

## Transparency on Corporate Governance and board of directors' strategies

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### Abstract

Based on agency and asymmetric information theories, the objective of this paper is to investigate whether the transparency on corporate governance is determined by strategies followed by the board of directors (liquidity, investment, capital structure, innovation and board composition impact on the corporate governance transparency). The study sample is composed by 826 observations from Latin American firms during the period 2004-2010 (128 unique firms). A two-way cluster standard errors and GMM methods have been adopted to perform the econometric analysis. Results suggest that corporate governance disclosure is attributable to changes on firm's decisions made by the board with respect to financial aspects and innovation. However, the impact upon transparency of board composition with regards to female directors, independence and size of boards are attributable to industry and/or country effects. Although the main limitation of the study is focused on the period of analysis, the results provide important implications for the business sector, demonstrating that the board composition and the financial and innovation strategies adopted by the board encourage greater corporate transparency, thus increasing confidence in the markets.

*JEL Classification: G34, L21, M14.*

*Keywords: Corporate Governance, Transparency, Agency Theory, Board strategy, Latin America.*

## Transparencia en Gobierno Corporativo y las Estrategias del Consejo de Administración

### Resumen

Basado en las teorías de la agencia y de la información asimétrica el objetivo de esta investigación es analizar si la transparencia de gobierno corporativo está determinada por las estrategias adoptadas por el consejo de administración (liquidez, inversión, estructura de capital, innovación). La muestra de estudio está conformada por 826 observaciones de empresas latinoamericanas durante 2004-2010 (128 empresas únicas). Se adoptan los métodos Cluster y GMM para realizar el análisis econométrico. Se evidencia que la transparencia de gobierno corporativo se atribuye a cambios en las decisiones del consejo con respecto a aspectos financieros y de innovación. Sin embargo, el impacto de la composición del consejo (presencia de mujeres consejeras, su independencia y su tamaño) son atribuibles a los efectos de la industria y/o del país. Aunque la limitación principal del estudio se centra en el periodo de análisis, los resultados aportan implicaciones importantes para el sector empresarial, demostrando que la composición del consejo de administración y las estrategias financieras y de innovación adoptadas por éste motivan a una mayor transparencia corporativa, lo cual incrementa la confianza en los mercados.

*Clasificación JEL: G34, L21, M14.*

*Palabras clave: Gobierno Corporativo, Transparencia, Teoría de la Agencia, Estrategia del Consejo, América Latina.*

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## 1. Introduction

The current of financial crises and of corporate scandals on the capital markets has caused an increase in the adoption corporate transparency and good governance codes as part of firms' strategy to increase stakeholders' trust (Nel, Scholtz and Engelbrecht, 2020). Likewise, the participation of worldwide institutions (World Bank, OECD, IFC) on the development and issuance of regulation and guidelines has aimed to improve good governance in most countries. Latin America is characterized by poorer corporate governance and inferior legal system, highly concentrated ownership structures, and capital markets relatively less developed in comparison to more developed OECD economies (Briano-Turrent and Rodríguez-Ariza, 2016). Corporate governance practices constitute an effective substitute mechanism when the regulatory and institutional frameworks are weak (Poletti-Hughes, 2009; Briano, 2022).

Disclosure of corporate governance practices is important because it provides information for shareholders and other stakeholders enabling them to make an informed judgement of how their companies are run (Torchia and Calabrò, 2016). According to Gaa (2009) transparency on reporting of corporate governance is expected to be improved as a consequence of country regulation that focus on the disclosure of financial information. Nevertheless, in a single country/region the cause of variation in reporting within firms is yet unknown, although literature had pointed out at the level of monitoring as plausible reason. For instance, transparency increases as more independent directors sit on the board (Liu, Valenti, and Chen, 2016); and, independent boards provide more voluntary disclosure of forward-looking information and strategic information (Lim et al., 2020).

Corporate transparency could also be the effect of financial policies, such as leverage, as creditors demand a level of corporate transparency to provide funding (Jensen and Meckling, 1976) or the dividend payouts, mainly in contexts characterized by a high information asymmetry, low financial reporting quality and for those with weak governance (Hendijani-Zadeh, 2021). For instance, Armstrong et al. (2016) find that firms involved in riskier financial activities might opt to raise their level of transparency to increase investors' confidence on such activities. Based on agency and asymmetric information theories, the objective of this paper is to investigate whether an index of transparency on corporate governance that represents voluntary disclosure is determined by strategies followed by the board of directors.

The agency theory suggests that corporate governance mechanisms are used to reduce asymmetric information between the companies and stakeholders, and provide more transparent corporate information to ensure stability to the financial sector and sustainability to the economy as a whole (Ștefănescu, 2014). This theory suggests that independent members of the board will conduct to an increase of voluntary disclosure (Filatotchev, Zhang, and Piesse, 2011). Similarly, the asymmetric information theory argues that firms with strong corporate governance mechanisms such as board composition are likely to increase information dissemination and thereby reduce agency costs (Tessema, 2019).

