The Economic Consequences of Investor Relations: A Global Perspective

G. Andrew Karolyi and Rose C. Liao*

Abstract

We offer new evidence on the economic value of investor relations (IR) activity using the results of a 2012 global survey of IR officers and their activities at over 800 firms from 59 countries. More active IR programs, as measured by firm's involvement in broker-sponsored conferences, in facilitating one-on-one meetings with institutional investors, through global outreach, and with formal disclosure, media and governance policies, are associated with a statistically significant and economically large 8 - 12% higher Tobin's *q* valuation. The findings are resilient to concerns about potential reverse-causality as we instrument the level of IR activity with firm-level constraints on IR personnel, salaries, and budget. Greater IR activity does not substitute for firm-level governance actions and is not associated with higher stock liquidity.

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* Karolyi is Professor of Finance and Economics and Alumni Professor in Asset Management at the Johnson Graduate School of Management, Cornell University and Liao is Assistant Professor, Rutgers Business School, Rutgers University. The authors thank participants at George Mason University and a brown bag workshop at Cornell. We are indebted to BNY Mellon and their Global Investor Relations Advisory team for allowing us to participate in and use the results from their 8th Global Trends in Investor Relations Survey in Fall 2012. We thank Michael Cole-Fontayn, former CEO Depositary Receipts at BNY Mellon, and to Guy Gresham, head of their IR advisory team, for the opportunity. Discussions with them and Chris Wachtelhausen, of the Rivel Research Group, greatly improved our understanding of the data and survey methods. Bryce Little offered excellent research assistance. Financial support from the Alumni Professorship in Asset Management at Cornell University is gratefully acknowledged. All remaining errors are our own and the views and opinions expressed in this paper are our own and should not be attributed to BNY Mellon Corporation, the Rivel Research Group, or any of their clients. Address correspondence to: G. Andrew Karolyi, Johnson Graduate School of Management, Cornell University, Ithaca, NY 14853-6201, U.S.A. Phone: (607) 255-2153, Fax:(607) 254-4590, E-mail: gak56@cornell.edu.

Economic theory implies that a commitment by a firm to higher levels of disclosure should lower the information asymmetry component of its cost of capital (among many others, see Diamond and Verrecchia, 1991; Baiman and Verrecchia, 1996). A commitment to increased disclosure reduces the extent of information asymmetries arising either between the firm and its shareholders (current and prospective) or by means of reduced adverse selection among buyers and sellers of the firm's shares (Kyle, 1985; Glosten and Milgrom, 1985). Merton (1987) suggests greater firm visibility can widen its investor recognition, broaden a firm's investor base, and in this way lower its cost of capital. Prior empirical work has uncovered several channels through which greater voluntary disclosure and heightened firm visibility can impact the cost of capital, such as through improved analyst and investor following, advertising and press coverage, or listings on major stock exchanges around the world.[1]

Our study offers new evidence on the economic consequences of increased disclosure from one specific channel through which greater firm visibility and heightened disclosure is effected: investor relations (IR). IR integrates a wide range of activities, including managing disclosure strategies, attracting analyst and media coverage, and targeting desired investors.[2] Firms from around the world invest considerable corporate resources in their IR activities, through direct investments in IR officers (hereafter, IROs), their budgets and staff time, engagement with outside IR consultancies, and indirectly in the amount of time CEOs, CFOs and top management devote to internal strategy meetings, analyst or investor visits, conference calls, and travel for road shows and broker-sponsored conferences.

[1] Among others, consider Kadlec and McConnell (1994), Lang and Lundholm (1996), Botosan (1997), Foerster and Karolyi (1999), Gervais, Kaniel, and Mingelgrin (2001), Grullon, Kanatas, and Weston (2004), and Lehavy and Sloan (2008).

[2] According to the National Investor Relations Institute (NIRI, www.niri.org), IR is a "strategic management responsibility that integrates finance, communication, marketing and securities law compliance to enable the most effective two-way communication between the financial community and other constituencies, which ultimately contributes to a company's securities achieving fair valuation."

To now, relatively little academic research exists on the role of IR, its processes, and its consequences (Brennan and Tamarowski, 2000; Bushee and Miller, 2012). As Brennan and Tamarowski rightly point out, firms are complex institutions with strategies, plans, commitments, personnel policies, products, patents, research programs, competitive threats, and managerial succession plans, all of which can have an effect on the value of its shares.[3] High-quality disclosure is important, but only some of this kind of information may be assessed adequately by analysts, financial media, and other delegated informational intermediaries of investors. So, IR may create value by filling this gap by correcting mis-valuations due to costly selective disclosures or limited investor familiarity, by reducing information asymmetry and the cost of capital and overall by lowering incomplete information (Hong and Huang, 2005).

Research conducted to date has presented conflicting evidence on the economic value of IR. Some studies uncovered positive consequences of IR activity toward greater analyst following and media attention, broader investor base, enhanced liquidity in share trading, lower cost of capital, and higher market valuations.[4] But there is a potentially dark side to IR. Hong and Huang (2005) offer an insiders' perspective on IR activity, suggesting that firms may undertake such investments not necessarily to improve share valuations, but to enhance the liquidity of their own block of shares in case they have to sell their stakes. Their model shows how insiders

[3] Brennan and Tamarowski (2000) describe the development of IR management back to the 1950s when the recognition of the importance of dealing with a company's shareholders seems to have emerged. They argue the 1980s as a catalyst point for expansion of IR thanks to the active market for corporate control. NIRI was founded in 1969 and has more than 3,300 members from over 1,600 public companies in the U.S. and worldwide as of 2014. They hold annual conferences, seminars, webinars, and promote certificate programs. Similar IR associations and societies exist all over the world.

[4] Consider Lang and Lundholm (1996) which uncovers more accurate analyst following for firms with higher ratings of disclosure and IR activities judged by the Association for Investment Management and Research (AIMR, now CFA Institute). Bushee and Miller (2012) uncover greater analyst following, media coverage and higher book-to-price ratios following the hiring of a professional IR consultancy by a firm. Kirk and Vincent (2014) show the same for firms that hire a NIRI member to their IR team. Agarwal, Belotti, Taffler, and Nash (2014) use IR magazine ratings to uncover positive abnormal returns and greater liquidity around changes in those ratings. Chang, D'Anna, Watson, and Wee (2008) show how greater disclosure on a firm's IR web page reduces information asymmetry. Boulland, Degeorge, and Ginglinger (2012) show that European firms using English-language press wires gain more trading volume and less drift around their earnings announcements. Bushee, Gerakos, and Lee (2013) link corporate jet flights to certain money-center cities with positive abnormal returns. Green, Jame, Markov, and Subasi (2013) show broker investor conferences attract firms with more intangible assets and have a positive effect on broker revenues.

benefit disproportionately from increased liquidity, though the costs of IR are shared by all investors. Agency considerations thus become one potentially important driver of IR effort, but not necessarily toward a boost in valuations. In fact, Solomon (2012) finds that firms that hire IR consultancies experience greater media coverage of their positive press releases than their negative ones ("media spin") and that it increases returns around news announcements, but lower returns around earnings announcements. Cohen, Lou, and Malloy (2013) furnish evidence that firms choreograph earnings conference calls – typically managed by IROs - by disproportionately calling on bullish analysts and this action results in negative future earnings surprises, more future earnings restatements, higher accruals, more insider selling, and overall lower returns performance.[5] Whatever the direction of the relationship, each of these studies relies on externally-observable proxies to capture the extent of IR investments and actions.

In this paper, we furnish new empirical evidence on the economic value of IR activity through a comprehensive examination of IR strategies, actions and effort balanced by their budgetary constraints. Our measures are derived from the results of a global survey of IROs at over 800 firms from 59 countries conducted during Fall 2012. To the best of our knowledge, this is the most comprehensive study to date of IR strategies and activities in order to evaluate their potential consequences for corporate performance.

More importantly, our new survey evidence contributes to an understanding of the economic value of IR in several ways previous proxies used for IR activity could not. First, the scope of the survey is broad in reach and deep in content. Our access stems from a partnership with BNY Mellon's Global Investor Relations Advisory team, which has conducted an annual survey of IROs around the world since 2005 and which offered us an opportunity to furnish

[5] They evaluate long-run risk-adjusted returns performance by building a long-short portfolio that exploits differential firm behavior on conference call "casting" to uncover a risk-adjusted monthly return of 101 basis points.

additional survey instruments for their 8th annual survey in 2012 (see www.adrbnymellon.com).[6] As a result, we are able to target over 800 on-line responses of IROs from 59 countries around the world. In terms of content, they responded to 77 detailed questions about current and planned future IR activities, such as IR strategy (engagement with officers, directors, external IR consultancy, media usage), company disclosure policies (guidance frequency and type, disclosure policy, crisis communications, capital-raising plans), interactions with the investment community (analyst coverage, broker-sponsored conferences, non-deal roadshows, CEO/CFO investor meeting frequency), and even the communication of social responsibility goals (related to environmental sustainability and corporate governance, hereafter ESG).

Second, we analyze the responses conditional on firm characteristics. We evaluate the relation between IRO responses and firm size, industry membership, sales growth, financial leverage, the fraction of closely-held shares, and the firm's global reach (e.g., international cross-listings). Specifically, we build composite indexes of these responses across six categories that capture the intensity of IR activities, which we associate empirically with Tobin's *q* valuations. The six categories include broker-sponsored activities, one-on-one meetings with investors, global engagement, disclosure policies, ESG communication, and overall. The large, global cross-section of firms yields statistical variation that lends power to our experiment.

A third advantage of our survey evidence is that we obtain detailed IR personnel and budget data to help us identify more precisely the incremental effort of the IR activity *relative to* the constraints of the firm's resources dedicated to the IR function. The survey asks about the title and seniority of the IRO as respondent, that IRO's direct report (e.g., CEO, CFO, Treasurer), the number of professional staff in the IR department, and the size of the budget. In our empirical

[6] The authors of this study have signed non-disclosure agreements with BNY Mellon to ensure anonymity of the survey respondents.

analysis, we use these data to instrument the six composite indexes of IR activity in order to identify as cleanly as possible a causal link between IR activity and corporate outcomes, like Tobin's *q* valuation. After all, good IR practices may just as easily be driven by unobserved firm characteristics that yield superior performance revealed in higher Tobin's *q* ratios leading to a false inference about causality. To refine further our instrumental variables analysis, we employ data on the plausibly-exogenous IR budgets and personnel set by *other firms* competing in the same global industry and country of domicile rather than that of just the firm itself. This choice satisfies the relevance criterion for a good instrument reflecting the commonality in IR practices among competing firms – a critical assumption we make - and it is more likely to satisfy the exclusion criterion in explaining Tobin's *q* valuation ratios (Angrist and Pischke, 2009, 2010).

This survey data offers a useful complement to existing studies of the extent of IR activity using proxies, such as IR magazine ratings, professional IR association membership, the hiring of external IR consultancy, or the management of earnings conference calls. But surveys are not without potential problems. As Graham and Harvey (GH, 2001) point out, surveys measure beliefs and not necessarily actions. They also face the risk that the respondents are not representative of the population of firms or that the survey questions are misunderstood.[7] We outline various tests to alleviate concerns about the representativeness of the sample of firms.

Our results are both reassuring *and* surprising. First, the majority of respondents globally (60%) are the senior-most IR executive at their company with an average of 7.5 years of IR experience. In 84% of the firms, the head of IR is the primary contact with the investment

[7] The risk is mitigated somewhat by the survey's implementation. Almost 5,000 candidate participants were sourced using internal and external databases and span all industry sectors and 59 countries. The BNY Mellon Global Investor Relations Advisory team partners with 22 different media organizations, such PR Newswire Takara Printing, and Russian IR Magazine, and investor relations societies, such as the U.K.'s IR Society, Australasian IR Association, IRS India, and Turkish IR Association, to obtain the original lists of firms and names. Questions were also translated into other languages, such as Japanese, to reduce potential misunderstanding. We also conduct experiments to investigate whether non-response bias affects our results by comparing responses of the firms that returned surveys earlier to those that returned later (Wallace and Mello, 1988, and GH, 2001) and by comparing our sample firms to the population of all public firms (Moore and Reichert, 1983, and GH, 2001).

community and consistently so across developed and emerging countries, across all sectors and market capitalizations. Of the 817 responses, firms from North America (244) and Asia-Pacific (269) dominate the sample. Large-cap stocks constitute one-third of the sample (322) and mid-cap stocks, another third (272).

Greater IR activity is reliably associated with higher Tobin's *q* valuations. Even after controlling for size (total assets), sales growth, financial leverage, the fraction of closely-held shares and whether the firm is cross-listed abroad, a one-standard deviation higher index score on total IR activity is associated with an 11.7% higher Tobin's *q* ratio, which represents about 15.8% of its unconditional standard deviation across the firms in our sample. These basic regressions account for industry and country fixed effects. We next instrument the level of IR activity as captured by a composite index of responses to the size of the IR budget, the fraction of the budget used externally for IR consultancy, and the number of IR staff employed full-time in the firm. These are statistically significantly associated with the level of IR activity. When we instrument, the economic consequence for Tobin's *q* ratios remains large: a one standard deviation higher index score on total IR activity is associated with a 13% higher valuation ratio. In order to better satisfy the exclusion criterion for the instrument choice by using the size of the IR budget, number of staff and the use of IR consultancy from competitor firms from the same global industry or country of domicile, the statistical precision of the relation remains and the economic magnitude implied is even larger.

