Effect of Firm's Investor Relation, Communication and Disclosure on Risk

Sam Kolahgar[1], Azadeh Babaghaderi[2], Harjeet Bhabra[3]

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Abstract

Literature to date lacks a comprehensive study on the effect of firms' investor relations on risk and return. Most of the prior research focus on firm's disclosures and analysts' reports using limited measurement proxies. In this paper, in order to test the effect of firm's level of investor relation and communication on risk control, we created a unique, comprehensive and repeatable index, IRCD. This index covers categories such as business and financial data, corporate governance, risk management, forward-looking information, investor relation practices, sustainability and environmental strategies, employee management and press releases. Using an extensive topic-specific dictionary, we implemented the content-analysis technique on more than 150,000 filings and press releases for a random sample of 120 companies from 2000 to 2014. Consistent with information asymmetry and agency theories, our results show a significant negative relation with idiosyncratic risk. Robustness tests deliver similar results. Overall, this paper supports the risk reduction effects of firm's disclosures and investor relations.

JEL Classification Codes: G14, G32, G34

Keywords: voluntary disclosure; involuntary disclosure; information asymmetry; risk management; investor relation

[1] PhD Candidate in Finance, John Molson School of Business, Concordia University, 1455 De Maisonneuve Blvd W., Montreal, Quebec, Canada H3G 1M8, E-mail: sam.kolahgar@concordia.ca
Mailbox: MB-12.247, # 62 – s.kolahgar, Office: GM-300.40
[2] PhD Candidate in Finance, John Molson School of Business, Concordia University, 1455 De Maisonneuve Blvd W., Montreal, Quebec, Canada H3G 1M8, E-mail: azadeh.babaghaderi@concordia.ca
[3] Professor, Department of Finance, Associate Dean Research & Research Programs, John Molson School of Business, Concordia University, 1455 De Maisonneuve Blvd W., Montreal, Quebec, Canada H3G 1M8, E-mail: harjeet.bhabra@concordia.ca

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Abstract

Literature to date lacks a comprehensive study on the effect of firms' investor relations on risk and return. Most of the prior research focus on firm's disclosures and analysts' reports using limited measurement proxies. In this paper, in order to test the effect of firm's level of investor relation and communication on risk control, we created a unique, comprehensive and repeatable index, IRCD. This index covers categories such as business and financial data, corporate governance, risk management, forward-looking information, investor relation practices, sustainability and environmental strategies, employee management and press releases. Using an extensive topic-specific dictionary, we implemented the content-analysis technique on more than 150,000 filings and press releases for a random sample of 120 companies from 2000 to 2014. Consistent with information asymmetry and agency theories, our results show a significant negative relation with idiosyncratic risk. Robustness tests deliver similar results. Overall, this paper supports the risk reduction effects of firm's disclosures and investor relations.

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Introduction

It is clear that all firms disclose information in some ways, but there are differences in breadth and depth of their revealing. Our review of prior studies on the effect of firm's disclosure and investor relations on firm's risk revealed two main shortages.

First, the measurements used in previous researches are very limited in terms of information categories. Most of the research papers only use one source of information which is mainly annual reports. In today's financial markets where timely corporate communication is happening via a host of different channels (including stakeholders meetings, press, and websites), financial reports with historical data are no longer enough to reflect the true image of the firm. Moreover, in papers where multiple sources are used, the list of topics included in their measures is very limited (Agarwal, 2014; Wang, 2013; Van Geyt, 2013; Uyar, 2012; Banghøj & Plenborg, 2008). Either way, these restricted proxies cannot represent a fair picture of firm's disclosure and investor relations efforts, therefore, the results are not easy to be generalized.

Second, the investor relations and disclosure proxies used in prior research mix the disclosures done by firms with those done by third parties such as analysts and media (Kothari et al, 2009). Third parties use original information, add their own interpretation to it, and then share it with the market, while firms just release the original information to the market for interpretation. Mixing these two sources reduces the explanatory power of the results.

Our paper solves both of the above-mentioned constraints by focusing on *all* aspects of *firm's* disclosure, communication and investor relations (referred to as "IRCD" throughout the paper). We examine market's point of view towards different levels of IRCD using firm's idiosyncratic risk. We first evaluate firm's IRCD quality and then test its effect on risk. Our results show that high disclosure level by firms signal quality and reliability to the market and therefore, reduce

price volatility. Our results confirm that the level and quality of firms' investor relations, communication and disclosure have significant negative relation with firm's risk.

