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Documentos de trabajo
Economía y Finanzas

Centro de Investigación
Económicas y Financieras

No. 17-05
2017

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What you say and how you say it: Information disclosure in Latin American firms

October, 2016

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Abstract

Firms in Latin America could differentiate themselves by adopting better information disclosure practices. In this paper, we construct an Information Disclosure Index (IDI) for a sample of 454 firms in the six largest Latin America countries. We look at 3.191 company reports and show that firms with better disclosure practices have better market valuation (Tobin's Q) and operating performance (ROE). We then measure the tone of the information disclosed using word content analysis, and find that uncertainty in tone is negatively associated with higher firm valuation (Tobin's Q) and better financial performance (ROE).

Keywords: Disclosure, Content analysis, Corporate governance, Firm value.

JEL Classification: G15, G34

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Introduction

La Porta et al. (1997, 1998, 2000, 2002) and Chong and López-de-Silanes (2007) have shown that there are great differences in legal protection around the world, usually explained by different legal origins and foundations (e.g., Common Law versus French Civil Law). All Latin American countries share the same foundation in French Civil Law, which is known to be a hostile legal environment for investors (La Porta et al. 1997, 2000; Chong and López-de-Silanes 2007).

When a given firm decides to disclose information, one can argue that the purpose is to adopt governance practices that differentiate it from others so that it becomes more attractive to outside investors. Latin America offers an ideal setting for firms willing to signal better governance, as explained in Garay and González (2008). Disclosure of valuable and credible information to the market can partly compensate for the weak legal environment in which Latin American firms operate, and so enhance their attractiveness to investors. Klapper and Love (2004) and Durnev and Kim (2005) provide theoretical and empirical evidence supporting the idea that corporate governance practices matter more in countries where legal protection is weak.

Following this line of reasoning, firms in emerging markets could enhance their market valuation by improving the quality and amount of voluntary information they are willing to disclose (Patel et al. 2002).

In this paper we review the level of information disclosure for 454 listed firms in six Latin American countries. We begin by constructing an Information Disclosure Index (IDI) comprised of 50 questions divided into 9 different sections (and three different clusters). This allows us to analyze disclosure practices reflected in 3.191 company reports. In particular, we test whether the IDI has any impact on firms' market value (Tobin's Q) and accounting performance (ROE), and study the relative importance of each of the IDI clusters. We then go one step further and measure the tone of the information disclosure through word content analysis. Using the financial dictionaries proposed by Loughran and McDonald (2011b), we build two measures of tone. We combine the uncertain, negative, and weak modal word lists to measure uncertainty in a subsection of the annual report known as the president's letter. We argue that the president's letter is the subsection most used by managers to gather information about past performance and future expectations of the firms they follow. We also measure positivity in text, again using the word list proposed by Loughran and McDonald (2011b). We then posit the idea that in terms of information disclosure, it is not only what you say that counts but also how you say it.

Our main information source was the annual reports posted on each firm's webpage, one of the most important channels for firms' communication with stakeholders according to the Organization for Economic Co-operation and Development (OCDE). We also use all available information from other sources (e.g., regulatory agencies).

We show that higher disclosure is positively associated with higher firm valuation (Tobin's Q) and better financial performance (ROE), a benefit that accrues directly to investors, actual or potential. In terms of the different sections of our IDI, we perform a principal component analysis (PCA) and identify three clusters among the 50 questions identified by our index. The group associated with "board of directors, risk management, and responsibility with others" group shows higher statistical and economic significance. The group for "company information, executive summary and financial" is not significant at first as a consequence of little heterogeneity in the variables. In other words, most firms reveal basic information about the company, present an executive summary and report financials. No effect is then observed between this type of information and performance measures. When we introduce tone variables, uncertainty in tone is negatively associated with higher firm valuation (Tobin's Q) and better financial performance (ROE).

This study is different from other research concerned with the impact of transparency on firm value in several ways. Although Patel et al. (2002) analyzed the same set of countries that we do (except for Colombia) they base their conclusions on only one year of data and do not consider the dynamic aspect of Latin American firms' disclosure practices. They also do not consider control variables and multivariate relations in their samples. Garay et al. (2013) developed a disclosure index but consider only information provided by the firm's internet site, without considering other information channels as we do. Finally, including a principal component analysis (PCA) allows us to identify different clusters of information disclosure and to measure their relative importance in terms of transmission to the market. To the best of our knowledge, this is the first effort to measure tone in a language other than English by using the financial word list proposed by Loughran and McDonald (2011b). By measuring tone in the president's letter, a very particular and important source of information, we shed light on the importance of meaning in information disclosure for Latin American firms.

The rest of the paper is organized as follows. First, we review the literature and state our hypotheses. Second, we present the methodology, the data sources and explain the construction of the IDI. Third, we discuss the main results. The last section concludes.

Literature review

Corporate governance is the set of mechanisms (internal and external) that deals with conflicts of interest between different stakeholders such as managers, boards of directors, controlling shareholders, minority shareholders, family members, and creditors, among others (Tirole 2001). What is the impact of good corporate governance on firm value? In theory, there must be a positive effect attributable to higher investor confidence that reduces the cost of capital and therefore increases firm value (La Porta et al, 2002). This empirical question has been addressed extensively in the literature. For instance, Gompers et al. (2003) create a corporate

governance index using 24 governance rules and finding that higher indexes are correlated with higher firm value in the United States. Using samples of firms from emerging and developed economies, La Porta et al. (1997) conclude that countries with legal systems based on French law provide less protection to investors and consequently have less-developed capital markets. In addition, La Porta et al. (1998 and 2000) show that external determinants (e.g., legal origin) have a great influence on the level of investor protection and the design of governance mechanisms.

For emerging markets, Klapper and Love (2004) study 25 countries, showing that better corporate governance is highly correlated with better operating performance (e.g., ROA, ROE) and market valuation (e.g., Tobin's Q). Research in Latin America has also shown that, on average, a good set of corporate governance practices and policies is positively related to firm value (Leal and Carvalhal-da-Silva 2005 for Brazil, Chong and López-de-Silanes 2006 for Mexico, Lefort and Walker 2005 for Chile, and Garay and González 2005 for Venezuela). The positive relation between corporate governance practices and firm value in Latin America is especially important given the weak investor protection environment (French Civil Law tradition). This creates the opportunity for firms to differentiate themselves and attract potential investors by disclosing more information than their peers. Easterbrook and Fischel (1991) and Diamond (1989, 1991) offer arguments about how firms could signal their quality by using better corporate governance practices. Moreover, Coffee (1999) advocates for a "global convergence" in corporate governance. As expected, empirical evidence in Klapper and Love (2004) and Durnev and Kim (2005) clearly demonstrates the fact that corporate governance practices are more valuable in environments with low investor protection. As a result, companies may enhance market perception of their value by improving the quality, amount, and tone of the information they decide to disclose (Patel et al. 2002).

Other benefits of information disclosure are the reduction of liquidity risk and adverse selection. A greater amount of firm-related information improves market liquidity, thus making it possible for investors to engage in long-term corporate projects that could be perceived as risky but profitable by the market (Levine 1997). Adverse selection, which represents the cost for investors to trade with agents who have more information, could be lowered by a firm's decision to disclose information. Diamond and Verrechia (1991) argue that the cost of adverse selection is much lower (measured as the average bid/ask spreads) when firms report relatively high levels of information to the market.

