Selective Publicity and Stock Prices

DAVID H SOLOMON*

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ABSTRACT

I examine how media coverage of good and bad corporate news affects stock prices, by studying the effect of investor relations (IR) firms. I find that IR firms "spin" their clients' news, generating more media coverage of positive press releases than negative press releases. This spin increases announcement returns. Around earnings announcements, however, IR firms cannot spin the news and their clients' returns are significantly lower. This pattern is consistent with positive media coverage increasing investor expectations, creating disappointment around hard information. Using reporter connections and geographical links, I argue that IR firms causally affect both media coverage and returns.

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Does a company's marketing of its news matter? Few people would be surprised to find out that the marketing of shoes or yoghurt affects how these products are perceived by consumers. In financial markets, however, simple models of market efficiency assume that investors can costlessly receive and process all relevant news signals. In such a setting there is no obvious reason for companies to spend resources to promote or spin a particular news story once it has been disclosed. Indeed, these assumptions also provide no clear role for the media in general. Yet the existence of a large and active business press seems to imply that investors face costs or difficulties in either acquiring or processing information about companies. This raises the question of whether the promotion of news stories affects media coverage, investor expectations, and stock returns.

A number of recent papers study the relationship between the media and stock returns. Some papers treat media coverage as an indication of company-level news (Chan (2003)) or as a measure of press attention (Fang and Peress (2009)). Other papers study the linguistic content of media coverage to capture company-specific information (Tetlock, Saar-Tsechansky, and Macskassy (2008)) or overall market sentiment (Tetlock (2007)). With some notable exceptions (Soltes (2008), Tetlock (2007), Engelberg and Parsons (2011), Gurun and Butler (2010)), however, it is often unclear whether media coverage represents cause, effect, or both. The central difficulty in understanding the effects of media coverage on stock prices is the endogeneity between company-level news and media reporting: it is usually difficult to determine if a change in media coverage represents a change in press interest or a change in company conditions.

In this paper I examine the impact of media publicity on asset prices. Motivated by the endogeneity problem, I look at companies' use of investor relations (IR) firms. IR is a subset of the public relations industry that deals specifically with a company's communications with investors, shareholders,

and the media. Importantly, IR firms are likely to directly influence media coverage, but unlikely to directly influence economic events at the company. This allows one to examine the role of media coverage separate from underlying news.

I focus on whether IR firms spin their clients' news by creating more positive media coverage. The specific method of spinning news that I examine is increasing coverage of a company's good news relative to its bad news, as captured by the linguistic tone of the press release. Building on Bushee and Miller (2007), who find that IR firms increase overall media coverage, the spin hypothesis focuses on the role of the press in identifying a story's importance or accuracy. Media coverage of a story is likely to increase its credibility or perceived importance with investors, which companies may wish to take advantage of by selectively promoting their good news. The most likely benefit for companies is to temporarily increase share prices by affecting investor expectations. If investors use media reports when forming expectations of the company's prospects, then more positive media coverage may cause investors to bid up the price. However, higher expectations cannot be sustained indefinitely without real effects at the level of company operations. As a consequence, media spin is likely to result in eventual disappointment.

The evidence in this paper indicates that IR firms spin their clients' news stories, and that such activities impact stock prices. My main findings are twofold. First, I find significant evidence that IR firms generate greater media coverage of their clients' positive press releases relative to their negative press releases, consistent with the spin hypothesis. Second, I find that this positive media coverage increases returns around news announcements. However, it leads to subsequent lower returns around earnings announcements, where IR firms show no ability to generate disproportionately positive media

coverage. I argue that the lower earnings announcement returns represent investor disappointment due to the effects of past spin.

I find that over the 2002 to 2006 period, the use of an IR firm is associated with an increase in media coverage on announcement days of 25.5% overall. Consistent with the spin hypothesis, the increase associated with IR firm use is 27.7% for press releases without any negative words, with this effect shrinking as the press release becomes more negative: each standard deviation of negative tone reduces the IR firm effect by 3.9%. This positive tone/negative tone disparity in the IR firm effect exists only in non-earnings announcements, however, as it is not evident in earnings news. This result is consistent with non-earnings announcements being easier to spin. Relative to earnings, non-earnings news is less anticipated (so fewer journalists will be aware of it without IR influence) and likely to contain more soft information (allowing IR firms to push a particular interpretation of ambiguous news events).

I also find evidence that IR firms affect investor expectations and stock returns. On non-earnings press release days (when IR firms can spin the news), IR firm clients' characteristic-adjusted returns are 11.2 basis points higher, significant at a 1% level, after controlling for a large number of other factors. The increase in returns is also larger for positive press releases, similar to media coverage: the IR firm increase in returns for press releases with no negative words is 16.5 basis points, with each standard deviation of negative tone reducing the IR firm effect by 15.5 basis points.

By contrast, on earnings announcement days (when IR firms cannot spin the news), IR firm clients' characteristic-adjusted returns are 33.6 basis points lower. This effect is concentrated in releases of negative earnings news, as the reaction to a given level of negative earnings surprise is 55% larger for companies using an IR firm. Earnings returns are significantly more negative following higher returns since the previous earnings announcement, and after greater media coverage of positive press releases.

Thus, the lower earnings announcement returns appear to be a direct consequence of investor disappointment due to past spin.

A central question of the paper is whether the results above are causal, or instead are driven by unobserved characteristics of companies that hire an IR firm. I address this question in several ways. For returns, I examine connections between IR firms and newspaper reporters who wrote about multiple clients of the IR firm. Turnover among connected reporters should reduce the effectiveness of IR firms in spinning the news. However, because reporter turnover is expected to be largely unrelated to the companies they write about, it should be exogenous to company characteristics. I show that connected reporter turnover weakens both of the main IR firm effects on returns, as it predicts lower returns around non-earnings announcements and higher returns around earnings announcements. By contrast, turnover by reporters who wrote about the company but were not connected to the IR firm has no effect on returns.

Additionally, IR firms that lack any connections to reporters show very little ability to influence returns in the first place. The IR firm effect on earnings announcement returns is roughly four times as large for IR firms with some past journalist connections (18 basis points for clients of unconnected IR firms vs. 70 basis points for connected IR firms). For non-earnings announcements, the effect of unconnected IR firms is a one basis point decrease in returns, compared with a 23 basis point increase for connected IR firms. Taken together, these results strongly suggest that the patterns in returns are causal, and driven by the ability of IR firms to generate media coverage.

The effects on media coverage also appear to be causal. The effect of IR firms on positive news coverage is almost three times greater in newspapers in the same state as the IR firm, where we would expect them to have more influence. This is consistent with IR firms generating spin through their connections to newspapers, and suggests that IR firm use does not merely capture companies that happen

to have more good news overall. Moreover, this result does not appear to be driven by IR firms locating near newspapers that are already predisposed to favorably covering the company. If IR firm geography merely reflected existing positive local coverage, then the apparent effect of IR firm geography should disappear once the tendency of newspapers towards positive coverage is taken into account. However, when I add two measures that may predict positive local coverage – whether the company is in the same state as the paper, and the percentage of company shares held by local mutual funds – I find that they do not change the IR firm geography effect much. In my last test on causality, I present evidence that the main effects are not driven by an IR firm's clients selectively issuing press releases only for good news, nor are they proxying for the internal IR operations of the company.

Consistent with spin being a motivation for hiring an IR firm, I present evidence that IR firm use is also associated with greater management of reported earnings. Like earnings management, spin involves increasing short-term perceptions at the cost of eventual disappointment. Consistent with this idea, IR firm clients are around 3% more likely to restate their earnings in a given year, and are also more likely to cut R&D expenses (a form of real earnings management). They also exhibit weaker shareholder protection, as measured by the Gompers, Ishii, and Metrick (2003) "G" measure. Together these results suggest that IR firm clients are more interested in pushing up prices in the short term, consistent with spin being a motivation for hiring an IR firm.

The predictable differences in announcement returns also create the potential for profitable trading strategies. I consider a strategy that, around earnings announcements, buys companies that do not use IR firms and shorts companies that use IR firms. Holding stocks for two days produces an alpha of 19.8 basis points per day, or around 50% per year, while holding stocks for 21 days lowers the alpha to 2.8 basis points per day, or around 7% per year. The fact that very high turnover is required to capture the

large differences in returns suggests that transaction costs may partly explain why the mispricing is not eliminated. Over a two-day window, IR firm clients experience a negative earnings announcement premium of around -13.3 basis points This provides evidence that investors are actually disappointed after the spin.[1]

The rest of the paper is structured as follows: Section I describes the setting, Section II presents the paper's hypotheses, Section III discusses the data, Section IV presents the main results on IR firm use, media coverage, and announcement returns, Section V presents results related to identification, Section VI presents additional evidence on returns and earnings management of IR firm clients, and Section VII concludes.

I. The Setting

The current study relates to three branches of literature in finance, namely, investor relations, the role of the media, and limited attention. In terms of the effect of specialized IR firms, Bushee and Miller (2007) examine IR firms' role in affecting company visibility.[2] They find that hiring an IR firm is associated with increases in disclosure, media coverage, analyst coverage, institutional ownership, and valuation. This paper builds on Bushee and Miller (2007) by examining whether IR firms engage in spin and selective promotion of good news, thereby augmenting their results about visibility.

A second branch of literature looks at the role of the media in financial markets. Chan (2003) examines the relationship between news coverage and momentum, while Fang and Peress (2009) find that

[1] The overall price pattern is not obviously more efficient, but this is complicated by the fact that the baseline alternative is an earnings announcement premium that is itself a challenge to efficiency (Frazzini and Lamont (2007)). Indeed, the short-window positive alpha for companies that do not use IR firms is roughly the same size as the negative alpha of companies that do use IR firms.

