The Value Relevance of Investor Relations

Vineet Agarwal (Cranfield School of Management)

Angel Bellotti (Middlesex Business School)

Elly A. Nash (Independent)

Richard J. Taffler* (Warwick Business School)

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***Corresponding author:**

Richard Taffler
Professor of Finance and Accounting
Warwick Business School
Scarman Road
Coventry
CV4 7AL

Tel: + 44 (0) 2 476 524513
Fax: + 44 (0) 2 476 150376
E-mail: Richard.Taffler@wbs.ac.uk

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The Value Relevance of Investor Relations

Abstract

We test the value relevance of investor relations (IR) activity directly employing a large database of firms nominated for *Investor Relations Magazine* 'best overall IR' awards measuring investor relations quality. We find firms perceived by survey respondents as having effective IR strategies have increased analyst following, and improved liquidity in the year after award nominations. Good IR also leads to subsequent positive abnormal returns, and such firms are additionally rewarded with significantly higher valuation multiples within the Ohlson (1995) framework. Overall, our findings are strongest for smaller firms which are more likely to be 'neglected'. Our evidence is consistent with good IR successfully reducing the risk to investors associated with high information asymmetry, as predicted by Merton's (1987) asymmetric information theory, and achieving fairer firm valuation as argued by IR professionals. Using the Heckman (1979) two-step procedure, we find our results are unlikely to be driven by potential sample selection bias.

The Value Relevance of Investor Relations

1. Introduction

The investor relations (IR) industry has developed substantially over the past few decades, primarily driven by a growing demand for firms to provide a higher degree of information transparency and accountability to multiple stakeholders (Laskin, 2009). However, despite the much greater importance firms now place on IR activities, little attention to date has been paid in the finance literature as to whether an effective IR strategy enhances shareholder value as asserted by industry practitioners. For example the National Investor Relations Institute (NIRI) views IR as "…providing current and potential investors with an accurate portrayal of a firm's performance and prospects, therefore having a positive effect on total value relative to the overall market….". Similarly Lou Thompson, its former President, states "The role of investor relations is to minimize investor risk… the lower the perceived risk in investing in a company, the lower the company's cost of capital" (quoted in Allen, 2002).

This study sets out to test the investment relevance of the IR proposition directly using a unique dataset of nominations for 'best overall IR' awards in the annual *Investor Relations Magazine* survey as a proxy for the quality of investor relations. Specifically, it explores whether high quality investor relations activity impacts positively on firm valuation – i.e., is investor relations market relevant? The implicit argument is that the reduced information asymmetry resulting from investor relations activity raises trust in management leading to increased analyst coverage, improved liquidity, higher returns, and consequently an increase in market value.

In traditional capital market theory in the absence of information asymmetry 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. However, Merton (1987) notes that, typically, investors only hold a sub-set of traded securities in their portfolios. The underlying assumption of his 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". Merton's model thus predicts, *inter alia*, (i) better followed firms will have, *ceteris paribus*, higher valuations, and (ii) the impact of investor recognition will be greater for smaller firms. On this basis, if an investment in investor relations activity serves to raise a firm's profile with market participants, then an increase in firm value may be predicted.

Consistent with Merton's asymmetric information model, Lehavy and Sloan (2008) find that employing changes in institutional holdings as a proxy for investor recognition helps explain stock returns.[1] However, since investor recognition is built up over time, it is more appropriate to consider levels rather than changes in this construct if potential self-selection bias issues can be addressed**.** Drawing on Merton's (1987) framework this paper explicitly tests whether good investor relations is really associated with increased analyst coverage, improved liquidity, positive abnormal returns, and higher market value as the investor relations industry argues. Specifically, we adopt the Ohlson (1995) model approach which allows us to measure directly the relation between firm IR quality and market value. We are also able to demonstrate our results are robust to model misspecification problems resulting from potential self-selection bias arising from larger and more successful firms being more likely to be nominated for IR awards.

[1] In particular, they use the proportion of investors filing form 13-F with the SEC (institutional investors with more than $100m of securities under discretionary management) as their measure of investor knowledge of the firm.

Brennan and Tamarowski (2000) demonstrate a chain of relations that together establish a "direct link between a firm's investor relations policy and its stock price". The first link in this chain is an increase in analyst following that can result from a good corporate IR strategy that operates primarily by reducing analyst research costs (Bhushan, 1989; Lang and Lundholm, 1996; Francis, Hanna, and Philbrick, 1997). As Merton (1987) argues, the best source of information about a particular firm is the firm itself, and since the information required by investors is largely the same as the information used by managers in operating the firm, the marginal costs to the firm of generating such information for stakeholders is small. Second, there is empirical support that higher analyst coverage has a significant positive impact on liquidity both directly due to reduced trading costs, and also indirectly through the consequent effect on trading volumes (Brennan and Subrahmanyan, 1996). Finally, Amihud, Mendelson and Lauterbach (1997) show that increased stock liquidity directly impacts stock prices, thus completing the final link in the putative chain of causation from effective IR to shareholder value.