More recently, Hermalin and Weisbach (2012) show that there are both costs and benefits when a firm chooses to reveal information to the market. Their model suggests the existence of an optimum level of information disclosure. As a result, any given firm could choose to adopt less than maximal disclosure so long as their market value is maximized. In general, a firm's information disclosure should be positively related to its value, which leads us to test the following hypothesis:

Hypothesis 1. *Higher information disclosure is positively related to firm valuation in Latin America.*

Other papers based mostly on internet-related information disclosure but with similar aims have reported a positive relation between the level of disclosure and firm value. For instance, Grzybkowski and Wójcik (2006) for British and Polish corporations; Geerings et al. (2003) for the Euronext Stock Exchange; Ismail (2002) for the Gulf Cooperation Council countries; Patel et al. (2002) for Latin America (except for Colombia); and more recently, Garay et al. (2013) for Latin America. As stated before, the adverse selection cost is lower when insiders who are better informed about the firm than outsiders publicly disclose information about the firm. In this paper we argue that not only the amount but also the tone of official information reported by insiders convey information about expected performance. Information disclosure is not just how much you say but what you mean to say and how you say it (Li 2010).

Previous research has studied the relationship between textual sentiment and corporate information disclosure. Li (2006) finds a negative association between risk sentiment and future earnings. Feldman et al. (2010) and Li (2010) find a significant correlation between contemporaneous returns and future earnings and the tone used in the management discussion and analysis (MD&A) section in 10k and 10Q forms. Loughran and McDonald (2011b) have created a dictionary of words with negative meaning in financial reports and find a negative relationship between the presence of these words in 10k forms and firms' returns.[1] Loughran and McDonald, (2011a) suggest that certain words can signal potential fraud, excess return and higher volatility. Hence, any uncertainty in tone could imply bad news about a firm and could lead investors to assign it a lower value. This argument leads us to the following hypothesis:

Hypothesis 2. *Higher uncertainty in the tone of corporate information disclosed is negatively related to firm valuation in Latin America.*

This paper differs from previous work because it uses not only the information in the firm's web site but also that in other sources commonly used by investors to gather firm-related information, such as firms' annual reports, regulatory bodies' reports, and any other publically available information channel. Using all these information sources together with a four-year panel and a full set of control variables, and considering the potential endogeneity of our dependent variables, we were able to construct a more comprehensive IDI for our econometric analysis.

We also go one step further and analyze not only the amount of information disclosed but its meaning and subsequent effect on firm valuation. To the best of our knowledge, this is the first attempt to measure the relationship between textual sentiment in corporate information and firm valuation in a language other than English.

[1] The authors created six dictionaries (negative, positive, uncertainty, litigious, strong modal and weak modal verbs).

Methodology

Data and information disclosure index (IDI).

For our sample of firms, we downloaded 3.191 reports from the firms' web pages and other information sources, such as the capital market regulatory bodies in each country, for the years 2010-13. Table 1 shows the number of firms in our sample by year and industry sector.

[Insert Table 1]

Our final sample is composed of 454 firms distributed in the six largest Latin American countries: 10 percent in Argentina, 20 percent in Brazil, 29 percent in Chile, 9 percent in Colombia, 18 percent in Mexico, and 14 percent in Peru. In terms of industry sectors, manufacturing represents 30 percent of the firms in the sample, followed by financial service with 12 percent and utilities with 10 percent of the total sample. We use the information in the reports to answer 50 yes/no questions (see Appendix 1) divided into 9 sections as follows: board of directors, executive summary, firm information, corporate governance, corporate social responsibility, financials, risk management, social dimension, and relations with other stakeholders. For each firm, we construct an IDI following the guidelines provided by the OCDE and CAF (a Latin American development bank), and by the Colombian code of good governance practices for listed firms (Código País) and closed firms (Guía de Gobierno Corporativo para Sociedades Cerradas y de Familia).

Each positive answer adds 1 point to the IDI for each firm and each year; therefore, we are assuming that the weight for each question is the same. (We later relaxed this assumption using a factor analysis approach.) Therefore the maximum score is 50 (50/50 or 100% in relative terms) and the minimum is 0 (0/50 or 0% in relative terms). We report all results in relative terms. This methodology for the construction of the IDI is widely used in the corporate governance literature, and it does not lead to tests of the effectiveness of any corporate governance practice in particular (Geerings et al. 2003, Grzybkowski and Wojcik 2006). Thus, in this paper we are not testing the firms' corporate governance as a whole, but one of its main components, that is, the level of information disclosure.

It is important to emphasize that although company reports are the main source of information, we complemented these with other information channels. Constructing the IDI using only the firms' annual report yields approximately 80 percent of all information disclosed (see Table 2). This fact reflects the relevance of these reports.

[Insert Table 2]

From Table 2, it is clear that the annual reports of the majority of firms offer an executive summary that provides the main facts and issues for the year. The second section in level of disclosure is the financials, where the company shows its financial statements, ratios, budget execution, and its stock performance. Note that the sections related to corporate governance and the board of directors show a very low average (0.25 and 0.401, respectively), which is not unusual in Latin America, a region characterized by low levels of information disclosure and investor protection (La Porta et al. 1999).

In Table 3, we show the IDI classified by the stock market liquidity for each firm. As expected, the higher the stock liquidity, the greater the IDI. In our sample, 73.8 percent of firms are represented in the low liquidity subsample. In addition, Table 3 shows that identity of the controlling shareholder also influences the IDI. In our sample the controlling shareholder is represented by pension funds and other institutional investors, domestic firms, multinational firms, families, banks, and the state. The lowest IDI comes from banks, the highest from firms owned by the state.

[Insert Table 3]

We also analyze the IDI regarding economic activities and countries (not shown in the tables but available upon request). In relation to industrial sectors, we find that investment firms score the lowest IDI, which is consistent with the fact that these firms are usually investment vehicles (holding firms) used by families to exert control. Other sectors with low IDI scores are fishing, agriculture, and manufacturing. In contrast, real estate and education run high in terms of the IDI followed by hotels and restaurants, mining, and utilities. The countries that score the highest average IDI for the subgroup of high liquidity stocks are Colombia, followed by Brazilian stocks registered in the Novo Mercado. Interestingly, the Colombian stocks in the subgroup of low liquidity have the lowest scores, followed by Chilean firms. An interesting aspect of our sample is that the IDI tends to increase for all countries in the sample (see Graph 1).

[Insert Graph 1]

Now, our goal is twofold. On the one hand we want to test whether the IDI has any impact on the firms' market value (Tobin's Q) and accounting performance (ROE), along with a more detailed analysis of the relative importance of each of the IDI sections. On the other hand, we include a content analysis approach to test whether the "tone" of the firm's executive summary, particularly the subsection with the president's letter, has any relationship with the firms' Tobin's Q and ROE.

Tone measures

Following the literature in information retrieval, we use a rule-based classifier to measure tone in the annual reports of our sample of Latin American firms. We use the dictionaries proposed by Loughran and McDonald (2011b) to measure the frequency

of a query in a corpus of files. Loughran and McDonald developed six dictionaries based on 10-k files, which are more appropriate in the financial context than previous dictionaries. The fact that these dictionaries are built on 10-k files makes our analysis better since we are dealing with the equivalent report released in Latin America.

In this work we focus our analysis on four dictionaries categorized in two groups. As suggested by Loughran and McDonald (2013) we combine the negative, uncertain and weak modal dictionaries to create just one since the three seem to proxy the same attribute. We also keep the positive dictionary and discard litigious and strong modal verbs. The litigious dictionary concerns suits by shareholders disappointed with firm performance (Ibbotson and Jaffe 1975). Since our interest is performance and not probability of being sued, we discard this dictionary. Examples of strong modal words are "always", "best", "must", and "highest". These words usually express necessity, which is not part of the analysis.