The motivation for this study stems on the importance of corporate governance for stakeholders confidence and the absence of prior research in Latin American emerging countries. This study contributes to a deeper understanding of the role of board of directors' strategies and its composition in influencing the corporate governance disclosure, filling a gap in Latin America, where

the comparative studies are limiting. Using a sample of 826 observations from non-financial firms in Latin America over the period 2004 to 2010 (128 unique firms), we categorized board of director's strategies as financial and structural. Financial strategies are represented by innovation and the volatility of three aspects that arise from the decisions of the managers/board of directors, classified liquidity, investment and capital structure. Board composition dimension is measured by board size, proportion of independent directors and percentage of female members. Furthermore, this study propose a corporate governance transparency index focused in four dimensions: 1) composition and functioning of the board; 2) shareholders' rights; 3) ethics and conflicts of interest; 4) other information related to good governance.

The main findings suggest an increase in corporate governance transparency when the strategic objective of firms is innovation, which is robust to adjustments for industry and country, and to endogeneity concerns. Strategic changes in firm liquidity and capital structure also enhance the level of transparency, whereas the positive impact of board independence and female participation is less significant when transparency is adjusted for industry and country effects. Internal corporate governance mechanisms such as board independence are found to directly increase corporate transparency, and therefore, this may constitute a strategic tool to increase market confidence in countries where the institutional system is weak (Jacoby et al., 2019).

The structure of the paper is as follows. First, we develop the theoretical framework and the context in Latin America. Second, hypotheses are proposed and the sample and research methodology explained. Third, we define the empirical model and the study variables. Finally, the empirical results and conclusions are discussed.

## **2. Literature review and Hypotheses Development**

Asymmetric information and agency conflicts between controlling and minority investors incentivize the demand for disclosure. Firms can optimally trade off the costs and benefits of voluntary disclosure, and to produce the efficient level of information for investors in the economy based on corporate governance, political and contracting reasons (Healy and Palepu, 2001). The board of directors plays a strategic role (i.e. financially and structurally) through their diverse perspectives and outside contacts, influencing management's decisions to protect shareholders interests through viable and realistic strategic plans (Kerr and Werther Jr., 2008).

### **2.1 Financial strategies**

#### **Liquidity.**

From a theoretical perspective, previous literature suggests that agency costs increase with fragile corporate governance practices. As a result, the uncertainty of future cash flows (liquidity) might increase as corporate efficiency decreases (Jensen and Meckling, 1976). The members of the board might have to make strategic decisions that involve changes on liquidity when short-term payment commitments might not be met due to lack of cash resources resulting in the deferral of payments to creditors that worsen future credit terms (Bibi and Amjad, 2017). By contrast, excess liquidity (that is, liquidity beyond the level that maximizes the firm's value) may arise with managerial

entrenchment, when aiming to reduce the risk of the firm's assets to maximize the value of their human capital (Nguyen and Rahman, 2020) or in firms that do not pay dividends (Subrahmanyam et al., 2017). Therefore, changes in liquidity suggests defensive strategic moves made under financial pressure and/or a change in a firm's financial resource allocation profile.

A consistent liquidity provides the firm with financial flexibility which increases in value when there is significant growth potential on the upside or potentially poor performance on the downside (Gamba and Triantis, 2008). Since a balance is required between firms' contracted short-term obligations and disposable assets, the volatility of cash available for this aim represents the risk of possible imbalances, which could even lead to insolvency. Sufficient liquidity is crucial to safeguard adequate cash flow. For instance, the board of directors becomes more/less active in strategic/monitoring activities to survive in times of crisis (Cambrea et al., 2022). Minton and Schrand (1999) discuss the importance of expected persistence on cash flow volatility in future periods as debt and equity holders use historical figures to predict future cash flow volatility when they set prices.

Strategic changes on firms' liquidity might be discouraging for investors' confidence unless that thorough disclosure that reduces asymmetric information is followed. The board of directors is aware of the importance of disclosure, specially, when financial changes are happening within the firm. Therefore, the following hypothesis is constructed:

*Hypothesis 1. Strategic changes in firm's liquidity increase transparency of corporate governance practices.*

### **Investment.**

As discussed by Biddle et al. (2009), firms invest in positive net present value projects at the market interest rate and return excess cash to investors. However, firms may depart from this optimal level and either over- or under-invest. The efficiency of capital investment involves asymmetric information between managers and outside suppliers of capital. The over-investment problem arises when taking projects with a negative NPV because of private benefits of control (Jensen, 1986). By contrast, under-investment relates to not taking on projects with positive NPV as a result of the combination of high personal costs in the case of failure and low personal benefits in successful projects (Stulz, 1990). Chang et al. (2009) find that firms with better disclosure have more flexibility to issue capital by reducing asymmetric information. Therefore, the quality of disclosure can be associated with investment performance through the diminish in both external funding costs and the probability of obtaining excess earnings because of temporary mispricing, suggesting that investment efficiency would not lead to over- or under-investment. In support of the previous argument, Biddle et al. (2009) find that firms with higher financial reporting quality deviate less from predicted investment levels and show less sensitivity to macroeconomic conditions. Likewise, Tang et al. (2022) find that good corporate governance effectively decreases the overinvestment effect caused by financial analysts coverage.