[2] Investor relations has also been examined more broadly in terms of managing and increasing corporate disclosures to investors (Brennan and Tamarowski (2000), Hong and Huang (2005), Chang, Murphy, and Wee (2006)).

greater media coverage is associated with lower stock returns, which they attribute to investor attention lowering the cost of capital (Merton (1987)). Soltes (2008) uses an instrumental variables approach based on aggregate news volume to show that media coverage is associated with higher trading volume, while Engelberg and Parsons (2011) use a geographic instrument to show how media causes trading. Other papers focus on the linguistic content of news announcements, examining the effect of positive and negative words ("tone") on returns (Tetlock (2007), Engelberg (2008)), subsequent earnings (Tetlock, Saar-Tsechansky, and Macskassy (2008)), and firm value (Gurun and Butler (2010)). Dyck and Zingales (2003) separate out information provided by the firm versus the media, and find that stock prices react more to earnings emphasized by the press. Solomon, Soltes and Sosyura (2011) examine how media coverage of stocks affects investors' allocation of flows to mutual funds.

The current paper contributes to this literature in several ways. First, I focus on how the media's choice of which stories to cover affects prices and investor expectations. I focus on the impact of the overall balance of positive and negative stories in the press. This focus complements the idea of linguistic tone (the language content of a particular announcement) in Tetlock (2007) and Tetlock, Saar-Tsechansky and Macskassy (2008), and the concept of media spin (which parts of a particular story to emphasize) in Dyck and Zingales (2003). Second, I distinguish between media coverage itself and company-level news. This distinction is important for drawing inferences about causality, but is not always made in the literature (Chan (2003), Fang and Peress (2009)). IR firms do not obviously affect company operations, but may affect media coverage directly, making them a very useful way to examine the effects of the media itself. I show that companies can influence the reporting they receive and the incentives of the media to report objectively.

The current paper is also related to the literature on limited investor attention and firm disclosure. Hirshleifer and Teoh (2003) model how limited attention among investors can result in different price responses depending on how information is disclosed by the firm. Empirically, weaker and delayed responses to news have been linked to various measures of investor inattention: large aggregate news flows (Hirshleifer, Lim, and Teoh (2009)), Friday announcements (DellaVigna and Pollet (2009)), and negative news, where managers have fewer incentives to publicize the story (Hong, Lim, and Stein (2000)). The current paper shows that investors rely on media coverage to process information about firms, but do not distinguish between truly important coverage and coverage resulting from IR firm influence.

II. IR Firms and Investor Perceptions

The basic question of this paper is whether IR firms are able to increase the positive media coverage that their clients receive. While there are various ways that IR firms could achieve this end, I focus on one particular mechanism – increasing the media coverage of their clients' positive news relative to negative news, which I refer to as spin. Assuming that IR firms are able to generate more media articles when the news is good, they increase the amount of attention paid to positive stories.[3] The central prediction of spin is that IR firm use is associated with disproportionately greater coverage of a company's positive news than negative news.

[3] Of course, this is not the only way an IR firm could generate positive coverage. For instance, they could instead write more positive press releases for a given news event, or they could persuade each journalist to write more positive articles conditional on what was in the press release. One advantage of the current construct is that it is relatively easy to measure (whereas unduly optimistic press releases are hard to measure directly, as the true news content is not observable). Further, it does not rely on an explicit payment between the IR firm and reporter (the IR firm could simply notify a busy reporter about a story and thus lower the time cost of writing about it, calling them selectively only when the story was positive).

If investors are fully aware of the information content of the underlying story, then spin should not affect stock prices. On the other hand, if investors face costs or difficulties in processing news stories, there is good reason to predict that spin may increase prices around news announcements. The rationale is as follows. Media coverage may be interpreted as a signal that the story is more important or more likely to be true, in which case investors are likely to weight the story more highly when forming expectations of the company's future prospects. If media reporting disproportionately covers *positive* news, then this would be interpreted as signifying better future prospects for the company, and hence investors would bid up the price. IR firm use would therefore be associated with larger price increases, especially around announcements that the IR firm can spin.

A further prediction of spin is that it should not affect overall returns. If positive spin increases expectations while real economic events at the firm are unchanged, eventually investors must be disappointed relative to companies without similarly raised expectations. Positive media coverage cannot conceal the truth of a company's economic situation forever. Such reversals could occur with the revelation of hard news that the company cannot spin (earnings announcements, bankruptcy, debt covenant violations, etc.), or in a gradual revelation over time in the absence of further news. In either case, if positive media coverage affects only investor expectations, it should not change overall returns.

III. Data and Summary Statistics

A. Data Sources

The IR firm data come from *O'Dwyer's Directory of Public Relations Firms*, from 2002 to 2007. Published since 1971, this directory contains information on firms in the public relations industry including fees (audited by a Certified Practicing Accountant), locations, specializations, number of

employees, and client lists. *O'Dwyer's* covers public relations firms in general, as well as IR firms more specifically.[4] Using firm specialties and fees, I exclude public relations firms that do not appear to do IR work. I then hand match IR firm clients to CRSP company names using internet searches to clarify ambiguous names. Further details on IR firm classification and matching are provided in Appendix A.

The news data come from Factiva, from January 2002 to December 2006. Compustat GVKEY values are manually matched with company codes from Factiva's Intelligent Indexing (used by Factiva to classify which articles relate to each company). The data come from Soltes (2008). The data include headline, lead paragraph, news source, publication date and time, and byline. Each article match is based on the first trading day after publication that the information could have been traded on. Searches are performed for U.S.-based companies with common shares, other than financials, utilities, and the top 100 companies by total news volume. [5] This last limitation is necessary as midway through the download of the news sample, Factiva changed their license agreement to prevent algorithmic downloads, greatly increasing the time required to download news data and making it prohibitively costly to obtain data on the largest news firms. Robustness checks indicate that excluding these firms does not appear to drive the results.[6]

Data on company returns, market capitalization, and turnover come from CRSP. Data on earnings per share are from the quarterly CRSP/Compustat merged database, and data on book value of equity are from the CRSP/Compustat annual file. Data on number of analysts come from the I/B/E/S detailed file. Institutional ownership data are from the CDA/Spectrum Institutional (13f) Holdings database. Data on

[4] The former category includes other services not related to the dissemination of a firm's information to shareholders, such as advertising, brand management, direct mail, marketing, crisis management, etc.
[5] CRSP "shrcd" equal to 10 or 11, excluding ADRs and firms headquartered overseas.
[6] One advantage of the current sample is that the vast majority of firms have meaningful variation between news and non-news days. Many of the largest news companies have press releases virtually every day, meaning that the concept of a "news day" is difficult to determine.

CEO compensation come from Execucomp.[7] Definitions of the control variables used in this paper are provided in Appendix B.

B. Summary Statistics

Table I presents summary statistics for company attributes according to IR firm use. In particular, Panel A reports results for companies that used an IR firm, while Panel B reports results for companies that did not use an IR firm. As can be seen from the table, a total of 1,805 companies (or 15.4% of the sample companies) use an IR firm at some point during the sample period. IR firm clients are on average larger and more visible than other companies, with a larger market capitalization ($11.2b vs. $1.3b), more analysts (11.71 vs. 5.26), more institutional ownership (47.49% vs. 31.61%), and higher turnover (1.71% vs. 1.36%). Further, they have a lower log book-to-market ratio (-0.67 vs. -0.50) and lower returns (1.05% vs. 1.25%), but insignificantly different characteristic-adjusted returns (-0.08% vs. 0.03%). IR firm clients also have greater media coverage across every category of news media, with a total of 29.50 articles per month, compared to 9.57 articles per month for companies without an IR firm.

[Table I about here]

IV. Results

A. IR Firm Use, Press Release Coverage, and Press Release Tone

The spin hypothesis predicts that IR firm use affects media coverage. More specifically, the spin hypothesis predicts that IR firm use will increase coverage of good news more than coverage of bad news. To test this hypothesis, I investigate the influence of IR firms on the total number of news articles

[7] Unless otherwise specified, tables that use annual firm observations match characteristics based on values in the previous December, while tables that use monthly or daily data match characteristics to the previous month.

surrounding a company's press release (on Business Wire or PR Newswire, the two main press release wires). I include articles on the trading days associated with both the announcement day and the following day, to allow for newspapers that may not publish about a story until the day after an announcement. Observations are included for every trading day that a firm issues at least one press release, and for every earnings announcement day according to Compustat (regardless of whether there is a press release).[8] In order to not attribute low coverage to companies that Factiva may not cover, the sample of firms is limited to those that have at least one article written about them.

To gauge whether IR firms spin the news by increasing coverage more for a company's good news than bad news, I measure good and bad news using article tone in the press release, which captures how positive or negative the language in the press release is.[9] The list of positive and negative words is taken from Loughran and McDonald (2010). Following Tetlock (2007) and Loughran and McDonald (2010), I measure tone as the fraction of negative words in the article headline and lead paragraph. The main measure of tone is thus given by:

$$Tone = \#\ Negative\ Words\ /\ Total\ \#\ Words. \quad (1)$$

By construction, the base effect of IR firms correspond to neutral and positive announcements, and increases in *Tone* indicate how this effect changes as news becomes more negative. Notice that *Tone* is defined in terms of negative words, as Tetlock (2007) finds that negative words convey more

[8] Examining only news release days controls for the possibility that IR firm clients may simply have *more* news coverage because they have more events going on at the firm level. Companies that have more events over a given period will not mechanically be taken to have more coverage unless *each* press release day is also considered more newsworthy. To control for the possibility that IR firm clients have *different* events at the firm level, I add controls for press release subject codes supplied by Factiva. All effects are robust to the inclusion of these controls.

[9] Press release tone has the advantage that it is constructed prior to both media coverage and stock returns, so reverse causation is not a problem.

information than positive words. The main results are similar, however, if *Tone* is instead defined using both positive and negative words (with *Tone = (# Positive Words - # Negative Words) / Total # Words*).

Table II Panel A examines whether IR firms disproportionately increase media coverage of positive announcements on days when companies issue a press release. The regression is

$$Log(1+Numarticles_{t,t+1}) = a + b_1*IRfirm + b_2*Tone + b_3* IRfirm*tone + b_4*Controls + \varepsilon, \quad (2)$$

where the dependent variable is the log of one plus the total number of articles in sources other than the two press release wires on the trading days associated with the announcement day and the day after the announcement. The controls include the log market capitalization of the company (normalized), the log book-to-market ratio, momentum, beta, analyst coverage, institutional ownership, last month's stock return, the average return in the same calendar month for the past five years (Heston and Sadka (2008)), 48 industry dummies based on SIC codes (Fama and French (1997)), press release subject codes, and the announcement-day characteristic-adjusted return. See Appendix B for a full description of these variables. As a final control, specifications with the interaction between log market capitalization and *Tone* are included to ensure that IR firm interactions are not proxying for interactions with company size (as IR firm use is correlated with firm size).[10]

[Insert Table II about here]

[10] The interaction with log market capitalization is included in each case where *IRfirm* is interacted with another variable. Adding interactions with other variables (such as analyst coverage or institutional ownership) produces similar results.