Considering that the annual reports in Latin America are written in Spanish and Portuguese, we first translate the financial dictionaries from English. Taking into account differences in language, we decided to use the best three translations given by a language translator. We merged the translated words, deleted repeated words, and eliminated those becoming in sentences after translation by looking for the best synonym. For example, the word "almost" can be translated in Portuguese as "por pouco", "pouco menos", or "quase". In this case we ignore the first two and keep the last one.

In order to validate the translations we take a sample of financial news from Bloomberg in their English, Spanish and Portuguese versions. We use the uncertainty, weak modal and negative dictionary to score the files using the equivalent dictionaries. We find a correlation of 0.82, 0.65, 0.7 between the uncertainty, weak modal, and negative measures, respectively. When combined in a single dictionary, we find a correlation of 0.7. We are confident that the translation of the original dictionary is not significantly affecting the scoring of files. To the best of our knowledge, this is the first attempt to build a financial dictionary in Spanish and Portuguese.

To score the files we proceed as follows: we first decide to focus our analysis on the subsection of the annual report labeled "president's letter". We argue that this subsection is used by management to reveal past information and future expectations about the firm through tone. We also use this subsection because it is a common section found in most of the files in our sample and it is usually placed at the beginning of the report, which makes it likely to be read by shareholders and future investors. Following Loughran and McDonald (2011b) we then mine text, creating a corpus of files and removing undesirable characters, such as punctuations, numbers, and stop words, as is common in the information retrieval literature. We also transform letters to lowercase and remove white spaces, again common in this type of procedure. We create a document-term matrix controlling by our two dictionaries (uncertain, weak, negative – uwn - and positive) and focus our attention on the most common words, removing sparse terms.

Panel A in Table 4 shows the top fifteen most frequent distribution of uwn words per country. As is common in textual analysis, we observed an uneven distribution of words in all countries. In Brazil, for example, over the 143 words classified by the uwn dictionary, the first fifteen account for 56.16 percent of the total count. Similar results are obtained in Mexico, where the first fifteen words account for 53.69 percent of the total count. In Peru, Colombia, Argentina and Chile the results are 48.85, 48.18, 45.47 and 43.84 percent, respectively. In four of the five Spanish-speaking countries, the most frequent uwn word is "compromiso". The average relative frequency of this word in these countries is 7.73 percent. The word "crisis" is also common in the president's letter. In Argentina, for example, the relative frequency of this word is 4.51 percent. Similar results are found in Peru, where the word "crisis" accounts for 4.34 percent of the total count. The lowest count is observed in Chile, 2.97 percent.

Another repeated word in Spanish is "cierre". In Colombia this word accounts for 7.23 percent of the total count, the highest in the sample. This word is also common in Mexico and Peru, scored at 7.10 and 5.29 percent, respectively. The most frequent uwn word in the Brazilian president's letters is "redução", accounting for 12.32 percent. Although this word is also present in the letters of Spanish-speaking countries, with the exception of Chile, the average is just 3.68 percent. Weak modal verbs seem not to be as frequent as reported in previous works (see Loughran and McDonald 2011b). Words like "posible", "casi", "poder", "aproximadamente", and "quase", among others, occur at lower frequencies. This is understood as natural in the section we analyze. The president's letter aims to convey precise information about past, present and future expectations; hence, these words are not as common here as in other sections.

[Insert Table 4]

In Panel B of Table 4 we analyze the fifteen most frequent positive words per country. As stated before, we argue that the president's letter conveys managers' sentiments concerning their firms. The most repeated positive word in Chile and Argentina is "aumento", with a frequency of 5.55 and 4.50 percent, respectively. This word is also present in the other four Spanish-speaking countries but with a lower frequency. The word "colaboradores" is present in all countries. The particular orientation of this section can give an insight of the particular orientation of this section to the company stakeholders.

Words related to financial performance are present but not as one might expect. Of the fifteen most frequent positive words, "ganancia" is observed only in Argentina. The word "rentabilidad/rentabilidade" accounts for 1.88 percent on average. Another particular case is the word "éxito", with the highest frequency in Colombia, 3.60 percent. This word is present in the president's letter but it seems to be used with caution by managers.

Once we have constructed the document-term matrix for uwn and positive lists, we proceed to score each firm. The scoring mechanism $score_i^{tf.idf}$ of document i, is mainly the sum of tf-idf weight of terms (queries) in document j over the total number of words in the document.

$$score_i^{tf.idf} = \frac{1}{(1 + \log a_i)} \sum_{j=1}^{J} w_{ij}^{tf.idf}$$

where:

$$a = Total\ number\ of\ words\ in\ document\ i$$
$$w_{ij}^{tf.idf} = Weight\ of\ each\ term\ in\ document$$
$$J = Total\ number\ of\ words\ (uwn, positive)\ in\ the\ lexicon$$

The weight for each term is assigned depending on the number of occurrences of term i in document j (tf) times the inverse document frequency, which measures the number of documents in a corpus containing a term i (Manning et al. 2008). Our analysis uses a "bag of words" method, where the order of terms in a document does not matter but their presence and frequency do. Our documents become a vector of words that are then transformed into a document-term matrix. Despite this assumption, the classifier works well as tested in other models (Manning et al. 2008).

Performance measures, control variables, and summary statistics

All the financial variables (in dollars) were extracted from Bloomberg for the period 2005-13 in order to estimate financial performance volatilities. Tobin's Q is widely used in corporate finance and corporate governance literature and aims to estimate the market expectation of a firm's future return. Given the low liquidity of some firms in our sample, we also use book value return on equity (ROE).

We further use market equity value, return on assets (ROA) and a dummy variable that takes the value of 1 when the firm reports profits, and 0 otherwise (profit dummy), to test the robustness of our results. We show in Appendix 2 all 20 variables used in the study. Tobin's Q, ROE, and ROA were industry-adjusted by using the International Standard Industrial Classification (ISIC). The adjustment was done by subtracting for each firm-year return the industry average return for that year. Following the literature, we include the following as financial and firm characteristics control variables: total debt ratio, firm size, dividends ratio (over assets and over sales), dividend's dummy, growth (assets, sales, and profits), volatility, identification of the major shareholder, industry and country dummies.

In Table 5 we show the average values and standard deviation for our variables. The average IDI obtained from company annual reports is 47.3 percent, which increases to 57.1 percent when we use all information channels. In Table 5 we also report the different sections of the IDI, showing that the highest scores are given by the executive summary (91%) and the financials sections (89.9%); the lowest scores are given by

the social, corporate governance, and board of directors dimensions, with average scores of 31.9, 44.6, and 47.3 percent, respectively.

[Insert Table 5]

Regarding tone measures, the average uncertain, weak modals and negative words (uwn) measure for the total sample is 0.027. Statistics by country for this variable reveals that the highest average scores are for Chile and Argentina (not shown but available upon request). In addition, the average positive words measure is 0.049 for the entire sample, and statistics by country for this variable reveal that the highest average scores are for Mexico and Peru (not shown but available upon request).

In relation to financial metrics, the average Tobin's Q is 1.911 (median 1.167), which indicates market values higher than book values, on average. for firms in our sample. In terms of the ROE and ROA, the average values in our sample are 12.3 and 5.2 percent, respectively. The average capitalization of the firms in our sample is 7,244 million dollars (average sales 14,292) and 83.7 percent of the firms report positive net earnings.