Nonetheless, there is limited, and conflicting, empirical evidence of a direct link between a firm's investor relations activity and its market pricing. Botosan (1997) finds a negative relation between her subjective annual report-based disclosure quality index, implicitly used to proxy for the effectiveness of the firm's overall market communications policy, and cost of equity for firms in a single industry, although this only holds for firms with low analyst coverage. However, the role of IR is much more than just conveying formal financial, and related information to the market (Guimard, 2008). Similarly, employing the AIMR Survey of Corporate Communications Ratings to identify the overall subset of 97 firms "with sustained and material increases in disclosure ratings" over a 3-year period between 1978 and 1991, Healy, Hutton and Palepu (1999) find that their stocks earn industry-adjusted returns of approximately 8.4% over the following year. On the other hand, Botosan

and Plumlee (2002) using the same survey data for the period 1986-1996 find no significant relation between firms' corporate communications ratings and cost of equity capital.[2] Finally, and of most direct relevance to this study, Bushee and Miller (2010) examine 210 small and mid-cap firms that initiate IR programs between 1998 and 2004 by hiring professional IR agencies. They find that these companies significantly increase their level of disclosure, media coverage, and analyst following, as well as experiencing a larger, and more geographically diversified, institutional ownership. In addition, there is a rise in the market-to-book ratio which Bushee and Miller use to proxy for firm valuation effects. Our study complements Bushee and Miller (2010) in a number of ways. In particular, given the nature of our sample, we are able to address additional research questions, and adopt a much richer valuation modelling approach. Specifically, our sample firm cases, averaging around 5,000 each year of our sample period, are all listed on the main exchanges, and are larger and better established than Bushee and Miller's more specialized sample, over 50% of which are traded on the OTC Bulletin Board and Pink Sheets**.** Also, our firms are likely to have more established IR programs, and be already followed by analysts. In this paper, we compare analyst coverage, firm liquidity, as measured by stock turnover, stock returns, and the market value of firms nominated by security analysts and fund managers for "best overall IR" in the annual *Investor Relations Magazine* IR awards for 2000 to 2002 with firms not so rated. This period is of particular interest as it is one of challenging market conditions following the bursting of the dot.com bubble in March 2000, and straddles the implementation of Reg FD in October that year which stopped investment analysts having privileged access to firm management thus, potentially, strengthening the importance of investor relations to the firm.

[2] It should be noted, though, that both studies employ the composite AIMR ratings which do not provide a "pure" measure of the value of a firm's IR activities since survey respondent perceptions of firm IR quality only accounts for 30% of the overall AIMR rating.

We find first that, 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, number of 'best overall IR' firm nominations is directly associated with a subsequent significant increase in analyst coverage compared with firms with no such votes, and this is particularly prominent in the case of small firms. Second, liquidity, as measured by relative stock turnover, increases very significantly for the best IR rated firms, although only in the case of smaller companies, compared with firms unrated by survey respondents. In addition, over the year following the IR awards, nominated firms earn a highly significant abnormal return of 0.8% per month compared with unrated firms where abnormal returns do not differ to zero. Similar patterns of abnormal returns apply across both large and small firms. Finally, and of most interest, using the Ohlson (1995) model approach we show that, *ceteris paribus*, firms nominated for 'best overall IR' votes in the annual *Investor Relations Magazine* survey are valued more highly by the market than those with no survey votes, and those with above median number of votes greater than those with below the median. Importantly, these results are robust to self-selection bias.

In summary, consistent with the predictions of Merton's investor recognition model, we find that firms nominated for 'best overall IR' in the *Investor Relations Magazine* annual survey appear to experience growth in analyst coverage, greater liquidity, positive abnormal returns, and higher market value, which results are particularly pronounced in the case of small firms. In contrast to traditional capital market equilibrium theory, and in line with much of the disclosure and corporate communications literature (e.g., Kothari, Li and Short, 2009), our results are consistent with a potential reduction in information asymmetry associated with effective IR strategies being rewarded by the stockmarket, especially in the case of smaller, less followed, firms.

The rest of the paper is organized 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 draws on the Merton (1987) model to generate our predictions about the potential impact of effective IR activity on analyst coverage, stock liquidity, abnormal returns, and market value. It then discusses our firm data and our modeling approach.

2.1 Predictions

Investment analysts are a key target audience for firm investor relations activity (e.g., Guimard, 2008; Laskin, 2009). 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 leads to an increase in analyst coverage

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

On a similar basis, we might expect higher analyst coverage combined with increased liquidity to lead to positive abnormal returns. Our third prediction consequently follows:

Prediction 3: Effective IR is associated with future abnormal returns

However it should be noted, a contrary view is held by Hong and Huang (2005) who argue that in firms with concentrated ownership, the benefits of increased liquidity flow to large shareholders disproportionately, while the costs are shared by all shareholders leading

to overinvestment in investor relations by such firms. In a similar vein, Doukas, Kim and Pantzalis (2005; 2008) find that firms with excessive analyst coverage overinvest, are overvalued, and generate lower future returns. They conclude that this is consistent with analyst coverage being driven by profitable investment banking business. In both these scenarios investor relations actually will also be market relevant, but in this case value destroying.

On the other hand, of course, in an efficient market, the implications of effective IR activity, as proxied by the *Investor Relations Magazine* 'best overall IR' firm rankings, should already be impounded in stock prices and not associated with subsequent abnormal returns. Thus, if as investor relations professionals argue, information asymmetry for investors is reduced by such activities, then we would expect reduced cost of capital as manifested by higher firm market value. On this basis we establish our final prediction to be tested:

Prediction 4: Effective IR has a positive impact on firm market value

2.2. Data

For many years, the *Investor Relations Magazine* has commissioned annually an independent research firm to obtain nominations from investors and analysts for firms that have performed the 'best' in distinct categories of IR over the previous 12 months. Nominations are collected from a large sample of fund managers, and sell and buy-side analysts listed in the *Thomson Financial I/B/E/S*, *Barron's*, and *WILink* databases, covering a wide range of industry sectors and investment specializations, although all respondents are encouraged to nominate firms outside their specialities. Our data covers the annual surveys for the years 2000, 2001 and 2002 with an average of 1,708 respondents responding to each survey. The nomination

collection process takes place during March with results published on 31 March each year, but nominations should only relate to IR performance over the previous 12 months.

Stock returns, market values, and trading volumes are extracted from the Centre for Research in Share Prices (CRSP) database. Book value of equity and net income are from COMPUSTAT, and analyst coverage is obtained from the *Thomson Financial I/B/E/S FirstCall* database. All accounting data is lagged six months to avoid look-ahead bias.