Columns 1 and 2 of Table II Panel A show that IR firms are associated with greater press coverage overall, strongly significant after adding a large number of controls.[11] With company characteristic controls, the coefficient on the IR firm dummy is 0.255, which means that IR firm use is associated with 25.5% more media coverage, significant at the 1% level.

Columns 3 to 6 show the main effect of IR firm spin. Consistent with IR firms spinning the news, the increase in coverage associated with IR firm use is larger for good news than bad news. The increase in coverage associated with IR firm use is 27.7% for articles without any negative words, decreasing as the tone becomes more negative. The coefficient on *IRfirm*Tone* when all company controls are included is -2.049, significant at the 1% level. The standard deviation of *Tone* for IR firm clients is 0.019, so a one standard deviation increase in negative tone causes the IR firm effect to decrease by 3.9%. This effect is quite stable as additional controls are added, including press release subject codes and announcement-day returns (the latter are endogenous with media coverage, but are included to show the robustness of the result). Thus, consistent with Tetlock (2007) and Loughran and McDonald (2010), greater negative tone appears to be associated with higher overall newsworthiness.

Table II Panel B examines whether IR firms' ability to spin the news is smaller for earnings announcements. Earnings announcements may be harder to spin for various reasons. First, earnings announcements are scheduled further in advance, so journalists probably know about them ahead of time (reducing the marginal value of an IR firm calling journalists). Second, such announcements are likely to contain more hard information, making it harder to put a particular interpretation on events. The regression is

[11] Standard errors are clustered by firm and month where memory allows, and by firm otherwise. Adding clustering by month does not increase the IR firm standard errors very much.

$$Log(1+Numarticles_{t,t+1}) = a + b_1*IRfirm + b_2*Tone + b_3*IRfirm*Tone + b_4*Earn + b_5*Earn*IRfirm + b_6*Earn*Tone + b_7*Earn*IRfirm*Tone + b_8*Controls + \varepsilon, \quad (3)$$

where *Earn* is a dummy variable that equals one if the press release occurred on a Compustat earnings date, and zero otherwise. All clustering in Panel B is by firm and month.

Table II Panel B shows that IR firms' ability to spin the news is significantly lower for earnings announcements. The coefficient on *Earn*IRfirm*Tone*, which shows whether the interactions between IR firm use and *Tone* are significantly different for earnings announcements, has a coefficient of 3.013 with company characteristics and press release controls, significant at the 5% level. In terms of magnitude, the coefficient on *Earn*IRfirm*Tone* is of similar size, or slightly larger than, the *IRfirm*Tone* effect. This means that the ability of IR firms to spin the news is completely eliminated for earnings announcements.

B. IR Firm Use and Returns around Non-Earnings Announcements

If spin influences investor perceptions, and IR firms can obtain disproportionately positive coverage around non-earnings announcements, as shown earlier, then IR firm influence should increase non-earnings announcement returns. Furthermore, this increase in returns should be concentrated among the announcements that the IR firm is able to spin – in this case, positive and neutral news stories. To test this conjecture, I estimate a regression in which the main dependent variable is *Retadj*, the three-day characteristic-adjusted return from one day before the announcement to one day after:

$$Retadj_{i,t} = \prod_{j=-1}^{1}(1 + r_{i,t+j)}) - \prod_{j=-1}^{1}(1 + r_{p,t+j}) \quad (4)$$

where $r_{i,t+j}$ is firm i's return on day $t+j$, and $r_{p,t+j}$ is the characteristic-adjusted portfolio return, that is, the daily equal-weighted return on a portfolio formed of stocks in the same size/book-to-market/momentum

quintile similar to Daniel et al. (1997). The sample of announcements is every day with a press release, excluding those within five days of an earnings announcement day.[12] The regression is thus

$$Retadj_{i,t} = a + b_1*IRfirm + b_2*tone + b_3*IRfirm*tone + b_4* controls + \varepsilon, \quad (5)$$

where *Controls* includes *Lmktcapnorm, Beta, Lbm, Momentum, Retl1, Hessad, Institpctown, Numanalysts, Industry*$_{2\text{-}48}$, and *Subject*$_{2\text{-}150}$.

Table III shows that companies that use IR firms have higher characteristic-adjusted returns around non-earnings announcements. The coefficient on *IRfirm* is 0.112 or 11.2 basis points with the full set of controls (column 3), significant at the 1% level. Columns 1 and 2 report results clustered by firm and announcement day, and column 3 presents results clustered by firm only.[13]

[Insert Table III about here]

Columns 4 and 5 also show that the increase in returns is concentrated among the same positive announcements that the IR firm is promoting, and is less pronounced as news becomes more negative. Adding the tone controls increases the IR firm effect to 0.165 for press releases with no negative language, and the coefficient on *IRfirm*Tone* is equal to -8.612 (significant at the 1% level with press release subject codes). A one standard deviation increase in negative tone reduces the IR firm associated increase by 15.5 basis points. In other words, similar to press coverage, IR firms increase returns more for positive press releases than for negative press releases.

C. IR Firm Use and Returns around Earnings Announcements

[12] This exclusion is to avoid contaminating effects of the earnings announcement, although the results are very similar if only the earnings day itself is excluded.

[13] This is due to memory limitations and the addition of the large number of *Subject* variables.

Table IV examines whether companies using IR firms have higher or lower returns around earnings announcements. The regressions are similar to those of Table III, but include every day with a Compustat quarterly earnings report date. The main independent variable used to measure earnings news is Standardized Unexpected Earnings (SUE) (Foster (1977), Bernard and Thomas (1990)), which is defined as in Shanthikumar (2004) as

$$SUE = \frac{e_t^i - e_{t-4}^i - \hat{\delta}^i}{\sqrt{Var(e_t^i)}}. \quad (6)$$

Expected earnings are equal to $(e_{t-4}^i + \hat{\delta}^i)$, where e_{t-4}^i is the company's earnings from four quarters ago, and $\hat{\delta}^i$ is the expected drift in earnings. I estimate the latter term using up to 20 quarters of prior data, and $\hat{\delta}^i = \frac{1}{n}\sum_{j=1}^{n}(e_{t-j}^i - e_{t-j-4}^i)$. SUE is normalized to have a mean of zero and standard deviation of one, by subtracting the population mean and dividing by the population standard deviation. Since earnings news may have asymmetric effects, I split it into positive and negative values (and hence *SUEPos* equals the value of SUE when SUE is positive, and zero otherwise, and *SUENeg* equals the value of SUE when SUE is negative, and zero otherwise). The regression is thus:

$$Retadj_{i,t} = a + b_1*SUEPos + b_2*SUENeg + b_3*IRfirm + b_4*IRfirm*SUEPos + b_5*IRfirm*SUENeg + b_6*Tone\ b_8*IRfirm*Tone + b_{10}*Controls + \varepsilon, \quad (7)$$

where *Controls* includes *Beta, Lbm, Momentum, Retl1, Hessad,* and $Industry_{2\text{-}48}$. Equation (7) also includes interactions between *Lmktcapnorm* and both *SUEPos* and *SUENeg*.

Table IV shows that companies that use IR firms have significantly lower returns around earnings announcements. Columns 1 to 2 show that IR firm clients' characteristic-adjusted returns around earnings

announcements are 33.6 basis points lower than those of other companies, after controlling for company characteristics and SUE, significant at the 5% level when clustered by firm and month.

[Insert Table IV about here]

Column 3 shows that the negative returns associated with IR firm use are concentrated around the release of negative earnings news. With the full set of controls, the coefficient on *IRfirm*SUENeg* is -0.597, significant at the 5% level, while the *IRfirm*SUEPos* terms are insignificant. The interpretation is that each standard deviation of negative unexpected earnings reduces returns by an additional 59.7 basis points for IR firm clients. The reaction to a given level of negative earnings news is around 55% larger for companies with an IR firm. On the other hand, the interaction between IR firm use and *Tone* is statistically insignificant, consistent with the IR firm effect on media coverage not varying with tone for earnings news. Instead, it is the hard negative earnings news that causes particular disappointment.

The above results are consistent with investors being disappointed due to increased expectations resulting from past spin. To further examine this link, columns 6 and 7 relate negative earnings returns to the higher returns and greater positive media coverage generated around non-earnings days. The variables of interest are the cumulative characteristic-adjusted return from *t*-50 to *t*-5 days (relative to the earnings announcement day), and the log of one plus the number of articles written about the company on positive press release days or the day after. Press releases are classified as positive if they contain more positive words than negative words. The results indicate that higher past returns and greater coverage of positive press releases significantly predict lower earnings announcement returns. The coefficient on the past returns effect is -1.084 with the full set of controls (column 6, significant at the 1% level), which implies that about 1% of the total cumulative adjusted returns is reversed on the earnings day. In terms of the effects of past news coverage of positive events, the coefficient with the full set of controls is -0.117,

significant at the 1% level. A one standard deviation increase in log coverage of positive press releases is 1.415, which implies lower earnings announcement returns of 16.6 basis points.

V. Identification Results

A. Identification Strategy

The results in section IV suggest that IR firms directly influence media coverage and returns. They also preclude several obvious alternatives. For instance, IR firm clients are unlikely to simply be more newsworthy, as this would ostensibly predict greater media attention for the company's good *and* bad news, whereas here the effect pertains only to good news (and only for non-earnings announcements). For returns, numerous company characteristics might predict higher or lower returns overall, but fewer would predict higher returns for non-earnings news and lower returns for earnings news.