In terms of our control variables, the average debt-to-asset ratio is 22.3 percent, the dividend payout is 3.4 percent of total assets, and close to 80 percent of the firms in our sample pay dividends. The firms' growth of assets is, on average, 10.3 percent, and their sales growth averages 9.2 percent. Table 5 also shows that 33.8 percent of the firms have a pension fund or some other institutional investor as the main shareholder; 28.1 percent are controlled directly by other domestic firms; 16.7 percent by a multinational company, 10.6 percent by a family. Banks and the state control 5.7 and 5.1 percent of the firms, respectively. These percentages together with the low incidence of family firms as direct controlling shareholders are evidence of pyramidal ownership structures, which are common in the region.

Results

We run a panel data regression model with random effects using a Feasible Generalized Least Squares (FGLS) estimation method. Specifically, we estimate the following regression model:

$$Y_{it} = \alpha + \beta_k^{'} \mathbf{IDI}_{it} + \gamma_k^{'} \mathbf{TA}_{it} + \delta_k^{'} \mathbf{CV}_{it} + \varphi_k^{'} \mathbf{IND}_{it} + \phi_k^{'} \mathbf{MSI}_{it} + \psi_k^{'} \mathbf{YEAR}_t + (\boldsymbol{\mu_i} + \boldsymbol{\varepsilon_{it}})$$

where $\boldsymbol{Y_{it}}$ is the financial performance variable (Tobin's Q or ROE); $\mathbf{IDI}_{it}$ is the vector of disclosure index metrics; $\mathbf{TA}_{it}$ is the vector of textual analysis measures; $\mathbf{CV}_{it}$ is the vector of control variables including financial and firm's characteristics; $\mathbf{IND}_{it}$ is the vector of industry dummies; $\mathbf{MSI}_{it}$ is the vector that identifies the major shareholder; and $\mathbf{YEAR}_t$ is the vector of year dummies.

In Table 6 we show the regression results using the Tobin's Q as our dependent variable. The IDI obtained through company annual reports is positive and statistically significant at the 1 percent confidence level (columns 1 and 2), which indicates that information disclosed through annual reports positively impacts the market perception of firms' value (Tobin's Q). When the IDI is measured by using all information channels, we obtain similar results not only in terms of statistical significance but also in terms of the size of the coefficients (columns 3 and 4).

[Insert Table 6]

The sections of the IDI were clustered in three groups with principal component analysis: 1) corporate governance, corporate social responsibility, and social dimension; 2) company information, executive summary, and financials; and 3) board of directors, risk management, and responsibility to other stakeholders. The results in columns 5 and 6 show that the third group has higher statistical significance, which suggests that the market highly values (through the firm's Tobin's Q) the information disclosure regarding the board of directors, risk management policies and the firm's responsibility to other stakeholders. The first group also shows statistical significance at the 1 and 5 percent levels, but with a much smaller coefficient (0.09 versus 0.45, in column 5). This supports our first hypothesis; that is, higher information disclosure is positively related to firm valuation in our sample of Latin America firms.

Regarding our second hypothesis, regressions in even columns in Table 6 include the two variables measuring tone (positive and uncertain, negative and weak modal words frequency). The coefficient for positive tone is not significant in the three models. However, it still shows a positive coefficient. This result coincides with Feldman et al. (2010), who find higher returns in the stock market with changes in positive tone in the management discussion and analysis (MD&A) section of 10-K and 10-Q filings. Similar results using the Loughran and McDonald (2011b) word list have been associated with higher returns and newspaper articles and investor capital inflows (Solomon et al. 2014) as well as a positive tone in conference calls (Mayew and Venkatachalam 2012). However, our results suggest that in the Latin American context the market is more suspicious and gives less credibility to positive messages from CEOs. Conversely, uncertainty in tone has a negative and statistically significant impact on Tobin's Q. This suggests that the market anticipates problems for firms whose managers use a negative tone in the annual letter summarizing the firm's situation.

Control variables behave as expected. Volatility shows a negative and significant relation with Tobin's Q, while dividends and growth opportunities display the contrary effects. In table 6, a non-monotonic firm-size effect emerges with significant statistical power across the regressions.

In Table 7 we show the same set of regression equations but use the firm's ROE as the dependent variable. Results are generally the same as for Tobin's Q and show a positive relation between ROE and IDI, which supports our first hypothesis. Again,

when the IDI was clustered by using principal component analysis, the first group containing information about the board of directors, corporate social responsibility and responsibility to other stakeholders was the most important in terms of statistical significance. The other coefficients were also statistically significant at the 1 percent level.

[Insert Table 7]

An interesting result is that the higher the level of information disclosure related to the group concerned with company information, executive summary, and financials, the lower the ROE. This suggests a more conservative approach and lower opportunities to "book or earnings management" when the firm discloses information through this route. Interestingly, this result was not present when a market measure such as Tobin's Q (not a book measure) was used. The non-significance with Tobin's Q is as expected because of the low variability in the dimensions used in group two. In other words, all firms should report company information, an executive summary and financials as a minimum to participate in the market. Another interpretation is that more financial disclosure leads to more conservative financial statements and book performance measures, but this does not affect market value.

In regard to our second hypothesis, regressions in even columns in Table 7 once again include the tone measures, and results show that uncertainty in tone is also negative and significantly related to ROE. In general we get the same results as those obtained with Tobin´s Q.
The regression specification tests consistently reject the null hypothesis of no individual effects, according to the Lagrange multiplier test. In this case, the error component model is assumed as the true specification, where individual effects are fixed or random. The random effects model is chosen because some of the control variables shaping our model are time-invariant dummies.[2]

Robustness

We perform several changes in the regression model specification, such as regressing our dependent variables using lagged IDI and tone measures yielding similar results; that is, a positive and significant relationship between IDI and firm performance measures and a significant negative relationship between uncertainty in tone and firm performance measures. We also regressed changes in our performance variables to

[2] The null hypothesis in the Hausman test assumes that the random effects model is the true model and that the variance-covariance matrix (VCE) is efficient. Therefore, one cannot reject the null hypothesis that the difference in the regression coefficient is systematic between the fixed versus the random effects specifications. The full specification displayed in regression equations 1 to 6 failed to pass the Hausman specification test. However, in the presence of heteroskedastic residuals, which is the case, the scope of this test is limited. Instead, what is recommended are related tests based on bootstrapping methods (Cameron and Trivedi 2010). We run reduced empirical models (not shown) that passed the Hausman test but with high costs in terms of explanatory power. Hence, the random effects model is chosen.

changes in the IDI and tone measures for our study period, and found that the main results remained in terms of coefficient signs and statistical significance. In addition, we use alternative firm performance measures, such as the profit dummy and the return on assets and obtain similar results. These findings are not reported but they are available upon reader's request.

Overall, after taking into consideration the controlling shareholder identity, industry and the usual financial controls, we find a statistically significant relation between Tobin's Q and ROE as dependent variables, and between the information disclosure index and uncertainty in tone measures for our sample of Latin American firms,. That is, investors in Latin America seem to pay attention not only to what firms disclose, but also to the tone they use in their communications to the market. Cultural factors seem to make market participants suspicious and unwilling to pay attention to positivity in CEO letters and messages, nevertheless reacting to uncertainty in tone in that type of communication channel.

We recognize that the corporate governance literature is subject to the problem of potential endogeneity of the independent variable. In our case, it is difficult to test conclusively whether an improvement of the firm's disclosure policies affects a firm's Tobin's Q and ROE positively or whether an improved Tobin's Q and ROE leads the firm to improve its disclosure policies (Garay et al. 2013). As pointed out by Healy and Palepu (2001), firms with the highest disclosure ratings tend to show better financial performance. This may be caused by a self-selection bias – firms may disclose more information when they are performing well. In the same way, it is difficult to test conclusively whether uncertainty in tone negatively affects a firm's Tobin's Q and ROE, or whether an improved Tobin's Q and ROE leads the firm to use less uncertainty in tone when reporting to the market. With our data, however, we include several control variables that we argue help to mitigate the endogeneity issue. In addition, and as mentioned above, we obtained similar results when using lagged values of the disclosure index and tone measures.