2.3. Method

Each year from 2000 to 2002, firms nominated for 'best overall IR' in the respective *Investor Relations Magazine* survey in the 'large firms' category (market capitalization > $3bn) are sorted by the number of nominations received, and divided into two portfolios formed at the median breakpoints of award nominations. All other large firms, with no votes for 'best overall IR', constitute a third 'unrated' portfolio used for comparison purposes. The 'best rated' portfolio consists of firms that receive more than the median number of nominations for 'best overall IR', and the 'other rated' portfolio all the other firms that receive at least one nomination. Similarly, firms nominated in the 'small firms' category (market capitalization < $3bn) are sorted into two portfolios ('best rated'; 'other rated') on the same basis, and a third parallel no nomination ('unrated') comparison portfolio likewise generated. Finally, we construct three pooled portfolios. The 'best rated' pooled portfolio is formed by pooling together the 'best rated' firms from both the large and small categories, with the 'other rated' and 'unrated' pooled portfolios constructed in the same way.

To examine the impact of prior year analyst coverage of firms on subsequent nominations for Best IR, we pool our sample firms across award years and run the following ordered logistic regression with firm market value at each year-end, prior-year stock returns, and year dummies as control variables where t denotes award year:

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

where:

$IR_{i,t}$ = 0 if the firm is not rated ('unrated'), 1 if the number of nominations it receives is below the median ('other rated'), and 2 if the number of nominations it receives is above the median ('best rated'),

$AF_{i,t-1}$ = number of analysts publishing forecasts in the *I/B/E/S FirstCall* database for firm i as at December 31 immediately prior to the award year,

$MV_{i,t}$ = market value of equity of firm i at March 31 in the award year,

$B/M_{i,t}$ = book value of common equity of firm i as at March 31 of the nomination year lagged 6 months divided by $MV_{i,t}$, and

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

To test whether there is a change in analyst following in the year after the nomination, we run the following pooled regression with year dummies:

$$\begin{aligned} AF_{i,t+1} - AF_{i,t-1} = {} & \alpha + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \beta_{PYR1} PYR1_{i,t} \\ & + \beta_{PYR2} PYR2_{i,t} + \beta_{PYR3} PYR3_{i,t} + \sum_{j=1}^{2} \beta_j YD_j + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where:

$AF_{i,t-1}$ = number of analysts publishing forecasts for firm i in the *I/B/E/S FirstCall* database as at December 31 immediately prior to the award year,

$AF_{i,t+1}$ = number of analysts publishing forecasts for firm i in the *I/B/E/S FirstCall* database as at December 31 of the award year,

$UR_{i,t}$ = 1 if firm i is not nominated ('unrated'), 0 otherwise,

$BR_{i,t}$ = 1 if the number of nominations received by firm i is above the median ('best rated'), 0 otherwise,

$MV_{i,t}$ = market value of equity of firm i as at March 31 of the award year,

$B/M_{i,t}$ = book value of common equity of firm i as at March 31 of the nomination year lagged 6 months divided by $MV_{i,t}$,

$PYR1_{i,t}$ = average monthly stock returns from March 1 of year t-1 to February 28 of year t,

$PYR2_{i,t}$ = average monthly stock returns from March 1 of year t-2 to February 28 of year t-1, and

$PYR3_{i,t}$ = average monthly stock returns from March 1 of year t-3 to February 28 of year t-2.

To explore whether stock liquidity increases after IR award nominations, 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):

$$TO_{i,j} = \frac{Vol_{i,j}}{SO_{i,j}} \tag{3}$$

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:

$$RTO_{i,t} = \frac{\overline{TO}_{i,t}}{\overline{TO}_{m,t}} \tag{4}$$

where:

t = award year,

$\overline{TO}_{i,t}$ = average monthly turnover ratio for firm i from April 1 of year t to March 31 of year t+1, and

$\overline{TO}_{m,t}$ = average monthly turnover ratio for all firms from April 1 of year t to March 31 of year t + 1.

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

$$DRTO_{i,t} = RTO_{i,t} - RTO_{i,t-1} \quad (5)$$

where :

$RTO_{i,t}$ = average monthly relative turnover for firm i from April 1 of year t to March 31 of year t + 1, and

$RTO_{i,t-1}$ = average monthly relative turnover for firm i from March 1 of year t-1 to February 28 of year t.[3]

Then, to test for the relation between change in stock liquidity and the IR rating, controlling for firm size, we estimate the following pooled regression with time dummies:

$$DRTO_{i,t} = \alpha + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \sum_{j=1}^{2} \beta_j YD_j + \varepsilon_{i,t} \quad (6)$$

where:

$UR_{i,t}$ = 1 if firm i is not nominated ('unrated'), 0 otherwise,

$BR_{i,t}$ = 1 if the number of nominations received by firm i is above the median ('best rated'), 0 otherwise,

$MV_{i,t}$ = market value of equity of firm i at March 31 of the award year, and

$B/M_{i,t}$ = book value of common equity of firm i as at March 31 of the nomination year lagged 6 months divided by $MV_{i,t}$.

To test whether firms nominated for IR awards earn superior risk-adjusted stock returns, we employ the conventional Carhart (1997) four-factor model:

$$R_{P,j} - R_{F,j} = a + b\ RMRF_j + s\ SMB_j + h\ HML_j + m\ MOM_j + e_j \quad (7)$$

where:

$R_{P,j}$ = the equally weighted average of the returns of firms in portfolio P during month j,

$R_{F,j}$ = the risk free rate (1-month T-Bill rate) at the start of month j,

[3] The relative turnover figure for March of year t is ignored as this is the IR survey and award release month.

$RMRF_j$ = excess return on the market factor in month j,

SMB_j = return on the mimicking portfolio for the size factor in month j,

HML_j = return on the mimicking portfolio for the book-to-market factor in month j, and

MOM_j = return on the mimicking portfolio for the momentum factor in month j.