Nonetheless, it remains possible that the apparent impact of IR firm use on media coverage and returns is driven by selection effects. In particular, the previous results may be caused by some omitted variable common to companies that hire IR firms, rather than the IR firms themselves. The results may also be driven by reverse causality, where IR firm use is the *result* of positive media coverage, not the cause. A company may hire an IR firm to simplify its dealings with the press, or when it has a lot of positive news coming up (although IR firm relationships tend to be quite stable over time, making the last case less likely). Below I consider whether these alternatives appear to be driving the main results.

A.1. Geographic Links and Media Coverage

If IR firms are causing the increases in positive media coverage (as opposed to selection effects or reverse causality), then positive coverage should be greater in publications where IR firms are expected to

have more influence. Consistent with this hypothesis, an IR firm is better able to spin the news in newspapers in the same state as the IR firm (even after controlling for whether the company itself is in the same state as the newspaper). Under a causality explanation, connections between IR firms and newspapers are likely to be stronger for geographically nearby newspapers. This could be the case because IR firm partners meet journalists in the same city, or because IR firms choose to locate near newspapers they are connected to.

By contrast, if positive media coverage were due to an omitted company characteristic (such as being generally interesting to the media), this would not obviously predict a role for IR firm geography. It may play a role under a reverse causality explanation, whereby IR firm location simply *reflects* underlying positive local coverage. In such a case, however, adding controls that predict positive local coverage should reduce or eliminate the apparent effect of IR firm geography. Accordingly, in results presented in Section V.B, I control for two possible predictors of positive coverage – the location of the company itself, and the concentration of shareholder ownership in that state (measured by mutual fund holdings). I find that adding these controls has only a small impact on the IR firm geography effect. This suggests that reverse causality is not driving the results on media coverage.

Another factor suggesting that reverse causality is not driving the results is that over half of IR firms are located in New York, Illinois, or California (38% are in New York alone). It seems unlikely that this concentration of IR firms is driven by positive media coverage given to companies by these states' newspapers. Notwithstanding this, in Section V.B I test this possibility by adding state fixed effects, and find they have virtually no impact on the IR firm effect. These results support the view that the IR firm effect on media coverage is causal.

A.2. Turnover Among Connected Reporters and Returns

To examine whether the IR firms are causally affecting returns (as opposed to selection effects or reverse causality), I examine turnover among reporters connected to the IR firms. Under causality, IR firms' ability to influence media coverage is likely to operate through connections to particular journalists, to whom they can suggest stories to write. If a connected reporter leaves a newspaper, this will reduce the influence of IR firms who relied on them, creating a shock to the ability of IR firms to spin the news.

Turnover among connected reporters has the advantage that it should be exogenous to company returns for several reasons. First, reporters leaving the sample is likely due to events exogenous to the companies they write about (e.g., life events for the reporter, changes at the newspaper). Second, because turnover is measured at the IR firm level (not the company level), any remaining selection effects will be diversified over all of the IR firm's clients. In addition, turnover among connected reporters can be compared with turnover among reporters who wrote about the company but were not connected to the IR firm, to make sure that the effects are not driven by company characteristics. I measure connections via reporters who wrote about multiple clients of the IR firm in the past year.

Consistent with the IR firm effect being causal, in tests reported in Section V.B I find that the patterns in returns are stronger for IR firms that have connections to reporters: non-earnings announcement returns are higher and earnings announcement returns are lower. Moreover, these patterns in returns are less pronounced when connected reporters drop out of the sample, showing that a weakening of connections reduces the returns patterns. Finally, turnover among unconnected reporters shows no effects. These findings, particularly those for reporter turnover, are strongly supportive of IR firms causally influencing announcement returns.

A.3. Internal IR Spending

One alternative to causation involves internal IR operations. Using an external IR firm may be a proxy for the company's level of internal IR operations. Even if this were true, however, IR spending would still have an effect on the media and investor perceptions, although the mechanism would be different. In Appendix C, I construct several proxies for internal IR operations using the contact information in each press release. I examine proxies for the number of people listed, the number of contact categories (media, investors, analysts, etc.), and the number of methods of contact given (email, phone numbers). In tests reported in Appendix C, I find that including measures of internal IR operations has little effect on the relationship between external IR firms and announcement returns, suggesting that external IR firm use is not simply a proxy for levels of internal IR spending.

A.4. Selective Issuance of Press Releases

A final alternative that may predict similar patterns is that IR firms are changing disclosure policies (rather than media coverage directly) by encouraging their clients to issue press releases more for good news. For bad news, they could either not issue a press release at all, or meet disclosure requirements in a less public manner (e.g., by filing an 8-K form with the SEC). In this case, IR firm clients' press releases would have on average more positive news, more positive media coverage, and higher returns, but not due to IR firms influencing the media. In the Internet Appendix, I test whether IR firm clients are more likely to issue press releases for positive news, for earnings announcements, and for SEC filings of 10-K, 10-Q, and 8-K forms.[14] Relative to other companies, IR firm clients are somewhat

[14] As well as examining whether IR firms selectively issue press releases for good news, the Internet Appendix includes additional results on the effect of IR firm use on book-to-market ratios, bid-ask spread, and trading volume. It also examines whether IR firm use is related to CEO equity-based compensation and sales, and considers additional tests related to selection effects of journalist inclusion. The Internet Appendix is available on the Journal of Finance website at http://www.afajof.org/supplements.asp.

less likely to selectively issue press releases for positive news, suggesting that selective press releases for good news are not driving the results.

B. Geographical Links and IR Firm Influence on Media Coverage

Table V explores the impact of geographical links on IR firms' ability to spin, and shows that IR firms generate disproportionately more positive coverage among newspapers in their own state. The unit of observation is a company-newspaper-year combination, from 2002 to 2006 (for all news sources with at least 1,000 articles that year). In Panel A, the regression is

$$PctPosArt_{i,p,t} = a + b_1*IRfirm + b_2*CompanyPaperMatch + b_3*IRFirmPaperMatch + b_4*CompanyStatedum_{1\text{-}50} + b_5*OwnershipIRState + b_6*OwnershipPaperState + b_7*LogTotalArticles + b_8*Controls + \varepsilon, \quad (8)$$

where the dependent variable is *PctPosArt*, the number of stories that year in the news source about the company, written within one day of the company issuing a positive-toned press release, expressed as a percentage of *all* of articles in the news source.[15] As in Table IV, press releases are classified as positive overall if they contain more positive words than negative words. In Panel B, the regression is similar but the dependent variable is *PctCompPosArt*, coverage on positive press release days as a percentage of articles *about that company* in the news source. Thus, Panel A measures positive coverage overall in the paper, while Panel B measures positive news relative to other news about that company.

The main independent variable in both panels of Table V is *IRFirmPaperMatch*, a dummy variable equal to one if the news source and the IR firm are located in the same state and zero otherwise.

[15] Percentages are used so that coverage may be comparable across news sources, despite the fact that different news sources will have very different space restrictions. The press release must be either on the same day as the article or the day immediately before (to account for a one-day publication delay in daily newspapers).

The variable *CompanyPaperMatch* is a dummy variable equal to one if the news source and the company are located in the same state and zero otherwise, and *LogTotalArticles* is equal to the log of the total number of articles in the news source that year (to account for possible mechanical effects in the range of allowable percentages across newspaper size). *CompanyStatedum* are dummy variables for the state that the company is located in (to control for the possibility that firms from particular states are more newsworthy overall).

The variables *OwnershipIRState* and *OwnershipPaperState* measure the fraction of the company's shares held by mutual funds located in the state of the IR firm and the newspaper, respectively. Ownership information comes from mutual fund 13F filings in the Thomson Financial database, and geographic information from the CRSP Mutual Fund database. These variables control for the possibility that IR firm location and newspaper coverage are jointly responding to the number of investors in the company located in a given state. In equation (8), *Controls* includes *Lmktcapnorm, Beta, Lbm, Numanalysts, Institpctown,* and $Industry_{2\text{-}48}$, as described in Table I Panel B.[16]

Table V shows that IR firm influence is significantly greater for news sources in the same state, even after controlling for the company's location. In Panel A, IR firms' geographical links increase positive coverage as a proportion of all articles in the newspaper. With the full set of controls (column 5), the coefficient on *IRFirmPaperMatch* is 0.060, significant at the 5% level when clustered by firm and year.[17] This indicates that the same-state increase in IR firm-related coverage is an additional 0.060% of

[16] The results are also robust to controlling for the log of the total number of articles in the news source, indicating that they are not being driven by newspaper size.

[17] The apparently low statistical significance for the given *t*-statistics reflects the fact that using Cameron, Gelbach, and Miller (2006), the relevant *t*-distribution has only four degrees of freedom, because the results are clustered by firm and year and there are only five years of data. Clustering by year as well as firm does not change the *t*-statistics much, but greatly reduces the degrees of freedom. For regressions clustered by news source and year, the significance is larger than that in Table V.

the total number of articles in that newspaper. The *IRFirmPaperMatch* effect is robust and fairly stable when additional controls are added. By comparison, the base coefficient on the *IRfirm* variable is 0.027 (for out-of-state papers), and the coefficient on *CompanyPaperMatch* is 0.046 (for local companies).

[Insert Table V about here]

In Panel B, IR firms also have geographical influence when positive coverage is measured as a proportion of articles in the newspaper about the company. In column 5 with the full set of controls, IR firms increase the percentage of positive news coverage by 4.74% (the coefficient on *IRfirm*, significant at the 1% level), and by a further 2.47% for newspapers in the same state as the IR firm (the coefficient on *IRFirmPaperMatch*, significant at the 1% level).

In terms of economic size, the influence of IR firms on local papers relative to other papers is around three times larger in Panel A, and around 1.5 times as large in Panel B. In terms of magnitudes, the average news source has 6,788 articles year, so in the full specification IR firm use increases positive news coverage by around 1.8 articles per news source per year for out-of-state news sources, and by 5.9 articles per year for news sources in the same state. Including controls for shareholder geography strengthens the *IRFirmPaperMatch* coefficients somewhat, rather than eliminate them.

