Investor relations, information asymmetry and market value

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Version: 12.1
7 January 2014

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Abstract

Evidence to date on the market value of investor relations (IR) strategies is limited. We test the market relevance of IR activity directly employing a proprietary database measuring investor relations quality across all firms listed on NYSE, Amex and NASDAQ. Although, in theory, “repackaging” and communicating existing information should have no market impact, we find firms with higher quality IR strategies are rewarded with significantly higher valuation multiples. In addition, increase in IR quality is associated with increases in analyst following and liquidity. Overall, our findings are strongest for smaller firms which are more likely to be ‘neglected’. Our evidence is consistent with good IR successfully raising firm visibility leading to enhanced recognition and reduced information asymmetry in line with Merton (1987) and thus “fairer” firm valuation as argued by IR professionals.

Keywords: firm valuation, market pricing, investor recognition, investment analysts, stock liquidity

JEL classification: G14, G34
Investor relations, information asymmetry and market value

1. Introduction

Firm investor relations programmes seek to raise a company’s profile and familiarity with fund managers and institutional investors and enhance the credibility of its management, as well as attracting investment analysts to follow the firm (Marston, 2004; 2008). Wide visibility, large institutional holding and a significant analyst following, it is argued, should lead to an increased demand for a firm’s securities and thus enhanced market value, particularly in the case of medium size and smaller firms (Lev, 2012, p. 53). On the other hand, in perfect markets, there is no justification for expenditure that increases firm visibility without providing new information relevant to investors in valuing of the firm. Simply “repackaging” and communicating existing disclosures should have no incremental value and, in fact, if the cost is significant, adversely impact market value. Hong and Huang (2005) and Doukas, Kim and Pantzalis (2005;2008) even suggest that increasing firm liquidity and analyst coverage, main goals of investor relations programmes (Brennan and Tamarowski, 2000), may well be detrimental to shareholder interests.

There have been relatively few studies to date that focus directly on the market relevance of investor relations programmes and empirical evidence of a clear link between a firm’s investor relations activity and its market pricing is limited and conflicting. This study sets out to provide more definitive evidence on whether investor relations activity is value relevant or not in practice and if so, its actual market impact. In particular, we are able to draw on a proprietary database of IR quality ratings which allows us to measure industry perceptions of investor relations quality directly for all firms listed on the NYSE, Amex and NASDAQ. This database consists of all nominations by fund managers and investment analysts for ‘best overall IR’ awards in the annual IR Magazine survey.
Most studies exploring the value relevance of IR activity to date employ the Association of Investment Management Research Corporate Information Committee (AIMR) firm disclosure quality ratings which are available from 1979 to 1996 and cover around 400 firms a year. Although separate quality ratings for the firm’s 10-K, quarterly published information and its investor relations programme are provided, most studies concentrate on the composite disclosure score to which its IR component only contributes 20 – 30%.\(^1\)

In an early study employing the AIMR total disclosure score ratings, for example, Healy, Hutton and Palepu (1999) find that 97 stocks “with sustained and material increases in disclosure ratings” over a 3-year period earned industry-adjusted returns of approximately 8.4% over the following year. On the other hand, using the same survey data Botosan and Plumlee (2002) find no significant relationship between firms’ overall AIMR corporate communications ratings and cost of equity capital, nor for its investor relations component separately.

In a recent paper, Jiao (2011) considers the relationship between the separate AIMR rating components and different measures of corporate performance, including stock returns and Tobin’s Q, proxying for market valuation. In particular, she reports that a hedge portfolio which goes long in firms with above median AIMR rankings for their IR programmes and short in those with below median rankings, earns a mean return of 4.3% each year from January 1982 to December 1996. However, since Jiao (2011) uses the AIMR ratings at the end of year \(t\) to form portfolios at the beginning of year \(t\),\(^2\) she is, in effect, measuring \(prior\) year returns rather than \(subsequent\) year returns. Jiao (2011) also reports that firms with IR rankings above the median have Tobin’s Q 45% higher than those ranked below the median.

In a similar way, though it is not clear when her Tobin’s Q is calculated, if this is on the same

\(^1\) All four AIMR measures are highly correlated which would also be consistent with a “halo” effect operating in the different AIMR industry committees’ rating judgments (Brown and Hillgeist, 2007; Haggard, Martin and Pereira, 2008; Jiao, 2011).

\(^2\) See her p. 652 and p. 658 as well as footnote 16.
basis as her book-to-market ratio (p.652), then she is, in fact, showing that firms with higher Tobin’s Q subsequently have higher IR rankings, not the other way around. Thus, it is difficult to use her results to argue that firms with good IR earn higher subsequent returns, or that their market value is greater, leaving the question of the market value of IR activity unresolved.

Chang et al. (2008) study the relationship between firms’ investor relations activity proxied by internet-based disclosure and information asymmetry. They report that firms with better disclosure scores have higher analyst following, lower bid-offer spreads and higher market capitalisation. However, the investor relations function is much broader than website information disclosure alone. Also, the authors collect their disclosure information for three-weeks in the middle of July 2005 while their proxies for information asymmetry are measured over calendar year 2005. Therefore, their study is likely to suffer from the same inference problems as those of Jiao (2011).

More pertinently, Bushee and Miller (2012), using data between 1998 and 2004, show that initiating IR programmes by hiring external IR agencies is associated with a significant increase in level of firm disclosure, media coverage and analyst following, as well as a larger and more geographically diversified, institutional ownership. In addition, there is a rise in the market-to-book ratio proxying for firm valuation effects. However, their sample is restricted to 210 typically very small firms, 50% of which are traded on the OTC Bulletin Board and Pink Sheets. Thus, it is not clear that Bushee and Miller’s findings can be generalised to shed light on the value of established IR programmes of larger and more mature firms. Although in a parallel study, Vlittis and Charitou (2012) use a sample of 146 firms listed on the main US exchanges that also initiate IR programmes and report similar results to Bushee and Miller (2012) their sample firms are still limited in size (median market

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3 Solomon (2012) also shows that firms that employ specialist IR firms generate more positive news stories and associated event-day returns. However, there is no evidence that such firms suppress unfavourable stories. In the case of earnings announcements, “spin” has no impact.
cap of $74m). Again, it is not possible to use their results to draw conclusions about the impact of well-developed and on-going IR activities on firm value.

On the other hand, in an interesting recent paper in this journal, Peasnell, Talib and Young (2011) test the proposition that investor relations activities help shield firms from the adverse consequences of challenges to corporate credibility associated with high-profile scandals, such as Enron. The authors compare a sample of 122 firms deemed to have effective investor relations programmes by IR Magazine survey respondents with matched firms not so rated in terms of contagion effects measured by stock price falls and other variables typically associated positively with IR activity. Contrary to expectations, Peasnell et al. (2011) report their high IR quality firms suffer larger stock price falls and more pronounced declines in press coverage, trading volume and analyst following relative to their control firms at the time of the Enron bankruptcy and as associated events unravelled during 2001 – 2002. The authors draw on these findings to question whether best practice investor relations programmes necessarily protect firms by maintaining trust and confidence in them, at least during periods of corporate scandal.

Our study seeks to test directly the value of firm IR programmes along a number of different dimensions and provide more conclusive evidence on the actual market value of investor relations activity across the generality of firms listed on the main US exchanges. It adds to the limited extant literature directly addressing this research question in terms of the source and characteristics of our IR quality rankings and our research design. In addition, given the size of our sample, we are able to address additional research questions and adopt a much richer valuation modelling approach than with the extant literature.

In particular, we draw on Merton’s (1987) Investor Recognition Hypothesis to test whether if a company’s investment in investor relations activity raises its profile with market
participants then firm value will be enhanced, as the investor relations industry argues. Specifically, we explore

(i) whether good IR is associated with increased analyst coverage (a key IR constituency),
(ii) whether effective IR, proxied by being nominated for an *IR Magazine* ‘best overall IR’ award, enhances firm liquidity,
(iii) the impact of investor relations on firm market value, and finally
(iv) whether such results are likely to be most pronounced in the case of smaller, less followed, firms as Merton (1987) suggests.

