in the stock price. Such a large change in market prices caused by a small change in earnings management is evidence of an elastic market performance. According to Leuz et al. [20], earnings management can be defined as the alteration of firms' reported economic performance by insiders to either mislead outsiders or to influence contractual outcomes. Our results provide evidence of this construct suggesting that when managers overstate or misreport financial statements by actively manipulating earnings, there is a market premium as a consequence of a general lack of transparency in the LATAM context [21], and investor biases, despite some distinctive levels of transparence, are observed in the region. We observe that the stock price change (MP1), the logarithmic transformation of the enterprise value (MP2), as well as the performance measure proxied by Tobin's Q (MP3), all serve to increase the manipulation of financial reports.

Our results also support the Lee et al. [9] model, where firms with higher accounting performance over-report earnings by a larger amount when looking for greater price responsiveness or market performance. In the Lee et al. [9] model, managers manage earnings to influence the stock price. This is a plausible explanation for our results. We suggest that under a rational setting that is free of market frictions, where information is symmetrically distributed and where there is complete alignment of interest between managers and shareholders, there is no room for managers to opportunistically manage earnings to increase market performance. Under these conditions, the market would be able to discriminate and choose a separating equilibrium as suggested by Akerlof [18], by rationally discounting for the over-statement of earnings. This supports the idea that buyers are guided by earnings but are unaware that earnings are inflated by the generous use of accruals, and that this is a consequence of individual biases, wrong perceptions and misuse of heuristics in making their financial decisions. Thus, investors are misled to pay too high a price [31], which triggers a greater change in stock price, enterprise value and Tobin's Q. Hence, when there is a lack of transparency and the agency conflict is not efficiently minimized, managers take advantage of their discretionary power to artificially boost the market performance of the company. The major motivation behind this is basically the improvement of contractual conditions and reward with better compensation packages. Or as stated in terms of Teoh et al. [31], managers manage earnings to exploit market credulity. This idea is consistent with investors naively extrapolating earnings without fully adjusting for the potential manipulation of reported earnings [32]. Consequently, the previous findings allow us to accept our research hypothesis that there will be a positive relationship between opportunistic manipulation of earnings and firms' market performance.

Concerning the control variables included in the model specifications, we observe that leverage (LEV) does not impact on the stock price change (MP1), but it has a positive relationship

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with our two other alternative measures of market performance, namely the enterprise value (MP2) and the proxy for Tobin's Q (MP3). As suggested by the capital structure literature, debt can be efficiently used to undertake profitable investment projects that the market interprets as positive growth opportunities by pushing up the market valuation [33]. Similarly, the size of the company (SIZE) is also positively related to its performance. According to our findings, larger firms take advantage of economies of scale and this dimension is rewarded with a premium in market valuation. The return on assets (ROA) is also positively associated with the market performance. Consequently, there is a direct correspondence between the bottom-line net income and the firms' stock performance. Regarding our last control variable, the default risk (RISK) is found to be negatively associated with market performance. As mentioned earlier, by construction, the RISK variable increases as the default risk decreases, and consequently, the results reported in **Tables 5** and **6** must be interpreted in the opposite direction. Hence, our findings suggest that the market discounts prices when the firm is approaching bankruptcy as suggested by the literature [28, 34].

4.2.2. Discussion of results by levels of governance

In this section on multivariate analysis, we aim to study the impact of different levels of transparency and efficiency of country-level governance systems on the relationship between earnings management and the firms' market performance. As has been widely supported in previous literature, governance systems in the Latin American region are comparatively weaker than in other more developed economies such as the US or Europe [35–37]. Consequently, such opaqueness in the financial markets and the weaker protection of investor rights determines how actively managers over-state financial information disclosed to the markets [38]. Moreover, differences in governance systems have also been observed across Latin American countries [39].

To disentangle this issue we add to our estimation model (12) a variable that allows us to control for cross-country differences in governance systems and transparency. To do so, we create a dummy variable (SYS) based on the subsamples of 'Transparent Countries' and 'Opaque Countries' described in Section 4.2. This dummy variable takes the value 1 if the country belongs to the subsample of 'Transparent Countries' and zero for the subsample of 'Opaque Countries'. Afterwards, we interact the SYS variable with our alternative measures of discretionary accruals and create a multiplicative variable, for instance, $DACC_{t-1}$*SYS. This variable allows us to measure the specific impact of discretionary accruals on firm performance moderated by the two different levels of cross-country transparency and governance defined in our sample.