C. Returns Around Announcements and Turnover Among Connected Reporters

Table VI considers the role of connections between reporters and IR firms on the announcement returns of IR firm clients. If the effect of IR firms on returns is causal, then the presence of connected reporters should increase the returns patterns in Sections IV.B and IV.C. Further, turnover among connected reporters (which is an exogenous shock to IR firm influence) should weaken those patterns. Both of these predictions find support in the data.

Reporter information is taken from the byline of each article, which has non-missing entries for roughly 25.6% of non-press release articles.[18] Reporter names are cleaned by removing information on paper affiliations and titles. Reporters must have written at least 50 single-author articles during the sample to be included. A reporter is considered to have left the sample in year *t* if year *t*-1 is the last year that the reporter's name appears on a byline. A reporter is considered to be connected to an IR firm in year *t*-1 if they wrote articles about at least two of the IR firm's clients in year *t*-1. The main independent variable is *RepTurnover*, defined for each IR firm *i* and applied to all clients of the IR firm that year:

$$RepTurnover_{i,t} = \frac{Number\ of\ Connected\ Reporters\ in\ year\ t-1\ \ who\ left\ sample\ in\ year\ t}{Number\ of\ Connected\ Reports\ in\ year\ t-1}. \quad (9)$$

If the IR firm has no connected reporters in the past year (or doesn't use an IR firm) the value of *RepTurnover* is zero, and companies with multiple IR firms are assigned the average over all IR firms used. A second variable, *WtRepTurnover*, weights connected reporters by the log of the number of articles in their news source, to test whether the results are driven by newspaper circulation. The variable *AnyConnect* equals one if the company uses an IR firm with any connected reporters in year *t*-1, and zero otherwise, to distinguish IR firms with no turnover from IR firms with no connected reporters. The variable *NumConnect* is the number of connected reporters in year *t*-1, to test whether the *RepTurnover* effect is driven by the denominator. Finally, *CompanyRepTurnover* is the proportion of all reporters (connected AND unconnected) who wrote about the company in year *t*-1 and dropped out of the sample in year *t*. This variable can be positive for all companies, not just IR firm clients, to control for the possibility that connected reporter turnover is measuring a change in the company itself, such the company becoming less newsworthy or journalists covering the company being fired. Table VI shows the

[18] In the Internet Appendix, I show that IR firm use is not associated with a change in the probability of an article having a journalist name included, which might generate contaminating effects.

effects of reporter turnover on announcement returns. Panel A examines non-earnings announcements and Panel B examines earnings announcements. The regressions are the same as in Sections IV.B and IV.C, respectively, with the addition of *RepTurnover*, *AnyConnect*, *WtRepTurnover*, *NumConnect*, and *CompanyRepTurnover*.

The first result from Table VI is that having at least one connected reporter greatly strengthens the effect of IR firms on announcement returns, consistent with the mechanism of IR firm influence being connections to specific reporters. In Panel A, with stock and press release subject controls, the base effect of *IRfirm* is -0.1 basis points and insignificant, whereas the *AnyConnect* effect is 23.4 basis points and significant at the 1% level when clustered by company. In other words, virtually the *entire* effect of IR firms on non-earnings returns comes from connected IR firms, with unconnected IR firms having no significant effects. In Panel B, the coefficient on *AnyConnect* is -0.514 (i.e., -52 basis points in addition to the base *IRfirm* effect) and significant at the 10% level with company characteristic controls (column 1), while *IRfirm* is -0.177 and insignificant. The effect is fairly stable with the inclusion of controls for the number of connected reporters (column 3) and company-level reporter turnover (column 4). In the data 57% of IR firm clients had an IR firm with connections to at least one reporter.

[Insert Table VI about here]

The second result from Table VI is that connected reporter turnover weakens the effect of IR firms on announcement returns, resulting in lower non-earnings announcement returns (Panel A) and higher earnings announcement returns (Panel B), the opposite of the baseline IR firm effects. In Panel A for non-earnings announcements, the coefficient on *RepTurnover* is between -0.774 and -0.836 depending on the controls, significant at the 10% or 5% level when clustered by firm. In Panel B for earnings announcements, connected reporter turnover increases returns. The coefficient on *RepTurnover* is

between 3.923 and 3.214 depending on the controls, and significant at the 1% or 5% level when clustered by firm and announcement month. In terms of the magnitude of the *RepTurnover* effect, a one standard deviation increase in connected reporter turnover (among those with some connection, equal to 0.147) raises earnings announcement returns by 57.5 basis points, and reduces non-earnings announcement returns by 12.1 basis points.

A third result from Table VI is that turnover among unconnected reporters does not drive the return effects. For both earnings and non-earnings announcements, company-level reporter turnover is statistically insignificant, and has very little impact on the connected reporter turnover effect. This indicates that the effects of reporter turnover are limited to those reporters who are connected to the company's IR firm. Finally, the connected reporter turnover results are similar if reporter turnover is weighted by newspaper circulation. The significance of reporter turnover is higher for non-earnings announcements in Panel A, but lower for earnings announcements in Panel B.

VI. Results on IR Firm Client Characteristics and Returns

A. IR Firm Use and Management of Reported Earnings

As discussed earlier, the most plausible motivation for spin seems to be to temporarily increase the share price, even though such price increases will ultimately be reversed without better company performance to justify them. In such a case, spinning the news represents behavior designed to affect investor perceptions rather than to improve underlying company performance. Spin is of course not the only possible reason to hire an IR firm – a company may hire an IR firm simply to outsource a non-core component of their business, as part of a strategy to increase greater disclosure, or for various other reasons.

Spin has similarities with other types of shareholder manipulation such as the management of reported earnings (Graham, Harvey, and Rajgopal (2005)). Both increase short-term perceptions, even though this can result in larger eventual disappointment. Shifting earnings from the future to the present, such as by earnings smoothing, requires that they be "paid back" at some point. If the manipulation involves cutting positive NPV projects (such as routine maintenance or R&D), then the eventual cost to the company will be greater than the benefit today. Nonetheless, there is significant evidence that some managers engage in these activities (Graham, Harvey, and Rajgopal (2005)). Using an IR firm to affect expectations is relatively cheap (the average cost is $474,000 per year in the sample), and selectively promoting good news stories to the media is legal and publicly defensible (absent bribery or breaching disclosure requirements).

The literature offers various reasons as to why managers might engage in earnings smoothing. Some explanations are based on game-theoretic considerations when managers have private benefits of control (Guttman, Kadan, and Kandel (2006)). Other explanations center on behavioral arguments using investors' utility (e.g., Burgstahler and Dichev (1997)), information processing heuristics (Degeorge, Patel, and Zeckhauser (1999)), or investor optimism (Teoh, Welch, and Wong (1998)).

If companies hire IR firms in order to spin the news, then IR firm use may be associated with other types of shareholder manipulation, such as managing reported earnings. I consider this possibility in Table VII, where I examine three measures of managing reported earnings – earnings restatements, accruals, and cuts to R&D expenditure – as well as a measure of shareholder protection. The independent variables are *IRfirm*, *Lmktcapann*, *Lbm*, *Retlann*, *Turnover*, *Institpctown*, *Numanalysts*, *Industry* (as defined in Appendix B), and year fixed effects, and *t*-statistics are clustered by firm and year.

In Panel A, I consider whether IR firm clients are likely to have weaker shareholder protection, as measured by the G measure of governance from Gompers, Ishii, and Metrick (2003)), where higher values of G represent weaker shareholder protection. I also examine whether IR firm clients are more likely to restate their earnings (a sign of poor governance and past attempts to boost investor expectations). Similar to Richardson, Tuna, and Wu (2002), I identify earnings restatements as cases where a company has a news article or press release that contains words that are derivations of "restate" and "earnings" in either the headline or lead paragraph.[19] The dependent variable is a dummy variable that equals one if the firm has any restatement that year, and zero otherwise.

In Panel B, I examine measures of earnings management and cash flow management (Graham, Harvey, and Rajgopal (2005)). For earnings management, I consider accruals (Sloan (1996), Barton and Simko (2002)), measured as earnings before extraordinary items and discontinued operations less operating cash flows, scaled by total assets in the previous year (Barton and Simko (2002)). Accruals capture the amount of earnings that have not produced current cash flows, and this variable has been associated with earnings management in prior research (Dechow, Sloan, and Sweeney (1995)). For cash flow management, I look at cuts to R&D, which often involve cutting potentially profitable long-term projects in order to reduce current expenses (D'Souza and Wang (2006)). Cuts to R&D are measured as a dummy variable that equals one if the firm reduced R&D expenditure that year.

The results in Table VII show that IR firm use is associated with earnings management. In Panel A, with the full set of controls IR firm clients have a 2.6% higher chance of restating earnings, significanct at the 1% level (column 6), and a governance index that is 0.211 points higher, significant at the 5% level (column 3, relative to a mean governance level of 9.01 and a standard deviation of 2.59). In

[19] The document must contain both "restat*" and "earn*". This is similar to the mechanism used by the General Accounting Office, and used in Collins et al. (2008).

Panel B, IR firm clients have a 1.1% higher chance of cutting R&D spending (significant at the 5% level with the full set of controls, and at the 1% level in other specifications). In terms of accruals, the evidence is weaker: IR firm clients have higher accruals at a univariate level, but this effect disappears when additional controls are included.

[Insert Table VII about here]

Between earnings restatements (consistent with past earnings manipulation) and cuts in R&D expenditure (a type of real earnings management), these results indicate that IR firm use is associated with earnings management. Moreover, the correlation with weaker governance is consistent with management focusing more on managing shareholder expectations, for example, through spin.

B. Price Efficiency and Tradability of Return Differences

The predictable differences in returns in Sections IV.B and IV.C raise the possibility of trading strategies to exploit them. Because the timing of non-earnings news is not known in advance, the non-earnings return discrepancies do not suggest obvious trading strategies. However, the date of an earnings announcement is typically known several days in advance and hence could potentially be traded on. Moreover, Tables III, IV, and VI only show differences in returns between the two types of stocks, rather than the levels of each. Yet the level of returns is crucial to understanding whether IR client earnings returns are too low, non-IR client returns are too high, or both. Moreover, earnings announcement returns are on average positive, which poses challenges to market efficiency (Beaver (1968), Ball and Kothari (1991), Frazzini and Lamont (2006)). Lower returns around earnings announcements could represent a lower earnings premium consistent with greater efficiency, or an overshooting that results in negative overall returns.