First we find, not surprisingly, the more analysts reporting on the firm the more nominations for ‘best overall IR’ award the firm receives in the following year. However, more importantly, increase in IR quality is directly associated with significantly higher analyst coverage and again, this is particularly prominent in the case of smaller firms. Specifically, large firms that move from having no ‘best overall IR’ nominations to being nominated at least once in the following year are associated with an increase in analyst coverage in the following year of 15% compared with firms not so rated, with the equivalent figures for smaller firms 59%, although from a lower base. We also demonstrate liquidity, as measured by relative stock turnover, increases by 21.5% for smaller firms newly nominated at least once for ‘best overall IR’ awards, compared with those that remain not rated.

Finally and of most interest, contrary to Hong and Huang (2005) and Doukas et al. (2005; 2008), we show that, *ceteris paribus*, firms nominated for ‘best overall IR’ awards in the annual *IR Magazine* survey are valued more highly by the market than those with no survey votes, and there is also a positive relation between IR rank and market valuation for those that are nominated. Importantly, we are able to demonstrate our results are robust to model misspecification problems resulting from potential endogeneity issues.
The proprietary database we use, provided by *IR Magazine*, covers all firms nominated by security analysts and fund managers for ‘best overall IR’ in the annual *IR Magazine* awards surveys for 2000 to 2002. Most previous studies, including Jiao (2011), use the AIMR disclosure ratings which end in 1996 and only cover a relatively small number of large firms. Unfortunately, the data we use was not available to us outside our observation period. Nonetheless, we believe our results are still of considerable interest. This is not just because of the nature of our original findings, but also our 2000-2002 observation period is one of challenging market conditions following the bursting of the dot.com bubble in March 2000 and includes September 11 and thus is of interest in its own right. Also, our data period largely postdates the implementation of Regulation Fair Disclosure in October 2000 which prevented investment analysts having privileged access to price-sensitive information from firm management thus, potentially, strengthening the importance of investor relations to the firm as fund managers and analysts no longer have a privileged direct access to management, a key source of information for them in their investment decisions (Fogarty and Rogers, 2005; Barker et al, 2012; Tuckett and Taffler, 2012). However, it goes without saying care needs to be taken in generalizing our results outside our observation period.

In summary, we find results consistent with the arguments of Merton (1987) about the impact of greater investor recognition on firm market value. Effective IR strategies, represented by nomination for *IR Magazine* ‘best overall IR’ awards by market professionals, appear to be rewarded by the stock market, especially in the case of smaller, less followed, firms.

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4 In contrast with Peasnell et al. (2011), who work exclusively with the subset of named award winning and honorary mention firms which meet their data requirements from the same data source we use, we are able to work with all firms nominated for ‘best overall IR’, whether award winners or not.

5 Peasnell et al. (2011), broadly speaking, cover a similar time period in their study.
The rest of the paper is organised as follows: section 2 presents our predictions, data and method, section 3 presents our results and section 4 summarises our findings and concludes.

2. Predictions, data and method

This section predominantly draws on Merton’s (1987) Investor Recognition Hypothesis model to generate our predictions about the potential impact of good investor relations programmes on analyst coverage, stock liquidity and market value as well as the expectation that such relationships will be stronger for smaller, less well-followed firms. It then discusses our firm data and our modeling approach.

The underlying assumption of Merton’s (1987) capital market equilibrium model is that when constructing their optimal portfolios, investors only use the securities they know about. Hence a “neglected” or less visible stock will have a higher required return to compensate investors for the “set up” cost associated with following a new security. In parallel, a firm information release will only be picked up by an investor who already follows the stock unless the disclosure “generates a headline”. On this basis, Merton (1987) argues, (i) better followed firms will have, ceteris paribus, higher valuations and (ii) the impact of investor recognition will be greater for smaller firms. In fact, a number of recent papers (e.g., Lehavy and Sloan, 2008; Bodnaruk and Ostberg, 2009; Richardson, Sloan and You, 2012) provide strong empirical support for Merton’s asymmetric information-based model and show that investor recognition can help explain stock prices. A key purpose of IR activity is increasing investor recognition of the firm. Thus, following Merton (1987), if an investment in investor relations activity serves to raise a firm’s profile with market participants, then we predict firm value will be greater, the key proposition this paper seeks to test. On the other hand, if firms are already well-known and followed, then investment in investor relations
may have little incremental value and in fact could even lead to reduced firm valuation if costs are significant (e.g., Hong and Huang, 2005; Doukas et al., 2005; 2008).

2.1 Predictions

Investment analysts are a key target audience for firm investor relations activity (Brennan and Tamarowski, 2000; Guimard, 2013). Good IR should lower the cost of analyst information gathering and raise the firm’s profile with investors (Merton, 1987) thereby creating higher demand for analyst coverage of firms with better IR. Our first prediction is thus:

Prediction 1: Effective IR will be associated with increased analyst coverage of the firm

In parallel, if investor relations activity serves to reduce information asymmetry between the firm and investors, then any associated risk should be reduced leading to increased stock liquidity. Our second prediction is thus:

Prediction 2: Effective IR leads to an increase in stock liquidity

Hong and Huang (2005) argue that the benefits of increased liquidity from investor relations activity flow to large shareholders disproportionately, while the costs are shared by all shareholders. As a consequence, insiders overinvest in investor relations leading to a reduction in firm value. In a similar vein, Doukas et al. (2005; 2008) find that firms with excessive analyst coverage are overvalued and generate lower future returns due to analyst overoptimism. As such, investor relations strategies aimed at increasing analyst coverage will also be market relevant, but in this case value destroying. Consequently, improving stock liquidity and raising analyst coverage, both important targets of investor relations professionals, may not lead to increased market value, but possibly even the opposite.

The National Investor Relations Institute (NIRI) views IR, inter alia, as enabling “…the most effective two-way communication between a company, the financial community
and other constituencies, which ultimately contributes to a company’s securities achieving fair valuation.” (NIRI Annual Report, 2009). Hence, if investor relations is effective in enhancing investor communication and thus increased firm transparency to investors leading to reduced risk, then we would expect good IR to be viewed favourably by the market. Thus, if as investor relations professionals argue, information asymmetry for investors is reduced by their activities, then we would expect reduced cost of capital as manifested by higher firm market value. On this basis we establish our third prediction to be tested:

Prediction 3: Effective IR has a positive impact on firm market valuation ratios

Merton’s (1987) information asymmetry-based arguments lead to the conclusion that the benefits of effective IR will be greater for firms with higher information asymmetry between managers and investors and large and small stockholders (Brown and Hillgeist, 2007). Such firms are likely to be smaller and less well-followed by analysts, investors and the media. On this basis we set up our final prediction:

Prediction 4: Effective IR will have a greater impact on smaller firms than larger firms.

2.2. Data

Each year, the IR Magazine commissions an independent research firm to obtain nominations from investors and analysts for firms listed on the main US exchanges that have performed the ‘best’ in distinct categories of IR over the previous 12 months. In the case of our observation period covering the 2000, 2001 and 2002 surveys, nominations were collected from the universe of fund managers and sell and buy-side analysts listed in the Thomson Financial/Carson and WILink databases supplemented with a number of

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6 Lev (2012, pp. 57-60) provides “operating instructions” for a good IR communications strategy.

7 Information asymmetry does not lead to lower valuations in every case. Some firms might, in fact, be overvalued (Jensen, 2005). Hence, achieving fair value does not mean firm market value will be greater in all cases. However, on average, firms suffering from information asymmetry are likely to be undervalued.
sophisticated individual investors reached via Barron’s Online. Respondents covered a wide range of investment specialisations and industry sectors and were encouraged to nominate firms outside their specialities. The nomination collection process took place during January and early February via e-mail and telephone using a formal survey questionnaire approach with two follow-ups in the case of non-response. Results were published around the end of March each year at the annual IR Magazine award ceremony. Questions covered a range of IR categories and other issues and respondents were asked to nominate three firms for each IR category, best and first and second runner-up. An average of 1,746 investment professionals responding to each of the three surveys, representing a 12% response rate.