Our paper contributes to the literature in different ways. First, we only consider information or investor relations practices done by firm itself rather than disclosures fromother sources such as analysts' reports or pre-organized scorings. This way we reduce the heterogeneity of our index data in terms of its quality and timeliness (Cooper et. al, 2015). In addition, we didn't use available indices because they were either not comprehensive or their components would not fit our research needs. For example, Standard & Poor's Transparency and Disclosure rankings only examines annual reports of companies or AIMR ratings are from analysts' point of view (Patel & Dallas, 2002; Hussainey et. al, 2003).

Second, our measure of IRCD is unique and comprehensive. We focus on a wide range of firm disclosures which, to our knowledge, has never been done with this degree of scrutiny. Among the prior work that has been done using the original disclosure vehicles, many only depend on the total number of words or statements in firms' filings (Wang, 2013). However, the quantity of words or sentences is not adequate to show the quality or market relevance of the disclosed document. It is reasonable to say that not all the words convey informative information for investors to be useful in their decision making process.

In order to evaluate both quantity and quality of firm's disclosure and investor relations, we incorporated content analysis technique and disclosure index method together and used our specialized and wide-ranging dictionary to count the meaningful words and phrases to create a replicable and comprehensive IRCD index. Ourdictionary consists of more than 550 topic-specific words and phrases plus their derivatives. These words and phrases are related to 95 information categories covering business and financial data, corporate governance, risk management, forward-

looking information, investor relation practices, sustainability and environmental strategies, employee management and press releases.

Our pool of discloure vehiclesconsists of annual reports, management discussion and analysis (MD&A), report of voting rights, management information circular, code of conduct, proxy statements, material change report, notices of filings, technical reports, qualification certificate and press releases among others. Our programmedscoring system not only allows us to consistently differentiate the absence or presence of a piece of information or investor relation activity, but also allows us to feature firms that performed above average in order to answer our research questions.

We couldn't find one single research that uses a comprehensive measure of IRCD quality and quantity (including all mediums of communication at the same time) which also focuses on more than a few types of sporadic disclosures, such as annual reports, environmental reports or CSRs. Our IRCD index is an overarching framework that encompasses every type of internal and external communication instrument.

The significance of our IRCD index also comes from the fact that it has the ability to incorporate all types of firm's filings, press releases in an efficient way due to extensive programming behind it. This valuable feature made us able to screen more than 150,000 disclosure files to calculate index values for 120 firms from 2000 to 2014. It is noteworthy that we are also close to finish our dataset for firm's websites which will be added to our database and index.

The remainder of our paper is structured as follow: Section 2 will review the literature on the relationship between firm's disclosures on its risk. We will also provide our hypothesis that is examined in this paper. Section 3 provides details on data gathering process, variables, and on

methodology design. Section 4 summarizes the results with the relevant explanations and finally, in Section 5 we will conclude the paper with its managerial implications.

Literature Review and Hypothesis Development

Business anecdotes are full of instances and cases where strategic information dissemination is the fundamental remedy for different types of risks such as reputational risk, anti-takeover attempts, IPO performance, and possible financial turmoil under major restructurings among others. There are several potential reasons for managers and investors to be concerned with stock return volatility (and its unsystematic risk). Firstly, high stock return uncertainty can increase a firm's perceived riskiness, thereby raising its cost of capital. Secondly, high stock return volatility can make stock price-based compensation less effective and/or more costly. Thirdly, shareholder class-action lawsuits have been shown to be associated with sudden, large stock price drops, a specific form of stock return volatility. Finally, firms with higher levels of unsystematic risk will often have trouble ensuring stable cash flows, leading to their inability to service debt, which ultimately contributes to their failure.

Firms disclose information via various channels such as financial reports, press releases, websites, presentations and many interim reports. These channels vary in their level of information content and in their timeliness. Moreover, the reason behind information disclosure can be rules and regulations (i.e. mandatory disclosure) or it can be management choice to communicate with the market and inform the participants about certain topics (i.e. voluntary disclosure). Hassan and Marston (2010) prepared an overall literature review on disclosure measurements used in different research studies. They divided disclosure proxies into two main groups based on whether they are built by examining the original disclosure vehicle or not. One group used the original sources of disclosure and created disclosure proxy via content analysis, disclosure frequency or

firm's press releases while the other used surveys, analysts' ratings or other available indices to examine disclosure.