Firm's decisions regarding investment prospects are made with the objective of an increase in future cash flows. The set of information on which investment decisions are made might not be available to outside investors even after they become public (Kanodia and Lee, 1998). Ostberg (2006)

finds that greater disclosure might result in a better price for future securities issued, but decreases the insider ability to use the firm's resources in a discretionary aspect. Over and under investment decisions are authorized by the board of directors, where part of the information set to support those decisions remains inside the firm. For instance, strategic investments lead by CEOs are mediated by boards of directors through compensation where good/poor performance are rewarded/penalized (Shi et al., 2019). The board of directors might exploit their ability for using resources to invest in a flexible manner seeking to reduce financing expenditures. The above arguments lead to the following hypothesis:

*Hypothesis 2. An increase on strategic investment decisions (over – under invest) reduces disclosure on corporate governance.*

### **Capital Structure.**

Departing from the premise that transparency can be costly but beneficial for shareholders, the relevance of its capital structure becomes apparent as a strategy to encourage firms' involvement in international markets. That is, capital structure is relevant to strategy (O'Brien, 2003). Campbell et al. (2004) suggest that firms that quote in international markets signal investors those corporate strategies by being monitored without incurring into the costs of disclosure.

The trade-off theory of capital structure anticipates that firms will choose an optimal debt/equity structure based on the costs and benefits of debt (Lemmon and Zender, 2010). Myers and Majluf (1984) suggest that firms follow a pecking order in which financing departs from internal funds, followed by increased debt and then equity issues. Changes in capital structure signal that performance targets associate with an implicit risk of varying strategic financing decisions (Chen et al., 2019), such as, increases in intangible assets through operating leverage (Lim et al., 2020), challenging competitive threats with conservative capital structures (Klasa et al., 2018), competing on the basis of innovation by increasing financial slack (O'Brien, 2003), among others. Therefore, considering that managers allow their risk preferences to dominate their firm capital structure decisions (Kieschnick and Moussawi, 2018; Sun et al., 2016) and by contrast that strategic targeted changes increase the prospects for profitability (Omoregie et al., 2019), strategic changes in capital structure (i.e. volatility on the ratio of debt to equity) might activate greater voluntary disclosure to assure investors that there is a potential for future success. As acceptable informational transparency allows the firms' access to considerable amounts of funding (Lemmon and Zender, 2010), information asymmetry is then an obstacle for firms that aim to issue equity or debt, as it increases costs for shareholders (Myers and Majluf, 1984) because managers' intentions to raise equity are associated with the risk of future stock price crash (Reichmann et al., 2022). As a result, there are strategic incentives to increase transparency in the view of reducing the information asymmetry problem, thereby reducing the firm's cost of external financing, leading to the following hypothesis:

*Hypothesis 3. Strategic changes to firms' capital structure increase transparency on corporate governance practices.*

**Innovation.**

Baysinger and Hoskisson (1990) argue that firms that aim to follow innovation as a strategy are benefited by the inclusion of executive directors on the board whereas the presence of outside directors provide more effective monitoring activities. Thus, companies that follow innovation as a strategy require a high degree of integration of the company, attracting a greater participation of executive directors in order to focus their activities towards an innovation process by using inside knowledge (Hill and Snell, 1988). Jia (2018) finds that the uncertainty surrounding innovation activities increases information asymmetry and risk for investors, but such risk depends on whether the innovation activities are based on exploration (i.e. new concepts) or exploitation (i.e. incremental improvements to existing concepts), where firms tend to disclose more exploration than exploitation innovation activities (Matthews et al., 2022). Therefore, a greater protection on the confidentiality and interests of the company might impact negatively on disclosure of corporate governance practices, leading to the following hypothesis:

*Hypothesis 4. Firms that follow a strategy on innovation have less disclosure of corporate governance practices.*

## 2.2 Structural strategies

**Board Size.**

According to Ahmed et al. (2006), small corporate boards are more effective in monitoring than large boards because they have a higher level of coordination and communication abilities and less propensity to manipulation by the CEO or chairman. However, from an agency theory point of view, larger boards increase their diversity and experience, which has an impact on the level of financial disclosure (Briano-Turrent and Rodríguez-Ariza, 2016). In this sense, the complexity of management and the accuracy of the information require greater number of directors with experience and diversity to perform their functions, generating an increase on corporate transparency (Mallin y Ow-Yong 2012). We therefore formulate the following hypothesis:

*Hypothesis 5. Size of the board of directors increases transparency on corporate governance practices.*

**Board Independence.**

Considering that the board of directors plays an important role in the promotion of voluntary disclosure and positively influences the firm's performance, its composition is relevant as an strategic process (Reguera-Alvarado and Bravo, 2017). Independent directors have reputational concerns, which act as an additional incentive for effectiveness in maximising shareholder value (Fama and Jensen, 1983). Although previous research findings are inconclusive regarding the direction in which board independence impacts on corporate transparency, most studies suggest there is a positive relationship between these variables (Samaha and Dahawy, 2011). For instance, Mendoza-Quintero et al. (2018) affirm that board independence increase the corporate governance transparency. In the same way, Liu et al. (2016) found that high levels of board independence have a significant effect on disclosure quality. Independent directors might be encouraged to promote

transparency on corporate governance practices in their aim of protecting shareholders' interests, leading to the following hypothesis:

*Hypothesis 6. The proportion of independent directors on the board increments transparency on corporate governance practices.*