Considering the 2001 survey, for example, 35% of respondents were fund managers, 25% buy-side analysts, 28% sell-side analysts and 12% sophisticated retail investors.

Clearly our results depend on how reliable the underlying subjective survey data we use is in reflecting actual firm IR quality. However, the surveys were conducted by a well-known and highly reputable research firm with extensive experience in this area and the completeness of our data, the very acceptable response rates and large number of respondents from a wide range of backgrounds serves to provide some assurance that we are capturing the perceptions of investment professionals, the main targets of IR departments, about the quality of individual firm investor relations programmes.

Our sample consists of all firms with equity traded on the NYSE, Amex or NASDAQ for some or all of our observation years meeting necessary data availability requirements and eligible to be nominated for ‘best overall IR’ awards. Stock returns, market values and trading volumes are extracted from the Center for Research in Share Prices (CRSP) database. Book value of equity and net income are from COMPUSTAT and analyst coverage is

Data for other survey years was unfortunately not available to us.

We treat all nominations equally in our analysis.
obtained from the Thomson Financial I/B/E/S database. All accounting data is lagged six months from fiscal year end to avoid look-ahead bias.

2.3. Method

Each year from 2000 to 2002, firms nominated for ‘best overall IR’ in the respective IR Magazine survey in the ‘large firms’ category (market capitalization > $3bn) are ranked by the number of nominations received with the firm with highest number of nominations assigned the highest rank. All other large firms with equity traded on the NYSE, Amex and NASDAQ, with no votes for ‘best overall IR’, are assigned a rank of 0. Similarly, firms nominated in the ‘small firms’ category (market capitalization < $3bn) are ranked based on the number of nominations with all firms with market cap < $3bn not nominated assigned a rank of 0.

We test our prediction 1 relating to the association between effective IR and analyst coverage in two ways. First, to examine the impact of prior year analyst coverage of firms on subsequent nominations for ‘best overall IR’, we pool our sample firms across award years and run the following ordered logistic regression with firm market value and book-to-market at each year-end, prior-year stock returns and year and industry dummies as control variables with t denoting award year:

\[
\text{IR}_{i,t} = \alpha + \beta_{AF} \times AF_{i,t-1} + \beta_{MV} \times \ln(MV_{i,t}) + \beta_{B/M} \times B/M_{i,t} + \beta_{PYR} \times PYR_{i,t-1} + \sum_{j=1}^{2} \beta_{j} \times YD_{j} + \sum_{k=1}^{76} \beta_{k} \times ID_{k} + \varepsilon_{i,t}
\]

where:

- \( \text{IR}_{i,t} \) = Investor relations rank based on number of nominations received, 0 if the firm does not receive any nominations,
- \( AF_{i,t-1} \) = number of analysts publishing forecasts in the I/B/E/S database for firm i as at December 31 immediately prior to the award year,
$MV_{i,t} = \text{market value of equity of firm } i \text{ at March 31 in the award year,}$

$B/M_{i,t} = \text{book value of common equity of firm } i \text{ is from the most recent fiscal year ending}$

September 30 or earlier of the year immediately preceding the nomination year, divided by $MV_{i,t},$

$PYR_{i,t-1} = \text{average monthly stock return from March 1 of year } t-1 \text{ to February 28 of year } t,$

$YD_j = \text{year dummy where } j = 1 \text{ for 2000 and } = 2 \text{ for 2001 with 2002 as reference year and}$

$ID_k = \text{industry dummy based on 2-digit SIC code where } k = 1 \text{ to 76.}$

In addition, we run a parallel Poisson regression where the dependent variable IR is now given by the number of award nominations the firm receives as the IR rating is count data.

Second, we use nominations for the *IR Magazine’s* ‘best overall IR’ award to reflect the underlying quality of firms’ IR programme. We expect firms where IR quality improves to be associated with a contemporaneous increase in analyst following. To test whether better IR (measured by change from non nominated to nominated status) leads to greater analyst coverage in the year of the nomination, we run the following pooled regression with year and industry dummies:

$$\begin{align*}
AF_{i,t} - AF_{i,t-1} &= \alpha + \beta_{N\rightarrow N} IRD_{N\rightarrow N,i,t} + \beta_{NN\rightarrow N} IRD_{NN\rightarrow N,i,t} + \beta_{N\rightarrow NN} IRD_{N\rightarrow NN,i,t} + \beta_{MV} \ln(MV_{i,t}) \\
&+ \beta_{B/M} B/M_{i,t} + \beta_{PYR} PYR_{i,t-1} + \beta_{YD} YD + \sum_{k=1}^{76} \beta_k ID_k + \varepsilon_{i,t}
\end{align*}$$

(2)

where:

$AF_{i,t} = \text{number of analysts publishing forecasts for firm } i \text{ in the I/B/E/S database as at}$

March 31 of the award year,

$AF_{i,t-1} = \text{number of analysts publishing forecasts for firm } i \text{ in the I/B/E/S database as at}$

March 31 of the year before the award year,

$IRD_{N\rightarrow N,i,t} = 1 \text{ if the firm is nominated (N) at least once in both years } t \text{ and } t-1, \text{ 0 otherwise,}$
IRD_{NN,N,i,t} = 1 if the firm is nominated at least once in year t but was not nominated (NN) in year t-1, 0 otherwise,

IRD_{N→NN,N,i,t} = 1 if the firm is not nominated in year t but was nominated at least once in year t-1, 0 otherwise,

YD = 1 for the award year 2001, 0 for the award year 2002,

other variables are as for model (1).

To test our proposition 2 relating to the association between effective IR and stock liquidity we explore whether stock liquidity increases during the year of IR award nominations. Specifically, we use the stock turnover ratio as a measure of liquidity. The monthly turnover ratio for each stock is defined as (see e.g., Korajczyk and Sadka, 2008):

$$TO_{i,j} = \frac{Vol_{i,j}}{SO_{i,j}}$$

where:

TO_{i,j} = turnover ratio of stock i during month j,

Vol_{i,j} = total trading volume of stock i during month j and

SO_{i,j} = number of shares outstanding for firm i at the end of month j.

Following Tkac (1999), we adjust individual firm turnover ratios for market wide activity by:

$$RTO_{i,t} = \frac{TO_{i,t}}{TO_{m,t}}$$

where:

t = award year,

TO_{i,t} = average monthly turnover ratio for firm i from April 1 of year t-1 to March 31 of year t and
\( \overline{T_O}_{m,t} \) = average monthly turnover ratio for all firms from April 1 of year \( t-1 \) to March 31 of year \( t \).

The change in relative turnover (DRTO) is calculated as follows:

\[
DRTO_{i,t} = RTO_{i,t} - RTO_{i,t-1}
\]

where:

\( RTO_{i,t} \) = average monthly relative turnover for firm \( i \) from April 1 of year \( t-1 \) to March 31 of year \( t \), and

\( RTO_{i,t-1} \) = average monthly relative turnover for firm \( i \) from April 1 of year \( t-2 \) to March 31 of year \( t-1 \).

Then, to test for the relationship between change in stock liquidity and change in IR status (from not nominated to nominated), controlling for firm size, book-to-market and stock returns, we estimate the following pooled regression with year and industry dummies:

\[
DRTO_{i,t} = \alpha + \beta_{N\rightarrow N} IRD_{N\rightarrow N,i,t} + \beta_{NN\rightarrow NN} IRD_{NN\rightarrow NN,i,t} + \beta_{N\rightarrow NN} IRD_{N\rightarrow NN,i,t} + \beta_{MV} \ln\left( MV_{i,t} \right) + \beta_{B/M} B/M_{i,t} + \beta_{PYR} PYR_{i,t-1} + \beta_{YD} YD + \sum_{k=1}^{26} \beta_{k} ID_{k} + \epsilon_{i,t}
\]

where:

\( IRD_{N\rightarrow N,i,t} = 1 \) if the firm is nominated in both, years \( t \) and \( t-1 \), 0 otherwise,

\( IRD_{NN\rightarrow NN,i,t} = 1 \) if the firm is nominated in year \( t \) but was not nominated in year \( t-1 \), 0 otherwise,

\( IRD_{N\rightarrow NN,i,t} = 1 \) if the firm is not nominated in year \( t \) but was nominated in year \( t-1 \), 0 otherwise,

\( MV_{i,t} \) = market value of equity of firm \( i \) at March 31 of the award year,

\( B/M_{i,t} \) = book value of common equity of firm \( i \) is from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by \( MV_{i,t} \).
YD = 1 for the award year 2001, 0 for the award year 2002, and

ID_k = industry dummy based on 2-digit SIC code where k = 1 to 76.