When we decompose our index of overall IR activity into the five components based on different response categories in the survey, we find the most reliable statistical evidence arises for those associated with broker engagement via sponsored conferences, the interactions with the investment community (e.g., number of CEO/CFO meetings with investors) and the extent of

global IR efforts. Those actions related to company policies on guidance on earnings, sales or capital expenditures, on the existence of disclosure, communications or social media policies or ESG goals are not reliably associated with higher valuation ratios.

We offer two additional results. First, greater IR activity is not simply the equivalent of better corporate governance practices. We use data from Governance Metrics International (formerly Institutional Shareholder Services) that features index scores on corporate governance practices based on common governance attributes such as board structure, audit function, anti-takeover rules, and compensation and ownership (Aggarwal, Erel, Stulz, and Williamson, 2009). For the 245 of our 817 firms for which these governance scores exist, the relationship between our IR activity indexes and Tobin's q ratios is unchanged even when governance scores are included. Second, in order to investigate the prediction from Hong and Huang (2005) that investments in IR may be associated with an increased liquidity and especially for those firms for which relatively more of the shares are closely-held (possibly by corporate insiders), we evaluate the empirical link between our IR activity indexes and several proxies for stock liquidity, such as average turnover, bid-ask spreads, or Amihud's (2002) market-impact measure in 2012. We find no evidence in favor of this prediction. Finally, we perform a number of robustness and falsification tests to evaluate the meaningfulness of our instrumental variables.

I. Survey Data and Methodology.

The BNY Mellon's 8th Global Trends in Investor Relations Survey (IRS) is an updated and expanded version of earlier surveys of the same name. It targets the most senior IR contacts in the company. In North America, the contacts are provided by Rivel, an IR consultancy, and outside of North America, BNY Mellon worked with 17 IR national associations globally. BNY

Mellon invests considerable effort to ensure the consistency and comprehensiveness of responses across countries. The current survey was conducted between July 17 and September 10 in 2012, and 4,993 surveys were sent out by email or fax and through newsletters and advertising on LinkedIn©. Of these, 817 completed surveys were returned for a response rate of nearly 16.3%. This response rate is comparable to other recent academic surveys of similar length (seven pages) and depth (over 70 questions).[8] The corporates that responded to the survey are from 59 countries and represent a broad cross-section of market capitalization, sectors, and regions. Of the 59 countries, 62 percent are developed economies and 38 percent emerging markets. Figure 1 also shows the top sectors represented included Financials (178) and Technology (127).

The IR survey provides a unique set of information on a wide range of issues related to how companies approach capital markets communication and investor relations. It contains over 70 questions, some with sub-questions. The survey is divided into 13 areas: (1) IR personnel and infrastructure; (2) IR strategy and objectives; (3) company policy and guidance; (4) third-party IR services; (5) media usage; (6) interaction between company and market; (7) interaction with the investment community; (8) investor targeting; (9) exchange listing and capital raising; (10) social responsibility and ESG; (11) corporate governance; (12) market confidence; and, (13) IR budget and salary. Some 55 percent of the survey consists of quantitative questions. About 30 percent of the questions are categorical questions, wherein respondents are required to choose one or more options from a set of alternatives. The remaining 15 percent are binary questions ("Yes" or "No") questions.

[8] The full survey questionnaire is available on request. Note that Trahan and Gitman (1995) obtain a 12% response rate in a survey mailed to 700 CFOs. GH (2001) obtain a 9% response rate in a survey to 4,400 CFOs. Four email reminders were sent during the open survey period (July 26, August 7 and 21, September 5). There was no indication to the survey firm Rivel that the survey responses were incomplete due to survey length. Only questions on IR budget and salaries were optional.

We focus on the most relevant IR attributes based on attention received in the academic literature to date. We include attributes from five categories: interaction between company and market, engagement with investment community, information and guidance, social responsibility and ESG, and one we call "global" outreach. 23 individual attributes constitute our overall IR activity index for each company. The index assigns a value of one to an IR attribute if the company meets a threshold level for that standard and zero, otherwise. For example, half of the sample firms used at least three brokers to organize non-deal roadshows in 2011 and our IR score for engaging brokers is assigned a value of one if more than three brokers are used to organize non-deal roadshows. A firm will be given a score of one on its IRO's effort to engage with investors if there are more than 50 one-on-one meetings the IRO has taken with investment professionals in a year. Such additive indices are not uncommon in the literature (e.g., La Porta, Lopez-de-Silanes, and Shleifer, 1997, 1998; Gompers, Ishii, and Metrick, 2003; Bebchuk, Cohen, and Ferrell, 2004; Durnev and Kim, 2005; and, Aggarwal et al., 2009). We express the IR activity index score as a percentage. If a firm satisfies all 23 IR activity attributes, its index score would equal 100%. The average firm in our sample has an IR index of 45%.

Table 1 provides a description of the thresholds we use for each of the 23 IR attributes and presents simple summary statistics on each of the IR attributes. The IR attributes are arranged by sub-categories of the firm's global efforts, efforts in engaging brokers and investors, obtaining (disseminating) information about (to) new investors, and targeting ESG investors. There are three attributes measuring the firms' efforts in engaging brokers: how many brokers the firm uses to organize non-deal roadshows, how many broker-sponsored conferences in which the firm participates, and how many criteria the firm uses to select a broker. Broker-hosted investor conferences have been shown to bring revenue to the brokers for facilitating informative

disclosures (Green, Jame, Markov, Subasi, 2013) and to increase abnormal returns and turnover of the firms participating in these conferences (Bushee, Jung, and Miller, 2011). In our sample, half of the firms used more than 3 brokers to organize road-shows in 2011 and half attended more than six broker-hosted conferences inside and outside of the firm's home market. The choice of brokers often involves several criteria such as the quality of the brokers' research, geographic presence, an ability to identify new investors and insights on current investor demands. One-third of firms use at least four criteria to choose brokers for a non-deal roadshow.

We use the following attributes to measure the firm's efforts in engaging investors: what percentage of investor meetings are with hedge funds, how many investor one-on-one meetings the CEO, CFO, IRO and operational heads of the firm, respectively, meet with investment professionals inside the firm's home market. As shown by Bushee, Gerakos, and Lee (2013), private meetings with investors are important for disseminating information about the firm. More than 20% of the investor meetings were with hedge funds among half of the sample firms. Hedge funds are often considered more sophisticated investors (Kosowski, Naik, and Teo, 2007) and better at parsing information (Solomon and Soltes, 2013). Indeed, Solomon and Soltes (2013) show that hedge funds attend more individual investor meetings than other institutional investor. IROs are not the only executives frequently taking one-on-one meetings with investors (more than 50 meetings in a year for half of the sample firms); so are CFOs (median count of more than 20 meetings) and CEOs (more than 10 meetings). Even operation heads typically undertake more than 3 meetings with investment professionals in a given year.[9]

Six attributes are used in measuring the firm's effort in providing guidance and obtaining information about new investors, including the number of guidance and written policy in place,

[9] Solomon and Soltes (2013) report that the CEOs, the CFOs, and the IROs, respectively, engage in 153, 94, and 166 meetings with all investors (both in and out of the home market) in a given year using proprietary data for a single, mid-cap NYSE firm. Our data would suggest that this firm's CEO and CFO level of activity is well above that of the median global firm.

how many criteria, sources, and means the IR department use to target new investors and how frequent the firm held investor/analyst days. Investor/analyst days are company organized mini-conference and have been shown to have substantial information contents for the investors and analysts based on analyst revisions and market trading (Kirk and Markov, 2013). In our sample, one in five firms host investor/analyst days at least twice a year and half of the firms host them at least once a year. The median firm provides at least four types of guidance, such as for revenues, earnings, margins, cash flows, capital expenditures. It has more than two written policies in place such as for disclosure, media, and corporate crises. The firms spent considerable efforts in targeting new investors as evidenced by the various criteria used (investment styles, types of investors, peer ownership, industry focus, for example), the various sources of investor information utilized (such as internal/external databases, brokers, IR consulting firms, and depositary banks), and the various means to receive introduction to new investors (e.g., road shows, investor conferences, IR departments). It is consistent with the findings in Bodnaruk and Ostberg (2013) which shows that firms with smaller shareholder base incur larger external financing costs.

For the firm's efforts in improving social responsibility and attracting environmental sustainability and governance (ESG) investors, we utilize five attributes including targeting ESG investors as well as communicating corporate governance-related topics with investors frequently. 82 percent of the survey respondents have indicated that part of their responsibilities include communicating with investors about corporate governance issues, though only 38 percent of the firms have a strategy to communicate corporate governance related issues with key investors on a regular basis and among those that do, only one or two topics on governance (board composition, executive compensation, ownership, controlling shareholders, and

relationship between management and board, the role of board committees) is discussed. Most firms do not reach out to ESG investors or believe that company-initiated policy is effective for improving ESG disclosure.

The final category is on the firm's global IR outreach, for which we include the number of sovereign wealth funds (SWF) with which the firm interacts, the percentage of investor one-on-one meetings abroad, and the number of days the firm spent on roadshows undertaken in the U.S. and Europe as well as the intention to increase the number of days on roadshows. 63 percent of the companies would like to increase the number of roadshow days outside of their home market. Further, the median firm participated in more than 43 percent of the broker-hosted conferences outside of their home market, meet with more than one SWF, and undertake more than 36 percent of their one-to-one meetings abroad. An average firm spends more than 7 days in the U.S., and more than 3 days in Europe for their roadshows.

We interpret these scores as indicators of the intensity of IR activity. If a firm has a higher score on an IR index, we infer that the firm has spent more effort in engaging with investors as a part of the firm's overall IR effort. An advantage of our IR scores lies in their objectivity; but, like many measures, it reflects the quantity of effort rather than the quality.

Table 2 provides summary statistics for a number of firm-specific characteristics. Out of the 817 survey responses, 773 remained after deleting duplicate responses from the same firms. All firm-level variables are obtained from Datastream, Worldscope, or Bloomberg, and winsorized at the 1% level in both tails of the distribution. We use financial statement data for the fiscal year 2011 since the survey questions are designed to evaluate IR activity in the preceding year of 2011. Tobin's q is defined as the book value of total assets plus market value of equity less the book value of equity scaled by the book value of assets, with an average value

of 1.505 and a standard deviation of 1.12. Average sales growth is the 3-year average of annual sales growth, with an average value of 5.3% and a standard deviation of 10.4%. We define external finance as the difference between capital expenditure and cash flow from operations scaled by capital expenditure, following Rajan and Zingales (1998) and Doidge, Karolyi, and Stulz (2007).[10] The average firm in our sample has higher capital expenditure needs than that can be satisfied by the internally-generated cash flows (-2.9 percent). Total assets is the book value of total assets in millions of U.S. dollars, with an average value of $41 billion and the largest value of $2.3 trillion due to inclusion of large financial firms. Closely-held shares is the percentage of common shares outstanding held by insiders, with an average value of 28% and a standard deviation of 26%. Leverage is the ratio of long-term debt to common stockholder equity, with an average value of 3.3 and a standard deviation of 2.4. The shares of an average firm are listed in at least 2 different countries.

We include three proxies for the illiquidity of the shares of the firm: Amihud's Price Impact, which measures the ratio of the absolute return to the dollar volume of trading proposed by Amihud (2002); Turnover, which is the negative ratio of daily trading volume to number of shares outstanding; and Spread, which is the daily bid-ask Spread derived from daily high, low and closing stock price proposed by Corwin & Schultz (2012). These are computed using daily data for 2011-2012 from Datastream.

At the bottom of Table 2, we introduce summary statistics on our three main survey variables related to the constraints of IR budget and salaries. We will use these as the instrumental variables for our regression analysis. The average firm has at least 2 staff members

[10] Doidge et al. (2007) follow Rajan and Zingales to compute the measure from Compustat for U.S. firms and apply the median values to global firms based on their membership in the same global industry (3-digit SEC code). The motivation for this approach is that, assuming that growth opportunities of firms in the same industry have a significant common component across countries, the level of external financing of U.S. firms is the level that firms in other countries would have if they were not constrained by country-level forces in their countries of domicile. We instead measure this external dependence directly for each firm.

working in the IR department and firms allocate 15% of their IR budgets for external IR engagement.[11] The average firm pays its IRO a base salary between $125,000 and $175,000 with bonus incentives.

Before we move on to our main findings, we perform two experiments to investigate whether non-response bias might affect our results. The first experiment, suggested by Wallace and Mellor (1988) and Graham and Harvey (2001), compares the responses for firms that returned the survey early (between July 17 and August 22, 2012) and those that returned them later (August 23, 2012 and September 10, 2012). One might think of those that responded late as a sample from the non-response group. Appendix Table A shows that the mean response for the early respondents differs significantly (*t*–statistics with associate *p*-values) from the mean for the late respondents for only 2 out of the 23 questions. Because answers may be correlated across different questions, we also perform multivariate χ^2 tests comparing the early and late responses. The tests are reported by category of question and across all categories. None of these test statistics are statistically significant, so Wallace and Mellor would judge that non-response bias is not a major problem.

The second experiment, suggested by Moore and Reichert (1983) investigates non-response bias by comparing characteristics of responding firms to those of the population at large. If they match well, the sample can be thought of as representing the population at large. But this is a challenging test given that we do not know which 4,993 of the 35,000+ public firms globally were targeted. They were likely to be among the larger ones. We report on the results of a comparison on key firm attributes for the BNY Mellon survey respondents relative to a benchmark population of public-listed firms using the Worldscope universe. The findings are

[11] The average value of the total annual IR budget is $1.1 million. However, one-third of the firms did not provide an estimate for their total annual IR budget.

presented in Appendix Table B in which we report raw, global industry-adjusted and home country-adjusted statistics for return on assets (ROA), on equity (ROE), book-to-market (B/M), cash-flow-to-price (C/P), trailing one-year sales growth (Panel A) and distributional statistics on market capitalization, total assets and total sales (Panel B). As expected, the reporting firms are larger than most of the rest of the public equity universe with a large fraction falling in the top quartile by any measure of size. The reporting firms are faster growing and more profitable than their industry or country peers, but their relative valuations reveal mixed results.