Following Garay et al. (2013), we also used an instrumental variable approach to tackle the potential endogeneity concerns between information disclosure and firm value (or performance); that is, finding a set of instruments related to the disclosure index but not to the firm's value (or performance). Along with Garay et al. (2013), we decided to use the American depositary receipt (ADR) dummy variable and the lagged value of the disclosure index as instruments to our independent variable, plus the other exogenous variables included in the instrumented equation. Participation in the ADR market significantly increases the amount of public information available for a given firm, which could positively affect the firm's willingness to disclose information but may not necessarily lead to better Tobin's Q or ROE. The results we got are similar in terms of sign, magnitude, and statistical significance (not shown in tables but available upon request).

Conclusions

Our results show the relevance of information disclosure and its impact on the market perception of firm value (Tobin's Q), and how disclosure decisions also affect book measures such as ROE. These results add to the growing literature that deals with the development of capital markets, access to external financing, cost of capital, firm valuation, and financial performance. In this paper we show that higher disclosure is positively associated with higher firm valuation (Tobin's Q) and better financial performance (ROE), a benefit that accrues directly to (actual or potential) investors.

We also add empirical evidence that supports the benefit of better policies oriented toward a higher level of firm disclosure and greater market transparency. In addition, we use word content analysis to measure meaning in tone for managerial reports in Latin America. We find a negative and significant relation between uncertainty in tone, firm valuation (Tobin's Q) and book financial performance (ROE), but a non-significant relation between positive tone and the market and book firm performance measures. These results suggest that market players in Latin America are highly suspicious and ignore positive words in CEO, remaining cautious when uncertainty in tone is present.

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Table 1

Number sample firms by year and industry sector

Industrial sector / Country	Argentina	Brazil	Chile	Colombia	Mexico	Peru	*Total*	*Percentage*
2010-2013								
Financial services	7	8	12	9	10	8	***54***	***11.9%***
Agriculture, hunting, livestock, and fisheries	2	1	6	1	0	0	***10***	***2.2%***
Fishing	0	0	4	0	0	1	***5***	***1.1%***
Mining	3	5	5	3	4	13	***33***	***7.3%***
Manufacturing industries	15	34	29	10	28	21	***137***	***30.2%***
Electric, gas and sanitary services	7	10	20	5	0	5	***47***	***10.4%***
Construction	1	6	4	3	9	5	***28***	***6.2%***
Commerce	2	10	7	2	7	2	***30***	***6.6%***
Hotels and restaurants	0	0	1	0	5	0	***6***	***1.3%***
Transportation and communications	5	8	12	3	12	2	***42***	***9.3%***
Investment Firms (investment vehicles)	3	5	18	5	3	6	***40***	***8.8%***
Real estate	0	0	4	0	0	0	***4***	***0.9%***
Education	0	1	0	0	0	0	***1***	***0.2%***
Social and health services	0	1	4	0	2	0	***7***	***1.5%***
Other social and community services activities	1	0	6	0	3	0	***10***	***2.2%***
Total	***46***	***89***	***132***	***41***	***83***	***63***	***454***	***100.0%***
Percentage Distribution	***10.1%***	***19.6%***	***29.1%***	***9.0%***	***18.3%***	***13.9%***	***100.0%***	

Table 2

Average IDI for the Latin American sample firms by different dimensions

Panel A: IDI from firms' annual reports	**IDI**				**Differences**
IDI dimensions	**2010**	**2011**	**2012**	**2013**	**2013-2010**
1 Board of directors	0.378	0.389	0.397	0.401	0.023
2 Executive summary	0.899	0.904	0.907	0.909	0.010
3 Company information	0.471	0.484	0.498	0.498	0.027
4 Corporate governance	0.219	0.225	0.240	0.250	0.031
5 Corporate social responsibility	0.398	0.411	0.420	0.428	0.030
6 Financials	0.799	0.804	0.805	0.811	0.012
7 Risk management	0.577	0.580	0.587	0.598	0.021
8 Social dimension	0.270	0.283	0.294	0.304	0.034
9 Responsibility for other stakeholders	0.595	0.612	0.617	0.617	0.022
Total	***0.459***	***0.469***	***0.478***	***0.484***	***0.025***
Number of firms	***454***	***454***	***454***	***454***	***454***

Panel B: IDI from all information channels	**IDI**				**Differences**
IDI dimensions	**2010**	**2011**	**2012**	**2013**	**2013-2010**
1 Board of directors	0.436	0.446	0.452	0.470	0.033
2 Executive summary	0.903	0.908	0.912	0.914	0.011
3 Company information	0.610	0.623	0.633	0.670	0.060
4 Corporate governance	0.415	0.420	0.435	0.506	0.091
5 Corporate social responsibility	0.491	0.507	0.508	0.544	0.053
6 Financials	0.891	0.898	0.904	0.906	0.015
7 Risk management	0.658	0.661	0.669	0.678	0.020
8 Social dimension	0.303	0.314	0.327	0.335	0.032
9 Responsibility for other stakeholders	0.649	0.664	0.669	0.691	0.042
Total	***0.553***	***0.562***	***0.571***	***0.597***	***0.044***
Number of firms	***454***	***454***	***454***	***454***	***454***

Table 3

Average IDI for the Latin American sample firms by the stock market liquidity and the controlling shareholder identity

	IDI from firms' annual reports				***IDI from all information channels***			
Stock market liquidity	**2010**	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
Low								
Number of firms	335	335	335	335	335	335	335	335
IDI	0.440	0.444	0.452	0.454	0.531	0.535	0.542	0.565
High								
Number of firms	119	119	119	119	119	119	119	119
IDI	0.514	0.540	0.553	0.569	0.613	0.637	0.651	0.687
Total	***0.459***	***0.469***	***0.478***	***0.484***	***0.553***	***0.562***	***0.571***	***0.597***
Number of firms	***454***	***454***	***454***	***454***	***454***	***454***	***454***	***454***

Controlling shareholder	***IDI from firms' annual reports***				***IDI from all information channels***			
identity	**2010**	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
State								
Number of firms	23	23	23	23	23	23	23	23
IDI	0.474	0.519	0.554	0.562	0.543	0.588	0.617	0.661
Banks								
Number of firms	26	26	26	26	26	26	26	26
IDI	0.376	0.384	0.393	0.410	0.483	0.481	0.486	0.534
Pension funds and other institutional investors								
Number of firms	153	153	153	153	153	153	153	153
IDI	0.467	0.482	0.490	0.494	0.550	0.565	0.574	0.600
Domestic firms								
Number of firms	128	128	128	128	128	128	128	128
IDI	0.466	0.465	0.476	0.480	0.564	0.562	0.571	0.590
Multinational firms								
Number of firms	76	76	76	76	76	76	76	76
IDI	0.464	0.476	0.475	0.488	0.558	0.571	0.572	0.603
Families or family firms								
Number of firms	48	48	48	48	48	48	48	48
IDI	0.446	0.450	0.461	0.460	0.566	0.571	0.582	0.600
TOTAL	***0.459***	***0.469***	***0.478***	***0.484***	***0.553***	***0.562***	***0.571***	***0.597***
Number of firms	***454***	***454***	***454***	***454***	***454***	***454***	***454***	***454***