### **Female Directors.**

Gender diversity on the board increases debate, which fosters monitoring, and the process of corporate disclosure in annual reports (Gul, Srinidhi and Ng, 2011), provides higher quality on decisions and promotes a more effective communication (McInerney-Lacombe et al., 2008). Hillman, Shropshire and Cannella (2009) conclude that women's participation on the board provides larger control over organizational actions and reporting through increased attendance in board meetings and audit committees, as well as, enhancement of corporate governance mechanisms. In the same line, females tend to be more risk averse and ambiguity averse than males in financial decision-making (Borghans et al., 2009), hence, female directors are more likely to take actions to reduce information asymmetry (Gul, Hutchinson, and Lai, 2013). Therefore, the above discussion leads to the following hypothesis:

*Hypothesis 7. The number of female directors enhances transparency on corporate governance activities.*

## **3. Data, Variables and Methodology**

### **3.1. Sample of study**

The sample of study is composed by 128 companies drawn from a population of 155 firms, which belong to the most liquid stock indexes in Argentina (MERVAL), Brazil (Bovespa), Chile (IPSA) and Mexico (IPyC). We excluded companies of banking and insurance sectors because they are under a more rigorously regulated market (Garay and González, 2008). The information related to the dependent variable (corporate governance transparency index) and explanatory variables was collected from the annual reports through content analysis methodology during the period 2004-2010. The companies were classified according to the Global Industry Classification Standards. Outliers values for the financial variables were identified, and values above the 99th percentile were allocated the value of this percentile. Values below the first percentile for each variable were assigned in the same way (Braga-Alves and Shastri, 2011). The panel dataset is composed by 826 observations from 2004 to 2010<sup>2</sup>. Table 1 shows a breakdown by industrial sector and country.

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<sup>2</sup> The period of analysis is limited to 2004-2010 since the research variables were collected manually. Currently, there are no databases in Latin America for listed companies that contain corporate governance and strategic information for each one.

**Table 1.** Sample Distribution

Industry	Country			
	Argentina	Brazil	Chile	Mexico
	%	%	%	%
Energy	10.8	4.0	0.0	0.0
Materials	32.3	19.7	16.8	13.5
Industrial	0.0	13.7	19.2	9.6
Consumer discretionary	0.0	8.8	18.8	30.3
Consumer staples	21.5	14.0	15.4	34.6
Health care	0.0	0.0	0.0	1.9
Financial (excl. banking and insurance)	0.0	10.0	6.7	0.0
Information technology	0.0	2.0	0.0	0.0
Telecommunications services	7.7	10.0	3.4	10.1
Utilities	27.7	17.8	19.7	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Own elaboration

## 3.2. Variables Measurement

### Dependent Variable.

The proposed Corporate Governance Transparency Index (CGTI) captures the nature of emerging Latin American context, using a mixture of information required by codes of governance and normative framework in Argentina, Brazil, Chile and Mexico (Lefort and González, 2005). Our main research instrument is the transparency index composed by 43 items, categorised into four dimensions on corporate governance: 1) composition and functioning of the board; 2) shareholders' rights; 3) ethics and conflicts of interest; 4) other information related to good governance (Briano-Turrent and Rodríguez-Ariza, 2016). For more detail see Appendix 1.

We compiled corporate governance information from annual reports by using content analysis methodology and add one point for each of the 43 items that represent disclosure in calculating the total transparency index. While each sub-index comprises 53, 18, 16 and 13 per cent of the total index composition, respectively. The index allows each element to be equally important and does not distinguish subjective selection of the most influential characteristics (Berglöf and Pajuste, 2005). Nevertheless, we measure a weighted sum of the four dimensions in our calculations.

### Explanatory Variables.

**Liquidity Strategies (LS).** Liquidity is measured with cash and equivalents to sales. To capture strategic changes in liquidity by the board of directors, the natural logarithm of the standard deviation of liquidity (volatility) is calculated over five years (Balakrishnan and Fox, 1993).

**Investment Strategies (IS).** To capture strategic changes on investment by the board of directors, the natural logarithm of the standard deviation (volatility) of the ratio of capital investment to sales is calculated over five years (Biddle et al., 2009).

**Capital Structure Strategies (CSS).** Strategic changes on capital structure are calculated with the natural logarithm of the standard deviation over five years of the ratio of total debt to total equity (De Jong and Veld, 2001).

**Innovation (Inn).** To classify a firm as innovative, we employ content analysis to review annual reports using the keyword search of “innovation” and its derivatives. Then we establish a dichotomous variable that takes the value of one for firms that adopt innovation as a strategy and zero otherwise (Samaha and Dahawy, 2011).

### **Board composition strategies**

**Board size (LnBS).** We adopt the natural logarithm of the total numbers of directors on boards to measure board size (Upadhyay and Sriram, 2011).

**Board independency (I/BS).** Ratio of outside members to board size is calculated as a proxy to measure independence of the board (Ajinkya, Bhojraj, and Sengupta, 2005).

**Proportion of female directors (FEM).** We use the ratio of female members to total board members (Gul, Srinidhi and Ng, 2011).

**Control Variables.** Company size, leverage, age of the company and profitability in the empirical model (Apostolos and Konstantinos, 2009).