Investor relations strategy is the manifest of firm's effort to increase transparency and update investor's belief about its risk profile. Helping all types of investors in their decision making process, information dissemination is the core of investor relations. Accessibility of information increases market efficiency which is beneficial for firms, investors and economy as a whole. It is legitimate to claim that a well-executed investor relations program can play a vital role in reducing cost of capital, creating fair market valuation for securities, developing appropriate shareholder base, increasing investment community awareness and broadening opportunities for strategic alliances such as joint ventures and M&As.

Available information comes from either the firm itself or from other market participants such as financial analysts and media. Information disclosure in any format reduces information asymmetry and agency conflicts between investors and management (Kothari et. al. 2009; Healey and Palepu, 2001).

There are several reasons that make us believe overall investor relations, communication and disclosure quality is able to reduce firm's specific risks.

Firstly, relations among firms' disclosures and firms' managers, investors, analysts, customers, suppliers, society are determined by the same forces that shape firms' governance structures and management incentives, which are developed to eliminate information asymmetry problems and agency costs issues (Core, 2001; Akerlof, 1970; Jensen & Meckling, 1976).

The idea is that when a company creates a sustainable and credible relationship with its stakeholders through corporate communications, one can deduce that this firm has nothing to hide from its stakeholders. As a result, information asymmetry or agency cost between company management and market declines, and the observed risk gets closer to its true level. Studies have shown that a lower level of information asymmetry results in more informative stock prices (Gelb & Zarowin, 2002; Lundholm & Myers, 2002), lower bid-ask spreads (Heflin, Shaw, & Wild, 2005; Welker, 1995), less analyst forecast dispersion (Hope, 2003; Lang & Lundholm, 1996), lower cost of equity (Botosan, 1997), and lower cost of debt capital (Sengupta, 1998). All of these results share a common driver, which is "risk".

Secondly, although, market players judge a company by its actions, it is acknowledged that providing information on these actions is also important (Deegan, Rankin, & Voght, 2000). By providing information, explanations, rationalizations, and legitimations for the organizational activities, managers use investor relations and disclosure tactics to harmonize information dissemination about their firm to shape the way shareholders view the firm, and to adjust their perceived risk of the company.

Thirdly, organizations apply impression management tactics and use corporate communication methods to build, shape, and maintain their corporate identities and their image. This way they will be ready to promptly react to changing factors in their environment, and ultimately to control their stock price volatility (Hooghiemstra, 2000).

As an example, think of Apple© and its stock price during the last months of Steve Jobs. Shareholders were afraid of his death and its possible negative impact on the company's stock price which made them contemplate on whether to hold or sell their shares. On the other hand, speculators, who were trying to find speculative opportunities, were betting on price declines and

took short positions on Apple's stocks. In those days, Apple's IRCD team tried to create an image that although they were going to lose Steve, as a visionary man, but they were not losing their innovative spirit since innovation and market leadership are inseparable characteristics of Apple. Basically they reacted to this threat by impression management which ultimately kept the price volatility of Apples stock lower than what would otherwise be.

This paper will support the idea that IRCD is a value creating initiative/strategy for firms to manage risks that stem from information asymmetry problems, agency cost concerns, and reputational threats. We hypothesize that, firms with better IRCD in place, are able to manage their risk level more effectively.

Our main testable hypothesis is:

H) IRCD index is negatively associated with firm's risk.

In order to check the robustness of the results and factoring the variety of control variables, there will also be minor testing hypotheses for our main hypothesis.

Data and Methodology

Construction of Investor Relations, Communication and Disclosure (IRCD) Index

There are many different channels that a researcher should look at when collecting information on the quantity/quality of firms' communication and public relation. Since the nature of data is textual, information gathering becomes a tedious hand-collection process. This issue is the major drawback of research in this literature so much that it has made researchers only focus on few information factors and draw their conclusions from non-comprehensive measures of

disclosures. Proper IRCD index not only needs to be comprehensive, but also valid and reliable for testing purposes.