Table VIII investigates these questions of tradability and efficiency. I form equal-weighted calendar-time portfolios of daily stock returns around earnings announcements, sorted according to whether the company used an IR firm. Portfolios are rebalanced daily, with stocks held beginning on the announcement day for a period between 1 and 20 days. "IR" and "No IR" are portfolios of IR clients and non-clients, respectively, and "(No IR – IR)" is a difference portfolio long "No IR" and short "IR." Return days are only included if the portfolio contains at least five stocks (including five stocks in both parts of the difference portfolio). Returns are regressed on the excess return on the market (Mkt-Rf), as well as portfolios of SMB, HML, and UMD from Ken French's website.

The difference portfolio represents the returns to a strategy designed to capture the predictable difference in earnings announcement premiums between IR clients and non-clients. The results in Table VIII indicate that there are substantial returns to this strategy, but large returns are only available with high portfolio turnover. If held only from t=0 to t=1, the "No IR – IR" portfolio has an alpha of 19.8 basis points per day, or around 50% per year, significant at the 1% level. Holding from t=0 to t=20 (roughly 100% turnover per month) reduces the alpha to 2.8 basis points per day, or around 7.0% per year, significant at the 5% level.

[Insert Table VIII about here]

In terms of the relative efficiency of the earnings price response, the results are consistent with investors overreacting to the positive spin of non-earnings news, rather than just efficiently incorporating positive news earlier. IR firm clients do not have an obviously more efficient price process relative to other companies. For the immediate earnings response (t=0 : t=1), the "IR" portfolio actually has a negative earnings announcement premium of -13.3 basis points per day, significant at the 1% level. The predictably negative returns around earnings announcements for IR clients indicate that investors are

disappointed at an absolute level, consistent with their overreacting to the spin of non-earnings news. By comparison, the positive alpha for the "No IR" portfolio of 13.6 basis points is roughly the same magnitude.[20] In other words, IR clients' returns appear too low by roughly the same amount that non-IR clients' returns appear too high. These results do not support the notion that IR firms are increasing price efficiency by simply speeding up the realization of positive news.

C. Monthly Calendar-Time Portfolios and Average Characteristic-Adjusted Returns

I next examine whether using an IR firm affects returns overall (rather than just price reactions to news). Under the spin hypothesis, IR firm use should not affect overall returns. On the other hand, overall returns may be affected by an alternative role that IR firms may be playing, namely, increasing attention (Fang and Peress (2009) and Merton (1987)). When more investors are aware of a company (e.g., as a result of increased media coverage), this can increase the pool of funds available to the company and thus lower the cost of capital and expected returns.

In the current context, the above argument implies that when an IR firm is first added, the company's stock price should increase to reflect the lower discount rate, in a simple present value framework. Thereafter, expected returns should be lower. The increase in price is important; without it, no manager would ever voluntarily sign up for a service that simply lowered stock returns today and in the future. This question is related to the results in Fang and Peress (2009), who use a calendar-time portfolio framework to show that high news stocks have lower returns. Table II shows that adding an IR firm does in fact increase media coverage, and thus presents a test of the Merton (1987) hypothesis of greater news lowering the cost of capital.

[20] For value-weighted portfolios, IR firm clients have directionally negative but insignificant two-day earnings announcement returns of -1.1 basis points. The value-weighted two-day difference between IR and non-IR companies is 14.1 basis points, significant at the 5% level.

Table IX examines this question by looking at monthly abnormal returns of stocks sorted by last month's news coverage and IR firm use. The table presents alpha coefficients from four-factor regressions (using Mkt-Rf, SMB, HML, and UMD, taken from Ken French's website). As in Fang and Peress (2009), media coverage is split into high, low, and no coverage, based on the number of articles last month in U.S. daily newspapers, with high versus low coverage relative to the median level of stocks that had at least one article that month.[21] Panel A sorts companies according to whether they use an IR firm, Panel B sorts companies according to whether they added an IR firm for the first time that year, and Panel C sorts companies according to IR firm use *excluding* those that added an IR firm for the first time.

Table IX offers very little support for the hypothesis that IR firm use lowers expected returns.[22] In Panel A, IR firm clients do not have significantly different returns overall from other companies. This is consistent with the spin hypothesis, whereby positive spin is eventually reversed. In Panel B, companies that add an IR firm for the first time have significantly *lower* alphas than other companies, whereas the Merton (1987) hypothesis predicts higher returns in the short run. In Panel C, in years after first adding the IR firm, IR firm clients show no significant differences in alphas, rather than significantly lower returns as under Merton (1987).

[Insert Table IX about here]

VII. Conclusion

In this paper, I provide evidence that media coverage affects the price response to news announcements. Greater coverage of positive news stories raises investor expectations of future

[21] The choice of U.S. newspapers is designed to resemble the Fang and Peress (2009) tests, although the results are similar using other news sources.

[22] If portfolios are value weighted, the differences in alphas by IR firm use are generally smaller and insignificant in all three panels. The results are also very similar if monthly characteristic-adjusted returns are used instead.

profitability, leading to price increases in the short term and lower returns in the future around earnings announcements. My findings suggest that investors rely on the media to help them process information and decide which stories are economically important. With the proliferation of free online news services, the problem becomes deciding which press releases and articles to read in the limited time available. Media coverage can help here by carrying an imprimatur of importance for a story. Greater coverage of good news relative to bad news is thus interpreted as indicating that the good news is more economically significant.

The evidence in this paper also indicates that reporters and newspapers are not unbiased in their decisions of which stories to cover. Instead, they are susceptible to influence by IR firms, who are able to increase the chances of particular stories being covered. Moreover, this influence appears to operate through the channel of personal connections between reporters and IR firms. How exactly such incentives operate is an area that invites further research.

News coverage is also an avenue by which some managers attempt to influence investor opinion. As a form of investor manipulation, it is quite attractive. It is fairly low cost – the average client of an IR firm spends only around $474,000 per year on IR firm services.[23] It is difficult to prove that a particular newspaper report was due to IR firm influence, and the practice does not involve managers making any false or misleading statements. The association between IR firm use and management of reported earnings, such as earnings restatements and cuts to R&D expenditure as well as weak shareholder protection, suggest that manager myopia might partly explain IR firm use. Nonetheless, it is possible that firms obtain other benefits from the publicity that are not measured in stock returns (such as greater

[23] This assumes that the total fees due to IR are spread among all publicly listed clients of the IR firm – fees are only known at the aggregate IR firm-year level. This also counts companies that use multiple IR firms – the average company spends roughly $375,000 on each IR firm it uses.

product recognition as part of a marketing effort). Given the low cost of IR firms, it is not possible to reject the hypothesis that IR firms pay for themselves or even add value, but not enough to be visible in overall stock returns.

Finally, the predictable nature of the patterns in returns indicates that investors are not incorporating publicly available information on IR firm usage into prices. To the extent that returns around earnings announcements are predictably lower for IR firm clients, investors ought to respond to this earlier. The results in this paper suggest investors do not distinguish between media coverage arising from IR influence and media coverage from general newsworthiness, and are surprised when hard information turns out to be worse than expected. Investors, it appears, can be fooled, but not forever.

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Appendix A - IR Firm Matching

For each year, I take IR firm and client information from the client lists in *O'Dwyer's Directory of Public Relations Firms*. Since these lists do not include client identifiers and often give a general name for the company rather than the precise CRSP name (and client lists include many private companies), I hand match them with CRSP names of publicly listed firms. I use a text string comparison to match each *O'Dwyer's* name with the 50 closest CRSP names, and for those without an exact match, any likely matches among the 50 closest names are identified. Where possible, common abbreviations are hand matched separately (e.g., GE for General Electric, AAR for American Airlines, etc.). Ambiguous names are resolved by internet search, and matches are performed on a conservative basis, excluding cases in which a Google search reveals multiple possible matches. I exclude client names that map to multiple potential CRSP firms, as well as clients identified as regional branches or subsidiaries of CRSP firms.

To distinguish between IR firms and non-IR public relations (PR) firms, I only exclude PR firms that show no evidence of doing IR work. PR firms are classified as IR firms if in any sample year of the PR firm's existence they list IR as one of their specialty areas (PR firms can nominate multiple areas of specialization) or the firm appears in the rankings of the top fees due to IR work (the latter list includes total annual fees from IR work as low as $75,000 per year, although not all PR companies disclose their fees).

Appendix B – Variable Definitions

Variable	Description	Definition
IRFirm	IR firm dummy	Dummy variable that equals one if the firm uses an IR firm that year
Lmktcapann	Log market cap	Log market capitalization, from December of previous year
Lmktcapnorm	Log market cap, normalized	Log market capitalization, from previous month, normalized to mean of zero and standard deviation of one
Beta	CAPM beta	Coefficient from regression of excess stock returns on excess return on CRSP value-weighted index, using up to five years of monthly data
Lbm	Log book-to-market ratio	Log of (book value of equity/market value of equity)
Mom	Momentum	Cumulative returns from 12 months ago to two months ago (inclusive)
Numanalysts	Number of analysts	Number of analysts who made an earnings per share forecast in the previous year
Turnover	Share turnover	Monthly share volume divided by the number of shares outstanding, averaged over the previous calendar year
Institpctown	Institutional ownership	Fraction of the company's shares held by institutions
Industry	Industry dummies	48 dummy variables for industry, based on SIC codes and classifications in Fama and French (1997)
Hessad	Heston and Sadka factor	Heston and Sadka (2008) factor for return periodicity - the average return of the stock in the same calendar month over the past five years
Retl1	Return last month	Stock return in the previous month
Accruals	Accounting accruals	Earnings before extraordinary items and discontinued operations less operating cash flows, scaled by total assets in the previous year (as in Barton and Simko (2002))
Randdcut	Dummy for cuts to R&D	A dummy variable that equals one if the company has lower R&D expenditure in the current year than in the previous year, and zero otherwise
SUE	Standardized unexpected earnings, normalized	$SUE = \frac{e_t^i - e_{t-4}^i - \hat{\delta}^i}{\sqrt{Var(e_t^i)}}$ where e is quarterly earnings and δ is the expected drift in earnings, normalized by subtracting the mean and dividing by the standard deviation; see Section IV.C
SUEPos	Standardized unexpected earnings (when positive)	Equal to standardized unexpected earnings (normalized) when this is positive, and zero otherwise
SUENeg	Standardized unexpected earnings (when negative	Equal to the absolute value of standardized unexpected earnings (normalized) when SUE is negative, and zero otherwise
Subject	Subject code dummies	150 dummy variables for press release subject matter, based on the most common Factiva subject codes
RetAdj	Characteristic-adjusted return	Three-day stock return, minus return on a portfolio matched on quintiles of market capitalization, book-to-market, and momentum