Finally, to test directly our third prediction relating to the value relevance of effective investor relations, we employ the well-established Ohlson (1995) valuation model.\(^{10}\) This is a variant of Tobin’s Q which explicitly takes into account the market value of current earnings to provide an appropriate framework to measure the incremental contribution to firm value of variables other than book value and current earnings (Barth, Beaver and Landsman, 1998). In our case, we are concerned with the impact of effective investor relations on market value.

Ohlson (1995) explicitly recognises that some value relevant information will appear in accounting numbers with a time lag. Since investor relations reputation is built over time,\(^{11}\) we follow Easton (1999) and use price level rather than returns regression as in the case of Bushee and Miller (2012). Ohlson (1995) derives his valuation function (equation 7, p. 670) as:

\[
P_t = b_1 (E_t - D_t) + b_2 \text{BVE}_t + b_3 \nu_t
\]

where:

\(P_t\) = market value of the firm’s equity at time \(t\),

\(E_t\) = earnings of the firm for the period \((t-1, t)\),

\(D_t\) = net dividends paid at time \(t\),

\(\text{BVE}_t\) = net book value at time \(t\), and

\(\nu_t\) = information other than abnormal earnings.

We assume effective IR, as proxied by nominations for IR Magazine ‘best overall IR’ awards, reflects information other than that contained in current earnings and book value.

\(^{10}\) Prediction 4 follows from our first three.

\(^{11}\) Though respondents are asked to nominate firms based on their IR performance over the previous 12 months, these firms would have been building their IR departments and policies over time.
Ohlson (2009) shows that dividend policy is irrelevant for this specification, hence we set dividends to zero (as in e.g., Barth et al., 1998).

Barth and Kallapur (1996) suggest that the coefficient estimates of such price level equations could be biased due to scale differences in the cross-section of firms. However, Barth and Clinch (2009) show that current tests to identify the scale effect are ineffective. Further, they test several specifications of the basic Ohlson (1995) equation used in the literature and find that unweighted OLS regressions produce robust inferences. Hence, we employ the following OLS regression with interaction terms to capture the potential impact of IR activity on market value conditional on levels of book value and net income, together with year and industry dummies:

\[
MV_{i,t} = \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{IRD} IRD_{i,t} + \beta_{IR^*BVE} (BVE_{i,t} \times IRD_{i,t}) + \beta_{IR^*NI} (NI_{i,t} \times IRD_{i,t}) \\
+ \sum_{j=1}^{2} (\beta_j YD_j) + \sum_{k=1}^{76} (\beta_k ID_k) + \epsilon_{i,t} 
\]

(8)

\[
MV_{i,t} = \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{IR} IR_{i,t} + \beta_{IR^*BVE} (BVE_{i,t} \times IR_{i,t}) + \beta_{IR^*NI} (NI_{i,t} \times IR_{i,t}) \\
+ \sum_{j=1}^{2} (\beta_j YD_j) + \sum_{k=1}^{76} (\beta_k ID_k) + \epsilon_{i,t} 
\]

(9)

where:

- \( MV_{i,t} \) = market value of equity of firm i at March 31 in the year of award nomination (t),
- \( BVE_{i,t} \) = book value of common equity of firm i is from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year,
- \( NI_{i,t} \) = net income before extraordinary items of firm i for year t,
- \( IRD_{i,t} = 1 \) if the firm does not receive any nominations, 0 otherwise,
- \( IR_{i,t} \) = investor relations rank based on number of nominations received,
- \( YD_j \) = year dummy where j = 1 for 2000 and = 2 for 2001 with 2002 as reference year and
- \( ID_k \) = industry dummy based on 2-digit SIC code where k = 1 to 76.

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12 We are unable to use both the interaction terms in the same specification in equation (9) due to extremely high correlations between the two. The usual method of mean-centring the variables still produces correlations in excess of 0.90. We do not use both IRD and IR in the same equation for the same reason.
Note that in all our regressions, there are usually more than one observation per firm rendering the assumption of independent observations in computing regression standard errors incorrect. We therefore report t-statistics based on the clustered sandwich estimator (Froot, 1989 and Williams, 2000) which accounts for the fact that observations for the same firm may be correlated.

3. Results
This section describes the characteristics of our firm sample and explicitly tests our predictions established in section 2.1 above. Potential endogeneity issues are also fully explored.

3.1. Summary statistics
Table 1 shows that whereas 81% of ‘larger’ firms (>3bn market capitalization) are nominated for ‘best overall IR’ awards, only 12% of ‘smaller’ firms (<3bn market capitalization) are so acknowledged. Panel A shows that in the case of large firms mean (median) number of nominations for those that are nominated is 5.9 (3.0) and panel B shows the equivalent figures are 1.6 (1.0) for small firms.

Table 1 here

Table 2 provides descriptive statistics for our sample firms. Panel A shows that in the case of large firms prior returns do not appear to be influential in determining IR award nominations. In fact, those firm cases which are unrated earn higher excess returns (3.1% per month) than those rated (1.4% per month). On the other hand, in the following year, rated firms appear to outperform firms receiving no award nominations (-0.9% per month v -1.7% per month), albeit the difference is not significant. Panel B of table 2 for small firms, suggests some association between prior year excess returns and award nominations compared with
unrated firms (1.7% per month v 0.9% per month) although the difference is not statistically significant and average excess returns are very similar in the following year. Further, both panels A and B show rated firms are very significantly larger and have lower book-to-market ratios, than those receiving no award nominations. Table 2 also shows that rated firms have higher analyst following, both before and after the award year as well as higher relative stock turnover than ‘unrated’ firms showing better liquidity for such firms.

Table 2 here

3.2. Analyst coverage

This sub-section tests our prediction 1 relating to effective IR leading to higher analyst coverage. Table 2 shows that average analyst following for firms nominated for ‘best overall IR’ in the IR Magazine survey is higher than that for those not nominated in the year prior to the award year. In particular, for large rated firms, prior average analyst following is 16.6, while for small firms it is 6.9. In contrast, average following for large unrated firms in the prior award year is 11.8 and for small unrated firms it is only 2.2.

Controlling for firm market value, book-to-market and prior year returns, the ordered logistic regression in table 3 panel A further demonstrates that there is a strong positive relationship between prior analyst coverage and IR award nomination for both large and small firms. For large firms, a unit increase in analyst following increases the odds ratio of the firm being assigned to the next award nomination rank by 2% (t = 2.42) and for small firms by 5% (t = 4.85).\(^{13}\) The count based Poisson regression in panel B provides somewhat similar findings in that while for large firms greater analyst following is no longer associated with more award nominations ($\beta_{AF} = 0.00$, t = 0.05), in the case of small firms the results are

\(^{13}\) We also estimate a simple binomial logistic regression with nominated and not nominated binary dependent variable. Our conclusions are unchanged.
equally strong ($\beta_{AF} = 0.03, t = 4.46$).\textsuperscript{14,15} These results show that the higher the prior year analyst following, the greater the number of nominations received by a firm. As might be expected, the relationship is stronger for smaller firms than for larger firms. Thus, table 3 provides evidence of a strong positive relationship between prior analyst following and IR rating, consistent with Lang and Lundholm (1993); not surprisingly, survey respondents tend to vote for firms with which they are familiar.