In this paper we have created a unique and to the most part comprehensive index to measure firm's Investor Relations, Communication, and Disclosure level, employing the quantitative content analysis approach to capture the scope of the information disclosed (Skouloudis et. al, 2014; Kothari et. al, 2009; Riffe et al., 2008). IRCD index is a composite variable that supports the multidimensionality of firm-market relationship.

We chose a random sample of 120 Canadian firms listed on TSX exchange market over a 15 year period from 2000 to 2014. Our IRCD index is used as the measure to evaluate and compare the quality of IRCD among our sample firms. The maximum value that the index can get is 194 and it includes 9 main categories and 95 sub-categories to capture various aspects of voluntary and mandatory information disclosure and investor relation practices of firms. Under each sub-category we formatted our dictionary of words, phrases, and their derivatives including more than 550 unique words and phrases plus their countless derivatives.

The main categories of our IRCD index are: 1) business and financial data, 2) corporate governance, 3) risk management and analysis, 4) labor practices, 5) forward-looking information, 6) investor relation practices, 7) sustainability and environmental practices, 8) press releases, and 9) common qualitative information measures. We are finishing the data gathering for our 10th category, company website, which has 32 more sub-categories and will be added to the current index database when completed. Each of these categories and their sub-categories are created based on the findings in prior research papers on firms' disclosure, investor relations and information management practices.

To have a testable, repeatable and consistent index, we established a detailed guideline to have numerical values for each category and finally for the index itself. In the process to get to the numerical values:

1) We randomly chose 2 firms from all industries in our sample.

2) In order to create a reliable index, two PhD students read and reviewed all filings and released documents in 2014 for the chosen firms to gather informative words and/or phrases for each of the 127 sub-categories. Due to increasing trend in investor disclosure regulations throughout the years, we believed that 2014 is the most informative year among all years in our time frame.

3) We created a topic-specific dictionary of 550 words and short phrases spread among 95 sub-categories.

4) We, then, count these 550 words along with their derivatives among all 150,720 filings and press releases for our sample firms from 2000 to 2014. The grouping of words was done by both the similarity of their meaning and also by their relation with each sub-category. Then, words in each sub-category (index items) were summed across all the documents for a firm in a given year. If the total number of words counted under each index item is more than the total average, that firm is assigned a score of 2.

If the word count is lower than average for that sub-category, it gets 1, and if there is no count of index item dictionary words, it gets 0. This way not only we accounted for presence of our words in the filings and press releases, but also rewarded more transparent firms by adding to their score. The direct scorecard method was used in prior disclosure-related research such as Eng and Teo (1999), Eng & Mak (2003), Donnelly & Mulcahy (2008). In addition to this method, we also used the original count number of words without scoring them which didn't change the results.

5) To complete our index items, the next step is to review and to score firms' websites from 2000 to 2014 to complete the remaining 32 sub-categories (items) of the index. There is a specific guideline to give scores 0, 1 or 2 for each of these sub-categories as well. In order to confirm the robustness of the scores, another person repeats the job on a random sample of firms. This part of the database is currently close to completion, so the present values of IRCD index do not contain the scores of website category.

IRCD index categories and sub-categories (Items)

1. ***Business and financial category*** is the most common topic included in majority of disclosure indices due to its generality and importance at the same time. The data related to this category mainly comes from annual reports, proxy statements and management discussions and analysis (MD&A) reports. This category in our index includes 25 sub-categories such as firm's background, market analysis and strategies, investments and partnerships, legal issues, control systems, financial ratios and cost of capital among others (Allegrini & Greco, 2013; Sharma, 2013; Cormier & Ledoux, 2012; Holder-Webb, 2008; Beattie et. al, 2004; Eng & Mak, 2003; Miller, 2002; Bujaki & McConomy, 2002).

2. ***Corporate governance*** consists of 10 sub-categories board structures, board independence, board experience and education, management and committee details, management compensation, management control system, disclosure, ethics and anti-corruption policies (Skouloudis et. al, 2014; Ntim et. al, 2012; Holder-Webb, 2008; Miller, 2002; Bujaki & McConomy, 2002).

3. ***Risk management and analysis*** disclosure takes 13 different aspects of risk including but not limited to customers, financial, regulations, competitive environment, IT, production, employees and economy (Allegrini & Greco, 2013).