Table 4

Top fifteen most frequent words by country

Panel A: Top fifteen most frequent uncertain, weak modals and negative words per country

Argentina		Brazil		Chile		Colombia		Mexico		Peru	
Compromiso	9.15%	Redução	12.32%	Compromiso	7.42%	Cierre	7.23%	Compromiso	8.95%	Compromiso	7.85%
Crisis	4.51%	Resultado	9.92%	Desafíos	4.89%	Disminución	5.71%	Cierre	7.10%	Cierre	5.29%
Privado	3.18%	Desafios	5.60%	Cambio	3.39%	Compromiso	5.26%	Reducción	5.75%	Crisis	4.34%
Desafíos	3.05%	Aproximadament	4.32%	Embargo	3.21%	Diferentes	4.78%	Diferentes	4.12%	Embargo	4.17%
Poder	3.05%	Crise	4.00%	Crisis	2.97%	Cambio	3.80%	Cambio	3.76%	Riesgo	3.62%
Cambio	2.79%	Possível	3.68%	Pérdida	2.79%	Reducción	3.65%	Disminución	3.27%	Cambio	3.12%
Aproximadament	2.65%	Dificuldades	2.24%	Disminución	2.78%	Riesgos	2.90%	Casi	3.05%	Reducción	3.06%
Cierre	2.52%	Incertezas	2.24%	Cierre	2.46%	Riesgo	2.51%	Embargo	2.63%	Riesgos	2.56%
Pérdida	2.25%	Abaixo	2.08%	Posible	2.44%	Crisis	2.24%	Reducir	2.63%	Aproximadament	2.39%
Reducción	2.25%	Revisão	2.08%	Desafío	2.34%	Embargo	2.03%	Crisis	2.27%	Diferentes	2.39%
Casi	2.12%	Desafiador	1.76%	Duda	2.18%	Pérdida	2.00%	Posible	2.27%	Incertidumbre	2.17%
Déficit	2.12%	Quase	1.76%	Riesgo	1.92%	Inferior	1.70%	Aprovechar	2.06%	Posible	2.17%
Diferentes	2.12%	Contra	1.60%	Casi	1.78%	Posible	1.58%	Aproximadament	1.99%	Disminución	2.11%
Volatilidad	1.99%	Poder	1.44%	Diferentes	1.64%	Transformación	1.41%	Volatilidad	1.99%	Transformación	2.00%
Embargo	1.72%	Aparente	1.12%	Pérdidas	1.62%	Variación	1.38%	Incertidumbre	1.85%	reducir	1.61%

Panel B: Top fifteen most frequent positive words per country

Argentina		Brazil		Chile		Colombia		Mexico		Peru	
Aumento	4.50%	Maior	8.54%	Aumento	5.55%	Cumplimiento	4.24%	Colaboradores	4.98%	Colaboradores	5.02%
Oportunidades	4.08%	Colaboradores	6.31%	Capacidad	4.70%	Capacidad	3.64%	Oportunidades	4.35%	Mejor	4.46%
Mejor	3.77%	Eficiência	4.95%	Mejor	3.82%	Éxito	3.60%	Capacidad	4.02%	Capacidad	3.77%
Ganancia	3.35%	Melhor	4.85%	Colaboradores	3.52%	Aumento	3.26%	Mejor	3.42%	Confianza	3.07%
Capacidad	2.93%	Bem	4.08%	Confianza	2.90%	Mejor	3.13%	Efectivo	3.25%	Oportunidades	2.88%
Mejora	2.72%	Inovação	4.08%	Principal	2.51%	Superior	2.62%	Confianza	2.96%	Eficiencia	2.41%
Resolución	2.30%	Confiança	3.69%	Superior	2.27%	Buen	2.49%	Aumento	2.76%	Mejora	2.31%
Cumplimiento	2.20%	Oportunidades	3.59%	Eficiencia	2.14%	Confianza	2.49%	Eficiencia	2.49%	Liderazgo	2.21%
Alcanzando	2.09%	Rentabilidade	3.59%	Innovación	1.92%	Colaboradores	2.21%	Rentabilidad	2.32%	Aumento	2.08%
Confianza	2.09%	Alta	2.72%	Permite	1.83%	Eficiencia	2.19%	Mejora	2.06%	Buen	2.05%
Principal	1.99%	Superior	2.72%	Liderazgo	1.79%	Fortalecimiento	2.19%	Éxito	1.83%	Superior	1.95%
Efectivo	1.88%	A pesar	2.43%	Rentabilidad	1.78%	Permite	2.02%	Liderazgo	1.79%	Alcanzar	1.88%
Éxito	1.88%	Fortalecimento	2.23%	Buen	1.73%	Logros	1.99%	Lograr	1.76%	Lograr	1.79%
Favorable	1.88%	Melhoria	2.23%	Alcanzando	1.72%	Rentabildiad	1.82%	Oportunidad	1.76%	Logrado	1.75%
Superior	1.88%	Satisfação	2.04%	Alcanzar	1.70%	Oportunidades	1.71%	Alcanzar	1.56%	Éxito	1.65%

Table 5

Summary statistics

Variables	Observ.	Mean	Median	Standard Deviation
Information disclosure indexes (IDI)				
IDI from firms' annual reports	1816	0.473	0.480	0.164
IDI from all information channels	1816	0.571	0.580	0.161
IDI from all information channels - Board of directors	1816	0.454	0.380	0.209
IDI from all information channels - Executive summary	1816	0.910	1.000	0.187
IDI from all information channels - Company information	1816	0.634	0.710	0.251
IDI from all information channels - Corporate governance	1816	0.446	0.500	0.244
IDI from all information channels - Corporate social responsibili	1816	0.512	0.600	0.370
IDI from all information channels - Financials	1816	0.899	1.000	0.170
IDI from all information channels - Risk management	1816	0.667	0.670	0.325
IDI from all information channels - Social dimension	1816	0.319	0.290	0.294
IDI from all information channels - Responsibility for other stake	1816	0.669	0.670	0.360
Tone measures				
Uwn words frequency	1816	0.027	0.026	0.014
Positive words frequency	1816	0.049	0.047	0.019
Financial performance				
Tobin's Q	3335	1.911	1.167	11.325
ROE - Return on equity	2648	0.123	0.096	0.143
Market capitalization (USD millions)	3134	7,244.00	584.90	78,119.09
ROA - Return on assets	3616	0.052	0.043	0.102
Profit dummy	3685	0.837	1.000	0.370
Control variables				
Leverage	3684	0.223	0.212	0.175
Firm Size	3682	14,291.79	631.83	124,311.00
Dividend Payout (assets)	3104	0.034	0.014	0.063
Dividend Payout (sales)	3081	0.500	0.026	11.261
Dividend dummy	3104	0.795	1.000	0.404
Growth (assets)	3233	0.103	0.078	0.396
Growth (sales)	3189	0.092	0.109	0.543
Growth (EBIT)	2645	0.096	0.111	0.799
Volatility	2693	0.436	0.025	8.599
Controlling shareholder identity dummies				
State	4086	0.051	0.000	0.219
Banks	4086	0.057	0.000	0.232
Pension funds and other institutional investors	4086	0.338	0.000	0.473
Domestic firms	4086	0.281	0.000	0.450
Multinational firms	4086	0.167	0.000	0.373
Families or family firms	4086	0.106	0.000	0.308