However, more importantly, table 4 shows that controlling for size, book-to-market and prior year stock return there is a strong positive contemporaneous relationship between change in IR rating and change in analyst following. Large firms that move from being not nominated in year $t-1$ to being nominated for IR Magazine ‘best overall IR’ award in year $t$ have a mean increase of 1.8 in analyst following compared with those firms not nominated in consecutive years ($t = 2.09$), with the increase in analyst following for small firms on the same basis 1.3 ($t = 7.09$).\textsuperscript{16} However, there is no change in analyst following for large firms nominated in two consecutive years or those not nominated in year $t$ although nominated in year $t-1$ compared with those firms not nominated at all ($t = 0.15$ and $t = 0.59$, respectively). Small firms that are nominated for IR awards in consecutive years experience a mean increase of 0.9 in analyst coverage ($t = 2.98$) while those that are not nominated in year $t$ after being nominated in year $t-1$ suffer a decrease of 1.3 ($t = 7.71$). Thus, overall, our evidence is consistent with effective IR leading to higher analyst following, in line with our prediction 1 which may reflect the potential lower information cost incentives.

\textbf{Table 4 here}

\textsuperscript{14} For a small firm with average (median) analyst following of 2.7 (1.0), this translates to a 1.2\% (3.3\%) increase for a unit increase in IR ranking.

\textsuperscript{15} We also estimate OLS regression. Results are omitted for brevity as our conclusions are unchanged.

\textsuperscript{16} For a large (small) not nominated firm with average analyst following of 11.8 (2.2), this represents a 15\% (59\%) increase.
3.3. Stock liquidity

The next prediction we test, prediction 2, is that effective IR leads to an increase in stock liquidity. Table 5 clearly shows that controlling for size, book-to-market and stock returns, there is a strong positive association between liquidity and IR quality, although for small firms only. Specifically, for firms with market capitalization < $3bn, while there is no change in relative stock turnover for firms that are not nominated in year t having been nominated in year t-1 ($\beta_{NN-NN} = 0.00, t = 0.07$), those that are nominated in year t experience higher relative stock turnover irrespective of whether they were nominated in year t-1 ($\beta_{N-N} = 0.20, t = 3.77$) or not ($\beta_{NN-N} = 0.16, t = 3.85$). However, there is no parallel association evident for large firms. In the case of small firms, at least, where we might expect the impact of good IR to be stronger, these results are consistent with our prediction of increased liquidity for nominated firms. This is on the basis that the costs associated with information asymmetry fall in particular for small firms with better communications strategies, e.g., as proxied by their IR award nominations.

Table 5 here

3.4. Value relevance

In this section we test our prediction 3: does effective IR have a positive impact on market value? The results of our Ohlson (1995) model-based regressions using equations (8) and (9) to assess value relevance of investor relations activity are presented in table 6. If investor relations is value relevant then firms with more effective IR should have higher valuation multiples. Model (i) in panel A shows that for large firms, firms that are nominated have higher valuation than those that are not nominated ($\beta_{IRD} = 3.94, t = 6.23$) and model (ii)
shows that firms with higher IR ranking have higher valuations \( (\beta_{IR} = 1.22, t = 10.15) \). Further, model (iii) shows that not only do nominated firms have higher market values, they also have higher valuation multiple on net income \( (\beta_{NI*IRD} = 5.29, t = 2.80) \) though the book value of equity multiple does not differ significantly \( (\beta_{BVE*IRD} = 0.52, t = 0.89) \). Models (iv) and (v) show largely similar results with IR rankings, while firms with higher IR rankings have higher market values, the valuation multiples on book value of equity and net income do not differ significantly for firms with better IR ranking \( (\beta_{BVE*IR} = -0.02, t = 1.12; \beta_{NI*IR} = -0.15, t = 1.85) \). Similarly, model (vi) in panel B shows that for small firms, nominated firms have higher market valuations \( (\beta_{IRD} = 0.23, t = 2.64) \) and model (vii) shows that higher ranked firms have higher valuations \( (\beta_{IR} = 0.25, t = 3.77) \). Finally, models (viii), (ix) and (x) show that for small firms both, the book value of equity as well as net income valuations multiples are significantly higher for better ranked firms \( (\beta_{BVE*IRD} = 1.05, t = 3.17; \beta_{NI*IRD} = 12.64, t = 5.89; \beta_{BVE*IR} = 0.39, t = 4.44; \beta_{NI*IR} = 2.35, t = 4.46) \).

To summarise, table 6 reports a strong positive relationship between IR rating and market value for both large and small firms. Further, for small firms, it also shows that higher IR ranking leads to higher valuation multiples on both book value of equity and net income. These findings clearly demonstrate that better investor relations is associated with higher market value. We therefore report evidence consistent with our prediction 3; effective investor relations does appear to make an incremental contribution to firm value.

\[\text{Table 6 here}\]

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18 For a large ranked firm with average book value of $3.73bn, average net income of $0.55bn and average IR rank of 5.31, this translates to a 5.8% increase in market value for a unit increase in ranking.

19 For a small ranked firm with average book value of $547.6m, average net income of $51.9m and average IR rank of 1.6, this translates to a 18.5% increase in market value for a unit increase in ranking.
3.5. Value relevance and endogeneity

Table 2 shows that firms that receive ‘best overall IR’ nominations are larger, are growth firms and have higher analyst following. This is also confirmed directly on a multivariate basis in table 4. However, our value relevance results could potentially suffer from endogeneity problem as firms with higher market values, lower book-to-market ratios and greater analyst coverage are more likely to be nominated for ‘best overall IR’ awards. The standard approach to correct for this potential bias is to use instrumental variables and a two-stage least squares framework (e.g. Wooldridge, 2002). However, Larcker and Rusticus (2010) note the problems of identifying strong instrumental variables in empirical research to control for endogeneity and provide an alternative route for assessing the robustness of the investor relations rank OLS coefficient ($\beta_{IR}$) in equation (8). This is by calculating its Impact Threshold for a Confounding Variable (ITCV) using the procedure suggested by Frank (2000). Specifically, we estimate the minimum level of correlation that the unobserved confounding variable needs with market value (MV) and investor relations rank (IR) for it to render the latter’s coefficient ($\beta_{IR}$) statistically insignificant if such a confounding variable were included in equation (8).

The (untabulated) ITCVs for the investor relations ranking coefficients in models (ii) and (vi) of table 6 are 0.0401 and 0.0239 for large and small firms respectively. This means that a confounding variable needs to have a partial correlation with the market value of equity and with investor relations ranking of at least 0.20 for large firms and 0.15 for small firms for it to render IR insignificant. Frank (2000) acknowledges that it is difficult to say whether any particular value of ITCV is high enough to ensure an OLS estimate is robust. However, as in Larcker and Rusticus (2010), we estimate the impact scores for the other independent variables in table 6, models (ii) and (vi). For large firms, the impact score for the book value
of equity coefficient ($\beta_{BVE}$) is 0.0051, and for net income ($\beta_{NI}$) -0.0059. So, a confounding variable that if included will render the coefficient on investor relations ranking insignificant needs to have much larger impact than book value of equity and net income on market value in equation (8) and be orthogonal to all other independent variables in the model. For small firms, the impact scores of book value of equity and of net income are 0.0664 and -0.0126 respectively, hence, even here the confounding variable needs to have an impact more than twice that of net income for it to render the investor relations ranking insignificant. The chance of such a variable existing is very small. As such, we conclude that any potential self-selection bias or endogeneity between investor relations ranking and market value is unlikely to have a sufficiently serious impact on our results to change the tenor of our conclusions.