## **3.3. Methodology**

The analyses are executed with OLS with clustered standard errors to account for the error term’s lack of independence across two dimensions: “i) firm and year; and, ii) firm and country. Two-way cluster standard errors has been suggested to be a robust method of analysis in both time-series and cross-sectional regressions in the accounting and economic literature (Cameron et al. 2011). Gow et al. (2009) document that recent findings in the cost-of-capital literature relating to earnings quality, idiosyncratic risk, and governance are not robust to the use of well-specified test statistics as normally only one type of correlation in the errors is considered and assumes that errors are uncorrelated across clusters. For example, clustering by time (firm) allows observations to be cross-sectionally (serially) correlated, but assumes independence over time (across firms)”.

In addition, this paper considers estimation problems that could arise from potential endogeneity. For instance, more transparent firms have been found to have higher contemporaneous earnings performance (Lang and Lundholm, 1993). But also, firms may increase disclosure when they are performing well. In the same way, board strategies might be a response to firms’ performance (positively associated with transparency); but also changes in performance might be the result of board strategies. To deal with potential estimation problems arising from endogenous explanatory variables, the estimators are calculated with Generalized Method of Moments System (system GMM) (Arellano and Bond, 1991; Arellano and Bover, 1995). Furthermore, system GMM estimation eliminates the unobservable firm characteristics by differencing the dependent and explanatory variables, relaxing the assumption of strict exogeneity. The inclusion of the lagged dependent variable (transparency) as an explanatory variable captures the effects of any possible dynamic endogeneity (Blundell and Bond, 1998). The estimation model is specified as follows:

$$CGTI = \alpha_{it} + \beta_1 LS_{it} + \beta_2 IS_{it} + \beta_3 CSS_{it} + \beta_4 Inn_{it} + \beta_5 Ln(BS)_{it} + \beta_7 \frac{I}{BS}_{it} + \beta_8 FEM_{it} + \beta_j [controls_{it}] + \mu_{it} \quad (1)$$

## 4. Results

### 4.1. Descriptive Analysis

Table 2 shows the means and standard deviations (in parenthesis) of CGTI and the covariates for each country. CGTI on average is around 0.63 across countries: Mexico achieves the largest CGTI (0.73) whereas Argentina records the lowest CGTI (0.51). Regarding to the explanatory variables, 14% of companies adopt innovation as a strategy and there is no large variation across countries since it ranges from 13% to 15%. The average number of board members is 9.74 for all countries: on average boards in Mexico comprise 13.3 directors whilst the comparative figure in Chile is 7.73. The average proportion of independent directors is 36% for all countries. Boards are most independent in Mexico with an average figure of 48% in contrast to the lowest proportion of 27% in Argentina. By way of explanation, the Mexican code of corporate governance stipulates a minimum of 25% of independent directors on boards, whereas the other countries specify neither a number nor proportion. The proportion of female directors is low with a grand average of 4%: the highest proportion is in Brazil at 6% and the lowest in Argentina at 0%. The average volatility of liquidity, investment and capital structure stand at -2.81, -3.63 and -1.43 respectively for all countries.

For the control variables, the average of leverage in the region is 28%. Firm size, measured by the natural logarithm of its assets, is 14.2 for all countries. Firms on average are 35 years old with the oldest firms in Chile at 43 years. Average financial performance (RoA) is 0.12 with the most profitable firms residing in Argentina (0.14) and the relatively less profitable in Chile (0.09).

**Table 2.** Means and Standard Deviations (in Parenthesis) by Country

Variable	Argentina	Brazil	Chile	Mexico	Total
CGTI	0.51 (0.19)	0.61 (0.17)	0.59 (0.10)	0.73 (0.10)	0.63 (0.15)
Liquidity	-2.92 (1.19)	-2.37 (0.95)	-3.21 (0.96)	-3.10 (0.99)	-2.81 (1.05)
Investment	-3.28 (0.95)	-3.49 (1.13)	-3.63 (0.85)	-3.95 (0.90)	-3.63 (1.02)
Capital_structure	-1.53 (1.30)	-0.82 (1.33)	-2.05 (0.91)	-1.80 (1.25)	-1.43 (1.33)
Innovation	0.15 (0.36)	0.14 (0.35)	0.13 (0.33)	0.15 (0.36)	0.14 (0.35)
Board_size	9.97 (2.97)	8.79 (2.85)	7.73 (1.17)	13.30 (3.81)	9.74 (3.55)
Board_Independence	0.27 (0.18)	0.30 (0.19)	0.35 (0.23)	0.48 (0.15)	0.36 (0.21)
Female	0.00 (0.01)	0.06 (0.09)	0.02 (0.06)	0.04 (0.07)	0.04 (0.07)
Leverage	0.22 (0.15)	0.30 (0.15)	0.30 (0.10)	0.23 (0.16)	0.28 (0.14)
Size	13.83 (1.16)	14.36 (1.44)	13.89 (1.09)	14.36 (1.01)	14.20 (1.25)
Age	35.97 (29.38)	32.36 (21.43)	43.57 (30.62)	32.40 (22.86)	35.48 (25.45)

RoA	0.14 (0.09)	0.13 (0.10)	0.09 (0.05)	0.12 (0.07)	0.12 (0.08)
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## 4.2. Empirical Analysis

We executive a correlation analysis to classify the variables as independent, endogenous or predetermined and report the results in Table 3 highlighting the significance at the 95% confidence level. We observe significant coefficients among all of the variables except for innovation, which is therefore used as exogenous.