Appendix C - Effect of Internal IR Spending

One alternative to causation involves the role of internal IR spending. Hiring an external IR firm involves a make versus buy decision at the company, compared with spending more on in-house investor relations. It is possible that IR firm use is actually measuring variation in internal IR spending, and that this is driving the main results. To test this possibility, I construct several proxies for the company's level of internal IR operations, using the regularly structured contact information contained at the bottom of press releases. Typical examples look like the following:

"/CONTACT: J. Roger Faherty, Chairman and Chief Executive Officer of Directrix, Inc., +1-212-XXX-XXXX, [email]@directrix.com/ 09:23 EDT"

"/CONTACT: Bob Schneider, Media Relations, +1-816-XXX-XXXX, or Mark Barnett, Investor Relations, +1-816-XXX-XXXX, both of H&R Block Inc./ 15:54 EST"

Based on such entries, I construct three proxies for the level of internal IR operations at the company:

1. A proxy for the number of contact persons, measured as the number of times the word "of" and "both of" appears in the document (to designate which group each person represents, since the word does not appear frequently in other contexts within the contact information);
2. A proxy for the number of categories of contacts offered, taken as the maximum of:
    - The number of times the word "enquiries" appears (e.g., "Press Enquiries");
    - The number of times the word "relations" appears (e.g., "Investor Relations");
    - The total number of times the words "media," "investor," and "analyst" appear (the most common categories listed);
3. A proxy for the number of contact details given, taken as the maximum of

- The number of email addresses, measured from the "@" character;
- The number of phone numbers, measured from the "-" character (phone numbers are usually listed as xxx-xxx-xxxx, after stripping out the "1-" that precedes some).

The three measures of internal IR operations are all fairly highly correlated with each other (between 0.51 and 0.72), but only weakly positively correlated with external IR firm use (between 0.03 and 0.08).

In Table C.I, I test whether the IR firm effects are sensitive to these measures of internal IR operations. For both the earnings and non-earnings announcement returns, controlling for internal IR operations has very little effect on the main results, in either magnitude or significance. In non-earnings returns, the IR firm coefficient with the full set of internal IR controls is 0.117 (*t*-statistic of 3.08), versus 0.114 (*t*-statistic of 3.00) with no internal IR controls. For earnings returns the IR firm coefficient with the full set of internal IR controls is -0.313 (*t*-statistic of -2.56), versus -0.336 (*t*-statistic of -2.74) with no controls. Measures of internal IR spending also do not show the same pattern in returns as using an external IR firm. Internal IR is associated with lower returns for both non-earnings and earnings announcements, although the effects are generally not significant. These results suggest that the impact of IR firm use is not simply proxying for internal IR spending.

Table C.I
Effect of Internal IR Spending on Press Release Returns

This table examines regressions of characteristic-adjusted returns around days with non-earnings press releases (Panel A) and Compustat Quarterly Earnings Announcements (Panel B), on a company's use of an IR firm for a sample of 3,934 publicly listed firms from January 2002 to December 2006. The dependent variable is *RetAdj*, the cumulative daily return (in %) in excess of the average returns for firms in the same size/book-to-market/momentum quintile, from one day before to one day after the announcements. The main independent variable is *IRFirm*, a dummy variable equal to one if the company used an IR firm in the year in question and zero otherwise. Company characteristics include log market capitalization, log book-to-market, momentum, industry controls, last month's stock return, the Heston and Sadka variable, press release subject codes, and standardized unexpected earnings (SUE) as defined in Appendix B. *Number of Contact People in Press Release*, *Number of Contact Categories in Press Release*, and *Number of Contract Details (Phone, email) in Press Release* are defined in Appendix B. *t*-statistics (with standard errors clustered by firm) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Non-Earnings Press Releases					
Intercept	1.512 ***	1.538 ***	1.536 ***	1.581 ***	1.569 ***
	(3.95)	(4.00)	(4.01)	(4.04)	(4.01)
IRFirm	0.114 ***	0.114 ***	0.117 ***	0.119 ***	0.117 ***
	(3.00)	(3.00)	(3.07)	(3.11)	(3.08)
Number of Contact People in Press Release		-0.040			-0.029
		(-1.46)			(-0.96)
Number of Contact Categories in Press Release			-0.042		-0.028
			(-1.33)		(-0.80)
Number of Contact Details (Phone, email) in Press Release				-0.039	-0.013
				(-1.25)	(-0.36)
Company Characteristics	Yes	Yes	Yes	Yes	Yes
R^2	0.008	0.008	0.008	0.008	0.008
N	245252	245252	245252	245252	245252
Panel B. Earnings Announcements					
Intercept	-0.622	-0.622	-0.555	-0.497	-0.537
	(-1.09)	(-1.09)	(-0.97)	(-0.85)	(-0.92)
IRFirm	-0.336 ***	-0.336 ***	-0.317 ***	-0.323 ***	-0.313 **
	(-2.74)	(-2.75)	(-2.58)	(-2.63)	(-2.56)
Number of Contact People in Press Release		0.002			0.065
		(0.03)			(0.93)
Number of Contact Categories in Press Release			-0.187 ***		-0.184 **
			(-2.60)		(-2.11)
Number of Contact Details (Phone, email) in Press Release				-0.090	-0.040
				(-1.41)	(-0.50)
SUE, Company Characteristics	Yes	Yes	Yes	Yes	Yes
R^2	0.022	0.022	0.022	0.022	0.022
N	50199	50199	50199	50199	50199

Table I
Summary Statistics

This table presents summary statistics on monthly company characteristics for U.S. publicly listed firms from January 2002 to December 2006, split into companies that used an IR firm that year (Panel A) and companies that didn't use an IR firm that year (Panel B).

Panel A. Companies Using Investor Relations Firms

	mean	std	min	p25	med	p75	max	n
Returns (in %)	1.05	14.40	-94.19	-5.05	0.70	6.50	460.87	54,581
Char-Adj Returns (in %)	-0.08	12.90	-88.63	-5.51	-0.38	4.76	427.78	51,985
Market Cap ($mil.)	11,212	32,619	1	233	1,251	6,881	513,362	54,682
Log Book-To-Market	-0.67	1.26	-3.36	-1.35	-0.80	-0.26	3.96	50,388
Turnover (in %)	1.71	1.76	0.01	0.64	1.16	2.11	10.16	54,682
Number of Analysts	11.71	11.14	0	3	8	18	82	54,682
Intitutional Ownership (in %)	47.49	30.37	0.00	18.27	53.05	73.59	95.95	54,682
Total Number of Articles	29.50	65.12	0	4	12	29	1911	22,151
Press Releases	3.57	4.91	0	1	2	5	79	22,082
Domestic Newspapers	3.46	12.95	0	0	0	2	531	21,960
Tone (Per Press Release)	0.007	0.019	0	0	0	0.007	0.333	136,395
Reporter Connections	0.575	0.494	0	0	1	1	1	21,906
Connected Reporter Turnover	0.062	0.085	0	0	0.048	0.078	1	12,586
Number of Firms								1,805
Number of Firm*Months								54,682

Panel B. Companies Not Using Investor Relations Firms

	mean	std	min	p25	med	p75	max	n
Returns (in %)	1.25	15.31	-95.27	-4.74	0.61	5.89	690.81	435,094
Char-Adj Returns (in %)	0.03	15.25	-102.39	-6.49	-0.72	5.23	682.55	342,980
Market Cap ($mil.)	1,298	5,082	1	63	220	787	310,219	437,989
Log Book-To-Market	-0.50	1.14	-3.36	-1.11	-0.57	-0.08	3.96	335,955
Turnover (in %)	1.36	1.81	0.01	0.28	0.72	1.66	10.16	437,989
Number of Analysts	5.26	7.61	0	0	2	7	109	437,989
Intitutional Ownership (in %)	31.61	30.30	0.00	2.89	22.29	56.68	95.95	437,989
Total Number of Articles	9.57	15.38	0	2	5	12	1227	136,828
Press Releases	1.88	2.40	0	0	1	3	108	136,368
Domestic Newspapers	0.58	2.62	0	0	0	0	158	135,544
Tone (Per Press Release)	0.006	0.014	0.000	0.000	0.000	0.007	0.290	372,188
Number of Firms								9,950
Number of Firm*Months								437,989

Table II

IR Firm Use and Media Coverage Around News Announcements

This table shows regressions of press coverage (after issuing a press release) on a firm's use of an IR firm for U.S. publicly listed firms from January 2002 to December 2006. The dependent variable is the natural log of the number of articles in Factiva about that firm on the trading day of the announcement and the day after. Panel A examines the effect of using an IR firm, with *IRFirm* being a dummy variable equal to one if the company used an IR firm in the year in question and zero otherwise. Panel B shows how the effect varies with the tone of the press release and between earnings and non-earnings announcements. *Earnflag* is a dummy variable that equals one if the press release was issued on a Compustat report date of quarterly earnings, and zero otherwise. *Tone* is the proportion of negative words in the press release headline and lead paragraph, using Loughran and McDonald's (2010) list of negative words. *t*-statistics (with standard errors clustered by firm) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. IR Firm Use, Tone, and Total Coverage

