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It's not only what you say, but also how you say it: information disclosure in Latin America

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Abstract

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

Introduction

La Porta et al. (1997, 1998, 2000, 2002) and Chong and López-de-Silanes (2007) have shown great differences in legal protection around the world, explained mainly by different legal origin (e.g. Common Law versus French Civil Law). In the case of Latin America, all countries share the same French Civil Law origin, which is known to be the most 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 it is trying to self-adopt governance practices to differentiate themselves from the rest and become 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). For example, a firm that discloses valuable and credible information to the market could, partly, compensates investors for the weak legal environment in which these firms operate, and become more attractive. Klapper and Love (2004) and Durnev and Kim (2005) provide theoretical and empirical evidence supporting this idea; that is, 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 the amount of the voluntary information they are willing to disclose (Patel et al., 2002).

In this paper we review the level of information disclosure for listed firms in six Latin America countries. We first construct an Information Disclosure Index (IDI) self-answering 50 questions divided into 9 different sections (and three different clusters) that allows us to analyze the disclosure practices for a set of 454 companies. In particular, we test whether IDI has any impact on the 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 in 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 named "president letter". We argue that the president letter is the most used subsection by managers to gather information about past performance and future expectations of the firms they follow. We also measure positivism in text using the word list proposed by Loughran and McDonald (2011b). Therefore, in this paper

we posit the idea that in terms of information disclosure, it is not only what you say what counts but also how you say it.

Our main information source was the annual reports posted in each firm's webpage, that according to the OCDE represent one of the most important channels of firm communication to its stakeholders; but 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 the 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 of our questionnaire. The "board of director, risk management, and responsibility with others" group shows higher statistical and economic significance. The group composed by "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 negative associated with higher firm valuation (Tobin's Q) and better financial performance (ROE).

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

The rest of the paper is organized as follows: First, we review the literature and state our hypothesis. 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 the 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 cause a positive effect due 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 before. For instance, Gompers, Ishii and Metrick (2003) create a corporate governance index using 24 governance rules and found for the US that higher indexes are correlated with higher firm value. Using samples with 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) has a great influence in 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 on how firms could signal their quality using better corporate governance practices. Moreover, Coffee (1999) advocates for a "global convergence" in corporate governance. As expected, empirical evidence shown in Klapper and Love (2004) and Durnev and Kim (2005) clearly demonstrates that in fact corporate governance practices are more valuable in low investor protection environments. As a result, companies may enhance their market perception of value by self-improving the quality, the amount, and the 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. The amount of firm-related information improves market liquidity, thus making possible for investor to engage in long-term corporate projects that could be perceived as risky but profitable by the market (Levine, 1997). In terms of adverse selection, which represents the cost for investor to trade with better-informed agents, could be lowered by firm's decision to disclose information. Diamond and Verrechia (1991) argue that the adverse selection cost is much lower (measured as the average bid/ask spreads) when firms report relatively high level of information to the market.

More recently, Hermalin and Weisbach (2012) show that there are both costs and benefits when the 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, if their market value is maximized. Therefore, firm information disclosure should be positively related to firm value. These arguments lead 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 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 works have studied the relationship between textual sentiment and corporate information disclosure. Li (2006) finds a negative association between risk sentiment and future earnings. Feldman, Govindaraj, Livnat, & Segal, (2010); and Li, (2010) find significant correlation between the tone used in the management discussion and analysis (MD&A) section in 10k and 10Q forms, contemporaneous returns and future earnings. Loughran & McDonald (2011b) create a dictionary containing 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 & McDonald, (2011a) suggest that the presence of some words can signal potential fraud, excess return and higher volatility. Hence, uncertainty in tone could imply bad news about the firm and could lead investors to assign a lower value. This argument leads us to the following hypothesis:

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

This paper differentiates from the previous because it uses not only information disclosure in the firm's web site but also study other channels commonly used by investors to gather firm-related information, such as firm's annual reports, regulatory bodies reports, and any other publically available information channel. Using

1 The authors create in total six dictionaries (negative, positive, uncertainty, litigious, strong modal and weak modal verbs)

all these information sources together with a four-year panel, a full set of control variables, and considering the potential endogeneity of our dependent variables, we were able to construct a more comprehensive IDI to perform our econometric analysis.