**Table 3.** Correlation Matrix (Bold Numbers Indicate Significance at the 5% Level)

	1	2	3	4	5	6	7	8	9	10
1.Liquidity	1.00									
2.Investment	0.2741	1.00								
3.Capital	<b>0.2896</b>	0.0140	1.00							
4.Innovation	-0.0384	-0.0012	-0.0302	1.00						
5.Board_size	<b>-0.1451</b>	<b>-0.0702</b>	<b>-0.1210</b>	0.0110	1.00					
6.Independence	-0.0295	<b>-0.1606</b>	-0.0503	0.0227	<b>0.1970</b>	1.00				
7.Female	-0.0570	-0.0519	<b>0.1010</b>	-0.0672	-0.0588	<b>-0.1329</b>	1.00			
8.Profitability	-0.0532	-0.1557	0.0477	-0.0529	<b>0.0819</b>	0.014	-0.0183	1.00		
9.Size	-0.0531	0.0589	<b>-0.1799</b>	-0.0385	<b>-0.2122</b>	<b>-0.0692</b>	<b>0.1584</b>	-0.0191	1.00	
10.Leverage	<b>0.1035</b>	<b>0.1080</b>	<b>0.3616</b>	-0.0006	<b>-0.1351</b>	-0.0204	<b>0.1299</b>	<b>-0.2102</b>	<b>-0.0904</b>	1.00
11.Age	<b>-0.2608</b>	<b>-0.1098</b>	<b>-0.1360</b>	-0.0156	<b>0.1216</b>	0.0578	0.0648	0.0385	<b>0.1078</b>	0.0639

We estimate the system GMM model in equation [1]. As system GMM uses more instruments that dynamic GMM it is likely that weak instruments could be present in the regression (Wintoki et al., 2012). Therefore, the selection of independent, endogenous and predetermined variables is important to increase the efficiency of the estimation. Table 4 presents the estimates of equation [1]. Column (1) presents estimated coefficients using two-way cluster standard errors by firm and year. We alter the source of variation in Column (2) and show results using two-way cluster standard errors by firm and country. Lastly, column (3) presents the results of the system GMM estimation.

**Table 4.** Transparency and Board Strategies

	(1) OLS-two-cluster (firm/year)	(2) OLS-two-cluster (firm/country)	(3) System-GMM
Liquidity(LS)	0.0105 (0.201)	0.0036 (0.506)	0.0112** (0.000)
Investment(IS)	-0.0072 (0.432)	-0.0094 (0.326)	-0.0032 (0.446)
Capital_Structure(CSS)	0.0025 (0.722)	0.0016 (0.813)	0.0073† (0.067)
Innovation(Inn)	0.0351** (0.000)	0.0325** (0.000)	0.0155* (0.020)
Board_size(BS)	0.0734 (0.108)	0.1292** (0.000)	0.0283† (0.095)
Independence(I/BS)	0.1076* (0.013)	0.1394* (0.014)	0.0581* (0.025)
Female	-0.2248	-0.1741*	0.1452*

	(0.147)	(0.019)	(0.040)
Profitability	-0.0133 (0.888)	0.0458 (0.506)	-0.0349 (0.518)
Size	0.0301** (0.000)	0.0242* (0.034)	0.0041 (0.330)
Leverage	0.0988† (0.098)	0.0773* (0.049)	-0.0738 (0.122)
Ln(Age)	0.0214* (0.027)	0.0100 (0.462)	-0.0031 (0.605)
Transparency <sub>t-1</sub>			0.8556** (0.000)
Constant	0.0345 (0.802)	-0.0363 (0.813)	0.0272 (0.677)
Industry	Yes	Yes	No
Country	Yes	No	No
Year	No	Yes	Yes
R2	0.3657	0.3968	
Hausman-Test Columns (2) vs (3)			34.58**
AR(1)			-3.34**
AR(2)			0.22
Sargan-Test			98.66
Hansen-Test			90.90
N	763	763	661
No. Instruments (2,2)			115

Note: \*\*,\*,† denote significance at the 1, 5 and 10 per cent levels.

Hypothesis 1 affirms that strategic changes in liquidity increase CGTI. Whereas the signs of the estimated coefficients on LS are consistent with **accepting the hypothesis 1**, the estimator is significant only in the case of system GMM. In the presence of endogeneity, the cluster standard errors estimation is likely to produce biased estimates whilst the system GMM panel model is superior in terms of consistency. We expect the opposite when the explanatory variables are exogenous, in which case, the cluster standard errors estimation is preferred because it is more efficient. A test of the difference between models is performed using the Hausman test. The Hausman statistic is 34.58 (Column (2) versus (3) in Table 4), which under the null hypothesis supports the estimators calculated with system GMM. Therefore, we find robust support for hypothesis 1 that increases in liquidity strategies yield increases CGTI.

Hypothesis 2 suggests that strategic changes on investment impact negatively the CGTI as investment efficiency is lost because of either over- or under-investment, which is associated with limiting the set of corporate information. Although the sign of the estimators on IS across columns in Table 4 are as expected, there is no significant evidence to accept hypothesis 2, therefore **H2 is not accepted**.

Hypothesis 3 supports that changes in capital structure facilitate increases in CGTI. We find evidence of a weak relationship between CGTI and CSS in Column (3) but no significant evidence in Columns (1) and (2). Nevertheless, as we contend that results from column (3) are more robust, we carefully **accept hypothesis 3** because system GMM is our preferred method of analysis since it

controls for endogeneity of the variables and produces a more robust estimation. The Sargan test and Hansen test suggest the instruments are robust and not weak whilst the AR(2) suggests there is no second order autocorrelation in error differences.