R_F, RMRF, SMB, HML, and MOM factors are from the *Kenneth French* website.[4]

Finally, to assess the value relevance of effective investor relations, we employ the well-established Ohlson (1995) valuation model 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). The model explicitly recognises that some value relevant information will appear in accounting numbers with a time lag. Since investor relations reputation is built over time,[5] we follow Easton (1999) and use price level rather than returns regression. Ohlson (1995) derives his valuation function (equation 7, p. 670) as:

$$P_t = b_1(E_t - D_t) + b_2\, BVE_t + b_3\, \nu_t \qquad (8)$$

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,

BVE_t = net book value at time t, and

ν_t = information other than abnormal earnings.

We assume effective IR, as proxied by nominations for *Investor Relations Magazine* 'best overall IR' awards, reflects information other than that contained in current earnings and book value. 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).

[4] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/.

[5] 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.

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 dummies:

$$\begin{aligned} MV_{i,t} = {} & \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{BVE*UR} \left(BVE_{i,t} * UR_{i,t} \right) \\ & + \beta_{BVE*BR} \left(BVE_{i,t} * BR_{i,t} \right) + \beta_{NI*UR} \left(NI_{i,t} * UR_{i,t} \right) + \beta_{NI*BR} \left(NI_{i,t} * BR_{i,t} \right) \\ & + \sum_{j=1}^{2} \left(\beta_j YD_{i,j} \right) + \varepsilon_{i,t} \end{aligned} \quad (9)$$

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 as at March 31 of the nomination year,

$NI_{i,t}$ = net income before extraordinary items of firm i for year t,

$UR_{i,t}$ = 1 if the firm i does not receive any nomination ('unrated'), 0 otherwise, and

$BR_{i,t}$ = 1 if the number of nominations received by firm i is greater than the median ('best rated'), 0 otherwise.

3. Results

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

3.1. Summary statistics

Table 1 shows that whereas 80% of large firms (>$3bn market capitalization) are nominated for best overall IR awards, only 13% of small firms (<$3bn market capitalization) are so acknowledged. Panel A shows that in the case of large firms prior returns do not appear to be influential in determining best overall 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), with difference statistically significant (t = 2.61). On the other hand, in the following year, rated firms outperform firms receiving no award nominations (-0.9% per month v -1.7% per month), albeit the difference is not significant (t = 1.17). Panel B for small firms, however, suggests some association between prior year excess returns and award nominations compared with unrated firms (1.8% per month v 0.9% per month) although the difference is statistically not significant (t = 1.19), and there is no difference in the following year. Similar results pertain for the pooled firms in panel C which are dominated by the number of small firms in our sample. However, as all three panels show rated firms are very significantly larger, and have lower book-to-market ratios than those receiving no award nominations, we work subsequently with risk-adjusted returns in seeking to measure the relation between investor relations activity and stock returns. Table 1 also shows that 'best rated' firms have higher analyst following than 'other rated' across all three panels, and parallel results hold between 'other rated' and 'unrated' firms. Further, rated firms have higher relative stock turnover than 'unrated' firms showing better liquidity for such firms.

Table 1 here

3.2. Analyst Coverage

This sub-section tests our prediction 1 relating to effective IR leading to an increase in analyst coverage. Table 1 shows that average analyst following for firms nominated for best overall IR in the *Investor Relations Magazine* survey is higher than that for those not

nominated in the year before nomination. 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, table 2 further demonstrate that there is a strong positive relation between prior analyst coverage, and number of IR award nominations for both large and small firms. For large firms, a unit increase in analyst following increases the odds ratio of the firm being in the immediately higher rated category by 1.02 times, and for small firms by 1.06 times. The 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 relation is stronger for smaller firms than for larger firms. Thus, table 2 provides evidence of a strong positive relation between prior analyst following and IR rating, consistent with that of Lang and Lundholm (1993); survey respondents tend to vote for firms with which they are familiar.

Table 2 here

More importantly, table 3 shows that controlling for size, book-to-market, and stock returns over the prior three years, there is a strong positive relation between IR ranking and change in analyst following. For large firms, 'other rated' firms experience an increase of 0.8 analysts, and 'best rated' an increase of 1.9 analysts following them respectively (5%, and 11%) relative to 'unrated' firms. For small firms, the mean increase in size of analyst following is 0.8 and 1.2 for 'other rated', and 'best rated' firms respectively (24% and 38%, albeit from a low base). Thus, the evidence is consistent with effective IR leading to increased analyst following, in line with our prediction 1 consistent with lower information cost incentives.

Table 3 here

3.3. Stock liquidity

The next prediction we test, prediction 2, is that effective IR leads to an increase in stock liquidity. Table 4 clearly shows that controlling for size and book-to-market, there is a strong positive association between number of 'best overall IR' nominations received, and change in relative turnover, although for small firms only. Specifically, for firms with market capitalization < $3bn, relative stock turnover increases by 15% in the case of 'other rated' firms, and by 37% for those 'best rated'.[6] However, there is no parallel association evident for large firms, or the overall sample. 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 2 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, as proxied by their IR award nominations.