3.6. Large and smaller firms

To conclude this section, we review our findings in the context of prediction 4 which, following Merton (1987), is that the benefits of good IR policies will be greater for smaller than larger firms. As we have seen, our results are largely consistent with this expectation. In particular, although both large and small firms nominated for ‘best overall IR’ experience a significant increase in analyst following, there is no equivalent increase in liquidity or market valuation multiples in the case of large firms, only small firms. We thus find evidence consistent with our prediction 4, good IR is particularly beneficial in the case of smaller firms. Nonetheless, it should be pointed out that our ‘small’ firms are not necessarily small with, as table 2 shows, mean (median) market capitalization of $1.7bn ($1.0bn) and all are listed on the main US exchanges. This is in contrast to the typically very small and micro-cap stocks which initiate IR activity that are the focus of Bushee and Miller (2012) and Vlittis and Charitou (2012).

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20 A negative value for the impact score of a variable shows that its inclusion would make the coefficient on quality of investor relations more positive.
4. Summary and conclusions

In this study, we seek to test two alternative views in the literature about the value of investor relations activity to firms. Traditional finance theory argues that simply “repackaging” and communicating an existing information set will have no value as such information will already be priced by the market. In addition, Hong and Huang (2005) and Doukas, Kim and Pantzakis (2005; 2008) suggest that the costs of investor relations could well outweigh the benefits leading to reduced market value. On the other hand, Merton’s (1987) investor recognition theory suggests that effective investor relations activity will enhance the ‘visibility’ of a stock. This may be manifest in greater analyst coverage, improved liquidity and higher market valuation multiples. In addition, since smaller firms are more likely to be ‘neglected’, investor relations should have a greater impact in such cases. To test these conflicting views on the market value of the investment in the intangible asset IR potentially represents, we employ a new proprietary database measuring IR quality that covers all firms listed on NYSE, Amex and NASDAQ. This database, compiled by the IR Magazine, consists of all firms nominated by security analysts and fund managers for ‘best overall IR’ in its annual investor relations surveys.

The most important contribution of our paper is that, in line with Merton (1987) but contra Hong and Huang (2005) and Doukas et al. (2005; 2008), both large and smaller firms nominated for ‘best overall IR’ awards have significantly higher market valuation multiples than those that not so nominated. This result is further emphasised when we consider firms ranked on the basis of number of ‘best overall IR’ nominations received in which case an increase in ranking by one step translates to a 5.8% increase in the market capitalisation for the average large ranked firm and 18.5% in the case of the average small ranked firm. Using the ITCV method of Larker and Rusticus (2010), we also show that these results are robust to
issues of potential endogeneity. In addition, controlling for a range of risk factors, we show that firms receiving ‘best overall IR’ award nominations experience increased analyst following, as well as improved liquidity in the case of smaller firms, in the year subsequent to these nominations. Finally, consistent with the predictions of Merton (1987), the majority of our results are much stronger for smaller companies which is likely due to their lower visibility and hence their likelihood of suffering more from issues of asymmetric information and lower management credibility.

We thus conclude that good IR has clear market impact; this has important implications for firms’ communication and other information dissemination strategies with the financial markets and market participants. In particular, we complement the findings of Bushee and Miller (2012) and Vlittis and Charitou (2012) who work with very small and micro-cap stocks which initiate IR activity, and extend these significantly. Our results demonstrate that the benefits of effective IR equally apply across a large cross-section of main exchange-listed firms with established IR programmes, not just for very small firms. Good investor relations policies appear to be value relevant and may be viewed as akin to investments in other firm intangible assets such as management quality (Agarwal, Taffler and Brown, 2011) and company brands (e.g., Wyatt, 2008) that produce long term benefits leading to higher market valuations.

Our results, however, are subject to some limitations. First, broadly speaking, they pertain to the generality of firms engaged in investor relations activity. This is in contrast with Peasnell et al. (2011) who focus on a different research question relating to the extent to which IR prize-winning firms are shielded from the adverse impact of corporate misdeeds on their credibility with investors. Second, there may be issues associated with the use of analyst and institutional investor subjective IR ratings as measures of firm overall IR quality and the problems inherent with all such survey-based data. However, we would argue that whether or
not IR Magazine survey respondents’ ‘best overall IR’ award nominations proxy for true IR quality, since such market specialists are the main targets of firms’ investor relations strategies, it is their subjective perceptions of IR quality that are key whether valid or not.

Finally, our data is restricted to a relatively short time span ending in 2002 and was not available to us for subsequent years. Nonetheless, it covers the first two years of the implementation of Regulation Financial Disclosure, the collapse of the dot.com bubble and September 11 and thus our results are of intrinsic interest in their own right. In addition, it should be noted that most other directly relevant studies use data from the AIMR database of large firms which ends in 1996. However, clearly, caution must be taken in generalising from what we find out of sample.
References


Table 1: Descriptive statistics
Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year. ‘Rated’ refers to all firms that were nominated and ‘Unrated’ refers to all firms not nominated in a particular year. Votes refers to the number of nominations received by a firm for ‘best overall IR’ award.

<table>
<thead>
<tr>
<th></th>
<th>Number of firm cases</th>
<th>Number of votes</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Large firms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated</td>
<td>1,277</td>
<td>5.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Unrated</td>
<td>294</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>All firms</td>
<td>1,571</td>
<td>4.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td><strong>B. Small firms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated</td>
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<td>1.6</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Unrated</td>
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<td>0.0</td>
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<tr>
<td>All firms</td>
<td>13,415</td>
<td>0.2</td>
<td>0.0</td>
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Table 2: Descriptive statistics

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and < $3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year. Prior year monthly average excess returns refers to the monthly returns from March of the year prior to the award year to February of the award year. Similarly, following year monthly average excess returns refers to the monthly returns from April of the award year to March of the year after the award year. Market capitalization is the market value of equity as at March 31 of the award year and book-to-market is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year. Prior year and following year analyst following refer to the number of analysts publishing forecasts in I/B/E/S as at the end of December of the year prior to the nomination year and as at the end of December of the year of the award nomination respectively. Prior year relative turnover refers to the average monthly turnover adjusted for market-wide turnover from March of the year prior to the award year to February of the award year. Similarly, following year relative turnover refers to the average monthly turnover adjusted for market-wide turnover from April of the award year to March of the year after the award year. ‘Rated’ refers to all firms that were nominated and ‘Unrated’ refers to all firms not nominated in a particular year.

<table>
<thead>
<tr>
<th></th>
<th>Monthly average excess returns (%)</th>
<th>Market capitalization ($bn)</th>
<th>Book-to-market</th>
<th>Prior year analyst following</th>
<th>Following year analyst following</th>
<th>Prior year relative turnover</th>
<th>Following year relative turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prior year</td>
<td>Following year</td>
<td>mean</td>
<td>median</td>
<td>mean</td>
<td>median</td>
<td>mean</td>
</tr>
<tr>
<td>A. Large firms</td>
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<tr>
<td>All rated</td>
<td>1.39</td>
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<td>0.30</td>
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<td>0.43</td>
<td>0.35</td>
<td>11.76</td>
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<td>B. Small firms</td>
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<td></td>
<td></td>
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<tr>
<td>All rated</td>
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<td>1.00</td>
<td>0.56</td>
<td>0.35</td>
<td>6.93</td>
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<tr>
<td>Unrated</td>
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<td>-0.25</td>
<td>0.29</td>
<td>0.09</td>
<td>1.13</td>
<td>0.67</td>
<td>2.21</td>
</tr>
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</table>
Table 3: Analyst coverage regression estimation

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and < $3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \{YD_{ij}\} and industry dummies based on 2-digit SIC codes \{ID_{ik}\} is estimated:

\[
IR_{i,t} = \alpha + \beta_{AF} AF_{i,t-1} + \beta_{MV} \ln(MV_{i,t}) + \beta_{BM} B/M_{i,t} + \beta_{PYR} PYR_{i,t-1} + \sum_{j=1}^{2} \beta_{j} YD_{j} + \sum_{k=1}^{76} \beta_{k} ID_{k} + \epsilon_{i,t} \quad (1)
\]

Panel A reports the results of the ordinal logistic regression where \(IR_{i,t}\) is the rank based on number of votes received in year t. Panel B reports the Poisson regression results for all sample firms where \(IR_{i,t}\) is number of votes received in year t. For both panels, \(AF_{i,t-1}\) is the number of analysts publishing forecasts in the I/B/E/S database for firm i as at December 31 immediately prior to the award year, \(MV_{i,t}\) is the market value of equity of firm i as at March 31 of the award year, \(B/M_{i,t}\) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \(PYR_{i,t-1}\) is the average monthly stock return from March 1 of year t-1 to February 28 of year t. The ranks are computed each year for ‘Small’ and ‘Large’ firms separately. Intercepts are omitted for brevity in panel A as they represent the cut-off scores for different categories and the number of such cut-offs is one less than the number of categories. Figures in brackets are the asymptotic t-statistics adjusted for clustering.