Table 6

Regressions using Tobin's Q as dependent variable

Variables	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q
IDI from firms' annual reports	0.4051***	0.3949***				
	(0.038)	(0.041)				
IDI from all information channels			0.4735***	0.4537***		
			(0.043)	(0.043)		
IDI from all information channels about Corporate governance,					0.0906***	0.0649**
Corporate social responsibility and Social dimension					(0.028)	(0.030)
IDI from all information channels about Company information,					-0.0321	0.0026
Executive summary and Financials					(0.041)	(0.039)
IDI from all information channels about Board of directors, Risk					0.4507***	0.4118***
management and Responsibility for other stakeholders					(0.037)	(0.038)
Positive words frequency		0.2039		0.3445		0.4577
		(0.324)		(0.316)		(0.323)
Uwn words frequency		-2.4017***		-2.2386***		-2.0798***
		(0.486)		(0.473)		(0.493)
Leverage	0.0137	0.0243	0.0003	-0.0064	-0.0025	0.0094
	(0.043)	(0.044)	(0.041)	(0.038)	(0.041)	(0.042)
Dividend Payout (assets)	8.0123***	8.1341***	8.2232***	8.4754***	8.2343***	8.3438***
	(0.219)	(0.226)	(0.199)	(0.219)	(0.211)	(0.210)
Firm Size	0.1770***	0.1740***	0.1685***	0.1726***	0.1719***	0.1711***
	(0.013)	(0.013)	(0.012)	(0.011)	(0.014)	(0.014)
Firm Size^2	-0.0094***	-0.0091***	-0.0088***	-0.0090***	-0.0094***	-0.0092***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth (sales)	0.1216***	0.1212***	0.1225***	0.1280***	0.1241***	0.1225***
	(0.013)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)
Volatility	-0.0006**	-0.0006**	-0.0006**	-0.0007***	-0.0007***	-0.0007**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.0283	0.0707	0.0025	0.0173	-0.0356	-0.0077
	(0.074)	(0.073)	(0.073)	(0.071)	(0.074)	(0.073)

Table 6 - continued

Regressions using Tobin's Q as dependent variable

Variables	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q
Regression	FGLS	FGLS	FGLS	FGLS	FGLS	FGLS
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industrial sector dummies	Yes	Yes	Yes	Yes	Yes	Yes
Controlling shareholder identity dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,244	1,244	1,244	1,244	1,244	1,244
Wald test	4018.93	33648.98	4271.52	10719.3	5145.53	7545
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
R^2 *overall*	0.3836	0.3828	0.3832	0.4592	0.3902	0.3884
Number of firms	371	371	371	371	371	371
Specification tests for random effects						
Lagrange multiplier test for RE	485.69	476.78	491.49	138.87	482.97	476.64
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Hausman specification test	382.7	378.57	391.28	109.53	402.87	381.14
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Table 7

Regressions using ROE as dependent variable

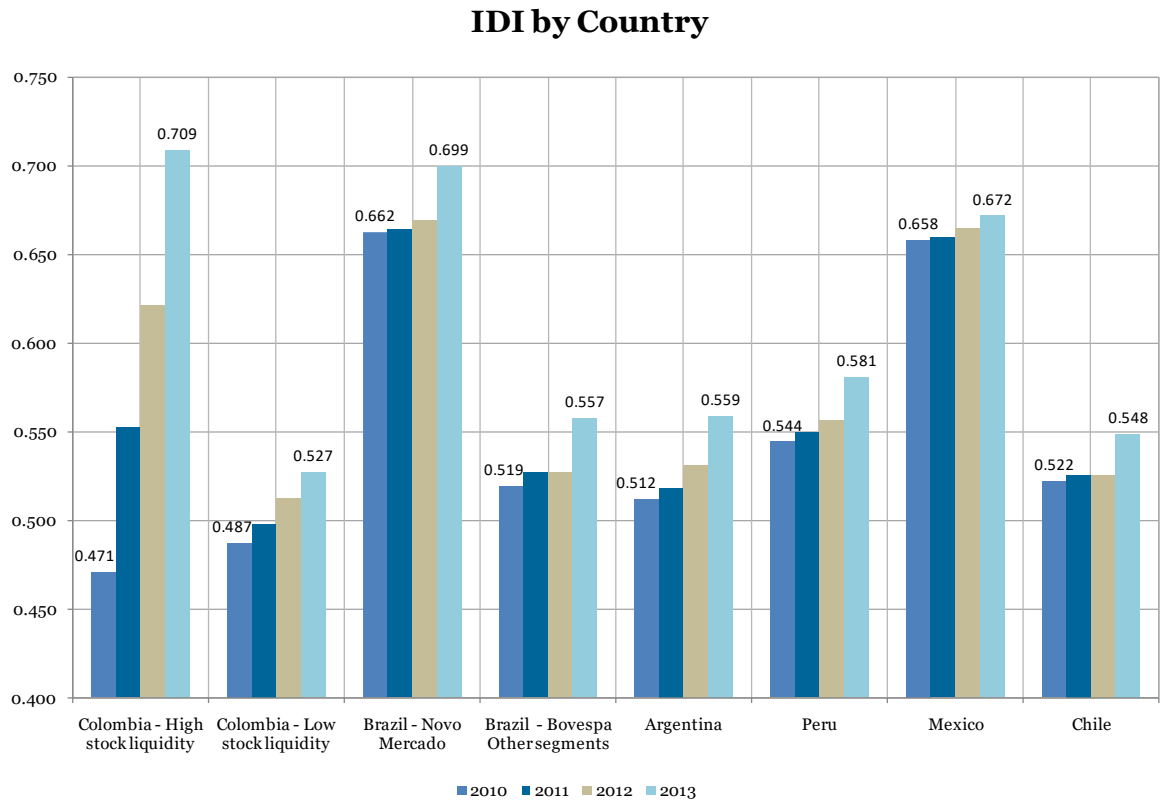
Variables	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE	(6) ROE
IDI from firms' annual reports	0.0234***	0.0260***				
	(0.006)	(0.005)				
IDI from all information channels			0.0269***	0.0323***		
			(0.006)	(0.006)		
IDI from all information channels about Corporate governance,					0.0339***	0.0358***
Corporate social responsibility and Social dimension					(0.004)	(0.005)
IDI from all information channels about Company information,					-0.0333***	-0.0323***
Executive summary and Financials					(0.007)	(0.007)
IDI from all information channels about Board of directors, Risk					0.0185***	0.0266***
management and Responsibility for other stakeholders					(0.005)	(0.005)
Positive words frequency		-0.0420		-0.0373		-0.0560
		(0.036)		(0.041)		(0.042)
Uwn words frequency		-0.5169***		-0.5722***		-0.5473***
		(0.066)		(0.074)		(0.073)
Leverage	-0.0981***	-0.1186***	-0.0962***	-0.1091***	-0.1101***	-0.1198***
	(0.006)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
Dividend Payout (assets)	1.1395***	1.0486***	1.1320***	1.1305***	1.0393***	1.0314***
	(0.033)	(0.027)	(0.033)	(0.031)	(0.028)	(0.031)
Firm Size	0.0036	0.0093***	0.0039	0.0024	0.0086***	0.0097***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Firm Size^2	-0.0003**	-0.0006***	-0.0004***	-0.0003*	-0.0006***	-0.0007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth (sales)	0.0453***	0.0490***	0.0454***	0.0470***	0.0431***	0.0457***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Volatility	-0.0038***	-0.0039***	-0.0038***	-0.0039***	-0.0037***	-0.0038***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.0451***	0.0116	0.0380***	0.0395***	0.0280***	0.0198**
	(0.012)	(0.008)	(0.011)	(0.013)	(0.009)	(0.009)