Table 4 here

3.4. Equity returns

In this sub-section we test our prediction 3 that effective IR leads to positive abnormal returns. Table 5, panel C columns 4 and 5, shows firms that receive award nominations earn abnormal returns of 80 basis points per month in the year post nomination, which is significant at the 1% level (t = 3.40), and this applies to both large (panel A), and small (panel B) firms (74bp and 86bp per month respectively). This evidence is in line with prediction 3, nominated firms *do* earn superior returns post nomination in contrast to the

[6] Derived as $\frac{\beta_{UR}}{\alpha+\beta_{UR}}$ and $\frac{\beta_{UR}-\beta_{BR}}{\alpha+\beta_{UR}}$ respectively as the impact of stock liquidity on 'other rated' firms is included within α.

arguments of Hong and Huang (2005), and Doukas et al. (2005; 2008). Although the average abnormal return over the 12-month period post award nomination is lower than that for the previous 12 months across all three panels, nonetheless, on this basis the market does not appear to fully incorporate the implications of better IR strategies.[7]

Table 5 here

3.5. Value relevance

Finally we test our prediction 4: does effective IR have a positive impact on market value? The results of our Ohlson (1995) model-based regressions using equation (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 on one or both of the book value of equity (BVE), and net income (NI) variables. Thus, the key coefficients of interest in table 6 are those that measure the strength of the interaction effects between BVE and NI with quality of IR ratings, which are presented in columns 6 to 9. For the full firm sample, although the book value multiple for 'unrated' firms does not differ significantly from 'other rated' (t = 1.52), for the 'best rated' firms it is a highly significant 49% greater than for those firms 'other rated' (t = 9.89).[8] The impact of effective IR on the BVE multiple is again much stronger in the case of small firms than large firms with the multiple for 'other rated' firms 35% higher than for 'unrated' firms (t = 7.93), and for 'best rated' 37% higher than for 'other rated' (t = 6.62). In the case of large firms, although as with the pooled sample there is no significant difference in the BVE multiples of 'unrated' and 'other rated' firms, for 'best rated' firms the multiple is 43% higher than for 'other rated' (t = 2.46). Directly parallel results apply with respect to the net income valuation multiples. In

[7] Although columns 1 and 2 demonstrate, not surprisingly, prior stock market performance influences the 'best overall IR' award decision, particularly in the case of small firms, our post-nomination returns explicitly take this into account via the MOM factor in the Carhart (1997) model, equation (7).

[8] $\beta_{BVE} = 1.67$, $\beta_{BVE*BR} = 0.81$, $\beta_{BVE|BR} = 2.48$. The net impact on the BVE multiple is thus $\left(\frac{2.48}{1.67} - 1\right) = 49\%$.

the case of all firms, the 'other rated' NI multiple is 65% higher than for 'unrated' firms, and for 'best rated' firms, the multiple is 22% higher than for 'other rated' firms. Again the results are much stronger for small firms than large firms as columns 8 and 9 show.[9]

Table 6 here

To summarize, table 6 reports a strong positive relation between IR rating and market value particularly for small firms, but also for large firms, through higher valuation multiples on both BVE and NI. These findings clearly demonstrate that better investor relations is associated with higher market value. We therefore report evidence consistent with our prediction 4: effective investor relations *does* appear to make an incremental contribution to firm value.

3.6. Value relevance and sample selection bias

Table 1 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 2. However, these results could also be consistent with our value relevance tests suffering from self-selection bias as firms with higher market values, lower book-to-market ratios, and greater analyst coverage are more likely to be nominated for the best overall IR award. To correct for this potential bias we adopt the Heckman (1979) two-step procedure. In the first step we employ a multinomial probit model to generate the probabilities of belonging to one of the three IR portfolios ('unrated', 'other rated' and 'best rated'), and then use these

[9] For the median large firm with market capitalization of \$7.4bn, BVE of \$2.0bn, and NI of \$0.27bn, moving from 'unrated' to 'other rated' increases market value by \$2.2bn, and moving from 'unrated' to 'best rated' increases market value by \$3.9bn. For the median small firm with market capitalization of \$116m, BVE of \$64.9m and NI of \$3.0m, the increases in market values are \$46m and \$107m respectively. For the median firm in our pooled sample with market capitalization of \$158m, BVE of \$80.2m and NI of \$4.2m, increases in market values are \$41m and \$115m respectively.

to estimate the inverse Mills ratio. In the second step we introduce the inverse Mills ratio into equation (9), and correct the OLS standard errors for heteroscedasticity.

Table 7 here

Table 7 shows that our inferences about the value relevance of effective IR are robust to potential sample selection bias as the coefficient on the IR variable remains positive and significant in the presence of the inverse Mills ratio derived from the first-stage probit regression. Although the inverse Mills ratio is highly significant for both small and large samples indicating a degree of sample selection bias being present, nonetheless all the coefficients on the interaction terms are very similar to those in table 6 save in the case of β_{BVE*BR} for small firms.[10] We conclude that our results on the impact of effective IR on market value are largely unaffected by sample selection bias.[11]

4. Conclusions and summary

Drawing on Merton's (1987) investor recognition theory, we suggest that effective investor relations activity might enhance the 'visibility' of a stock leading to greater analyst coverage, improved liquidity, positive abnormal returns, and higher market valuation. In addition, since smaller firms are more likely to be 'neglected' investor relations should have a greater impact in such cases. In this paper we use a large sample of firms nominated for 'Best Overall IR' in the well-established *Investor Relations Magazine* surveys of market participants for the years 2000 to 2002, to test these propositions. Specifically, controlling for a range of risk factors,

[10] Although this interaction term is no longer significant, indicating little difference in BVE multiples between 'other rated' and 'best rated' small firms, the BVE multiple for 'all rated' (i.e. pooled 'other rated' and 'best rated' small firms) is still significantly greater than that for 'unrated' firms (β_{BVE*UR} is negative and significant at the 1% level).

[11] We use the same independent variables in the first and second stage regressions because of the problems in identifying instrumental variables highlighted by Larcker and Rusticus (2010). Our second stage regression may potentially suffer from multicollinearity because the same variables are used in both steps leading to inflated standard errors, and downward biased test statistics (though the coefficients remain unbiased and efficient). However, this would serve to render our reported results more conservative. Rather than less conservative

we find firms that receive IR award nominations experience a greater increase in analyst following, as well as improved liquidity, in the year subsequent to these nominations. We also report that such firms continue to earn positive abnormal returns in the following year consistent with the impact of effective IR not being fully priced by the market.