<table>
<thead>
<tr>
<th></th>
<th>(\alpha)</th>
<th>(\beta_{AF})</th>
<th>(\beta_{MV})</th>
<th>(\beta_{BM})</th>
<th>(\beta_{PYR})</th>
<th>Pseudo/Adj-R²</th>
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<td><strong>A. Ordered logistic regression</strong></td>
<td></td>
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<tr>
<td>Large</td>
<td>0.02</td>
<td>1.59</td>
<td>-0.50</td>
<td>-0.31</td>
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<td>0.13</td>
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<td></td>
<td>(2.42)</td>
<td>(22.67)</td>
<td>(2.33)</td>
<td>(2.59)</td>
<td></td>
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<tr>
<td>Small</td>
<td>0.05</td>
<td>1.09</td>
<td>-0.03</td>
<td>-0.04</td>
<td></td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>(4.85)</td>
<td>(27.74)</td>
<td>(0.55)</td>
<td>(0.77)</td>
<td></td>
<td></td>
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<tr>
<td><strong>B. Poisson regression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Large</td>
<td>-12.11</td>
<td>-0.00</td>
<td>0.79</td>
<td>-0.10</td>
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<td></td>
<td>(22.38)</td>
<td>(0.05)</td>
<td>(23.01)</td>
<td>(0.80)</td>
<td>(0.06)</td>
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<td>Small</td>
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<td>0.97</td>
<td>-0.06</td>
<td>-0.06</td>
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<td>(1.02)</td>
<td>(4.46)</td>
<td>(26.34)</td>
<td>(1.07)</td>
<td>(1.36)</td>
<td></td>
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</table>
Table 4: Investor relations rankings and analyst following

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \( \{ \text{YD}_t \} \) and industry dummies based on 2-digit SIC codes \( \{ \text{ID}_k \} \) is estimated:

\[
AF_{i,t} - AF_{i,t-1} = \alpha + \beta_{N \rightarrow N} \text{IRD}_{N \rightarrow N,i,t} + \beta_{NN \rightarrow N} \text{IRD}_{NN \rightarrow N,i,t} + \beta_{N \rightarrow NN} \text{IRD}_{N \rightarrow NN,i,t} + \beta_{\text{MV}} \ln(MV_{t,i}) + \beta_{\text{B/M}} B/M_{i,t} + \beta_{\text{PYR}} \text{PYR}_{i,t-1} + \beta_j \text{YD} + \sum_{k=1}^{26} \beta_k \text{ID}_k + \epsilon_{i,t} \quad (2)
\]

Where \( \text{IRD}_{N \rightarrow N,i,t} \) is 1 if the firm is nominated in both year \( t \) and \( t-1 \), \( \text{IRD}_{NN \rightarrow N,i,t} \) is 1 if the firm is nominated in year \( t \) but not in year \( t-1 \) and \( \text{IRD}_{N \rightarrow NN,i,t} \) is 1 if the firm is not nominated in year \( t \) but is nominated in year \( t-1 \). \( AF_{i,t} \) and \( AF_{i,t-1} \) are the number of analysts publishing forecasts in the I/B/E/S database for firm \( i \) as at December 31 of the award year and December 31 of the year immediately prior to the award year respectively, \( MV_{t,i} \) is the market value of equity of firm \( i \) as at March 31 of the award year, \( B/M_{i,t} \) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \( \text{PYR}_{i,t-1} \) is the average monthly stock return from March 1 of year \( t-1 \) to February 28 of year \( t \). The ranks are computed each year for ‘Small’ and ‘Large’ firms separately. Figures in brackets are the asymptotic t-statistics adjusted for clustering.

<table>
<thead>
<tr>
<th></th>
<th>( \alpha )</th>
<th>( \beta_{N \rightarrow N} )</th>
<th>( \beta_{NN \rightarrow N} )</th>
<th>( \beta_{N \rightarrow NN} )</th>
<th>( \beta_{\text{MV}} )</th>
<th>( \beta_{\text{B/M}} )</th>
<th>( \beta_{\text{PYR}} )</th>
<th>Adj-R²</th>
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<td>(14.98)</td>
<td>(0.06)</td>
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</table>
Table 5: Relative turnover regression analysis

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \( \{ \text{YD}_j \} \) and industry dummies based on 2-digit SIC codes \( \{ \text{ID}_k \} \) is estimated:

\[
\text{DRTO}_{i,t} = \alpha + \beta_{N \rightarrow N} \text{IRD}_{N \rightarrow N,i,t} + \beta_{NN \rightarrow N} \text{IRD}_{NN \rightarrow N,i,t} + \beta_{N \rightarrow NN} \text{IRD}_{N \rightarrow NN,i,t} + \beta_{MV} \ln(\text{MV}_{i,t}) + \beta_{B/M} \text{B/M}_{i,t} \\
+ \beta_{PYR} \text{PYR}_{i,t} + \beta_{YD} + \sum_{k=1}^{76} \beta_k \text{ID}_k + \varepsilon_{i,t} \tag{6}
\]

Where \( \text{DRTO}_{i,t} \) for firm \( i \) is the difference between the average monthly turnover ratio adjusted for market-wide activity from April 1 of year \( t-1 \) to March 31 of year \( t \) (award year) and the average monthly turnover ratio adjusted for market-wide activity from April 1 of year \( t-2 \) to March 31 of year \( t-1 \). \( \text{IRD}_{N \rightarrow N,i,t} \) is 1 if the firm is nominated in both, year \( t \) and \( t-1 \), \( \text{IRD}_{NN \rightarrow N,i,t} \) is 1 if the firm is nominated in year \( t \) but not in year \( t-1 \) and \( \text{IRD}_{N \rightarrow NN,i,t} \) is 1 if the firm is not nominated in year \( t \) but is nominated in year \( t-1 \). \( \text{MV}_{i,t} \) is the market value of equity of firm \( i \) as at March 31 of the award year, \( \text{B/M}_{i,t} \) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \( \text{PYR}_{i,t-1} \) is the average monthly stock return from March 1 of year \( t-1 \) to February 28 of year \( t \). Figures in brackets are the asymptotic t-statistics adjusted for clustering.

<table>
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<tr>
<th></th>
<th>( \alpha )</th>
<th>( \beta_{N \rightarrow N} )</th>
<th>( \beta_{NN \rightarrow N} )</th>
<th>( \beta_{N \rightarrow NN} )</th>
<th>( \beta_{MV} )</th>
<th>( \beta_{B/M} )</th>
<th>( \beta_{PYR} )</th>
<th>Adj-R(^2)</th>
</tr>
</thead>
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<tr>
<td>Large</td>
<td>2.25</td>
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<tr>
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<td>(0.92)</td>
<td>(0.95)</td>
<td>(1.92)</td>
<td>(1.67)</td>
<td>(4.77)</td>
<td></td>
</tr>
<tr>
<td>Small</td>
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<td>(13.30)</td>
<td>(2.72)</td>
<td>(1.43)</td>
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</tr>
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</table>
Table 6: Value relevance of IR activity