Hypothesis 4 analyses the relationship between innovation (Inn) and increases in CGTI. Innovation influence positively and significantly the CGTI and the result is consistent across columns in Table 4 in support of hypothesis 4. We observe that firms, which state in their annual reports they actively pursue innovative activities achieve higher indices of CGTI in comparison with firms not participating in such activities (Zahra, 1996). Thus **H4 is accepted**.

Hypotheses 5 and 6 evidence that a larger and more independent board of directors increase corporate transparency. The results suggest that independent directors are excellent monitors of firm activities and they safeguard the interests of outside shareholders by promoting corporate governance practices. The significant coefficients on BS (column 1 of Table 4) and I/BS lead to **accept hypotheses 5 and 6**.

Hypothesis 7 affirms that transparency rises when the proportion of female board members is higher. The results are inconclusive. In columns (1) and (2) the coefficient on FEM is negative suggesting that greater female representation lessens transparency. However, the sign on FEM conforms to expectations in the system GMM estimation and is significant at the 5% level. Based on the Hausman test (see column (3)), we consider the estimation with two-way cluster standard errors might be inconsistent due to the presence of endogenous variables. Therefore, we **accept hypothesis 7** based on the findings of column (3), which, supports claims *inter alia* that greater female participation on corporate boards improves disclosure as a result of an increase in monitoring (Gul, Srinidhi and Ng, 2011).

Whereas size and leverage significantly affect CGTI in the OLS estimations the relationships lose significance in the system GMM model. Similarly, age is significant in one model only. Lastly, there is no evidence of a relationship between profitability (RoA) and transparency.

### 4.3. Industry And Country-Adjusted CGTI.

On the basis that system GMM is a robust method to estimate equation [1] we use this approach and re-estimate the model using adjusted measures of CGTI as dependent variables. First, we create an industry-adjusted CGTI by subtracting the industry mean of CGTI from the firm level value. Second, we derive a country-adjusted CGTI by subtracting the country mean of CGTI from the firm level value. Finally, we compute an industry and country-adjusted CGTI by following both of the above adjustments simultaneously.

Table 5 presents the results for strategic liquidity, strategic capital structure and innovation are consistent with the results in column (3) of Table 4. This gives further support for **accepting hypotheses 1, 3 and 4**.

**Table 5.** Transparency and Board Strategies - System GMM Estimation

	(1) CGTI (industry- adjusted)	(2) CGTI (country- adjusted)	(3) CGTI (industry and country adjusted)
Liquidity(LS)	0.0100** (0.008)	0.0083* (0.041)	0.0096* (0.026)
Investment(IS)	-0.0056 (0.283)	-0.0036 (0.491)	-0.0040 (0.462)
Capital_Structure(CSS)	0.0080† (0.060)	0.0091* (0.026)	0.0091* (0.034)
Innovation(Inn)	0.0171* (0.017)	0.0155* (0.019)	0.0150* (0.016)
Board_size(BS)	0.0314 (0.108)	0.0189 (0.271)	0.0162 (0.357)
Independence(I/BS)	0.0491† (0.093)	0.0464 (0.102)	0.0608† (0.061)
Female	0.1468† (0.080)	0.1366† (0.088)	0.1230 (0.153)
Profitability	-0.0410 (0.462)	-0.0559 (0.310)	-0.0337 (0.500)
Size	0.0033 (0.458)	0.0042 (0.425)	0.0044 (0.349)
Leverage	-0.0810 (0.101)	-0.0912 (0.149)	-0.0788 (0.104)
Ln(Age)	-0.0046 (0.413)	-0.0041 (0.393)	-0.0072 (0.217)
Transparency <sub>t-1</sub>	0.8304** (0.000)	0.8300** (0.000)	0.7968** (0.000)
Constant	-0.0567 (0.361)	-0.0340 (0.673)	-0.0285 (0.664)
Year	Yes	Yes	Yes
AR(1)	-3.24**	-3.37**	-3.39**
AR(2)	0.34	0.47	0.48
Sargan-Test	96.73	98.46	101.30
Hansen-Test	98.90	97.21	97.08
N	661	661	661
No. Instruments (2,2)	115	115	115

Note: \*\*,\*,† denote significance at the 1, 5 and 10 percent levels.

However, the relationship between transparency and board independence (I/BS) becomes less significant (from 5% to 10%) after adjustments and loses significant entirely when CGTI is country-adjusted. Similarly, the former significant relationship between transparency and board size (BS) cannot be confirmed when CGTI is adjusted for industry and country. The evidence shows that differences in transparency are not explained by board size but rather the size of boards varies depending on the country and industry. This dimension could reflect unobserved heterogeneity in codes of corporate governance practices across countries in the region (Poletti-Hughes and Williams, 2019).

The importance of female directors is upheld in columns (1) and (2) albeit at the 10% level of significance compared to 5% previously. The loss of significance when CGTI is country-adjusted is not clear-cut. The estimator from column (2) evidences that country differences might determine the proportion of female directors. Tentatively, female participation on boards depends on the wider environment, including the social, political and economic structures of individual countries (Tejersen and Singh, 2008). For instance, Mendoza-Quintero et al. (2018) found that female directors motivates to a higher supervision function to the management team, which leads to a better corporate performance in weakness institutional contexts.