Finally, and most importantly, contrary to the arguments of Hong and Huang (2005), but in line with Merton (1987), using the Ohlson (1995) framework we find that firms nominated for 'best overall IR' awards are rewarded with significantly higher market valuations than those that are not so nominated. Using the Heckman (1979) two-step procedure, we also show that the results are robust to potential sample selection bias. In addition, again consistent with the predictions of Merton (1987), all our results are much stronger for smaller companies which are likely to be less visible, and hence suffer more from issues of asymmetric information.

In summary, we find firms nominated for the *Investor Relations Magazine* 'Best Overall IR' award, which proxies for effective IR strategies, have increased analyst following, higher liquidity, higher stock returns, and higher market valuation. We thus conclude that good IR has clear market impact; this has important implications for firms' communication and accounting and other information dissemination strategies with the financial markets and market participants. Although Bushee and Miller (2010) provide related findings for their sample of largely Over-the-Counter and Pink Sheet firms, we believe our study which employs a unique source of data is the first to be able to demonstrate this result for a large cross-section of exchange-listed firms.

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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 '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 at March 31 of the award year, and book-to-market is computed using the latest book value of equity figure as at March 31 of the award year lagged 6 months, and 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 FirstCall* 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. 'Best rated' refers to the firms with number of votes > median number of votes, 'Other rated' refers to all other nominated firms, and 'Unrated' refers to all firms not nominated in a particular year. Medians are computed separately for each year and each firm size category.

	Number of firm cases	Monthly average excess returns (%)		Market capitalization ($bn)		Book-to-market		Prior year analyst following		Following year analyst following		Prior year relative turnover		Following year relative turnover	
		Prior year	Following year	mean	median	mean	median	mean	median	mean	median	mean	median	mean	median
A. Large firms															
All rated	1,277	1.39	-0.88	18.26	8.40	0.30	0.21	16.55	16.00	16.20	16.00	1.94	1.13	2.07	1.28
Best rated	572	1.25	-0.96	28.31	15.79	0.25	0.18	19.27	19.00	18.72	19.00	1.88	1.05	2.02	1.21
Other rated	705	1.50	-0.83	10.10	6.44	0.33	0.25	14.43	14.00	14.23	14.00	1.99	1.17	2.10	1.34
Unrated	294	3.09	-1.70	7.12	4.99	0.43	0.35	11.76	12.00	11.28	12.00	1.73	0.96	2.05	1.05
B. Small firms															
All rated	1,584	1.72	-0.21	1.70	1.00	0.56	0.35	6.93	6.00	7.27	7.00	1.92	1.31	1.95	1.38
Best rated	548	1.75	-0.43	2.81	1.39	0.52	0.32	8.87	8.00	9.36	9.00	2.06	1.49	2.24	1.65
Other rated	1,036	1.69	-0.10	1.11	0.82	0.58	0.38	5.94	5.00	6.21	6.00	1.84	1.20	1.79	1.27
Unrated	11,831	0.89	-0.25	0.29	0.09	1.13	0.67	2.21	1.00	1.77	0.00	1.13	0.59	0.89	0.49
C. All firms															
All rated	2,861	1.58	-0.52	9.09	2.37	0.44	0.28	11.16	10.00	11.19	10.00	1.93	1.22	2.00	1.33
Best rated	1,120	1.52	-0.71	15.83	3.45	0.38	0.23	14.13	13.00	14.09	13.00	1.97	1.27	2.13	1.40
Other rated	1,741	1.61	-0.39	4.75	1.81	0.48	0.32	9.32	8.00	9.41	8.00	1.90	1.19	1.92	1.29
Unrated	12,125	0.94	-0.28	0.45	0.09	1.12	0.65	2.44	1.00	2.01	0.00	1.15	0.60	0.92	0.51

Table 2: 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 *Investor Relations Magazine* 'Best Overall IR' award nomination year. 'All' refers to all stocks pooled across 'Large' and 'Small'.
The following ordered logit regression with year dummies $\{YD_j\}$ is estimated:

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

where $IR_{i,t}$ is 0 if the firm is not rated ('unrated'), 1 if the number of nominations it receives is below the median ('other rated'), and 2 if the number of nominations it receives is above the median ('best rated'). $AF_{i,t-1}$ is the number of analysts publishing forecasts in the *I/B/E/S FirstCall* 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 at March 31 in the award year, $B/M_{i,t}$ is computed using the latest book value of equity figure as at March 31 of the award year lagged 6 months, and 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 median number of nominations is computed each year for 'Small' and 'Large' firms separately. Figures in brackets are the asymptotic t-statistics.

	α_1	α_2	β_{AF}	β_{MV}	$\beta_{B/M}$	β_{PYR}	Pseudo-R^2
Large	17.37 (15.54)	19.91 (17.39)	0.02 (2.89)	1.18 (16.27)	-0.69 (4.63)	-0.20 (1.65)	0.33
Small	15.30 (35.91)	16.72 (38.71)	0.06 (8.92)	1.03 (31.88)	-0.07 (1.64)	-0.06 (1.21)	0.34
All	13.80 (45.86)	15.57 (50.00)	0.03 (6.42)	0.92 (41.21)	-0.11 (2.66)	-0.07 (1.56)	0.50