4. ***Labor practices*** deals with information disclosed about employees and their training, health, safety, ethics, turnover, diversity, satisfaction, productivity and communication with management which creates 10 sub-categories (Skouloudis et. al, 2014; Ntim et. al, 2012; Holder-Webb, 2008; Donnelly & Mulcahy, 2008; Eng & Mak, 2003; Miller, 2002; Bujaki & McConomy, 2002; Zeghal & Ahmed, 1990).

5. ***Forward-looking information*** is a category that covers all types of firms' expected values or plans for the future. In this category we include 14 forecasted subcategories related to financial data, strategies, capital expenditures, dividend policy, earnings, partnerships, market share, sales, mergers & acquisitions, developments, interest rate and exchange rate (Allegrini & Greco, 2013; Ntim et. al, 2012; Holder-Webb, 2008; Eng & Mak, 2003; Miller, 2002; Botosan, 1997).

6. ***Investor relation practices***, another very important feature in our paper that evaluates investor relation practices by the company. In order to score firm's investor relations, along with other papers, we benefited from topics in BVFA-ABAF (2010) award questionnaire for the Best Financial Communication which is conducted by Belgian Association of Financial Analysts. Every year a large group of analysts score Belgian firms based on their financial, non-financial and investor relation activities and the firm with highest score wins the award. The 7 topics that we focused on, include but not limited to, investor relations contacts, accessibility, calendar of

events, investor communication policies and channels, investors' rights and concerns and details of shareholders groups (Skouloudis et al., 2014; Sharma, 2013; BVFA, 2010; Chang et al., 2008; Holder-Webb, 2008; Bujaki & McConomy, 2002).

7. ***Sustainability and environmental practices*** is also a very important disclosure item for firms especially in recent years. Firm's voluntary environmental disclosure is found to have positive effect on its value, and cost of equity (Plumlee, 2015). Using Fortune 2009 list of the World's Most Admired Companies, Bear et al. (2010) found that corporate social responsibility (CSR) ratings have positive impact on firm's reputation ratings. This category consists of 12 subcategories in order to capture relevant disclosures on CSR policy, energy consumption, community involvement and social activities, sustainability and climate change policies, environmental sustainability performance indicators, social sustainability performance indicators , environmental legal issues, product safety, stakeholder map and waste management (Skouloudis et. al, 2014; Allegrini & Greco, 2013; Connor & Johnston, 2013; Cormier & Ledoux, 2012; Beattie et. al, 2004; Miller, 2002; Zeghal & Ahmed, 1990).

8. ***Press release;*** one of the efficient ways to timely disclose information to the market is via their press releases. The information in firm's press releases are complements to the audited documents and can change risk profile of the firm. Although these private disclosures may contain unverified information, the fact that market is able to evaluate their correctness later makes managers be truthful in their releases beforehand (Ball et. al, 2012; Van Geyt et. al, 2014). In order to score firm's press leases, we benefited from topics in BVFA-ABAF award questionnaire for the Best Financial Communication which is conducted by Belgian Association of Financial

Analysts. Number of news, the total count of words and numbers in each news release are three subcategories used in this part of the index (BVFA, 2010, 2015).

9. ***Websites;*** Companies voluntarily convey valuable information to the market through their websites. This communication channel has become increasingly more important during recent years because investors have more access to internet and they can get timely information online. There are numerous up-to-date, financial and non-financial information offered on the webpage of firms, which can be used in investors' valuation of the firm (Van Geyt et. al, 2014; Trabelsi et. al, 2008). In our IRCD index, we used 32 elements of information to be gathered from firms' websites to reflect the level of firms' comprehensive disclosure on the internet. Some of these disclosure topics include company background, archived financial reports, management and board details, corporate governance, CSR and sustainability reports, current and future investments, analyst coverage, investor relations, operational details, online investor feedback and information services, open to general public, press release, stock information, language options, employee information, presentations to potential investors and calendar of events (Sharma, 2013; Al-Barghouthi, 2013; Cheung et al, 2010; BVFA, 2010; Chang et al, 2008; Holder-Webb, 2008; Miller, 2002; Deller, 1999).