II. Does IR Activity Increase Firm Value?

We have seen that firms spent a lot of effort, time, and resources on improving their IR practices in the previous section. In this section, we examine the relation between firm value and the IR index scores. Specifically, we test the prediction that there should be a positive relation between the IR scores and Tobin's *q* in the cross-section. We first employ a simply ordinary least square (OLS) regression models, controlling for observable firm characteristics as well as country and industry fixed effects.

This finding allows us to establish little more than statistical association. Of course, each firm's level of IR effort given its attributes and its relation with firm value could reflect an omitted-variables problem in which some unobservable firm attribute affects a firm's IR effort as well as the firm's value. We address this problem in the second subsection utilizing survey questions on IR budgets and personnel of the respondent, as well as those of other firms competing in the same global industry or country of domicile excluding the firm itself. The identifying assumption is straightforward: IR efforts are likely to be constrained by the predetermined budgets of the division and the salaries and compensation of IROs. So to

understand the valuation consequences, we attempt to identify abnormal IR activity beyond the constraints of the budgets set for the activity. To push our identifying assumptions one step further, we propose that there exists commonality in IR budgets and IRO compensation practices among sector peers. Using median IR budgets and salaries for the competitive peers as instruments for the level of IR activity thus allows us to satisfy the exclusion restriction that might link these budget constraints to firm value.

1. Preliminary results

To investigate the relation between IR effort and firm valuation, we control for firm characteristics that have been shown to determine firm valuation in the international context (Durnev and Kim, 2005, Aggarwal et al., 2009), such as sales growth, the fraction of closely-held among shares outstanding, number of cross-listings, book leverage, book value of total assets, a measure of dependence on external financing. Both sales growth and the measure of dependence on external finance are proxies for a firm's growth opportunities. Book value of total assets is used to proxy for firm size. The percentage of closely-held shares is used to control for the insider ownership which is shown to minimize expropriation by controlling shareholder. Finally, Tobin's *q* may differ across firms because of unobservable industry and country characteristics. To account for the country and industry sources of heterogeneity, we include country and industry fixed effects.

Table 3 reports the regression results for the relation between IR effort and Tobin's *q*. Model (1) shows the regression of Tobin's *q* on the overall IR index score, IR Score (Total). Models (2) to (6) include the sub-categories of IR scores on brokers, investors, information, ESG, and global effort, respectively. The adjusted R^2s from the regressions range from 29.8% to 31.4%,

which shows that our models have reasonable explanatory power. The robust *t*-statistics reported take into account the potential clustering of the error terms within countries and industries.[12]

In Model (1), we find that a firm's Total IR score is positively related to Tobin's *q*, controlling for firm, industry, and country characteristics. The coefficient of 0.863 is significant both statistically and economically. A one standard-deviation increase in the Total IR score (0.19) is associated with an increase in Tobin's *q* of 0.16, an 11% increase relative to the sample average of 1.505 and an increase that constitutes 15% of its standard deviation (1.12). The economic magnitude is comparable to that found in papers studying the valuation of corporate governance in the international context. For example, Aggarwal et al. (2009) found that decreasing an average firm's governance score by the average governance gap between an international firm and a matching US firm would reduce Tobin's *q* by 6.2%. Durnev and Kim (2005) found that a one standard deviation increase in their comprehensive governance score results in a 9% increase in *q*.

In Models (2) to (6), we include the sub-categories of IR scores on brokers, investors, information, ESG, and global effort, respectively. Three out of five sub-categories of IR scores – namely, IR scores on information, ESG, and global effort - are statistically and economically significant for explaining Tobin's *q*. These results are consistent with the large literature on how voluntary disclosure increases firm value (Verrecchia, 1983; Diamond and Verrecchia, 1991) and on how improved corporate governance increase firm value (La Porta et al., 2002; Durnev and Kim, 2005; Aggarwal et al., 2009; and, Griffin et al., 2014).

Most control variables are of the expected sign and several are reliably significant. Firms with high growth opportunities (measures by average sales growth) are valued higher, as are

[12] In unreported tables, we also test whether our results hold when we include no fixed effects, country fixed effects alone, and industry fixed effects alone, in combination with estimators that allow for clustering of the residuals at the country level or industry level. The results are similar to what is reported here.

firms that are smaller and have relatively less reliance on external financing. There is no effect on valuation whether a firm is closely-held, more levered or has more cross-listings abroad.

2. Endogeneity

We have found that IR efforts are associated with higher firm value. However, reliable inferences are limited because of endogeneity concerns. It could be that an optimal level of IR effort given its characteristics is justified by higher firm value, a form of reverse causality, or a relation between firm value and the IR scores could simply reflect omitted variables, a bias which induces a spurious link between a firm's IR effort and firm value. Endogeneity concerns are common in the governance literature, but our data may be well suited to address the potential for reverse causation or omitted variable bias. Our tests use internal measures of activity captured from firms' responses to survey questions rather than externally-observed measures of firm behavior. For example, the typical argument for the relation between governance and valuation is that either high-value stocks attract international investors who, in turn, demand better governance or analysts assign higher governance scores to firms that enjoy high valuation (Durnev and Kim, 2005). However, in our setting, we do not rely on analysts' estimates of firm disclosure nor is it clear that international investors will demand more IR effort than domestic investors.[13] Indeed, a firm may have more incentive to increase its IR efforts if it has low valuation. Nonetheless, we address this problem by instrumenting the IR effort. A good instrument would be one that is related to the level of IR effort a firm makes, yet is uncorrelated with some unobservable firm characteristics linked to Tobin's *q*. We exploit survey questions on IR external budget, number of IR staff, and IRO's base salary. Our identification assumption is

[13] One potential bias that may impede our advantage with the survey data is if the participation rate and answers from the respondents reflect the higher valuations of firms that are current or aspirant clients of BNY Mellon's securities services or Global IR Advisory unit.

that a firm that has more IR staff, a larger IR budget, and pays a higher salary to the IRO has more resources and will enable higher IR efforts.

Table 4 reports the results of two-stage least squares (2SLS) regressions of firm valuation on the IR scores and other firm characteristics. Panel A presents first-stage regression results in which the IR index scores are projected onto the instrumental variables comprised of three IR budget variables: percentage of budget for external IR help, number of professional IR staff, and base salaries of the IRO. We also include other firm characteristics such as sales growth, closely-held shares, number of cross-listings, book leverage, book value of total assets, and dependence on external financing. The number of observations dropped in all specifications (to around 494 from 640) due to the fact that some respondents did not answer questions related to the budget and salary. The R^2 from the first stage models range from 16% to 47%, which shows that there is a considerable variation in the explanatory power of observable firm characteristics and IR instrument. In all models, we report an *F*-statistic for a joint zero-exclusion test of the significance of all the instruments employed. These *F*-statistics are significant at the 1% level for three out of six models, one at the 5% level, and they are rejected as insignificant for Models (4) and (5) where the IR indexes are related to information and ESG. These two specifications are worrying, but overall the instruments are reasonably useful.

Panel B presents the second-stage results. To ensure that the success of the instrument in the second stage is not inadvertently proxying for other firm characteristics, we include all firm characteristics that are previously included in the OLS regressions of Table 3, except the IR budget-related instrumental variables. We again include country and industry fixed effects with robust standard errors clustered at the country and industry levels. In Model (1), we find that the coefficient on the total IR score is positively related to Tobin's *q*. This result is significant both

statistically and economically though slightly smaller in economic importance than that implied in Table 4. The coefficient on the Total IR index score implies that a one standard deviation increase in the IR score (0.11) is associated with an increase in Tobin's *q* by 0.20, a 13% increase relative to the sample average of 1.505 or 18% of its unconditional standard deviation.

In Models (2) to (6), among the sub-categories of IR scores on brokers, investors, information, ESG, and global effort, three out of five sub-categories of IR scores (for brokers, investors and global outreach) are statistically and economically associated with Tobin's *q*. Interestingly, IR score on information and ESG are no longer significant, possible due to the fact that the budget instruments used in the first-stage regressions are not significant in determining the IR scores on these sub-categories. Importantly for all six models, the *p*-values of the Sargan's test are above the 10% levels, suggesting that the error terms are uncorrelated with the instruments.

The validity of using firm-level budget variables as instruments builds on the assumption that firms with more resources have no other unobservable firm characteristics that lead to higher Tobin's *q* valuation. But such an assumption could be challenged given that both resources and firm value are at the discretion of the firm. To counter this criticism, we next use as our instruments the level of IR budget of other firms competing in the same global industry in the firm's country of domicile excluding the firm itself (see John, Litov, and Yeung, 2009, and Aggarwal et al., 2009, for the use of a similar instrument).[14] This approach necessarily excludes all firms from home-country sectors with only one company, but we pick up observations for

[14] John, Litov, and Yeung, in particular, evaluate the relation between corporate risk-taking and corporate growth. Their risk-taking proxy is instrumented using firm attributes, like firm size. Recognizing how size may directly influence growth, they instrument using country averages of risk-taking of other companies in the same industry sector in their home country. Their rationale for using the peer group stems from competitive pressure in the underlying product markets. Our assumption is similar that there are strong common practices in IR budgeting among firms competing in the same industry and home country.

firms that do not report IR budget data themselves but which have available peers. Another problem is the "reflection" or simultaneity problem documented by Manski (1993): if firm *i*'s IR budgeting choices are a function of firm *j*'s and vice versa, it is difficult to accurately identify the "peer effect" stemming from the IR budgeting choices.[15] We conduct extra tests of the potential "reflection" problem in the next section.

Table 5 reports the results of the second-stage regressions of firm valuation on the IR scores and other firm characteristics. Panel A presents the first-stage regression results in which the IR index scores are instrumented with the equally-weighted average level of the IR budgets of other firms competing in the same country of domicile. The second-stage regression results project Tobin's *q* on those instrumented IR index scores and are shown in Panel B. We again include other firm characteristics such as sales growth, closely-held shares, number of cross-listings, book leverage, book value of total assets, and dependence on external financing in both the first and second stage regression. The number of observations is larger than that in Table 4 since we now use the country-sector peer's budget variables instead of firm-specific budget variables. We also include country and industry fixed effects with robust standard errors clustered at the country and industry level.

The explanatory power in the first-stage regressions in Panel A range from R^2s as low as 14% for the IR Information index in Model (4) to as high as 43% for the IR global outreach index in Model (6). *F*-statistics associated with the joint zero-exclusion test for the three peer IR budget variables are sizeable and rejected at least at the 5% level for four of the specifications, another at the 10% level; only for the IR information index score do we fail to reject that they are weak instruments.

[15] See Manski (1993) and Leary and Roberts (2011) for more on the reflection problem. Leary and Roberts specifically use an instrumental variables approach to identify endogenous and exogenous capital structure peer effects, in which their instrumental variables consist of lagged idiosyncratic stock returns.

In Model (1) of Panel B, we find that the coefficient on the total IR score is positively related to Tobin's *q*, controlling for firm, industry, and country characteristics. This result is significant both statistically and economically and similar in value to the coefficient in the 2SLS regressions using firm-level IR budgets as instruments. The coefficient on total IR score indicates that a one standard-deviation increase in the overall IR index score (0.11) is associated with an increase in Tobin's *q* by remarkably large 0.50, which constitutes 45% of the unconditional variation in sector- and country-mean-adjusted Tobin's *q*. In Models (2) to (6) for the sub-categories of IR scores on brokers, investors, information, ESG, and global outreach, we see three out of five sub-categories of IR scores – namely, on brokers, investors, and global outreach - are all statistically and economically linked to Tobin's *q*. Again, the IR score on information and ESG are not significant, partly due to the fact that the country-sector peer IR budget instruments used in the first-stage regressions are weakly related to the IR scores on these sub-categories. Importantly for all six models, the *p*-values of the Sargan's over-identification test are above 10%, suggesting the error terms are uncorrelated with the peer firm instruments.

III. Robustness Checks, Alternative Explanations, and Falsification Tests.

In this section, we explore robustness checks, alternative hypotheses, and falsification tests. We have seen that firms that engage in higher IR activity also have higher Tobin's *q* valuation ratios. This relationship remains strong when we address endogeneity concerns using a firm's IR budget and personnel as instrument variables along with that of its country-sector peers. One concern is that our survey-based measures of IR activity simply proxy for the overall quality of corporate governance of the firm. Firms that are more active in broker-sponsored conferences, for which corporate officers participate in more one-on-one meetings at home and overseas, or

when IROs facilitate guidance on sales and profits, are also those firms with larger boards and more independent directors, face tougher anti-takeover laws, and disclose more about their ownership or officer compensation. We test this conjecture by including a proxy for firm-level corporate governance in our regression model. Another concern is the "reflection" or simultaneity problem (Manski, 1993) if the firm's IR budgeting choices simply reflect other firms' in the same industry and country. We test whether our inferences change if we focus on smaller firms whose budgeting choices will be less likely to drive that of industry practice. Finally, we test whether the valuation benefit of IR activity differs across firms depending on whether they are already cross-listed on a major U.S. exchange and whether they are from countries with relatively higher or lower quality of accounting standards, strength of regulations that preclude self-dealing among corporate insiders, and the overall stringency of the rule of law.