## 5. Conclusions.

This paper promotes the debate on corporate governance transparency. It expands the expertise by providing firm-level evidence from Latin America, a region where codes of good governance substitute for perceived weaknesses in institutional environments. We posit and find that disclosure on corporate governance practices is related with the strategic decisions taken by boards of directors. We define strategic decisions from both financial and structural perspectives: specifically, we compute measures of liquidity strategy, investment strategy, capital structure strategy, innovation, board size, board independence and proportion of female directors to proxy the strategic decision-making by corporate boards.

This study shows strong empirical evidence that companies which select innovation as a strategy, are more likely to improve corporate disclosure (H4). It supports claims that firms disclose press releases or other public statements in order to pre-empt the market by forcing rivals to exit an innovation contest prematurely (Gill, 2008), mainly because unlike investment in fixed capital, innovation is a long term venture with high uncertainty. More importantly, as a firm engages in innovative activities, the provision of information assures investors' confidence and decreases the sensitivity of management entrenchment to poor innovative output (Zhong, 2018). Firms, which characterize by higher volatility of strategic liquidity and capital structure, also enhance transparency independent of industry and country effects (in support of H1 & H3). It suggests that corporate boards aim to decrease information asymmetries between insiders and shareholders by increasing transparency on corporate governance mechanisms. This finding remarks that as profitability responds to liquidity and capital structure, strategic changes on these aspects impact on the trade-off between profitability and the risk of bankruptcy especially as companies view non-compliance as costly (Omorieg et al., 2019).

It is empirically supported that industry and country factors impact the relationship between transparency and board structure. This means the variation in levels of transparency, which is attributable to board size (H5) and female participation (H7) is the result of country and industry gaps. The influence of adjusting transparency by country eliminates any significance in the relationship between board size and transparency. Similar country and industry adjustments lead to a more precise understanding of the role female board members play in terms of improving transparency. We suggest the impact of female directors is affected by political and economic differentials on the empowerment of women across Latin American countries .

We find evidence to suggest that greater board independence increases transparency (H6). However, the relationship is sensitive to industry-adjustment, which implies the ratio of independent

directors varies across industries and does not necessarily determine the level of transparency. Generally speaking, our findings offer support for the view that country characteristics are the most important determinant of the governance and transparency of firms, particularly, in less-developed countries because transparency and better firm-level governance realize mixed implications for shareholder wealth. In conclusion, the empirical results shows that the variation of transparency on corporate governance practices by Latin American firms increases, because disclosure on corporate governance constitutes a substitute strategic tool on institutional frameworks where the regulatory system is weak and the expropriation of the minority shareholders is common (agency conflicts type II), therefore transparency may raise the confidence of investors and stakeholders. The board of directors have a relevant role to motivate the corporate governance disclosure, mainly its composition and financial strategies adopted.

Although our results contribute to extend the international comparative literature in the corporate governance disclosure, many related issues are worthy of further investigations. For example, recent studies show that firms tend to increase transparency to respond to stakeholder's requirements, so other variables such as gender diversity in the board, sustainable variables or family element may influence in corporate transparency. In addition, our results are focused in Latin American countries, and it would be interesting to see whether similar issues exist in other markets with different institutional environments. This study has relevant practical implications for decision makers in Latin American firms; for instance, the stakeholders require active independent directors in order to increase confidence in capital markets and enhance the corporate information.

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**Appendix 1.** Corporate Governance Transparency Index

<b>Functioning and performance of the board</b>
Mission of the board
Main functions of the board
Practices related to COB-CEO duality
Board structure
Size of the board
Rules of organization and operation of the board and its committees
Functions and activities of each member of the board
Selection, removal or re-election procedures
Document that establishes the norms of conduct for the board
Relationships between directors and shareholders
Shareholding of the directors
Conditions determining the independence of the board
Profile and/or curriculum of the board members
Independent director occupies a steering position in other companies
Remuneration of the CEO and board members
Nominating committee
Remuneration committee
Corporate governance committee
Auditing committee
Additional support committees
Main functions of the support committees
Integration of support committees
<b>Shareholders rights</b>
Description of shareholder voting process
Pyramidal structures
Resolutions adopted at the last Annual General Meeting
Information about the notice of the meeting
Information of the agenda
Information about the text of all resolutions proposed for its adoption
Shareholder agreements to reduce the concentration of control
Company is listed on other international markets
<b>Ethics and conflicts of interest</b>
Information related to conflicts of interest and related party transactions
Company is free of any penalty for breach of good governance rules in the stock market on the last year
Percentage of company ownership from significant shareholders
Company operations with its directors and managers and to what extent such transactions are made in competition

Significant transactions that have occurred between the company and significant shareholders Members of the board held other positions on the boards in companies of the same group The composition of its shareholders
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<b>Other related information with corporate governance</b>
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Use the international accounting principles Use the services of a recognized auditing firm (Big 4) The corporate information provided in English Sanctions against the management for breach of their corporate governance practices Financial situation and performance Practices of good governance
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Source: Briano-Turrent and Rodríguez-Ariza (2016); Garay and González (2008); Lefort and Walker (2005).