We also go one step further and analyze for Latin America not only the amount of information disclosed but its meaning and the 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 different than English.

Methodology

Data and information disclosure index (IDI).

For our sample firms we downloaded 3,191 reports from the firms' webpage and other information sources such as the capital market regulatory bodies in each country, for the years 2010-2013. In Table 1 we show 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% Argentina, 20% Brazil, 29% Chile, 9% Colombia, 18% Mexico, and 14% Peru. In terms of industry sectors, manufacturing represents 30% of the firms in the sample, followed by financial service with 12%, and utilities with 10% of the total sample. We use the information provided by the reports to self-answered 50 yes/no questions divided into 9 sections: board of directors, executive summary, firm information, corporate governance, corporate social responsibility, financials, risk management, social dimension, and relations with other stakeholders. We show in Appendix 1 all the 50 questions. For each firm, we construct an IDI following the guidelines provided by the OCDE and CAF, and 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 (later we 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 will 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 test the effectiveness of any corporate governance practice in particular (Geerings et al. 2003; Grzybkowski and Wojcik, 2006). Therefore in this paper we are not testing the firms' corporate governance as a whole, but one of its main components, which is the level of information disclosure.

It is important to emphasize that although company reports are the main source of information, we complemented it with other information channels. For instance, when we construct the IDI using only the firms' annual report, it yields approximately 80% of all information disclosed (see table 2). This fact stresses the relevance of the company annual reports.

[Insert Table 2]

From Table 2, it is clear that the majority of firms reveal an executive summary with the main facts and issues occurred during 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. On the other hand, the components related to corporate governance and the board of directors sections show 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 considered. As expected, the higher the stock liquidity the greater the IDI. In our sample, 73.8% represent firms in the low liquidity

subsample. Besides, In Table 3 we show that identity of the controlling shareholder also influences de IDI. In our sample, the controlling shareholder is represented by pension funds and other institutional investors, domestic firms, multinational firms, families, banks, and state. The lowest IDI comes from banks and the highest comes from firms owned by the state.

[Insert Table 3]

We also analyze the IDI regarding economic activities and countries (not shown in 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 usually are investment vehicles (holding firms) used by families to exert control. Other sectors that run low in IDI scores are: fishing, agriculture, and manufacturing. On the other hand, real estate and education run high in terms of 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 the Brazilian stocks registered in the Novo Mercado. Interestingly, the Colombian stocks in the subgroup of low liquidity are the ones that show the lowest scores, followed by Chilean firms. An interesting aspect of our sample is that the IDI tend to increase for all countries in the sample (see graph 1).

[Insert Graph 1: Available upon request given the lack of space]

Now, our question is twofold, on the one hand we want to test whether IDI has any impact on the firms' market value (Tobin's Q) and accounting performance (ROE), together to a more detailed analysis of the relative importance of each of the IDI sections. On the other hand, we will include a content analysis approach to test whether the "tone" of the firm's executive summary, particularly the subsection named "president 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 annual reports to Latin American firms. We use the dictionaries proposed by Loughran & McDonald (2011b) to measure the frequency of a query (dictionary) in a corpus of files. Loughran & McDonald (2011b) develop six dictionaries, based on 10-k files, which are more appropriate in the financial context than other dictionaries previously used. The fact that these dictionaries are built on 10-k files makes better our analysis since we are dealing with the equivalent report presented in Latin America.