We also investigate a prediction from a model of Hong and Huang (2005) that investments in IR may simply be associated with an increased liquidity and especially for those firms for which relatively more of the shares are closely-held (possibly by corporate insiders). We evaluate the empirical link between our IR activity indexes and several proxies for stock liquidity, such as average turnover, bid-ask spreads or Amihud's (2002) market-impact measure in 2012. Finally, we perform one falsification test to evaluate the meaningfulness of our IR-specific instrumental variables. In various specifications, we replace a chosen country-level proxy for good governance, such as country equally-weighted average ISS/Riskmetrics governance score, the Anti-Self-Dealing index of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008), and the Disclosure index in La Porta, Lopez-de-Silanes and Shleifer (2006), for the IR budget, staff level and IRO compensation variables for competitor peers in the home country.

1. *Does Firm-Level Governance Substitute for the Level of IR Activity?*

Some of the IR activity may be perceived to be simply "good governance." To see whether this is the case, we obtain data from Governance Metrics International (formerly Institutional Shareholder Services) that features index scores on corporate governance practices based on 44 common governance attributes such as board structure, audit function, anti-takeover rules, and compensation and ownership (Aggarwal, Erel, Stulz, and Williamson, 2009).[16] There are a total of 245 firms for which these governance scores exist for our primary sample of 773 firms for which we have IR index scores.

Table 6, Model (1) reports the instrumental-variables regression results of Tobin's *q* on the overall IR index scores, ISS/Riskmetrics governance scores, and other firm characteristics. The firm-level IR budget variables are used as instruments as in Table 4. We again include other firm characteristics such as sales growth, closely-held shares, number of cross-listings, book leverage, book value of total assets, and a measure of dependence on external financing. We also include industry fixed effects with robust standard errors clustered at the country and industry level. Model (1) shows the positive relation between Tobin's *q* and the total IR index score is statistically significant even in this much smaller firm sample. The economic magnitude of the effect is still significant (3.281×0.11 or 0.36) implies a 24% Tobin's *q* premium relative to its unconditional mean (1.505). The coefficient on the ISS/Riskmetrics Governance variable is insignificantly different from zero and those for the other control variables are of the same sign and statistical reliability as before.

We include one specification that includes only small firms in which the firms are smaller than the median of their peers in the global industry group in their home country. One could

[16] We thank Reena Aggarwal for making these data available on her website for the governance index used in Aggarwal, Erel, Ferreira, and Matos (2011). Their sample is heavily skewed toward developed markets, with Japan and the U.K. representing more than 50% of their non-U.S. population of firms. There are no traditionally emerging markets represented.

associate more severe agency problems with smaller firms to push our line of inquiry further. But our objective here is actually to assess the potential of the Manski "reflection" problem to distort our findings when we use our country-industry peers and their IR budget variables as instruments. The smaller the firm in question, the less likely it is that the peer firm IR budget decisions are influenced by those of the firm. Indeed, we confirm that the coefficient on the Total IR index score is reliably positive with economic magnitudes as large as what we uncovered in Table 5.

Another proxy for the potential boost in quality of corporate governance may be captured by the fact that the firm in question is secondarily cross-listed on a major U.S. exchange. Doidge, Karolyi, and Stulz (DKS, 2004, 2009) offer evidence in favor of the so-called "bonding" hypothesis toward stronger governance from a U.S. cross-listing that stems from the heightened monitoring by informational intermediaries, such as auditors, lawyers, analysts, institutional investors or legally by means of formal registration with the U.S. Securities and Exchange Commission.[17] Our base specifications in Tables 4 and 5 identify the number of overseas cross-listings for our respondent firms (2.196, on average, by Table 2), but we further identified those non-U.S. respondents specifically with U.S. cross-listings (157, in count). One possibility is that a U.S. cross-listing substitutes for the higher level of IR activity and neutralizes its valuation benefit because a more intense level of engagement is simply necessitated by "bonding" to U.S. markets. Models (3) and (4) present two specifications involving non-U.S. firms separately for those with a U.S. cross-listing on a major exchange and those without, respectively. The coefficients on the overall IR index score in the similarly instrumental variable regressions are similarly positive and reliably different from zero. The magnitude of the coefficient is larger for those without a U.S. cross-listing which implies an even larger Tobin's *q* valuation premium

[17] The original bonding hypothesis was proposed by Coffee (1999) and Stulz (1999) and formalized in the model of DKS (2004). There is much evidence in support of bonding and yet many studies that challenge it. See Karolyi (2012) for a recent survey of the proponents and opponents.

given that their average sector-mean-adjusted Tobin's *q* valuation ratios are lower than for those with a U.S. listing in our sample. We can safely conclude that the level of IR activity is not a direct substitute with a U.S. cross-listing. Interestingly, the importance of dependence on external finance is concentrated in those with U.S. cross-listings in Model (2), which is consistent with the bonding theory.

One final set of tests in Table 6 involve subsamples by country according to whether the respondent firms are from a home country with relatively higher or lower quality of accounting standards, strength of regulations that preclude self-dealing among corporate insiders, and the overall stringency of the rule of law. Our country-level variables include: the disclosure index ("Disclosure") from La Porta, Lopez-de-Silanes, and Shleifer (2006); the Anti-self-dealing index ("ASDI") from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008); and, the Rule of Law index ("Rule of Law") from the World Bank's World Governance Indicators for 2011 based on laws related to contract enforcement and property rights. Our cutoff criteria is based on the median scores of the countries in the sample, which yields different subsample counts by firms. Models (4) to (9) emphasize that the statistical and economic association of Total IR index score with Tobin's *q* is concentrated among the firms that are located in countries with weaker disclosure standards, anti-self-dealing protections and rules of law. In Models (5) and (7), in particular, the magnitudes of the coefficients on Total IR index score imply larger Tobin's *q* valuation premiums than on average for the full sample of respondents.

2. *Talking Up Liquidity?*

Hong and Huang (2005) develop a theoretical model that predicts how management teams will spend considerable resources on IR activities in order to enhance the liquidity of their own shares rather than to improve the value of the firm. They further argue how it is firms with

more severe agency problems that are more likely to motivate IROs to "talk up the liquidity" in their shares. We have already seen above that firms with higher IR scores also have higher Tobin's *q* and the relation is robust after we address endogeneity concerns. In this section, we offer two additional tests of the predictions of their model. First, we test whether firms with lower share liquidity are more likely to engage in IR activities. Second, we test whether firms with more closely-held shares - our rough proxy for more severe agency problems - are those in which IR activity is most acutely positively linked to liquidity, as in Hong and Huang (2005).

We include several proxies for stock liquidity, such as average turnover, bid-ask spreads, or Amihud's (2002) market-impact measure in 2012. Turnover is defined as daily share trading volume divided by the number of total shares outstanding, which has also been a popular measure of liquidity (e.g., Rouwenhorst, 1999, Chordia and Swaminathan, 2000, Dennis and Strickland, 2003). Bid-ask spreads are derived from daily high and low prices (using the methods of Corwin and Schultz, 2012). Since it is a measure based only prices and can be estimated daily, it provides a feasible way of capturing bid-ask spreads for our global set of firms. Finally, we also include Amihud's (2002) market-impact proxy, which has been widely used in the literature (see Avramov, Chordia, and Goyal, 2006, Watanabe and Watanabe, 2008, Karolyi, Lee, and van Dijk, 2012). All of the measures are calculated daily and averaged for the calendar year preceding that of the survey (2011). Since both bid-ask spreads and Amihud's (2002) market-impact measures are proxies for illiquidity, we add a negative sign to turnover for ease of interpretation and comparison.

Table 7 reports the regression results of the total IR scores on liquidity measures and other firm characteristics. We also include country and industry fixed effects with robust standard errors clustered at the country and industry level. Models (1) to (3) show the regression

of the total IR score on the three liquidity measures alone. Models (4) to (6) also include our control variables from earlier tables with country and sector fixed effects, and Models (7) to (9) add an interaction term between the liquidity proxies and closely-held shares. The adjusted R^2s in the specifications with control variables average about 35%, which shows reasonable explanatory power for the cross-section of firm IR activity levels.

Overall, we find that only the Amihud Price Impact proxy is significantly associated with the level of IR activity, but it is negatively so. Economically, the effect is small: a one-standard deviation increase in illiquidity is associated with a 0.035 lower Total IR index score, which represents a 7% lower level of IR activity. Regardless of the economic magnitude, the outcome runs opposite to the predictions of Hong and Huang (2005). Note that, as in our earlier instrumental variable regressions in Tables 4 and 5, we again find that firms with higher growth opportunities, more reliance on external finance, and larger size are likely to engage in more IR efforts. Finally, in Models (7) to (9), we also test whether firms with more closely-held shares, or more agency problems, are more likely to engage in talking up liquidity and find no evidence supporting this prediction. None of the three interactions are reliably different from zero.

3. *Falsification and Robustness Tests.*

In the Table 5, we used as our instrumental variables the equally-weighted average level of IR budget and IRO compensation of peer firms competing in the same global industry and country of domicile excluding the firm itself. The logic was that the IR practices of the firm's global industry or country of domicile is not likely to be influenced by the firm itself. One concern is that our peer instrumental variables can be proxies for other country-level governance factors and not just IR activities. The subsample tests in Table 6 confirm that our findings were concentrated among firms in countries with poor disclosure standards and weaker investor

protections which imply further that these country-level governance variables may be associated country-sector peer practices. To falsify this association, we use three alternative country-level governance measures as stand-in instrumental variables to test whether other country-level measures would be just as relevant instruments for firm-level IR activity.

We first construct an equally-weighted average country-level governance score from Governance Metrics/ISS using the data in Model (1) of Table 6. Recall the index scores on corporate governance practices are based on 44 common governance attributes such as board structure, audit function, anti-takeover rules, and compensation and ownership (Aggarwal, Erel, Stulz, and Williamson, 2009). We also include the Disclosure index from La Porta, Lopez-de-Silanes (2006), and Anti-Self-Dealing index of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). We also explored several other candidates in unreported tests with identical outcomes.

Table 8 reports the results of the 2SLS regressions of Tobin's *q* valuation ratios on the total IR scores and other firm characteristics but now using the stand-in country-level corporate governance measures as instruments for IR scores. Models (1), (3) and (5) report the first stage regression results of the total IR scores on firm characteristics and the country-level corporate governance measures. We find that none of the country-level governance measures is significant to the total IR scores. The alternate country-level instruments are weak and not relevant. Models (2), (4) and (6) next report the second stage regression results of Tobin's *q* on the respective instrumented Total IR index score. Consistent with the first-stage regression results, none of the instrumented IR score is significant to Tobin's q. We conclude that greater IR activity as instrumented by the extent of the IR budget and IRO compensation levels for the firm or the peers of the firm indeed drives the link with Tobin's *q*, and not a poor equivalent of better

corporate country-level governance practices. These falsification tests give us additional confidence on our identification strategy for the importance of IR activity.[18]

IV. Concluding Remarks.

In this paper, we provide new empirical evidence on the economic value of IR activity using measures of IR activity derived from the results of a global survey of IROs at over 800 firms from 59 countries conducted in 2012. To the best of our knowledge, it is the most comprehensive assessment of the level of IR activity for corporate performance and for a broad set of global firms. We build composite indices across six categories that capture the intensity of IR activities, including participation in broker-sponsored activities, in one-on-one meetings with investors, global engagement, disclosure policies, and ESG communication. We find greater IR activity is reliably associated with higher Tobin's q valuations. This relation remain significant when we instrument the level of IR activity using unique data on the size of the IR budget, the fraction of the budget used for IR consultancy, and the number of IR staff employed full-time in the firm, as well as those of the other firms competing in the same global industry or country of domicile rather than that of just the firm itself.

When we decompose our index of overall IR activity into the five components based on different responses in the survey, we find that the most reliable statistical evidence arises for those associated with broker engagement via sponsored conferences, the interactions with the

[18] In one final set of robustness tests on methodology, we employ a two-step Heckman self-selection model in which the selection model uses an indicator variable that equals one if the median Total IR index score is above the median among all respondent firms and zero otherwise. The goal of this exercise is to capture some unobservable firm-level attribute associated with higher IR activity and to allow for its impact in the second-stage observation model for Tobin's q valuation. We use the same firm-level and country-sector peer IR budget variables as predictors in the first stage and introduce the inverse Mills' ratio in the second-stage with the Total IR index score. Appendix Table C presents the findings and confirms the reliable positive coefficient for Total IR score on Tobin's q. Interestingly, the inverse Mills' ratio is negatively and reliably significant in the country-peer sector specification verifying that some selectivity plays a role.

investment community (e.g., number of CEO/CFO meetings with investors) and the extent of global IR efforts. Those actions related to company policies on earnings, sales or capital expenditure guidance, on the existence of disclosure, communications or social media policies or ESG goals are not reliably associated with higher valuation ratios.

We test a series of alternative hypotheses as to whether greater IR activity is just the equivalent of better corporate governance practices, whether investments in IR may be driven by management's or corporate insiders' desires to enhance liquidity of their shares to facilitate exit, and whether other country-level governance variables serve as equally plausible instrumental variables. The empirical relation between Tobin's *q* valuation ratios and IR activities are unchanged even in a much smaller sample when governance scores are included in the specifications. We find no evidence that investments in IR are driven by share illiquidity or in those firms for which relatively more of the shares are closely-held. Finally, our falsification test to evaluate the meaningfulness of our instrumental variables shows that the relationship between IR activity and Tobin's *q* ratios is unique.