10. ***Common Qualitative Words;*** this category was created to capture the volume of common qualitative words. The main idea behind creating a special sub-category for the dictionary of our index is to capture topic-specific statements that can gauge the quality of disclosure and investor relation. In addition to the nine – mentioned - categories that use topic-specific words and phrases to capture a wide range of

business aspects, we added more than 50 common qualitative words/phrases to evaluate the informativeness of disclosed texts. Thereby adding to the robustness of the index. Some of these common qualitative words are growth, comparison, impact, average, projected, adjusted, uncertainty, expected, trend, assumptions, discounted, benchmark, graph, results, challenges, disclosure, transparency and communication.

We use regression analysis to test our hypothesis that links firm risk to changes in communication and investor relation's variables. Generic mathematical equation of our analysis upon which the econometric model will be utilized for their verifications, has the following form:

$$H: \qquad Risk\ Measures = f\ (\ IRCD\ index\ and\ Control\ Variables)$$

In order to empirically investigate whether high-quality communication reduces information asymmetry, we estimate the following panel regression using ordinary least squares and clustered, heteroskedasticity robust standard errors.

$$Idiosyncratic\ Risk = \ \alpha + \beta_1\, IRCD\ Index + \beta_2\, Block\ Ownership + \beta_3\, Debt\ Ratio + \beta_4\ Size + \beta_5\ Price\ To\ Book + \beta_6\, Lagged\ Index + \beta_7\, Industry$$

Where;

Idiosyncratic Risk (STD), as proxy for volatility, is the standard deviation of firms' daily abnormal returns for each year over the period of 2000 to 2014. We follow Bansal and Clelland (2004) approach which is the standard deviation of the unexplained portion of realized returns. Moreover, in order to check the robustness of our results we will, in our next draft, consider other risk measures such as systematic risk (Akhigbe & Martin, 2008), Cost of equity capital as proxy for risk, and analyst forecast dispersion as measured by standard deviation of analyst forecast error (Connors & Johnston, 2013; Kothari et al., 2009).

IRCD is our measure of investor relation, communication, and disclosure. And X is a vector of control variables. In this round of analysis, our control variables are size, industry dummy, lagged IRCD index and Market-to-book ratio (Van Geyt et al, 2014; Kothari et al., 2009), Leverage (Jensen & Meckling, 1976; Van Geyt et al., 2014), and Block ownership including managerial ownership (Baek et al., 2009). Institutional ownership will be added later (Baek et al., 2009; Bushee & Noe, 2000; Bushee & Noe, 2000).

1) Control Block Ownership:

Percentage of equity interest held as a group by the directors of the company, plus any other individuals or companies that that own more than 10% of the equity shares of the company.

2) Leverage (Debt ratio)

The Debt Ratio evaluates the relationship between the debt load and the capital invested in the business. Formula: (Long-Term Debt including the current portion) / ((tank Loans) + (Long and Short Debt) + (Total Equity))

4) Market Ratios (Price to book ratio)

Results

Descriptive Statistics

Following tables provide univariate descriptive statistics for our dependent and independent variables for the whole sample as well as for each sector. The number of observations reported in each panel represents the number of firms, times the number of years for which sufficient data are available to compute the variables.

Table 1

Descriptive statistics for variables: 120 firms over 2000 to 2014

Panel 1: Descriptive statistic – All Industries

Variable	*Mean*	*StDev*	*Min*	*Q1*	*Med*	*Q3*	*Max*
Standard Deviation	0.030	0.034	0.006	0.016	0.022	0.034	0.706
TobinsQ	1.732	2.543	-22.774	1.266	1.628	2.234	41.609
Growth (Price)	0.166	0.717	-0.917	-0.124	0.097	0.298	14.099
Growth (Size)	0.258	0.918	-0.917	-0.092	0.133	0.378	15.715
IRCD Index	52.222	15.719	9.000	40.000	52.000	64.000	94.000
Index (Word Count)	12,802	9,353	58	6,135	11,045	17,294	77,307
Block Ownership (%)	17.876	20.737	0.010	0.240	11.460	27.430	71.220
MrktCap	7190.44 M	11248 M	23 M	1007 M	2430 M	7731 M	84435 M
DebtToEquity	0.681	1.392	0.000	0.150	0.364	0.841	31.163