In this work we focus our analysis in four dictionaries categorized in two groups. As suggested by Loughran & McDonald (2013) we combine the negative, uncertain and weak modal dictionary to create just one since these three dictionaries seem to proxy the same attribute. We also keep the positive dictionary and discard litigious and strong modal verbs. The litigious dictionary results useful to measure the lawsuit avoidance hypothesis in which shareholder, disappointed with firm performance, can sue it (Ibbotson & Jaffe, 1975). Since our interest is not on the probability of being sued but performance, we discard this dictionary. Strong modal verbs include words such always, best, must, and highest. These words are usually used to express necessity so we consider not to include them since are 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 to Spanish and Portuguese. Taking into account the differences in language we decide to use the best three translations given by a language translator. Once we merge the translated words we delete repeated words and eliminate the words becoming in sentences looking for the best synonym for them. As an example consider the word "almost" which 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 version. 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 one single dictionary, we find a correlation of 0.7. We are confident that the translation of the original dictionary is not affecting significantly the score 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 in a subsection of the annual report named "president 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 both, it is a common section in most of the files of our sample and usually goes at the beginning of the report what makes us believe it will be surely read by shareholders and future investors. Following Loughran & McDonald (2011b) we then mine text creating a corpus of files and removing undesirable characters, such as punctuations, numbers, and stop words as it is common in information retrieval literature. We also transform to lowercase and remove whitespaces, as it is 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 in the most common words removing sparse terms.

Panel A in Table 4 shows the top fifteen most frequent uncertain, weak modals and negative words per country. As it 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 count for 56.16% of total count. Similar results are obtained in Mexico where the first fifteen words count for 53.69% of total count. In Peru, Colombia, Argentina and Chile the results are 48.85%, 48.18%, 45.47% and 43.84% respectively. In four of the five Spanish spoken countries, the most frequent uwn word is "compromiso". The average relative frequency of this word in the five Spanish spoken countries is 7.73%. The word "crisis" is also common in the president letter. In Argentina for example, the relative frequency of this word is 4.51%. Similar results are found in Peru where the word "crisis" counts for 4.34% over total count. The lowest count is observed in Chile with 2.97%.

Another repeated word in Spanish is "cierre". In Colombia this word counts for 7.23% being the highest in the sample. This word is also common in Mexico and Peru with 7.10% and 5.29% respectively. The most frequent uwn word for Brazilian president letters is "redução" counting for 12.32%. Although this word is also present in Spanish spoken Letters, except Chile, the average in this case is just 3.68%. Weak modal verbs seem to be not so frequent as reported in previous works (see Loughran & McDonald 2011b). Words such "posible", "casi", "poder", "aproximadamente", "quase" among others count for lower frequencies. These can be understood as natural in the section we analyze. The president letter aims to convey precise information about past, present and future expectations; hence, these words are not so common as can be for other sections.

[Insert Table 4]

In Panel B table 4 we analyze the top fifteen most frequent positive words per country. As stated before, we argue the president letter conveys sentiment from managers about their firms. The most repeated positive word in Chile and Argentina is "aumento" with a frequency of 5.55% and 4.50% respectively. This word is also present in the other four Spanish spoken countries with a lower frequency. Except Argentina, the word "colaboradores" is present in all countries. This can give an insight of the particular orientation of this section to the company stakeholders.

Words oriented to financial performance are present but not as one might expect. Over the top fifteen most frequent positive words, "ganancia" is only observed in Argentina. The word "rentabilidad / rentabilidade" counts on average for 1.88%. Another particular case is the word "éxito" with the highest frequency for Colombia with 3.60%. This word is present in the president 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 $score_i^{tf \cdot idf}$ 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.

$$score_i^{tf.idf} = \frac{1}{¿}$$

$$1 + \log ¿$$

$$¿$$

$$¿$$

$$a_i$$

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, Raghavan, & Schütze, 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. 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 2005-2013 in order to be able 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 the firm's future return. Given the low liquidity of some of our 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 the 20 variables used in the study. Tobin's Q, ROE, and ROA were industry-adjusted using the International Standard Industrial Classification (ISIC). The adjustment was done subtracting for each firm-year return the industry average return for that year. Following the literature, as financial and firm characteristics control variables we include, total debt ratio, firm's 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 average values and standard deviation for our variables. The average IDI through company annual reports is 47.3% and increases to 57.1% when we use the IDI from 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%); on the other hand, 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% 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 reveals that the highest average scores are for Mexico and Peru (not shown but available upon request).