Our study sheds new light on the importance of IR and the specific mechanism through which value may be added. The scope and breadth of the survey and its instruments helps shed light on the *internal* functioning of the IR process and it allows us to compare across different dimensions of the activities and across the world. These advantages allow us to contribute to existing research conducted to date, which has presented conflicting evidence on the economic value of IR. Our findings are consistent with those studies that have uncovered positive consequences of IR activity toward greater analyst following and media attention, broader investor base, lower cost of capital, and higher market valuations (Bushee and Miller, 2012). Our evidence is less consistent with studies that find firms engage in IR activity to talk up liquidity of

insider shares (Hong and Huang, 2005), to manipulate media coverage (Solomon, 2012) and to choreograph earnings conference calls (Cohen, Lou, and Malloy, 2013). The key difference is that all of these earlier studies rely on externally-observable proxies such as IR magazine ratings, professional IR association membership, the hiring of external IR consultancy or the management of earnings conference calls to capture the extent of IR investments and actions.

We close with an important caveat, however, and that is that surveys measure beliefs and not necessarily actions. Surveys also face the risk that the respondents are not representative of the population of firms or that the survey questions are misunderstood (Graham and Harvey, 2001). Though the survey here has been designed to represent as many firms from as many countries and industry sectors as possible (and our tests show that our sample firms have similar characteristics to the population at large and regardless of the timing of the survey response), it is only a snapshot in time. We plan to run future surveys to conduct a proper time-series analysis of changes in IR practices, and not only as evidenced in surveys but also in externally-verifiable actions.

References

Agarwal, Vineet, Angel Liao, Richard, Taffler, and Elly Nash. The Impact of Effective Investor Relations on Market Value, 2008, available at SSRN: http://ssrn.com/abstract=1102644.

Aggarwal, Reena, Isil Erel, René Stulz, and Rohan Williamson. Differences in Governance Practices between U.S. and Foreign Firms: Measurement, Causes, and Consequences, Review of Financial Studies, 2009, 22 (8): 3131-3169.

Aggarwal, Reena, Isil Erel, Miguel Ferreira and Pedro Matos. Does Governance Travel Around the World? Evidence from Institutional Investors, Journal of Financial Economics, 2011, 100(1):154-182.

Amihud, Yakov. Illiquidity and Stock Returns: Cross-Section and Time-Series Effects, Journal of Financial Markets, 2002, 5(1): 31–56.

Angrist, Joshua D. and Jorn-Steffen Pischke. Mostly Harmless Econometrics: An Empiricists Companion. Princeton: Princeton University Press. 2009.

Angrist, Joshua D. and Jorn-Steffen Pischke. The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking the Con out of Econometrics, Journal of Economic Perspectives, 2010, 24(2): 3-30.

Avramov, Doron, Tarun Chordia, and Amit Goyal. Liquidity and Autocorrelations in Individual Stock Returns, Journal of Finance, 2006, 61:2365–2394.

Bebchuk, Lucian, Alma Cohen, and Allen Ferrell. What Matters in Corporate Governance? Review of Financial Studies, 2009. 22 (2): 783-827.

Bodnaruk, Andriy and Per Östberg. The Shareholder Base and Payout Policy, Journal of Financial and Quantitative Analysis, 2013, 48 (3):729-760.

Boulland, Romain, Francois Degeorge, and Edith Ginglinger. Targeted Communication and Investor Attention, 2013, available at http://EconPapers.repec.org/RePEc:dau:papers:123456789/9553.

Brennan, Michael J. and Claudia Tamarowski. Investor Relations, Liquidity, and Stock Prices, Journal of Applied Corporate Finance, 2002, 12 (4): 26–37.

Bushee, Brian J., Joseph Gerakos, and Lian Fen Lee. Corporate Jets and Private Meetings with Investors. 2014, available at SSRN: http://ssrn.com/abstract=2141878.

Bushee, Brian J., Michael Jung, and Gregory S. Miller. Conference Presentations and Disclosure Milieu, Journal of Accounting Research, 2011, 49 (5): 1163–92.

Bushee, Brian J. and Gregory S. Miller. Investor Relations, Firm Visibility, and Investor Following, The Accounting Review, 2012, 87(3): 867–97.

Chang, Millicent, Patrick Murphy, and Marvin Wee. An Investigation into the Impact of Investor Relations on the Profitability of Director Share Trading, Australian Journal of Management, 2008, 33(2):375-390.

Chordia, Tarun and Bhaskaran Swaminathan. Trading Volume and Cross-autocorrelations in Stock Returns, Journal of Finance, 2000, 55: 913–935.

Coffee, John. The Future as History: The Prospects for Global Convergence in Corporate Governance and its Implications. Northwestern University Law Review, 93, 641-708.

Cohen, Lauren, Dong Lou, and Christopher Malloy. Playing Favorites: How Firms Prevent the Revelation of Bad News, NBER Working Paper No. 19429.

Corwin, Shane A. and Schultz, Paul. A Simple Way to Estimate Bid-Ask Spreads from Daily High and Low Prices, The Journal of Finance, 2012, 67(2): 719–760.

Dennis, P., and D. Strickland. The Effect of Stock Splits on Liquidity: Evidence from Shareholder Ownership Composition, Journal of Financial Research, 2003, 26:355–370.

Diamond, D.W. and Verrecchia, R.E. Disclosure, Liquidity and the Cost of Capital, Journal of Finance, 1991, 46 (4):1325–1359

Djankov, Simeon, La Porta, Rafael, Lopez-de-Silanes, Florencio, and Shleifer, Andrei. The law and Economics of Self-Dealing, Journal of Financial Economics, 2008, 88, 430–465.

Doidge, Craig, G. Andrew Karolyi, and Rene Stulz. Why are Foreign Firms Listing in the U.S. Worth More? Journal of Financial Economics, 2004, 71, 205-238.

Doidge, Craig, G. Andrew Karolyi, and Rene Stulz. Why Do Countries Matter So Much for Corporate Governance? Journal of Financial Economics, 2007, 86(1), 1-39.

Durnev, Art and E. Han Kim. To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation, The Journal of Finance, 2005, 60(3): 1461–1493.

Gompers, Paul, Joy Ishii, and Andrew Metrick. Corporate Governance and Equity Prices, Quarterly Journal of Economics, 2003, 118:107-155.

Graham, John R. and Campbell R. Harvey. The Theory and Practice of Corporate Finance: Evidence from the Field, Journal of Financial Economics, 2001, 60(2-3):187-243.

Green, T. Clifton, Russell E. Jame, Stanimir Markov, and Musa Subasi. Broker-Hosted Investor Conferences, 2014, available at SSRN: http://ssrn.com/abstract=1911959.

Griffin, Dale W., Omrane, Guedhami, Chuck C.Y. Kwok, Kai Li, and Liang Shao, National Culture, Corporate Governance Practices, and Firm Performance, 2014, available at SSRN: http://ssrn.com/abstract=2400078.

Hong, Harrison, and Ming Huang. Talking up Liquidity: Insider Trading and Investor Relations, Journal of Financial Intermediation, 2005, 14:1–31.

John, Kose, Litov, Lubomir P., and Yeung, Bernard Yin. Corporate Governance and Risk-Taking. The Journal of Finance, 2008, 63(4): 1679–1728.

Karolyi, G. Andrew. Corporate Governance, Agency Problems, and International Cross-listings: A Defense of the Bonding Hypothesis, Emerging Markets Review, 13(4), 516-547.

Karolyi, G. Andrew, Kuan-Hui Lee, and Mathijs van Dijk. Understanding Commonality in Liquidity around the World, Journal of Financial Economics, 2012, 105: 82-112.

Karolyi, G. Andrew, and Ying Wu. Size, Value, and Momentum in Global Stock Returns: A Partial-Segmentation Approach, 2014: available at http://ssrn.com/abstract=2043156.

Kirk, Marcus and Stanimir Markov. Come on Over: Analyst/Investor Days as a Disclosure Medium, 2014, available at SSRN: http://ssrn.com/abstract=2144972.

Kirk, Marcus and James Vincent. Professional Investor Relations within the Firm, The Accounting Review, 2014, forthcoming.

Kosowski, Robert, Narayanan Y. Naik and Melvyn Teo. Do Hedge Funds Deliver Alpha? A Bayesian and Bootstrap Analysis, Journal of Financial Economics, 2007, 84: 229 - 264.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert W Vishny. Law and Finance, Journal of Political Economy, December 1998, 106(6), 1113-1155.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert W Vishny. Legal Determinants of External Finance, Journal of Finance, July 1997, 52(3), 1131-1150.

La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer, 2006, What Works in Securities Laws, Journal of Finance 61(1), 1-32.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. Investor Protection and Corporate Valuation, Journal of Finance, 2002, 57:1147–1170.

Lang, Mark, and Russell Lundholm. Corporate Disclosure Policy and Analyst Behavior. The Accounting Review, 1996, 71(4): 467–492.

Leary, Mark, and Michael Roberts. Do Peer Firms Affect Corporate Financial Policy? Journal of Finance, 2014, 69: 139-178.

Manski, Charles F. Identification of Endogenous Social Effects: The Reflection Problem, Review of Economic Studies, 1993, 60(3): 531-42.

Merton, Robert. A Simple Model of Capital Market Equilibrium with Incomplete Information. Journal of Finance, 1987, 42(3): 483–510.

Moore, James S. and Allan K. Reichert. An Analysis of the Financial Management Techniques Currently Employed by Large U.S. Corporations, Journal of Business Finance and Accounting, 1983, 10, 623-645.

Rajan, Raghuram and Luigi Zingales. Financial Dependence and Growth. American Economic Review, 1998, 88, 559-586.

Rouwenhorst, K. Geert. Local Return Factors and Turnover in Emerging Stock Markets, Journal of Finance, 1999, 54:1439–1464.

Solomon, David H. Selective Publicity and Stock Prices, Journal of Finance, 2012, 67(2): 599–638

Solomon, David H. and Eugene F. Soltes. What are We Meeting For? The Consequences of Private Meetings with Investors, 2013, available at SSRN: http://ssrn.com/abstract=1959613.

Stulz, René. Globalization, Corporate Finance, and the Cost of Capital. Journal of Applied Corporate Finance, 12, 8-25.

Trahan, E.A. and Gitman, L.J. Bridging the Theory-practice Gap in Corporate Finance: A Survey of Chief Financial Officers, Quarterly Review of Economics and Finance, 1995, 35: 73-87.

Verrecchia, Robert E. Discretionary Disclosure, Journal of Accounting and Economics, 1983, 5(1): 179-194.

Wallace, R. and Mellor, C. Nonresponse Bias in Mail Accounting Surveys: A Pedagogical Note. British Accounting Review, 1988, 20, 131-139.

Watanabe, Akiko, and Masahiro Watanabe. Time-varying Liquidity Risk and the Cross Section of Stock Returns, Review of Financial Studies, 2008, 21: 2449–2486.

Table 1
Variable Definition and Summary Statistics on the Investor Relation Scores from BNY Mellon Survey

This table presents variable definitions and summary statistics of the IR variables used in constructing the IR scores.

Score Category	Questions	Mean	P25	Med	P75	Max	Criterion	Mean	Std.
Brokers	How many brokers did you use to organize non-deal roadshows in 2011? (Question 30)	4.85	2	3	6	350	1 if more than 3; 0 otherwise	0.50	0.50
	Approximately how many broker-sponsored conferences per year does your company participate in inside and outside of your company's home market? (Question 32)	8.00	4	6	11	50	1 if more than 6; 0 otherwise	0.49	0.50
	Which of the following criteria do you use to select a broker for a non-deal roadshow? (Question 34)	3.69	3	4	5	7	1 if more than 4 criteria are selected; 0 otherwise	0.33	0.47
							IR Score (Brokers)	*0.44*	*0.33*
Investors	In 2011, what percentages of your company's investor meetings were with hedge funds? (Question 37)	24.08	10	20	30	100	1 if more than 20% with hedge funds; 0 otherwise	0.44	0.50
	How many investor one-on-one meetings do the CEOs typically undertake with investment professionals inside your company's home market in a year? (Question 39)	19.07	3	10	25	200	1 if more than 10 meetings; 0 otherwise	0.45	0.50
	How many investor one-on-one meetings do the CFOs typically undertake with investment professionals inside your company's home market in a year? (Question 39)	32.30	5	20	50	299	1 if more than 20 meetings; 0 otherwise	0.45	0.50
	How many investor one-on-one meetings do the IROs typically undertake with investment professionals inside your company's home market in a year? (Question 39)	85.97	20	50	100	1000	1 if more than 50 meetings; 0 otherwise	0.49	0.50
	How many investor one-on-one meetings do the operation heads typically undertake with investment professionals inside your company's home market in a year? (Question 39)	13.80	0	3	10	380	1 if more than 3 meetings; 0 otherwise	0.50	0.50
								0.47	*0.31*
	IR Score (Investors)								

Table 1 (continued)
Variable Definition and Summary Statistics on the Investor Relation Scores from BNY Mellon Survey