Panel 2: Mean and Median classified by sectors

Variables	***IRCD Index***		***Index (Word Count)***		***Standard Deviation***	
Sector	Mean	Median	Mean	Median	Mean	Median
Consumer Discretionary	53.101	50.000	12,606	9,885	0.026	0.022
Consumer Staples	47.853	44.500	11,359	9,044	0.025	0.021
Energy	52.812	52.000	11,791	10,703	0.033	0.021
Financials	53.271	54.000	15,651	13,320	0.021	0.017
Health Care	70.000	70.000	24,882	24,882	0.035	0.035
Industrials	52.169	54.500	12,095	11,487	0.025	0.023
Information Technology	53.296	54.500	12,802	11,954	0.037	0.034
Materials	50.570	51.000	11,470	10,026	0.044	0.035
Telecommunication	67.333	71.500	24,332	26,906	0.016	0.014
Utilities	56.735	58.000	14,648	10,370	0.017	0.014

Variables	***Growth (Size)***		***Block Ownership (%)***		***MrktCap***	
Sector	Mean	Median	Mean	Median	Mean	Median
Consumer Discretionary	0.176	0.149	32.514	17.550	2,494,473,049	1,623,073,200
Consumer Staples	0.276	0.121	45.320	45.320	5,095,666,948	3,093,838,059
Energy	0.214	0.087	19.666	17.250	7,912,335,732	2,751,120,960
Financials	0.173	0.161	15.531	2.720	10,605,882,518	3,476,585,534
Health Care	-0.032	-0.032	1.840	1.840	575,913,846	575,913,846
Industrials	0.183	0.138	12.389	8.630	7,311,099,552	2,745,060,411
Information Technology	0.508	0.077	26.163	21.950	8,476,531,249	3,849,049,500
Materials	0.399	0.130	14.894	12.325	4,518,745,885	1,185,733,434
Telecommunication	0.103	0.051	0.050	0.050	33,015,828,940	29,708,803,320
Utilities	0.153	0.129	9.029	0.130	3,071,756,070	2,316,504,000

Variables	*TobinsQ*		*Growth (Price)*		*DebtToEquity*	
Sector	Mean	Median	Mean	Median	Mean	Median
Consumer Discretionary	1.798	1.465	0.161	0.142	0.641	0.464
Consumer Staples	1.658	1.566	0.244	0.112	1.408	1.392
Energy	1.577	1.938	0.117	0.050	0.640	0.331
Financials	1.394	1.224	0.117	0.125	0.716	0.352
Health Care	1.287	1.287	-0.043	-0.043	31.163	31.163
Industrials	1.758	1.706	0.148	0.129	0.698	0.724
Information Technology	3.677	1.945	0.449	0.062	0.169	0.020
Materials	2.111	1.934	0.216	0.044	0.357	0.147
Telecommunication	1.825	1.713	0.095	0.103	0.989	1.024
Utilities	1.397	1.381	0.076	0.080	1.461	1.371

Table 2 summarizes the results of our model. Parameter model estimates and their respective p-values, t-stats, as well as R-Square are given in the table.

All of the models in table 2 have idiosyncratic volatility as their dependent variable. We follow the concept of time varying beta, and compute this measure using two-year moving market model to estimate the abnormal returns for the next month of each estimation period. Then we compute daily residuals of which we calculate their standard deviations. These volatilities then summed over each year to get our measure of idiosyncratic volatility. The first model regresses this measure on our index of investor relation, communication and disclosure, IRCD. Although, the coefficient is economically insignificant, the statistical significance is high. This significant negative relation is supported by other models when we added different compositions of control variables. Almost all of our model show the same relation, and that is a significant negative relation between firm's level of investor relation, communication and disclosure, and its level of idiosyncratic risk.

Our control variables are as follows: block ownership, which includes managerial holdings, institutional owners, and individuals holding more than 10 percent of the equity interest. Debt

ratio, as one of the most widely used measures of financial risk, which also play a role of discipline, is shown to have a significant negative relation with risk, which is aligned with the theory. The more debt, the more scrutiny from bank or creditors, therefore the less risk. Next control variable is size measured by market capitalization of equity. As robustness check we also considered alternative variable such as total asset and log of total assets, and the results still hold. Other control variables are price to book valueP of the equity and the industry dummies.