Table 3: Change in 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 *Investor Relations Magazine* 'Best Overall IR' award nomination year. 'All' refers to all stocks pooled across 'Large' and 'Small'.
The following regression with year dummies $\{YD_j\}$ is estimated:

$$AF_{i,t+1} - AF_{i,t-1} = \alpha + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \beta_{PYR1} PYR1_{i,t} + \beta_{PYR2} PYR2_{i,t} + \beta_{PYR3} PYR3_{i,t} + \sum_{j=1}^{2} \beta_j YD_j + \varepsilon_{i,t}$$

where $AF_{i,t-1}$ and $AF_{i,t+1}$ are the number of analysts publishing forecasts for firm i in the *I/B/E/S FirstCall* database as at December 31 immediately prior to the award nomination year, and as at December 31 of the award year respectively. $UR_{i,t}$ is 1 if firm i is not nominated ('unrated'), 0 otherwise, and $BR_{i,t}$ is 1 if the number of nominations received by firm i is above the median ('best rated'), 0 otherwise. $MV_{i,t}$ is the market value of equity of firm i at March 31 of the award year, $B/M_{i,t}$ is computed using the latest book value of equity figure at March 31 of the award year lagged 6 months, and market value of equity as at March 31 of the award year, $PYR1_{i,t}$ is the average monthly stock return from March 1 of year t-1 to February 28 of year t, $PYR2_{i,t}$ is the average monthly stock return from March 1 of year t-2 to February 28 of year t-1, and $PYR3_{i,t}$ is the average monthly stock return from March 1 of year t-3 to February 28 of year t-2. The median number of nominations is computed each year for 'Small' and 'Large' firms separately. Figures in brackets are the t-statistics.

	α	β_{UR}	β_{BR}	β_{MV}	$\beta_{B/M}$	β_{PYR1}	β_{PYR2}	β_{PYR3}	Adj R^2
Large	18.49 (5.82)	-0.79 (1.66)	0.98 (2.26)	-1.19 (5.99)	-0.45 (0.84)	-1.20 (2.68)	1.80 (9.97)	1.44 (8.08)	0.14
Small	3.98 (17.00)	-0.77 (8.31)	0.44 (3.03)	-0.28 (17.92)	-0.41 (20.97)	0.19 (6.39)	0.62 (25.39)	0.54 (19.46)	0.13
All	4.84 (18.21)	-0.80 (8.09)	0.34 (2.58)	-0.35 (20.44)	-0.41 (16.81)	0.16 (4.20)	0.76 (26.55)	0.70 (21.61)	0.11

Table 4: 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 *Investor Relations Magazine* 'Best Overall IR' award nomination year. 'All' refers to all stocks pooled across 'Large' and 'Small'.
The following regression with year dummies $\{YD_j\}$ is estimated:

$$DRTO_{i,t} = \alpha + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{MV} \ln(MV_{i,t}) + \beta_{B/M} B/M_{i,t} + \sum_{j=1}^{2} \beta_j YD_j + \varepsilon_{i,t}$$

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 (award year) to March 31 of year t+1, and the average monthly turnover ratio adjusted for market-wide activity from March 1 of year t-1 to February 28 of year t. $MV_{i,t}$ is the market value of equity of firm i at 31 March in the year of award nomination , $B/M_{i,t}$ is computed using the latest book value of equity figure as at March 31 of the award year lagged 6 months, and market value of equity at March 31 of the award year. UR_i is 1 if firm i is not nominated ('unrated'), 0 otherwise, and BR_i is 1 if the number of nominations received by firm i is greater than the median ('best rated'), 0 otherwise. The median number of nominations is computed each year for 'Small' and 'Large' firms separately. Figures in brackets are the t-statistics. *** denotes significant at 1%.

	α	β_{UR}	β_{BR}	β_{MV}	$\beta_{B/M}$	F
Large	-0.05 (0.15)	0.06 (1.41)	0.02 (0.49)	0.00 (0.21)	-0.10 (1.96)	1.04
Small	-0.71 (6.55)	-0.13 (3.02)	0.18 (2.65)	0.07 (9.46)	0.01 (1.46)	36.25***
All	-0.41 (4.28)	-0.04 (1.22)	0.05 (1.10)	0.04 (5.91)	0.00 (0.20)	17.54***

Table 5: Risk adjusted returns

Portfolios in panel A are formed as follows: on March 31 of each year from 2000 to 2002, all companies nominated for 'Best Overall IR by a Large Firm' (market capitalization >$3bn) by the *Investor Relations Magazine* are sorted into two portfolios: 'best rated' has the firms with number of votes > median number of votes, and 'other rated' has all other rated firms. All large firms that receive no award nominations are in the 'unrated' portfolio.

Portfolios in panel B are formed as in panel A but using all firms nominated for 'best overall IR by a small firm' (market capitalization <$3bn) by the *Investor Relations Magazine.* All small firms not receiving any nominations are assigned to the 'unrated' portfolio.

The 'best rated' firms portfolio in panel C is formed by pooling the 'best rated' firms from panels A and B. Similarly, 'all rated', 'other rated', and 'unrated' portfolios in panel C are formed by pooling firms from respective portfolios in panels A and B.

The following regression is carried out for each portfolio:

$$R_{P,j} - R_{F,j} = a + b\ RMRF_j + s\ SMB_j + h\ HML_j + w\ MOM_j + e_j$$

where $R_{P,j}$ is the equally-weighted return on portfolio P in month j, $R_{F,j}$ is the 1-month Treasury Bill rate at the beginning of month j, $RMRF_j$ is the return on the market factor in month j, SMB_j is the return on the mimicking portfolio for the size factor in month j, HML_j is the return on the mimicking portfolio for the B/M factor in month j, and MOM_j the return on the mimicking portfolio for the momentum factor in month j. Prior 12 months refers to monthly returns from March of year t-1 to February of the award year t, and Following 12 months refers to monthly returns from April of award year t to March of the year t+1. Stocks that are delisted during the holding period are assumed to earn portfolio returns for the rest of that period.