Score Category	Questions	Mean	P25	Med	P75	Max	Criterion	Mean	Std.
Information	How many types of guidance does your company provide? (Question 17)	4.07	2	4	6	7	1 if more than 4 types of guidance are provided; 0 otherwise	0.46	0.50
	How many of the following written policies are in place? (Question 18)	2.50	1	2	4	6	1 if more than 2 policies are in place; 0 otherwise	0.47	0.50
	What criteria does the investor relations department use to target new equity investors? (Question 46)	4.18	3	4	6	10	1 if more than 4 criteria are selected; 0 otherwise	0.44	0.50
	What sources do you utilize to receive information before meeting with investors? (Question 47)	2.28	2	2	3	5	1 if more than 2 sources are used; 0 otherwise	0.40	0.49
	Which of the following is the most important means by which your company receives introductions to investment professionals? (Question 48)	2.45	2	2	3	6	1 if more than 2 means are used; 0 otherwise	0.48	0.50
	In general, how often does your company hold analyst/investor days (a group event for investors and analysts conducted by a company that includes management presentations, discussions on strategy, Q&A, product demos, etc.)? (Question 50)	2.25	1	3	3	4	1 if the company holds analyst/investor days at least twice a year; 0 otherwise	0.21	0.40
IR Score (information)								*0.41*	*0.22*
ESG	Does your company reach out to socially responsible and/or ESG investors to target them as potential investors? (Question 58)	0.26	0	0	1	1	1 if the company reaches out to either or both; 0 otherwise	0.26	0.44
	What do you believe would be the most effective means for improving ESG disclosure standards? (Question 60)	0.28	0	0	1	1	1 if company initiated policy is chosen; 0 otherwise	0.28	0.45
	Does any part of your responsibilities include communicating with investors about corporate governance issues? (Question 61)	0.82	1	1	1	1	1 if "Yes"; 0 otherwise	0.82	0.39
	Does your company have a strategy to communicate with key investors about corporate governance issues on a regular basis? (Question 62)	0.38	0	0	1	1	1 if "Yes"; 0 otherwise	0.38	0.49
	Which of the following corporate governance topics do you discuss with investors? (Question 63)	0.38	0	0	1	1	1 if any of the topics are discussed with investors; 0	0.38	0.49
IR Score (ESG)								*0.42*	*0.28*

Table 1 (continued)
Variable Definition and Summary Statistics on the Investor Relation Scores from BNY Mellon Survey

Score Category	Questions	Mean	P25	Med	P75	Max	Criterion	Mean	Std.
Global	What is the fraction of broker-sponsored conferences per year your company participate in outside of your company's home market.(Question 32)	0.43	0.11	0.43	0.67	1	1 if more than 43% outside of home market; 0 otherwise.	0.50	0.50
	Which of the following sovereign wealth funds (SWFs) has your IR department engaged with over the last 12 months? (Question 38)	1.96	0	1	3	14	1 if more than the IR department engaged with more than 1 SWFs; 0 otherwise	0.48	0.50
	What fraction of one-on-one meetings do the firm executives (CEO, CFO, IRO, OH) undertake with investment professionals outside your company's home market? (Question 39)	0.38	0.14	0.36	0.57	1	1 if more than 36% of the meetings are undertaken outside of home markets; 0 otherwise	0.50	0.50
	In 2011, how many days of roadshows did you undertake in the US? (Question 43)	10.19	1	7	15	92	1 if more than 7 days; 0 otherwise	0.47	0.50
	In 2011, how many days of roadshows did you undertake in Europe? (Question 43)	6.74	0	3	10	71	1 if more than 3 days; 0 otherwise	0.50	0.50
	In 2013, does your company plan to increase, decrease, not change, or uncertain the number of roadshow days in the following regions? (Question 44)	0.63	0	1	1	1	1 if plan to increase roadshow days in any of the regions; 0 otherwise	0.63	0.48
IR Score (Global)								*0.50*	*0.29*
IR Score (Total)								***0.49***	***0.19***

Table 2
Summary Statistics on Firm Characteristics

This table presents descriptive statistics for firm characteristics. Our sample is based on the firms that have responded to the BNY Mellon's 8th Global Trends in Investor Relations Survey (IRS) in 2012. All firm-level variables are winsorized at the 1% level in both tails of the distribution. Tobin's *q* is defined as the book value of total assets plus market value of equity less the book value of equity scaled by the book value of assets. Average sales growth is the 3-year average of annual sales growth. External finance is defined as the difference between capital expenditure and cash flow from operation scaled by capital expenditure. Total asset is the book value of total assets in millions of US dollars. Closely-held shares is the percentage of common shares outstanding held by insiders. Leverage is the ratio of long-term debt to common stockholder equity. If the non-U.S. firm has a secondary listing on a major U.S. stock exchange, the indicator variable equals one. Number of cross-listings is the total number of countries in which the shares of a firm are secondarily listed outside the country of domicile. The Amihud Price Impact measures the ratio of the absolute return to the dollar volume of trading proposed by Amihud (2002). Turnover is the negative ratio of daily trading volume to number of shares outstanding. Spread is the daily bid-ask spread derived from daily high, low and closing stock price using the formula proposed by Corwin & Schultz (2012). Number of IR staff is defined by the number of professional investor relations employees that has direct contact with the investment community for the firm. IR external budget is the percentage of the investor relations budget that is explicitly allocated to external investor relations consultancy. IRO base salary is a number that corresponds to one of 17 income brackets the IRO's base salary excluding bonus and stock options is in: 0, is less than US$50,000, 1, is between US$50,000 and US$100,000, and so on, up to 17, more than US$1 million.

Variable	Obs.	Mean	Median	Std. Dev.	Min	Max
Tobin's q	747	1.505	1.140	1.121	0.216	14.522
Average Sales growth	721	0.053	0.050	0.104	-0.109	0.233
External Finance	717	-0.029	-0.010	0.048	-0.142	0.014
Total Assets (in $million)	755	41,066	4,819	155,931	5	2,337,000
Closely-held shares	699	0.275	0.200	0.255	0.003	0.693
Leverage	748	3.312	2.340	2.381	1.297	8.861
Cross-listing in the U.S.	774	0.202	0.000	0.401	0.000	1.000
Number of Cross-listings	774	2.196	2.000	1.378	0.000	14.000
Amihud Price Impact Proxy	752	0.004	0.000	0.007	0.000	0.023
Turnover	753	-0.005	0.000	0.004	-0.013	0.000
Spread	752	0.025	0.020	0.008	0.014	0.039
Number of IR Staff	735	2.321	2.000	2.433	0.000	40.000
IR External Budget (%)	765	15.484	10.000	19.863	0.000	90.000
IRO Base Salary	635	4.562	4.000	3.591	0.000	17.000

Table 3
Regressions of Firm Valuation on the IR Scores

This table reports the results of ordinary least squares regressions of firm valuation on the IR scores and other firm characteristics. Firm valuation is proxied by Tobin's q. See Table 1 for details on the IR scores construction and Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels using robust standard errors that allow sector and country fixed effects and are double-clustered at both sector and country levels. The associated t-statistics are in parentheses below the coefficients.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Average Sales growth	2.367***	2.413***	2.476***	2.487***	2.462***	2.293***
	(3.76)	(3.65)	(4.01)	(4.04)	(3.99)	(3.64)
External Finance	-3.727***	-3.480***	-3.418***	-3.649***	-3.585***	-3.400***
	(-3.94)	(-3.75)	(-3.69)	(-3.78)	(-3.86)	(-3.73)
Log (Total Assets)	-0.114***	-0.088**	-0.079**	-0.086**	-0.086**	-0.115***
	(-3.20)	(-2.48)	(-2.22)	(-2.34)	(-2.35)	(-3.29)
Closely-held shares	-0.068	-0.090	-0.098	-0.089	-0.107	-0.087
	(-0.29)	(-0.38)	(-0.41)	(-0.37)	(-0.46)	(-0.36)
Leverage	-0.020	-0.017	-0.018	-0.017	-0.016	-0.018
	(-0.93)	(-0.77)	(-0.82)	(-0.81)	(-0.77)	(-0.89)
Cross-listings	0.028	0.037	0.038	0.033	0.026	0.029
	(0.90)	(1.22)	(1.22)	(1.05)	(0.80)	(0.94)
IR Score (Total)	0.863***					
	(3.16)					
IR Score (Brokers)		0.139				
		(0.87)				
IR Score (Investors)			0.034			
			(0.27)			
IR Score (Information)				0.361**		
				(2.15)		
IR Score (ESG)					0.408***	
					(2.64)	
IR Score (Global)						0.622***
						(3.46)
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	640	640	640	640	640	640
Adjusted R^2	0.313	0.299	0.298	0.303	0.308	0.314

Table 4
Instrumental Variables Regressions of Firm Valuation on the IR Scores

This table reports the results of two-stage least squares regressions of firm valuation on the IR scores and other firm characteristics. Firm valuation is proxied by Tobin's *q*. Panel A presents first-stage regression results, where the IR scores are instrumented with three budget variables: percentage of budget for external IR help, number of professional IR staff, and base salaries of the investor relation officer. We report an *F*-statistic for the zero-exclusion test that the coefficients on the three instrumental variables are jointly equal to zero. This evaluates the relevance of the excluded exogenous variables. Panel B presents the second-stage results. We report the adjusted R^2, the Wald χ^2 statistic of the joint significance of the control variables and fixed effects (degrees of freedom in parentheses), as well as Sargan's χ^2 statistic test of the over-identifying restrictions to assess whether the instrumental variables are uncorrelated with the error term (degrees of freedom in parentheses). See Table 1 for details on the IR scores construction and Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels using robust standard errors that allow sector and country fixed effects and are double-clustered at both sector and country levels. The associated t-statistics are in parentheses below the coefficients.

Panel A. First-stage regressions

	(1) IR Score Total	(2) IR Score Brokers	(3) IR Score Investors	(4) IR Score Information	(5) IR Score ESG	(6) IR Score Global
Average Sales growth	0.065	0.412	-0.073	-0.053	-0.080	0.222
	(0.73)	(2.59)***	(-0.46)	(-0.51)	(-0.57)	(1.71)*
External Finance	0.309	0.361	0.219	0.717	0.255	-0.105
	(1.58)	(1.02)	(0.64)	(2.87)**	(0.77)	(-0.41)
Log (Total Assets)	0.036***	0.067	0.012	0.025	0.019	0.053
	(4.05)	(4.66)***	(0.87)	(2.08)**	(1.39)	(5.58)***
Closely-held shares	-0.021	-0.078	-0.132	0.057	-0.010	0.018
	(-0.40)	(-0.81)	(-1.78)*	(0.80)	(-0.12)	(0.25)
Leverage	-0.002	-0.005	0.013	-0.006	-0.009	-0.002
	(-0.36)	(-0.45)	(1.62)	(-0.86)	(-1.16)	(-0.36)
Cross-listings	0.005	-0.011	-0.014	0.005	0.025	0.011
	(0.64)	(-0.82)	(-1.43)	(0.46)	(1.90)*	(1.24)
Number of IR Staff	0.008**	0.013	0.012	0.010	-0.004	0.009
	(1.99)	(1.93)*	(2.56)***	(1.37)	(-0.69)	(2.31)***
IR External Budget ($\times 10^3$)	-0.096	-0.570	0.313	0.317	0.673	-1.220
	(-0.23)	(-0.98)	(0.38)	(0.46)	(1.04)	(-2.81)***
IRO Base Salary	0.009***	0.007	0.016	0.001	0.007	0.010
	(3.55)	(1.33)	(3.42)***	(0.29)	(1.38)	(2.61)***
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	494	494	494	494	494	494
Adjusted R^2	0.372	0.339	0.215	0.215	0.165	0.468
F test (Zero exclusion of IVs)	7.36***	2.64**	8.87***	0.73	1.16	8.29***
(*p*-value)	<0.01	0.05	<0.01	0.53	0.32	<0.01

Table 4 (continued)
Instrumental Variables Regressions of Firm Valuation on the IR Scores

Panel B. Second-stage regressions on Tobin's *q*

	(1)	(2)	(3)	(4)	(5)	(6)
Average Sales growth	2.386***	1.717***	2.593***	2.623***	2.559***	2.125***
	(3.09)	(3.00)	(2.96)	(3.71)	(3.57)	(3.09)
External Finance	-4.184***	-4.264***	-3.834***	-4.831***	-3.745***	-3.476***
	(-5.22)	(-4.01)	(-4.04)	(-3.51)	(-4.08)	(-4.22)
Log (Total Assets)	-0.166***	-0.228***	-0.108***	-0.133**	-0.086**	-0.194***
	(-3.36)	(-2.81)	(-2.97)	(-2.16)	(-2.17)	(-3.52)
Closely-held shares	-0.148	-0.049	-0.067	-0.272	-0.199	-0.204
	(-0.65)	(-0.20)	(-0.26)	(-0.93)	(-0.79)	(-0.82)
Leverage	-0.023	-0.019	-0.038*	-0.016	-0.025	-0.022
	(-0.87)	(-0.49)	(-1.69)	(-0.56)	(-0.88)	(-0.92)
Cross-listings	0.016	0.046	0.039	0.018	0.034	0.004
	(0.42)	(1.12)	(1.07)	(0.43)	(0.75)	(0.10)
IR Score (Total)	1.839**					
	(2.09)					
IR Score (Brokers)		1.809***				
		(2.59)				
IR Score (Investors)			0.926			
			(1.59)			
IR Score (Information)				1.536		
				(0.87)		
IR Score (ESG)					-0.091	
					(-0.07)	
IR Score (Global)						1.740***
						(3.01)
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	493	493	493	493	493	493
Adjusted R^2	0.281	0.091	0.243	0.249	0.281	0.248
Wald χ^2	7742.0	3198.9	15269.	9807.4	11552.	4949.7
(*p*-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sargan's χ^2 Test	1.037	0.387	1.467	2.235	2.986	0.069
(*p*-value)	(0.59)	(0.82)	(0.48)	(0.32)	(0.22)	(0.97)

Table 5
Instrumental Variables Regressions of Firm Valuation on IR Scores: Alternative Instruments

This table reports the results of two-stage least squares regressions of firm valuation on the IR scores and other firm characteristics, using alternative instruments. Firm valuation is proxied by Tobin's *q*. Panel A presents first-stage regression results, where the IR scores are instrumented with the sector averages of the country in which the firm is domiciled (*excluding* the firm itself) of three budget variables: percentage of budget for external IR help, number of professional IR staff, and base salaries of the investor relation officer. We employ 10 sector groups defined by the BNY Mellon Survey (see Figure 1). Panel B presents the second-stage results for Tobin's *q* valuation ratios. We report the adjusted R^2, the Wald χ^2 statistic of the joint significance of the control variables and fixed effects (degrees of freedom in parentheses), as well as Sargan's χ^2 statistic test of the over-identifying restrictions to assess whether the instrumental variables are uncorrelated with the error term (degrees of freedom in parentheses). See Table 1 for details on the IR scores construction, Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels using robust standard errors that allow for both country and sector fixed effects in first- and second-stage results. The associated *t*-statistics are in parentheses below the coefficients.