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year. The following regressions with year dummies \{YD_j\} and industry dummies based on 2-digit SIC codes \{ID_k\} is estimated:

\[
MV_{i,t} = \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{IRD} IRD_{i,t} + \beta_{BVE*IRD} \left( BVE_{i,t} \times IRD_{i,t} \right) + \beta_{NI*IRD} \left( NI_{i,t} \times IRD_{i,t} \right) + \sum_{j=1}^{76} \left( \beta_j YD_{i,j} \right) + \sum_{k=1}^{76} \left( \beta_k ID_{i,k} \right) + \varepsilon_{i,t} \tag{8}
\]

\[
MV_{i,t} = \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{IR} IR_{i,t} + \beta_{BVE*IR} \left( BVE_{i,t} \times IR_{i,t} \right) + \beta_{NI*IR} \left( NI_{i,t} \times IR_{i,t} \right) + \sum_{j=1}^{76} \left( \beta_j YD_{i,j} \right) + \sum_{k=1}^{76} \left( \beta_k ID_{i,k} \right) + \varepsilon_{i,t} \tag{9}
\]

where \(MV_{i,t}\) is the market value of equity of firm i as at 31 March in the year of nomination (t), \(BVE_{i,t}\) is the book value of common equity for firm i as at the end of the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year and \(NI_{i,t}\) is the net income before extraordinary items for firm i for the award year. Accounting data is lagged by 6 months. \(IRD_{i,t}\) is 1 if the firm receives at least one nomination and 0 otherwise and \(IR_{i,t}\) is the investor relations rank of firm i based on the number of nominations received. The ranks are computed each year for ‘Small’ and ‘Large’ firms separately. Figures in brackets are the t-statistics adjusted for clustering.
<table>
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<th>$\beta_{NI}$</th>
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<th>$\beta_{BVE\cdot IR}$</th>
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<td><strong>B: Small firms</strong></td>
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<td>(4.46)</td>
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</tbody>
</table>
Tables for the reviewers
Table 3A: Analyst coverage regression estimation

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \{YD_j\} and industry dummies based on 2-digit SIC codes \{ID_k\} is estimated:

\[ IR_{i,t} = \alpha + \beta_{AF} AF_{i,t-1} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \beta_{PYR} PYR_{i,t-1} + \sum_{j=1}^{76} \beta_j YD_j + \sum_{k=1}^{2} \beta_k ID_k + \varepsilon_{i,t} \]  (1)

Panel A reports the results of logistic regression for all sample firms where \( IR_{i,t} \) is 1 if the firm is nominated, 0 otherwise. Panel B reports the rank regression results for nominated firms where \( IR_{i,t} \) is the rank based on number of votes received in year t.

For both panels, \( AF_{i,t-1} \) is the number of analysts publishing forecasts in the I/B/E/S database for firm i as at December 31 immediately prior to the award year, \( MV_{i,t} \) is the market value of equity of firm i as at March 31 of the award year, \( B/M_{i,t} \) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \( PYR_{i,t-1} \) is the average monthly stock return from March 1 of year t-1 to February 28 of year t. The ranks are computed each year for ‘Small’ and ‘Large’ firms separately. Figures in brackets are the asymptotic t-statistics adjusted for clustering.

<table>
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<th></th>
<th>( \alpha )</th>
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<th>( \beta_{MV} )</th>
<th>( \beta_{B/M} )</th>
<th>( \beta_{PYR} )</th>
<th>Pseudo/Adj-R(^2)</th>
</tr>
</thead>
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<td><strong>A. Binary logistic regression</strong></td>
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<td></td>
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<td>1.01</td>
<td>-0.48</td>
<td>-0.28</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(7.44)</td>
<td>(2.20)</td>
<td>(8.13)</td>
<td>(2.47)</td>
<td>(1.74)</td>
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</tr>
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<td>-0.01</td>
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<td><strong>B. Rank regression</strong></td>
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<td>(1.58)</td>
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<td>Small</td>
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<td>0.21</td>
<td>-0.02</td>
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<td></td>
<td>(1.80)</td>
<td>(3.80)</td>
<td>(6.40)</td>
<td>(0.54)</td>
<td>(2.66)</td>
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</tbody>
</table>
Table 4A: Investor relations rankings and analyst following

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria and nominated for two consecutive years for the IR Magazine ‘best overall IR’ award. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \( \{YD_j\} \) and industry dummies based on 2-digit SIC codes \( \{ID_k\} \) is estimated:

\[
AF_{i,t} - AF_{i,t-1} = \alpha + \beta_{\Delta IR} \Delta IR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \beta_{PYR} PYR_{i,t-1} + \beta_{YD} YD + \sum_{k=1}^{76} \beta_k ID_k + \epsilon_{i,t}
\]

Where \( \Delta IR_{i,t} \) is the difference between the IR rank in years t and t-1, \( AF_{i,t} \) and \( AF_{i,t-1} \) are the number of analysts publishing forecasts in the I/B/E/S database for firm i as at December 31 of the award year and December 31 of the year immediately prior to the award year respectively, \( MV_{i,t} \) is the market value of equity of firm i as at March 31 of the award year, \( B/M_{i,t} \) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \( PYR_{i,t-1} \) is the average monthly stock return from March 1 of year t-1 to February 28 of year t. The ranks are computed each year for ‘Small’ and ‘Large’ firms separately. Figures in brackets are the asymptotic t-statistics adjusted for clustering.

<table>
<thead>
<tr>
<th></th>
<th>( \alpha )</th>
<th>( \beta_{\Delta IR} )</th>
<th>( \beta_{MV} )</th>
<th>( \beta_{B/M} )</th>
<th>( \beta_{PYR} )</th>
<th>Adj-R(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>12.94</td>
<td>0.24</td>
<td>-1.08</td>
<td>-2.14</td>
<td>-3.99</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(2.81)</td>
<td>(4.96)</td>
<td>(3.65)</td>
<td>(2.52)</td>
<td>(3.78)</td>
<td></td>
</tr>
<tr>
<td>Small</td>
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<tr>
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<td>(0.94)</td>
<td>(3.25)</td>
<td>(0.24)</td>
<td>(5.15)</td>
<td>(1.45)</td>
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</tr>
</tbody>
</table>
Table 5A: Relative turnover regression analysis

Our sample covers all firms listed on the NYSE, Amex and NASDAQ from 2000 to 2002 meeting data availability criteria and nominated for two consecutive years for the IR Magazine ‘best overall IR’ award. ‘Large’ and ‘Small’ firms are those with market capitalization > $3bn and <$3bn respectively at the end of December of the year prior to the IR Magazine ‘best overall IR’ award nomination year.

The following regression with year dummies \{YD_t\} and industry dummies based on 2-digit SIC codes \{ID_k\} is estimated:

\[
DRTO_{i,t} = \alpha + \beta_{AIR} \Delta IR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \beta_{PYR} PYR_{i,t} + \beta_1 YD + \sum_{k=1}^{76} \beta_k ID_k + \varepsilon_{i,t}
\]

Where \(DRTO_{i,t}\) for firm \(i\) is the difference between the average monthly turnover ratio adjusted for market-wide activity from April 1 of year \(t-1\) to March 31 of year \(t\) (award year) and the average monthly turnover ratio adjusted for market-wide activity from April 1 of year \(t-2\) to March 31 of year \(t-1\). \(\Delta IR_{i,t}\) is the difference between IR ranks of firm \(i\) in years \(t\) and \(t-1\), \(MV_{i,t}\) is the market value of equity of firm \(i\) as at March 31 of the award year, \(B/M_{i,t}\) is computed using the book value of equity from the most recent fiscal year ending September 30 or earlier of the year immediately preceding the nomination year divided by the market value of equity as at March 31 of the award year and \(PYR_{i,t-1}\) is the average monthly stock return from March 1 of year \(t-1\) to February 28 of year \(t\). Figures in brackets are the asymptotic t-statistics adjusted for clustering.

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<th>Adj-R(^2)</th>
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</thead>
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<td>-0.08</td>
<td>-0.18</td>
<td>-0.48</td>
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<td>(1.90)</td>
<td>(2.15)</td>
<td>(2.92)</td>
<td>(1.36)</td>
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<tr>
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<td>-0.12</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.36</td>
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<td>(0.13)</td>
<td>(4.39)</td>
<td>(0.45)</td>
<td></td>
</tr>
</tbody>
</table>