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

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

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

where Y_{it} is the financial performance variable (Tobin's Q or ROE); IDI_{it} is the vector of disclosure index metrics; TA_{it} is the vector of textual analysis measures; CV_{it} is the vector of control variables including financial and firm's characteristics; IND_{it} is the vector of industry dummies; MSI_{it} is the vector that identifies the major shareholder; and 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 through company annual reports is positive and statistically significant at the 1% confidence level (columns 1 and 2), indicating that the firms in our sample that disclose company information through their annual report, positively impact the market perception of their value (Tobin's Q). When the IDI is measure 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 using 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 with other stakeholders. The results in columns 5 and 6 show that the third group reports higher statistical significance, suggesting that the market values highly (through the firm's Tobin's Q) the information disclosure firms make regarding their board of directors, risk management policies and the firm's responsibility with other stakeholders. We also show that the first group (corporate governance, corporate social responsibility, and social dimension) reports statistical significance at the 1% and 5% levels, but with a much smaller coefficient (0.09 versus 0.45, in column 5). This results support 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 modals words frequency). The coefficient for positive tone is nonsignificant in the three models. However, it still shows a positive coefficient. This result coincides with Feldman, Govindaraj, Livnat, and Segal (2010) who find higher returns in the stock market to changes in positive tone in the MD&A section of 10-K and 10-Q filings. Similar results using Loughran and McDonald (2011b) word list have been found to newspaper articles and investor capital inflows (Solomon, Soltes and Sosyura, 2014) and positive tone in conference calls and higher returns (Mayew and Venkatachalam, 2012). However, our result suggests that in the Latin American context the market is more suspicious and give 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 firm situation.

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

In Table 7 we show the same set of regressions equation but using firm's ROE as the dependent variable. Results are generally the same as the one for Tobin's Q showing a positive relation between ROE and IDI, which support our first hypothesis. Again, when the IDI was clustered using Principal Component Analysis, the most important group in terms of statistical significance was first group where the firm disclose information about their board of directors, corporate social responsibility and responsibility with other stakeholders. The other coefficients were also statistically significant at the 1% level.

[Insert Table 7: Available upon request given the lack of space]

An interesting result is that the higher the level of information disclosure related to the firm in the group compose of company information, executive summary, and financials, the lower the ROE; suggesting a somehow 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 of with Tobin's Q is as expected due to the low variability in the dimensions used in group two. In other words, company information, executive summary and financial is what all companies should report 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 regards to our second hypothesis, regressions in even columns in table 7once 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 the ones obtained we 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 negative and significant relationship between uncertainty in tone and firm performance measures. We also regressed changes in our performance variables to 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, yielding similar results. These findings are not reported but they are available upon reader's request.

Overall, we find a statistically significant relations between Tobin's Q and ROE as dependent variables, and the information disclosure index and uncertainty in tone measures for our sample of Latin American firms, after taking into consideration the controlling shareholder identity, industry and the usual financial controls. That is, investors in Latin America seem to pay attention not only to what firms disclose, but also to the tone

2 The null hypothesis in the Hausman test assumes that the random effects model is the true model and 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 to apply in this case 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.

they use in their communications to the market. Cultural factors seems to make market participants suspicious not paying attention to positivism in CEO letters and messages, but reacting to uncertainty in tone in that type of communication channel.

We recognize that the corporate governance literature is subject to the problem of the 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 positively a firm's Tobin's Q and ROE, or an improved Tobin's Q and ROE leads the firm to improve their 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 affects negatively a firm's Tobin's Q and ROE, or 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 we mentioned above, we used lagged values of the disclosure index and tone measures obtaining similar results.

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 firm's value (or performance). As Garay et al. (2013), we decided to use the 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. The participation in the ADR market significantly increases the amount of public information available for that given firm, which could positively affect the willingness to disclose information, but not necessarily participating in ADR market will 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 affect also 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. We show in this paper that higher disclosure is positively associated with higher firm valuation (Tobin's Q) and better financial performance (ROE), a benefit that accrues directly to the investors (actual or potential).