Table 7 - continued

Regressions using ROE as dependent variable

Variables	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE	(6) ROE
Regression	FGLS	FGLS	FGLS	FGLS	FGLS	FGLS
Year dummies	Si	Si	Si	Si	Si	Si
Industrial sector dummies	Si	Si	Si	Si	Si	Si
Controlling shareholder identity dummies	Si	Si	Si	Si	Si	Si
Observations	1,112	1,112	1,112	1,112	1,112	1,112
Wald test	5066.47	9844.37	5255.4	45820.51	15892.08	2515.96
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
R^2 *overall*	0.4211	0.6761	0.4229	0.676	0.4264	0.6974
Number of firms	359	359	359	359	359	359
Specification tests for random effects						
Lagrange multiplier test for RE	54.76	41.28	54.63	40.97	54.27	41.98
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Hausman specification test	19.81	42.85	18.59	25.63	18.62	11.46
	[0.031]	[0.031]	[0.046]	[0.007]	[0.000]	[0.649]

Graph 1
IDI by country and year



Appendix 1

IDI dimensions, elements and questions

No.	Dimension / Element	Question
	Board of directors	
1	Name of directors	The company provides a list with the names of all directors.
2	Insider /outsider status	The company reveals the independence status (insider/outsider) for each director.
3	Director characteristics	The company indicates the professional background, work experience, age, and gender for each director.
4	Compensation	The company discloses directors' compensation.
5	Attendance	The company informs the attendance of director to board meetings
6	Directors' selection	The company summarize the directors' selection process, terms, and voting procedures.
7	Board committees	The company divulge information about board committees and their objectives.
8	Committees' members	The company shows the names of each committee participant.
	Executive summary	
9	Yearly summary of operations	The company indicates information about the main issues occurred in the year
10	Summary of financial information	The company reveals key information about financial results
11	Letter to shareholders	The company provides a letter to the shareholders in relation to the yearly performance of the company
	Company information	
12	Firm profile	The company disclose information regarding commercial activities, ownership structure and intl. presence.
13	Organizational structure	The company informs the difference hierarchy level, operational units and support.
14	History	The company summarize their history since its foundation to the present.
15	Strategy	The company divulge a summary of its strategy and the main challenge it has to face.
16	Mission	The company present its mission statement.
17	Vision	The company present its vision statement.
18	Certifications and accreditations	The company share its awards, recognitions, certifications, and the accreditations achieved.
	Corporate governance	
19	Good governance code	The company inform the existence and provides details of good governance policies.
20	Governance structure	The company reveals the different entities that conform the governance structure of the firm.
21	Annual corporate governance	The company disclose a detail report of all its activities related to its corporate governance practice.
22	Fulfillment of its governance code	The company declares the fulfillment of its governance code and any changes occurred during the year.
23	Selection process and compensation of top management	The company shows the selection policies and compensation practice of the Top Management Team.
24	Internal control	The company explains its practices of internal control and auditing.
25	External control	The company summarize all external control entities (supervisory bodies, risk rating agencies, etc.)
26	Conflict of interest manual	The company report the existence of Ethical Codes, procedures gear preventing wrong-doings, etc.
	Corporate social responsibility	
27	Relationships with interest groups	The company reveals the compromise and expectations with interest groups and results verifications.
28	Results	The company reports the results on different areas of its CSR goals.
29	Sustainability report	The company shows an integrated report using the standard of the Global Reporting Initiative (GRI).
30	Environmental protection projects	The company informs the environmental projects which is involve in.
31	Environmental investments	The company summarize the investment level in environmental projects.
	Financials	
32	Summary of the Profit and Loss Statement	The company presents a summary of its P&L statement.
33	Summary of the Balance Sheet	The company report a summary of its Balance Sheet.
34	Financial indicators	The company disclose its main financial indicators.
35	Investment returns	The company show the financial return of all its investment portfolio locally and abroad.
36	Budget execution	The company divulge detail information about the execution of its yearly budget.
37	Share market value	The company indicates the evolution of its share price.
	Risk management	
38	Risk identification	The company reveals their risk cycles management according to its lines of business and processes.
39	Risk maps	The company shows its risk maps in relation to its environment, operations, finance, and strategy.
40	Legal issues	The company informs the results or status of legal procedures or fines and legal contingencies.
	Social dimension (human capital policies and practices)	
41	Procurement and retention of human talent	The company summarize the behavior of its human capital and details such as compensation and career development.
42	Salary	The company reveals its salary scale by position and gender.
43	Work environment	The company reports cultural activities, competence development practice, personal care, among others.
44	Organizational climate	The company informs the results of organizational climate measurement under international standards.
45	Welfare projects	The company shows its plans to improve the workers welfare and recognize performance and tenure.
46	Occupational health	The company disclose its occupational wealth plans such as industrial health and labor risks.
47	Absenteeism	The company divulge the events recognized as causes for labor absenteeism.
	Responsibility for other stakeholders	
48	Suppliers relations	The company has a program for suppliers development.
49	Stockholders relations	The company maintains communication channels with investors and the measures the level of utilization.
50	Clients and products relations	The company reveals clients segmentation and their level of satisfaction

Sources: This questionnaire was developed taking into consideration the guidelines regarding good corporate governance practices of the principal international agencies such as OCDE, CAF, and the Colombian code of good governance for listed firms (Código País) and non listed firms (Guía de Gobierno Corporativo para Sociedades Cerradas y de Familia).

Appendix 2

IDI dimensions, elements and questions

Name	Description
Information disclosure index (IDI)	
IDI from firms' annual reports	IDI from annual reports of company i in year t. The minimum value is 0 and the maximum value is 1 given the total score of the 50 yes/no questions, using only the company reports.
IDI from all information channe	maximum value is 1 given the total score of the 50 yes/no questions, using all information available.
IDI by components	the maximum value is 1 given the total score of the number of yes/no questions in each category.
Tone measures	
Uwn words	Frequency of uncertain, weak modals and negative words over total words in the annual report "president letter" for each company i in year t.
Positive words	Frequency of positive words over total words in the annual report "president letter" for each company i in year t.
Financial performance	
Tobin's Q	Market value of assets divided by the book value of assets for firm i in year t. The value is provided by Bloomberg.
ROE	Return on equity measured by the net profits to equity for firm i in year t.
Market capitalization	Bloomberg.
ROA	Return on assets measured by the net profits to assets for firm i in year t.
Profit dummy	Dummy variable that takes the value of 1 when net profits are positive for firm i in year t, 0 otherwise.
Control variables	
Leverage	Ratio of total liabilities to total assets for each firm in year t.
Size	Natural log of total assets for each firm i in year t, as reported in Bloomberg.
Dividend Payout (assets)	Dividend payout calculated as cash dividend to total assets for firm i in year t.
Dividend Payout (sales)	Dividend payout calculated as cash dividend to sales for firm i in year t.
Dividend dummy	Dummy variable that takes the value of 1 when firm i in year t pays dividend, 0 otherwise.
Growth (assets)	Yearly percentage increase in asset value for firm i.
Growth (sales)	Yearly percentage increase in sales for firm i.
Growth (EBIT)	Yearly percentage increase in EBIT (Earnings Before Interest and Taxes) for firm i.
Volatility	Standard Deviation of EBIT in the preceding three years.
Industry dummy	Dummy variable that takes the value of 1 when firm i belong to industry X, 0 otherwise.
Shareholder dummy	Dummy variable that takes the value of 1 when the majority shareholder of firm i in year t belong to category X, 0 otherwise.
Country dummy	Dummy variable that takes the value of 1 when firm i belong to country X, 0 otherwise.