All of our models have estimated coefficients according to what we have expected. Risk has significant negative relation with IRCD Index. And this shows that the quality of investor relations can control risk. Even after including different combinations of control variables, this relation holds. A direct interpretation is that, firms help resolve the ambiguity and uncertainty of their strategic plans and day-to-day operations, and contribute to transparency by dissemination of wide array of information to the market. The more uncertainty evaporates, the closer the market price gets to the fair / fundamental value of the firms; and therefore, the unsystematic volatility decreases. And this is exactly what our models captured in this research.

Now the question is:

Does this risk reduction create value for stakeholders and help companies grow or it increases the costs and levy heavier taxes on the shoulders of stakeholders. This is the question on which we are currently studying…

Table 2

Regression Results
Dependent Variable = Idiosyncratic Risk (StDev of Daily Residuals)

	Model 1		***Model 2***		***Model 3***		***Model 4***	
Independent Variables	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*
Intercept	0.043 ***	18.829	0.044 ***	17.271	0.049 ***	19.29	0.048 ***	20.871
IRCD Index	-0.0003 ***	-7.564	-0.0003 ***	-7.465	-0.0003 ***	-6.943	-0.0003 ***	-6.935
Ownership %			0.00004	-0.569	-0.00004	-0.897		
Debt Ratio					-0.022 ***	-8.247	-0.022 ***	-8.22
MrktCap Size								
Price To Book								
Lag Index								
Industry Dummies	No		No		No		No	
Adj-R^2	0.056		0.055		0.118		0.118	

	Model 5		***Model 6***		***Model 7***		***Model 8***	
Independent Variables	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*
Intercept	0.048 ***	20.872	0.049 ***	19.293	0.033 ***	6.669	0.034 ***	6.787
IRCD Index	-0.0003***	-6.944	-0.0003 ***	-6.954	-0.0003 ***	-3.528	-0.00002 ***	-3.76
Ownership %			0.000003	-0.906			-0.00004	-1.385
Debt Ratio	-0.022 ***	-8.241	-0.023 ***	-8.269				
MrktCap Size					0.000 ***	-5.123	0.00002 ***	-4.94
Price To Book	0.00001	0.634	0.00001	0.647				
Lag Index								
Industry Dummies	No		No		No		Yes	
Adj-R^2	0.117		0.117		0.219		0.22	

	Model 9		***Model 10***		***Model 11***		***Model 12***	
Independent Variables	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*	*Coefficient*	*t-Stat*
Intercept	0.040 ***	7.828	0.040 ***	7.711	0.040 ***	7.709	0.042 ***	8.274
IRCD Index	0.00002 ***	-3.597	*** - 0.000014	-3.348	*** 0.000013	-3.35		
Ownership %	0.00004	-1.437					-0.00004	-1.64
Debt Ratio	-0.014 ***	-4.449	-0.013 ***	-4.434	-0.014 ***	-4.428	-0.014 ***	-4.504
MrktCap Size	0.00002 ***	-5.261	*** 0.00002	-5.45	*** 0.000026	-5.441	*** 0.000024	-4.912
Price To Book					0	0.176	0	0.029
Lag Index							0.000 ***	-4.579
Industry Dummies	Yes		Yes		Yes		Yes	
Adj-R^2	0.235		0.234		0.233		0.241	

Implications and Future Research

Based on agency theories, information asymmetry theories, and social political economic theories such as stakeholder and legitimacy, firms with better investor relations, communication and disclosure practices are expected to enjoy less risks in different aspects of their businesses and also create higher value for their shareholders.

This study will contribute to the literature of "disclosure, communications and investor relations" and their impacts on firm's risk and value. This work has implications for practitioners in areas of:

- Risk/crisis management: as we show how corporations could control their stock price drops by disseminating and harmonizing their communications, and
- Capital market transparency: as investors can better evaluate their investment opportunities when they have access to all kinds of financial and non-financial information
- Market regulations: as our results indicate potential areas of improvement for mandatory disclosure requirements. These requirements are imposed by regulators to prevent information asymmetries and stimulate a more efficient allocation of resources.

And finally, this paper opens up new areas of research in related fields and asks following research questions for further studies:

- How do different groups of stakeholders respond to corporate disclosures?
- How does communication and investor relation affect resource allocation in the economy?

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