We also add empirical evidence showing the benefit of better policies oriented towards 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. In this paper we show 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 CEOs letters but are careful 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 stocks 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

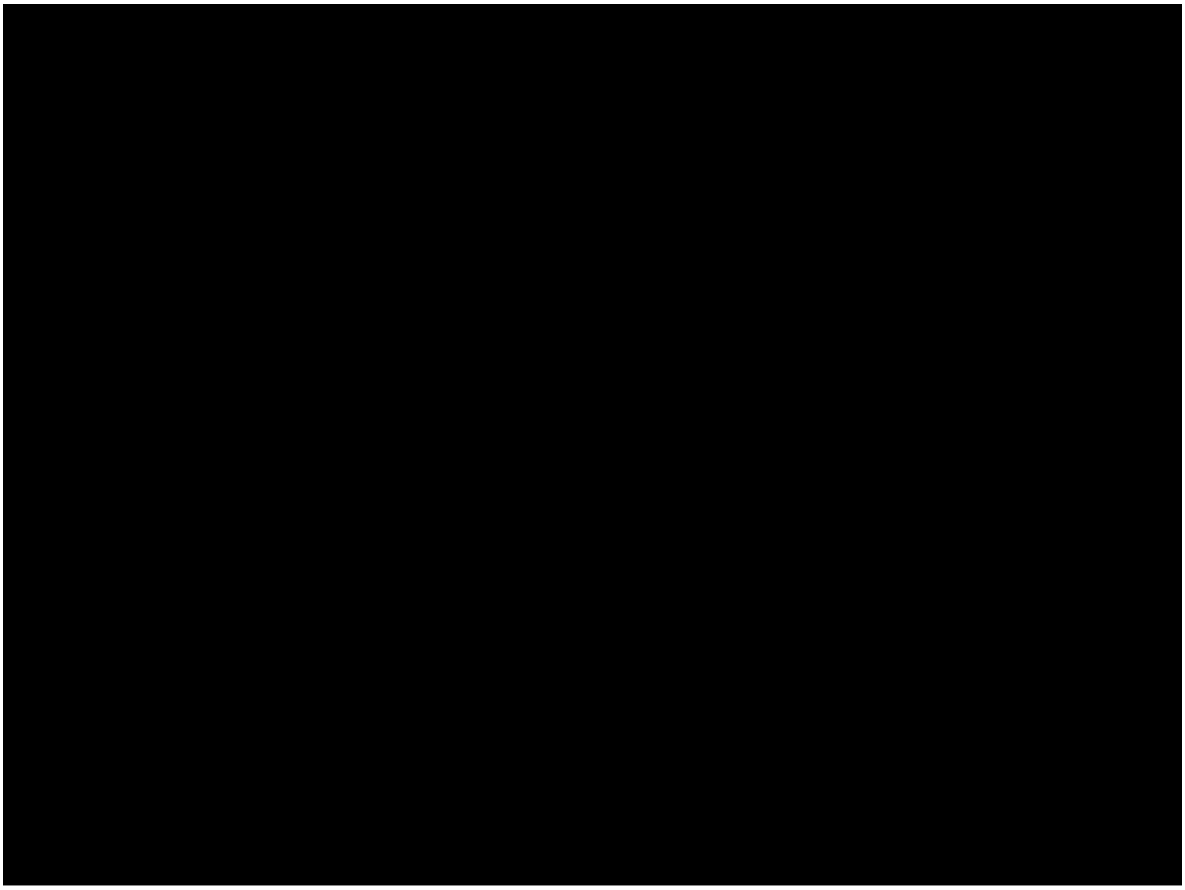

Table 5
Summary statistics

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, Corporate social responsibility and Social dimension					0.0906***	0.0649**
					(0.028)	(0.030)
IDI from all information channels about Company information, Executive summary and Financials					-0.0321	0.0026
					(0.041)	(0.039)
IDI from all information channels about Board of directors, Risk management and Responsibility for other stakeholders					0.4507***	0.4118***
					(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]

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.