	Prior 12 months			**Following 12 months**		
	Intercept	t	Adj R^2	Intercept	t	Adj R^2
	(1)	(2)	(3)	(1)	(2)	(3)
A. Large firms						
All rated	1.71	6.55	0.94	0.74	2.84	0.96
Best rated	1.69	5.48	0.92	0.71	2.18	0.94
Other rated	1.73	5.63	0.92	0.77	2.81	0.96
All unrated	3.29	4.25	0.60	0.38	0.77	0.89
B. Small firms						
All rated	1.65	4.33	0.92	0.86	3.12	0.96
Best rated	1.78	4.36	0.89	0.61	1.68	0.94
Other rated	1.57	3.82	0.92	1.00	3.55	0.96
All unrated	0.79	1.31	0.82	0.65	1.17	0.85
C. All firms						
All rated	1.67	6.36	0.95	0.80	3.40	0.97
Best rated	1.76	5.74	0.93	0.64	2.37	0.96
Other rated	1.61	5.96	0.95	0.90	3.86	0.97
All unrated	0.85	1.43	0.82	0.64	1.18	0.85

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 *Investor Relations Magazine* 'Best Overall IR' award nomination year. 'All' refers to all stocks pooled across 'Large' and 'Small'.

The following regression with year dummies $\{YD_j\}$ is estimated:

$$MV_{i,t} = \alpha + \beta_{BVE} BVE_{i,t} + \beta_{NI} NI_{i,t} + \beta_{UR} UR_{i,t} + \beta_{BR} BR_{i,t} + \beta_{BVE*UR}\left(BVE_{i,t} * UR_{i,t}\right) + \beta_{BVE*BR}\left(BVE_{i,t} * BR_{i,t}\right) + \beta_{NI*UR}\left(NI_{i,t} * UR_{i,t}\right)$$
$$+ \beta_{NI*BR}\left(NI_{i,t} * BR_{i,t}\right) + \sum_{j=1}^{2}\left(\beta_j YD_{i,j}\right) + \varepsilon_{i,t}$$

where $MV_{i,t}$ is the market value of equity of firm i at 31 March in the year of nomination (t), $BVE_{i,t}$ is the book value of common equity for firm i, 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. $UR_{i,t}$ is 1 if firm i does not receive any best overall IR award nominations ('unrated'), 0 otherwise, and $BR_{i,t}$ is 1 if the number of nominations received by firm i is greater than the median ('best rated'), 0 otherwise. The median number of nominations is computed each year for 'Small' and 'Large' firms separately. Figures in brackets are the t-statistics.

	α (1)	β_{BE} (2)	β_{NI} (3)	β_{UR} (4)	β_{BR} (5)	β_{BVE*UR} (6)	β_{BVE*BR} (7)	β_{NI*UR} (8)	β_{NI*BR} (9)	Adj R^2
Large	1.64	1.49	10.46	0.15	5.23	-0.16	0.64	-6.89	1.48	0.65
	(2.03)	(7.55)	(9.10)	(0.12)	(5.35)	(0.38)	(2.46)	(2.49)	(1.03)	
Small	0.35	1.25	7.27	-0.18	-0.40	-0.44	0.46	-5.81	10.29	0.80
	(9.28)	(25.80)	(29.29)	(4.94)	(6.94)	(7.93)	(6.62)	(19.79)	(30.09)	
All	0.75	1.67	10.38	-0.80	1.84	-0.15	0.81	-6.79	2.32	0.75
	(5.63)	(27.52)	(28.05)	(6.18)	(9.24)	(1.52)	(9.89)	(10.39)	(4.96)	

Table 7: Self-selection bias and value relevance of IR activity

This table provides the results of the Heckman (1979) two-step procedure to correct for self-selection bias. Our sample covers all firms listed on 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 *Investor Relations Magazine* 'Best Overall IR' award nomination year. 'All' refers to all stocks pooled across 'Large' and 'Small'.

The following regression with year dummies $\{YD_j\}$ is estimated:

$$MV_{i,t} = \alpha + \beta_{BVE}BVE_{i,t} + \beta_{NI}NI_{i,t} + \beta_{UR}UR_{i,t} + \beta_{BR}BR_{i,t} + \beta_{BVE*UR}\left(BVE_{i,t} * UR_{i,t}\right) + \beta_{BVE*BR}\left(BVE_{i,t} * BR_{i,t}\right) + \beta_{NI*UR}\left(NI_{i,t} * UR_{i,t}\right)$$
$$+ \beta_{NI*BR}\left(NI_{i,t} * BR_{i,t}\right) + \beta_{MR}MR_{i,t} + \sum_{j=1}^{2}\left(\beta_j YD_{i,j}\right) + \varepsilon_{i,t}$$

where $MV_{i,t}$ is the market value of equity of firm i at 31 March in the year of nomination (t), $BVE_{i,t}$ is the book value of common equity for firm i, 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. $UR_{i,t}$ is 1 if firm i does not receive any 'best overall IR' nomination ('unrated'), 0 otherwise, and $BR_{i,t}$ is 1 if the number of nominations received by firm i is greater than the median ('best rated'), 0 otherwise. $MR_{i,t}$ is the inverse Mill's ratio for firm i estimated through a first stage multinomial probit regression with the number of award nominations received by firm i in year t, $IR_{i,t}$, as the dependent variable.

	α	β_{BVE}	β_{NI}	β_{UR}	β_{BR}	β_{BVE*UR}	β_{BVE*BR}	β_{NI*UR}	β_{NI*BR}	β_{MR}	Adj R^2
Large	21.01	1.47	9.01	0.15	6.61	-0.18	0.44	-5.71	-0.11	-23.50	0.66
	(6.62)	(7.78)	(7.80)	(0.12)	(6.66)	(0.43)	(1.73)	(2.09)	(0.07)	(6.26)	
Small	1.07	1.85	8.16	-0.33	-0.01	-0.24	0.10	-4.98	8.57	-3.45	0.81
	(20.74)	(29.80)	(34.17)	(12.91)	(0.39)	(3.12)	(1.16)	(18.10)	(24.93)	(16.28)	
All	0.97	1.70	10.41	-0.87	1.89	-0.12	0.79	-6.70	2.24	-0.60	0.75
	(5.44)	(27.14)	(28.11)	(6.45)	(9.41)	(1.17)	(9.59)	(10.21)	(4.78)	(1.86)	