Panel A. First-stage regressions

	(1) IR Score Total	(2) IR Score Brokers	(3) IR Score Investors	(4) IR Score Information	(5) IR Score ESG	(6) IR Score Global
Average Sales growth	0.041	0.344**	-0.119	-0.062	-0.080	0.214*
	(0.50)	(2.41)	(-0.77)	(-0.60)	(-0.62)	(1.92)
External Finance	0.439**	0.636*	0.203	0.728***	0.614*	-0.045
	(2.20)	(1.66)	(0.62)	(2.91)	(1.97)	(-0.16)
Log (Total Assets)	0.046***	0.078***	0.026**	0.021**	0.028***	0.070***
	(5.86)	(6.48)	(2.03)	(2.06)	(2.62)	(7.27)
Closely-held shares	-0.049	-0.086	-0.103	-0.028	-0.037	-0.003
	(-1.10)	(-0.97)	(-1.49)	(-0.42)	(-0.49)	(-0.04)
Leverage	0.001	-0.005	0.013	0.001	-0.007	0.000
	(0.25)	(-0.52)	(1.63)	(0.24)	(-0.89)	(0.04)
Cross-listings	0.007	-0.012	-0.014	0.018*	0.028**	0.004
	(1.07)	(-0.99)	(-1.46)	(1.84)	(2.32)	(0.43)
Number of IR Staff – Peers	-0.010	-0.011	0.002	-0.006	-0.025***	-0.007
	(-1.56)	(-1.01)	(0.18)	(-0.61)	(-3.33)	(-0.81)
IR External Budget ($\times 10^2$) – Peers	0.039	0.006	-0.005	0.049	0.026***	-0.011
	(0.59)	(0.07)	(-0.05)	(0.56)	(3.31)	(-1.34)
IRO Base Salary – Peers	0.012***	0.023***	0.014***	0.004	0.008	0.013**
	(3.28)	(2.99)	(2.74)	(0.80)	(1.25)	(2.37)
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	541	541	541	541	541	541
Adjusted R^2	0.348	0.294	0.260	0.148	0.180	0.430
F test (Zero exclusion of IVs)	4.05***	2.99**	2.92**	0.38	7.17***	2.30*
(*p*-value)	<0.01	0.03	0.04	0.77	<0.01	0.08

Table 5 (continued)
Instrumental Variables Regressions of Firm Valuation on IR Scores: Alternative Instruments

Panel B. Second-stage regressions on Tobin's *q*

	(1)	(2)	(3)	(4)	(5)	(6)
Average Sales growth	2.124***	1.385	2.761***	2.808***	2.439***	1.557*
	(2.76)	(1.51)	(2.88)	(2.69)	(3.72)	(1.91)
External Finance	-4.977***	-4.593***	-3.762**	-8.737*	-3.849***	-2.890**
	(-3.57)	(-3.01)	(-2.29)	(-1.87)	(-3.43)	(-2.31)
Log (Total Assets)	-0.233***	-0.233**	-0.123*	-0.187	-0.059	-0.289**
	(-2.60)	(-2.17)	(-1.69)	(-1.31)	(-1.61)	(-2.34)
Closely-held shares	0.228	0.217	0.407	0.244	0.114	0.037
	(0.74)	(0.69)	(1.12)	(0.43)	(0.44)	(0.10)
Leverage	-0.042	-0.024	-0.086*	-0.047	-0.028	-0.037
	(-1.61)	(-0.65)	(-1.84)	(-1.09)	(-1.44)	(-1.56)
Cross-listings	-0.025	0.043	0.059	-0.134	-0.021	-0.003
	(-0.62)	(1.03)	(1.28)	(-0.90)	(-0.56)	(-0.07)
IR Score (Total)	4.584**					
	(2.54)					
IR Score (Brokers)		2.631**				
		(2.02)				
IR Score (Investors)			3.628*			
			(1.66)			
IR Score (Information)				7.816		
				(1.21)		
IR Score (ESG)					1.110	
					(1.51)	
IR Score (Global)						3.780**
						(2.28)
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	540	540	540	540	540	540
Adjusted R^2	N.A.	N.A.	N.A.	N.A.	0.2774	N.A.
Wald χ^2	543.45	18670.	14015.	761.07	1417.1	618.40
(*p*-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sargan's χ^2 Test	0.526	0.116	0.988	0.899	7.15**	0.966
(*p*-value)	(0.77)	(0.94)	(0.61)	(0.64)	(0.03)	(0.62)

Table 6
Instrumental Variables Regressions of Firm Valuation on IR Scores: Additional Tests

This table reports the instrumental variables-based estimation results only for second-stage regressions of firm valuation on the IR scores, governance scores, and other firm characteristics. Firm valuation is proxied by Tobin's *q*. In Model (1), the sample is based on the firms that have responded to the BNY Mellon's 8th Global Trends in Investor Relations Survey (IRS) in 2012 and are also in the sample of 1,710 firms from 22 developed countries that have RiskMetrics (formerly ISS) governance ratings index in Aggarwal, Erel, Ferreira, and Matos (2011). The governance score is constructed from forty-one different governance attributes in four subcategories: board, audit, anti-takeover provisions, and compensation and ownership. Model (2) includes on stocks with total assets below the sample median. Models (3) and (4) split the sample into those with cross-listings on a major U.S. exchange. In Models (5)-(10), we use the full sample from Table 5, but split on three different country indexes: a disclosure index ("Disclosure") from La Porta, Lopez-de-Silanes, and Shleifer (2006); the Anti-self-dealing index ("ASDI") from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008); and, the Rule of Law index ("Rule of Law") from the World Bank's World Governance Indicators for 2011 based on laws related to contract enforcement and property rights. We report the Sargan's χ^2 statistic test of the over-identifying restrictions to assess whether the instrumental variables are uncorrelated with the error term (degrees of freedom in parentheses). See Table 1 for details on the IR score construction, Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively, using robust standard errors that allow for only industry fixed effects but are clustered at both sector and country level. The associated *t*-statistics are in parentheses.

	(1) Add Firm-Level Governanc	(2) Small firms only	(3) U.S. cross-listed firms only	(4) Not U.S. listed firms	(5) High Disclosure countries	(6) Low Disclosure countries	(7) High ASDI Countries	(8) Low ASDI countries	(9) High Rule of Law	(10) Low Rule Of Law countries
Average Sales growth	1.930**	2.575**	-0.455	0.411	3.756***	-1.107	0.770	-0.789	3.689***	-0.449
	(2.20)	(2.51)	(-0.51)	(0.41)	(3.17)	(-0.92)	(1.07)	(-0.69)	(3.76)	(-0.64)
External Finance	-3.010*	-4.101**	-6.981***	-2.648	-3.819***	-3.351*	-6.941***	-1.588	-4.063***	-2.382**
	(-1.74)	(-2.48)	(-3.47)	(-1.60)	(-2.70)	(-1.91)	(-2.94)	(-1.10)	(-2.61)	(-2.33)
Log (Total Assets)	-0.214***	-0.169**	-0.168**	-0.248**	-0.101	-0.272**	-0.056	-0.302**	-0.085	-0.208***
	(-3.05)	(-2.24)	(-1.98)	(-2.02)	(-1.47)	(-2.16)	(-0.74)	(-2.19)	(-1.21)	(-2.65)
Closely-held shares	0.226	0.015	-0.340	0.503	-0.300	0.708*	0.575	0.315	-0.290	0.058
	(0.36)	(0.04)	(-1.15)	(1.45)	(-0.50)	(1.66)	(1.38)	(0.83)	(-0.75)	(0.23)
Leverage	-0.009	-0.053	-0.095	0.022	-0.025	-0.029	-0.024	-0.029	-0.056**	0.007
	(-0.32)	(-1.50)	(-1.27)	(0.45)	(-1.17)	(-0.55)	(-0.63)	(-0.62)	(-2.33)	(0.19)
Cross-listings	-0.031	-0.203*	-0.101*	-0.006	0.028	-0.124*	0.027	-0.089	-0.006	-0.039
	(-0.44)	(-1.95)	(-1.85)	(-0.08)	(0.74)	(-1.69)	(0.29)	(-1.41)	(-0.14)	(-0.98)
IR Score (Total)	3.281*	3.865**	3.851***	5.227**	-0.542	6.966***	0.600	6.076**	1.066	3.447***
	(1.81)	(2.52)	(3.09)	(2.41)	(-0.49)	(2.58)	(0.62)	(2.45)	(0.76)	(2.74)
ISS/Riskmetrics Governance	0.189									
	(0.20)									
Sector fixed effects?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects?	Yes	Yes	No	No	No	No	No	No	No	No
Observations	186	299	92	247	264	232	94	231	309	223
Sargan's χ^2 Test	2.191	0.463	1.626	0.413	1.275	0.698	0.575	3.186	0.504	1.316
(*p*-value)	(0.33)	(0.79)	(0.44)	(0.81)	(0.53)	(0.71)	(0.75)	(0.20)	(0.78)	(0.52)

Table 7
Talking Up Liquidity?

This table reports the ordinary least squares regression results on the potential liquidity determinants of the IR scores. Total IR score is the only dependent variable. See Table 1 for details on the IR score construction and Table 2 for the definition of control variables. The Amihud Price Impact measures the ratio of the absolute return to the dollar volume of trading proposed by Amihud (2002). Turnover is the negative ratio of daily trading volume to number of shares outstanding. Spread is the daily bid-ask spread derived from daily high, low and closing stock price using the formula proposed by Corwin & Schultz (2012). ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively, using robust standard errors that allow for country and sector fixed effects and are clustered at both sector and country level. The associated *t*-statistics are in parentheses below the coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sales growth				0.122	0.133*	0.137*	0.121	0.133*	0.138*
				(1.60)	(1.71)	(1.78)	(1.58)	(1.71)	(1.77)
External Finance				0.344**	0.349**	0.334*	0.348**	0.351**	0.336*
				(1.99)	(2.01)	(1.92)	(1.98)	(1.98)	(1.91)
Log (Total Assets)				0.036***	0.042***	0.044***	0.035***	0.042***	0.044***
				(4.47)	(5.91)	(5.73)	(4.39)	(5.82)	(5.72)
Leverage				0.004	0.002	0.002	0.004	0.002	0.002
				(0.73)	(0.48)	(0.40)	(0.74)	(0.48)	(0.40)
Cross-listings				0.009	0.010	0.010	0.009	0.010	0.010
				(1.38)	(1.49)	(1.44)	(1.38)	(1.49)	(1.44)
Closely-held shares				-0.008	-0.038	-0.039	-0.012	-0.038	-0.055
				(-0.20)	(-0.90)	(-0.94)	(-0.28)	(-0.90)	(-0.72)
Amihud Price Impact	-5.007***			-5.035**			-5.397**		
	(-4.35)			(-2.53)			(-2.45)		
Turnover		-1.323			-0.309			-0.266	
		(-0.77)			(-0.17)			(-0.14)	
Spread			-0.696			0.644			0.433
			(-0.71)			(0.62)			(0.37)
Amihud ×Closely-held shares							0.000		
							(0.81)		
Turnover × Closely-held shares								-0.027	
								(-0.16)	
Spread × Closely-held shares									0.607
									(0.31)
Country fixed effects?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Sector fixed effects?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	752	753	752	632	632	632	632	632	632
Adjusted R^2	0.036	0.001	0.001	0.366	0.354	0.354	0.366	0.354	0.355