The results reported in **Table 6** indicate, on the one hand, that the one-period lagged variable of discretionary accruals is always positively related to market performance. On the other hand, the interacted or multiplicative variables between discretionary accruals and transparency and governance efficiency (see for instance $DACC_{t-1}$*SYS in the first regression in **Table 6**) consistently show a negative relationship with firm performance. The interpretation of these results are as follows. Taking the first regression in **Table 6**, for the subsample of 'Transparent Countries', namely Brazil and Chile, the SYS variable takes the value 1 and

consequently the impact of discretionary accruals on the firm's performance corresponds to the addition of $DACC_{t-1}$ and $DACC_{t-1}$*SYS (=$DACC_{t-1}$ + $DACC_{t-1}$*SYS) which is reported in the table in italic characters. In the first regression, this addition of variables takes a value equal to 2.1549. Consequently, for the 'Transparent Countries', a marginal increase in earnings management ($DACC_{t-1}$) causes more than twice an impact on the change in stock price (MP1). However, since SYS takes a zero value for the group of 'Opaque Countries', the impact of discretionary accruals on market performance for this subset of countries corresponds only to the coefficient estimate of the $DACC_{t-1}$ variable, which in the first regression goes up to 7.059. Thus, before any marginal change in opportunistic managerial behaviour is measured through discretionary accruals, the impact on the change in price will be more than seven times the change in discretionary accruals. The significance of the linear combinations of coefficients is tested and it is accepted in all cases that the addition of the discretionary accruals variables and the interacted or multiplicative variables are statistically different from zero (e.g. see italic characters in **Table 6**).

In all the subsequent regression estimates of **Table 6**, we observe that the impact on any measure of market performance (MP1, MP2 or MP3) as a consequence of a change in the discretionary accruals is systematically greater in the group of 'Opaque Countries' than in the group of 'Transparent Countries'. This may be used as robust evidence that managers take more advantage of market myopia when institutional settings are endowed with weaker governance systems and where greater gaps of information exist between insiders and outsiders. In other words, although we subscribe to previous literature on the fact that governance systems are relatively weak in the Latin American region [40], we also recognize that there are still some intraregional differences in transparency and governance, as supported by our findings. Thus, in more transparent financial systems and where the right of shareholders is relatively better protected, the impact on market performance caused by opportunistic manipulation of financial reports is not as large as in contexts of less transparency and governance. We can derive out of this finding that the market is fooled in order to increase the firm's valuation by mispresenting the financial information. And even more, the weaker the governance systems across countries in the Latin American region, the greater the changes will be to boost firm value by misleading the market towards making wrong investment decisions.

Finally, findings concerning the control variables listed in **Table 6** remain consistent with those previously interpreted based on **Table 5**. Thus, we can conclude that our overall findings are robust to a battery of alternative test specifications and controls, as well as to elaborate dependent and independent variables.

5. Conclusions and final remarks

The main goal of this chapter has been to measure the impact of earnings management and reporting on market performance. We have sought to examine this phenomenon in a holistic way. Far from a purely statistical correlation analysis, we have sought to examine the phenomenon in light of theories that support this from a management point of view, in an attempt to merge the two together.

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The two major theories we have applied include agency theory and social cognitive theory. According to Eisenhardt [12], agency theory is particularly effective when coupled with complementary perspectives. We have therefore created a theoretical model that serves to illustrate our operational model, by showing how this process happens as a whole. While it does describe our two mediating variables, financial reporting quality and investment decision making, we conceptually consider these to be a 'black box' that then allows us to focus more on the relationship of the two variables in the extremes of the model, earnings management and stock performance. Overall, our approach seeks to show how both a cognitive and an agency approach can be used together to demonstrate how a firm's earnings quality can impact on its market performance.

A number of policy recommendations are derived from our findings. First, regulators and those who set accounting standards may find these results useful for assessing the levels of discretion that should be permitted to corporate managers for adjusting their financial reports. Second, our results suggest that individual investors will behave more rationally and be more aware in their investing decisions if the impact of discretionary accruals on the stock price is made more apparent. Overall, we argue that there is a clear need for more transparent financial markets and enhanced corporate governance measures.

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