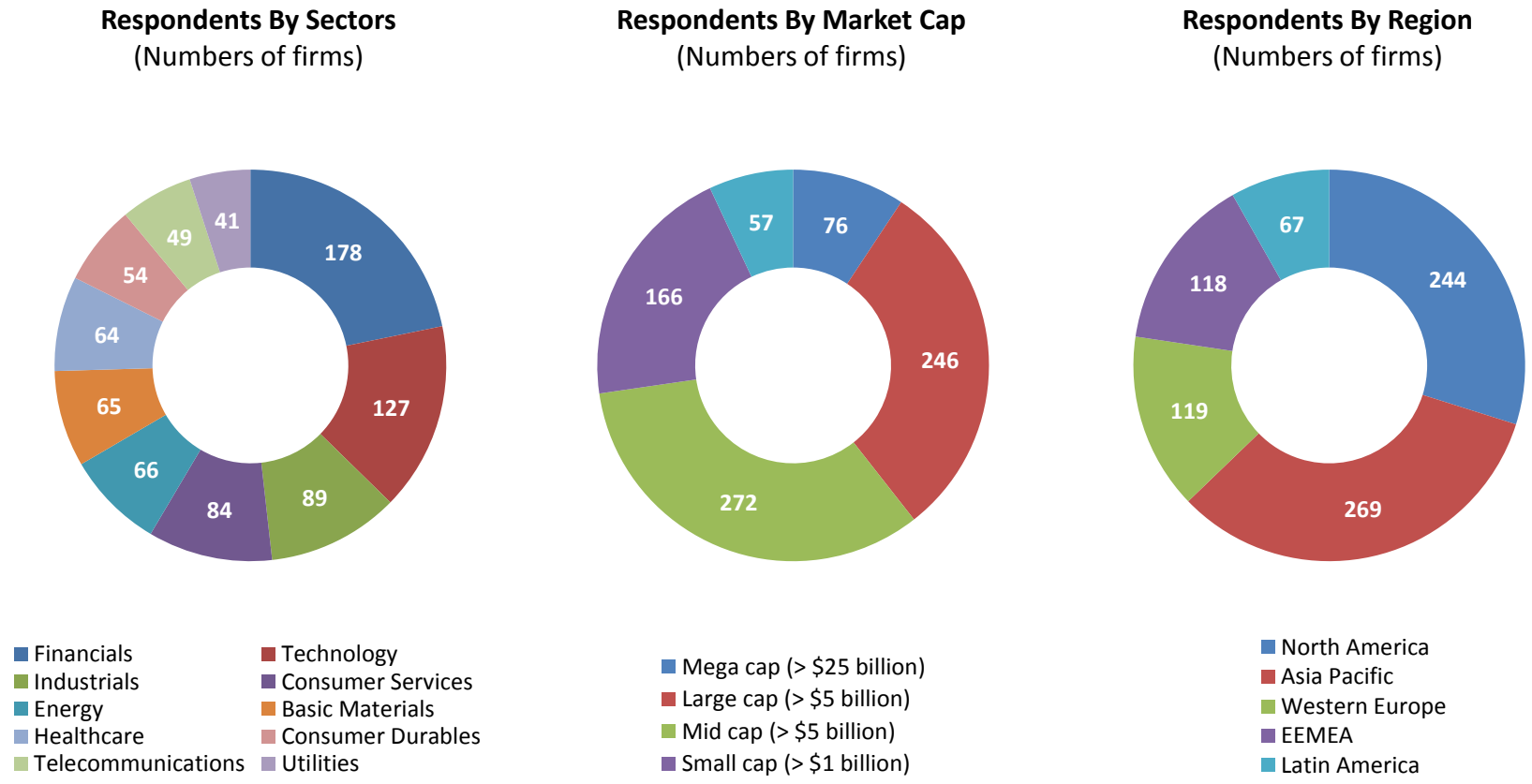
Table 8
Falsification Tests: Instrumental Variables Estimation with Country-level Governance Instruments

This table reports the results of instrumental variables estimation of firm valuation on the IR scores and other firm characteristics, using alternative country-level governance instruments. Firm valuation is proxied by Tobin's *q*. Total IR score is projected in the first-stage model using three country-level governance variables: average country-level governance score index in Aggarwal, Erel, Ferreira, and Matos (2011), common law country dummy variable and the anti-self-dealing index from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). Columns (1), (3), and (5) present results for the first-stage regressions on the Total IR score. Columns (2), (4), and (6) report the second-stage results for Tobin's *q* valuation ratios. We report the adjusted R^2, the Wald χ^2 statistic of the joint significance of the control variables and fixed effects (degrees of freedom in parentheses), as well as Sargan's χ^2 statistic test of the over-identifying restrictions to assess whether the instrumental variables are uncorrelated with the error term (degrees of freedom in parentheses). See Table 1 for details on the IR scores construction, Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels using robust standard errors that allow for sector fixed effects and are clustered at both sector and country level. The associated t-statistics are in parentheses below the coefficients.

	(1) Total IR Score%	(2) Tobin's *q*	(3) Total IR Score%	(4) Tobin's *q*	(5) Total IR Score%	(6) Tobin's *q*
Average Sales growth	0.158*	1.229	0.264***	-33.268	0.218***	5.578
	(1.85)	(0.66)	(3.07)	(-0.11)	(2.72)	(0.82)
External Finance	0.330	-4.667	0.431**	-53.156	0.362**	2.016
	(1.65)	(-1.44)	(2.52)	(-0.12)	(2.21)	(0.19)
Log (Total Assets)	0.033***	-0.449	0.039***	-5.725	0.039***	0.592
	(4.13)	(-1.21)	(5.63)	(-0.12)	(5.89)	(0.45)
Closely-held shares	-0.051	0.150	-0.048	6.962	-0.042	-0.995
	(-1.04)	(0.15)	(-1.18)	(0.11)	(-1.10)	(-0.75)
Leverage	-0.001	-0.043	-0.000	-0.512	-0.001	0.018
	(-0.15)	(-0.61)	(-0.00)	(-0.12)	(-0.16)	(0.17)
Cross-listings	0.025***	-0.173	0.017***	-2.292	0.017***	0.338
	(3.51)	(-0.64)	(2.75)	(-0.11)	(2.87)	(0.59)
Average Governance Score	0.102					
	(0.86)					
Accounting Standards			-0.004			
			(-0.16)			
Anti-Self-Dealing Index					-0.031	
					(-0.69)	
IR Score (Total)		10.445		146.580		-17.347
		(0.91)		(0.12)		(-0.52)
Country fixed effects?	No	No	No	No	No	No
Sector fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	458	457	582	581	627	626
Adjusted R^2	0.185	N.A.	0.181	N.A.	0.172	N.A.
F test (Zero exclusion of IVs)	0.75		0.03		0.47	
(*p*-value)	(0.39)		(0.87)		(0.49)	
Wald χ^2		30.57		0.26		14.69
(*p*-value)		(0.02)		(1.00)		(0.55)

Figure 1
BNY Mellon 2012 Survey Participants by Region, Market Capitalization, and Industry Sector

Our sample is based on the firms that have responded to the BNY Mellon's 8th Global Trends in Investor Relations Survey (IRS) in 2012. The survey was distributed to nearly 5,000 corporates and includes 817 on-line responses by investor relations officers from 59 countries. For additional details on the sector, market capitalizations, and regional classifications, consult *Global Trends in Investor Relations: A Survey Analysis of IR Practices Worldwide – Eighth Edition, 2012* (2012 The Bank of New York Mellon Corporation). "Mega" capitalization represents firms over US$ 25 billion, "Large," between US$5 billion and US$25 billion, "Mid," between US$1 billion and US$5 billion, "Small," between US$150 million and US$5 billion, and "Micro," less than US$150 million.



Appendix Table A
Evaluating Non-Response Bias in BNY Survey Respondents

This table compares the differences in responses for firms that returned the survey early (between July 17, 2012 and August 22, 2012) and those that returned them late (between August 23, 2012 and September 10, 2012). Our sample is based on the firms that have responded to the BNY Mellon's 8th Global Trends in Investor Relations Survey in 2012. We first test, for each question, whether the mean response of the early respondents differs from the mean response of the late respondents. Differences ("Diff.") are reported by question with their respective univariate *t*-statistics ("*t*-stat"). We next allow for correlations across questions within each IR score group and report *F*-statistics ("*F*-stat") and associated probabilities ("*p*-val") for each set of questions. In the third experiment, a single multivariate test is performed on all 25 questions. See Table 1 for the complete list of questions.

IR Category	Question	*By Question* Diff.	*t*-stat	*By Category* *F*-stat	*p*-val	*All Categories* *F*-stat	*p*-val
Brokers	Question 30 (Non-deal roadshows)	-0.0128	-0.35				
	Question 32 (Broker-sponsored events)	-0.0394	-1.09	0.46	0.71		
	Question 34 (Criteria non-deal roadshows)	0.0094	0.28				
Investors	Question 37 (Meetings with hedge funds)	0.0409	1.14				
	Question 39 (CEO one-on-one meetings)	-0.0070	-0.20				
	Question 39 (CFO one-on-one meetings)	-0.0540	-1.50	0.83	0.53		
	Question 39 (IRO one-on-one meetings)	-0.0220	-0.61				
	Question 39 (Division Head meetings)	-0.0121	-0.33				
Information	Question 17 (types of guidance)	-0.0396	-1.10				
	Question 18 (guidance policy statement)	-0.0377	-1.04				
	Question 46 (criteria for IR targeting)	-0.0372	-1.03	0.70	0.64		
	Question 47 (info sharing in meetings)	-0.0207	-0.58				
	Question 48 (investor target mechanisms)	-0.0150	-0.41			1.17	0.26
	Question 50 (investor/analyst days)	0.0280	0.95				
ESG	Question 58 (ESG targeting)	0.0132	0.41				
	Question 60 (ESG initiated policy)	-0.0643	-1.98				
	Question 61 (Governance policy)	-0.0235	-0.02	1.74	0.14		
	Question 62 (Governance communication)	0.0437	1.24				
	Question 63 (Governance-related topics)	0.0447	0.10				
Global	Question 32 (Overseas broker events)	0.0557	1.44				
	Question 38 (SWFs meetings)	-0.0029	-0.08				
	Question 39 (C-suite overseas meetings)	0.0746	2.05	1.16	0.32		
	Question 43 (Roadshows U.S.)	0.0388	1.07				
	Question 43 (Roadshows Europe)	0.0374	1.03				
	Question 44 (Expected overseas meetings)	0.0316	0.90				

Appendix Table B
A Comparison of Key Firm Attributes for BNY Mellon Survey Firms with Benchmark Population of Worldscope Firms

This table reports sample statistics for the firms that have responded to the BNY Mellon's Eighth Global Trends in Investor Relations Survey (IRS) in 2012. The global universe is based on the sample in Karolyi and Wu (2012), in which there are over 37,000 stocks from 46 countries represented between 1990 and 2010. See the paper for details on global industry groups and country representation. Panel A reports raw, industry adjusted, and country adjusted mean and median value for our sample of firms, along with *t* statistics and respective *p*-values for industry-adjusted and country-adjusted measures. ROA is return on assets, ROE, return on equity, B/M, book-to-market ratio, C/P, cash flow-to-price ratio, and Sales growth is the trailing one-year growth rate (in %). Panel B reports raw size values for mean and median of our sample firms along with the distributions across quartiles by global industry and country of domicile.

Panel A

	Raw			**Industry-Adjusted**					**Country-Adjusted**				
Variable	N	Mean	Median	N	Mean	Median	*t*-statistic	*p*-value	N	Mean	Media	*t*-statistic	*p*-value
ROA	65	5.42	5.42	509	2.62	3.09	2.39	0.02	609	1.22	1.22	1.32	0.19
ROE	64	13.65	12.09	498	9.62	6.50	4.16	0.00	598	6.60	4.58	3.35	0.00
B/M	65	0.78	0.65	507	-0.06	-0.14	-2.60	0.01	607	0.00	-0.09	0.04	0.97
C/P	65	0.14	0.13	507	0.05	0.03	6.89	0.00	607	0.03	0.01	2.94	0.00
Sales growth (%)	62	5.40	4.96	490	2.30	1.45	3.05	0.00	585	2.12	1.61	2.90	0.00

Panel B

	Raw Data (US$ millions)			**Distribution across Global Industry**					**Distribution across Country**				
Variable	N	Mean	Median	Total	Top Quartile	2nd Q	3rd Q	Bottom Quartile	Total	Top Quartile	2nd Q	3rd Q	Bottom Quartile
Market Cap	669	9,936	2,789	515	427	63	20	5	616	510	71	33	2
Total Assets	656	41,092	4,979	511	415	79	12	5	612	478	80	38	16
Total Sales	656	11,420	2,859	511	391	97	14	9	612	436	103	51	22

Appendix Table C
Heckman Two-Stage Model on Firm Valuation--Correcting for Selection Bias

This table reports the results of the Heckman two-stage procedure for firm valuation on the IR scores and other firm characteristics. Firm valuation is proxied by Tobin's *q*. The first-stage selection equations are estimated by a probit regression, where the dependent variable is one if the Total IR score is above the sample median. The second-stage outcome equations include both the total IR score as well as the inverse Mills' ratio from the first-stage selection equation to adjust for selection bias. See Table 1 for details on the IR scores construction and Table 2 for the definition of control variables. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels using robust standard errors that allow for country and sector fixed effects. The associated *t*-statistics are in parentheses below the coefficients.

	Firm-level IV		Country-sector Peers IV	
	Selection Model	Outcome Model	Selection Model	Outcome Model
IR Score (Total)		1.701***		1.480***
		(3.65)		(2.56)
Inverse Mills' Ratio (λ)		-0.370		-1.377**
		(-1.19)		(-2.25)
Average Sales Growth	0.876	0.825	0.725	0.034
	(1.45)	(1.40)	(1.24)	(0.04)
External Finance	2.438*	-5.067***	2.021*	-6.236***
	(1.87)	(-3.82)	(1.62)	(-3.19)
Log (Total Assets)	0.158***	-0.227***	0.229***	-0.238**
	(2.97)	(-3.78)	(4.83)	(-2.23)
Closely-held shares	0.376	-0.197	0.231	0.068
	(1.42)	(-0.63)	(0.90)	(0.15)
Leverage	-0.047	0.036	-0.016	0.018
	(-1.53)	(1.15)	(-0.53)	(0.40)
Cross-listings	0.111*	0.011	0.104*	-0.061
	(1.90)	(0.22)	(1.87)	(-0.81)
Number of IR Staff	0.147***		0.035	
	(3.38)		(0.94)	
IR External Budget ($\times 10^2$)	-0.233		0.033	
	(-0.74)		(0.09)	
IRO Base Salary	0.071***		0.078***	
	(3.70)		(3.96)	
Country fixed effects?		Yes		Yes
Sector fixed effects?		Yes		Yes
Wald χ^2		173.22		106.86
(*p*-value)		(<0.01)		(<0.01)
Observations	494	641	641	631