Intercept	1.208 ***	1.466 ***	1.124 ***	1.432 ***	1.443 ***	1.319 ***
	(56.18)	(20.13)	(52.70)	(18.63)	(19.56)	(18.87)
IR Firm	0.338 ***	0.255 ***	0.357 ***	0.277 ***	0.273 ***	0.262 ***
	(6.56)	(6.94)	(6.49)	(7.03)	(6.97)	(6.87)
Neg. Tone			8.745 ***	8.581 ***	8.018 ***	7.280 ***
			(25.90)	(25.74)	(28.71)	(24.79)
IR Firm * Neg. Tone			-1.707 ***	-2.049 ***	-1.850 ***	-1.624 ***
			(-2.66)	(-3.10)	(-3.12)	(-2.62)
Log Market Cap	0.478 ***	0.469 ***	0.489 ***	0.486 ***	0.490 ***	0.541 ***
	(20.42)	(11.68)	(19.83)	(11.46)	(11.82)	(12.81)
Beta		0.020		0.015	0.013	0.006
		(1.61)		(1.06)	(0.97)	(0.47)
Log Book-to-Market		0.066 ***		0.075 ***	0.073 ***	0.077 ***
		(4.29)		(4.53)	(4.48)	(4.78)
Momentum		-0.034 ***		-0.031 ***	-0.034 ***	-0.034 ***
		(-3.80)		(-2.62)	(-3.48)	(-3.61)
Number of Analysts		0.010 ***		0.010 ***	0.010 ***	0.009 ***
		(5.03)		(4.58)	(4.70)	(4.23)
Insititutional Ownership		-0.274 ***		-0.327 ***	-0.335 ***	-0.305 ***
		(-3.87)		(-4.52)	(-4.75)	(-4.44)
Day 0 Abnormal Return (if Pos.)						3.528 ***
						(23.30)
Day 0 Abnormal Return (if Neg.)						-4.670 ***
						(-37.68)
Industry, 1 mth return, H&S	No	Yes	No	Yes	Yes	Yes
Press Rel. Subject Codes	No	Yes	No	No	Yes	Yes
Log Market Cap * Tone	No	No	No	No	No	Yes
Clustering	Firm/Day	Firm	Firm/Day	Firm/Day	Firm	Firm
R^2	0.264	0.316	0.279	0.323	0.336	0.359
N	340928	298935	312633	274592	274592	273889

Intercept	1.283 ***	1.308 ***	1.237 ***
	(16.69)	(17.22)	(17.24)
IR Firm	0.271 ***	0.266 ***	0.276 ***
	(6.39)	(6.41)	(6.79)
Neg. Tone	9.213 ***	8.537 ***	7.894 ***
	(31.62)	(29.37)	(25.18)
IR Firm * Neg. Tone	-2.449 ***	-2.190 ***	-1.594 **
	(-3.75)	(-3.71)	(-2.46)
Earnings Ann. * IR Firm * Neg. Tone	2.757 *	3.013 **	2.474 **
	(1.89)	(2.28)	(1.99)
Earnings Ann.	0.771 ***	0.878 ***	0.759 ***
	(47.58)	(51.93)	(44.81)
Earnings Ann. * IR Firm	0.155 ***	0.133 ***	-0.079 **
	(3.49)	(3.10)	(-2.09)
Earnings Ann. * Neg. Tone	-11.846 ***	-10.212 ***	-7.646 ***
	(-18.21)	(-16.39)	(-13.04)
Company Characteristics	Yes	Yes	Yes
Press Rel. Subject Codes	No	Yes	Yes
Adjusted Return	No	No	Yes
Earnings Ann.	No	No	Yes
R^2	0.355	0.374	0.391
N	274416	274416	273713

Table III
Non-Earnings Press Release Returns and IR Firm Use

This table examines regressions of characteristic-adjusted returns around days with non-earnings press releases on a company's use of an IR firm for U.S. publicly listed firms from January 2002 to December 2006. The dependent variable is *RetAdj*, the cumulative daily return (in %) in excess of the average returns for firms in the same size/book-to-market/momentum quintile, from one day before to one day after the announcements. Days are included whenever the company has a press release on either PR Newswire or BusinessWire on days other than earnings announcements. The main independent variable is *IRFirm*, a dummy variable equal to one if the company used an IR firm in the year in question and zero otherwise. *Tone* is the proportion of negative words in the press release headline and lead paragraph, using Loughran and McDonald's (2010) list of negative words. Company characteristics include industry dummy variables, the past month's return, the Heston and Sadka variable, accruals, and cuts to R&D. See Appendix B for definitions of these variables, as well as definitions of log book-to-market, momentum, and press release subject codes. *t*-statistics (with standard errors clustered by firm and announcement day) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Intercept	0.489 ***	1.527 ***	1.541 ***	1.709 ***	1.712 ***
	(10.64)	(4.22)	(3.98)	(4.56)	(4.30)
IR Firm	0.161 ***	0.109 ***	0.112 ***	0.165 ***	0.164 ***
	(3.45)	(2.58)	(2.94)	(3.74)	(4.20)
Neg. Tone				-23.637 ***	-23.246 ***
				(-8.70)	(-9.31)
IR Firm * Neg. Tone				-8.612 ***	-8.157 ***
				(-3.67)	(-2.68)
Log Market Cap	-0.391 ***	-0.277 ***	-0.290 ***	-0.364 ***	-0.374 ***
	(-10.82)	(-4.78)	(-6.01)	(-6.53)	(-8.21)
Beta		-0.024	-0.022	-0.03	-0.03
		(-0.64)	(-0.80)	(-0.91)	(-1.13)
Log Book-to-Market		0.018	0.026	0.02	0.03
		(0.57)	(0.92)	(0.67)	(1.00)
Momentum		-0.047	-0.047	-0.052 *	-0.052 *
		(-1.56)	(-1.62)	(-1.74)	(-1.79)
Number of Analysts		0.009 **	0.009 ***	0.010 **	0.010 ***
		(1.99)	(2.61)	(2.23)	(2.88)
Insititutional Ownership		-0.821 ***	-0.819 ***	-0.812 ***	-0.806 ***
		(-8.30)	(-10.21)	(-8.14)	(-9.96)
Company Characteristics	No	Yes	Yes	Yes	Yes
Press Rel. Subject Codes	No	No	Yes	No	Yes
Log Market Cap * Tone	No	No	No	Yes	Yes
Clustering	Firm/Month	Firm/Month	Firm	Firm/Month	Firm
R^2	0.003	0.004	0.008	0.006	0.009
N	275756	245252	245252	245252	245252

Table IV
Earnings Announcement Returns and IR Firm Use

This table examines regressions of earnings announcement characteristic-adjusted returns on a company's use of an IR firm for U.S. publicly listed firms from January 2002 to December 2006. The dependent variable is *RetAdj*, the size/book-to-market/momentum adjusted cumulative daily returns (in %) from one day before to one day after the announcements. The main independent variable is *IRFirm*, a dummy variable equal to one if the company used an IR firm that year and zero otherwise. SUE is the firm's standardized unexpected earnings, split into two positive and negative values: "(if >=0)" is either positive or zero, and "(if <=0)" is either negative or zero. *Tone* is the proportion of negative words in the press release headline and lead paragraph, using Loughran and McDonald's (2010) list of negative words See Appendix B for further details. *Adjusted Returns, t-50: t-5* is the cumulative-adjusted stock return from 50 days before to 5 days before the earnings announcement. *Log (1 + Coverage of Positive Press Releases* is one plus the natural log of the total number of articles written about the company on days when a positively toned press release is issued, as defined in Appendix B. Stock characteristic controls include beta, log book-to-market, momentum, number of analysts, institutional ownership, industry controls, last month's stock return, the Heston and Sadka variable, accruals, and cuts to R&D, as defined in Appendix B. *t*-statistics (with standard errors clustered by firm and month) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

IR Firm	-0.343 **	-0.336 **	-0.199	-0.364 *	-0.152	-0.348 **	-0.284 **
	(-2.46)	(-2.35)	(-1.44)	(-1.85)	(-0.79)	(-2.43)	(-1.97)
SUE (if Pos.)	1.667 ***	1.626 ***	1.702 ***	1.603 ***	1.865 ***	1.636 ***	1.613 ***
	(12.62)	(12.77)	(14.72)	(10.09)	(11.18)	(12.45)	(12.74)
SUE (if Neg.)	-1.173 ***	-1.207 ***	-1.093 ***	-1.173 ***	-1.127 ***	-1.226 ***	-1.203 ***
	(-11.89)	(-12.08)	(-12.04)	(-8.54)	(-8.62)	(-11.91)	(-12.00)
IR Firm * SUE (if Pos)			0.193		0.099		
			(0.82)		(0.29)		
IR Firm * SUE (if Neg.)			-0.597 **		-0.804 **		
			(-2.07)		(-2.00)		
Neg. Tone				-30.02 ***	-31.00 ***		
				(-5.36)	(-5.59)		
IR Firm * Neg. Tone				9.274	13.207		
				(0.71)	(0.97)		
Adjusted Returns, t-50:t-5						-1.084 ***	
						(-3.49)	
Log (1 + Coverage of Pos. Press Releases, t-50:t-5)							-0.117 ***
							(-3.63)
Log Market Cap	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Log Market Cap*SUE	No	No	Yes	No	Yes	No	No
Log Market Cap*Tone	No	No	No	Yes	Yes	No	No
R^2	0.019	0.022	0.029	0.029	0.037	0.023	0.022
N	57006	50629	50629	26463	26463	50560	50362

Table V

Media Coverage and IR Firm Geographical Links to Newspapers

This table shows regressions of annual positive press coverage on IR firm use and geographical links between newspapers, companies and IR firms for U.S. publicly listed firms from January 2002 to December 2006. In Panel A, the dependent variable measures (by news source) the number of articles about each company on days when the company had a positively toned press release, divided by the number of articles in the paper that year. In Panel B, the same positive coverage is divided by the number of articles about that company in the paper that year. *IRFirm* is a dummy variable equal to one if the company used an IR firm in the year. *CompanyPaperMatch* is a dummy variable that equals one if the company is headquartered in the same state as the news publication, and zero otherwise. *IRFirmPaperMatch* is a dummy variable that equals one if the IR firm is headquartered in the same state as the newspaper. *State Controls* are 50 dummy variables for the state of the company headquarters. Stock characteristic controls include beta, log book-to-market, momentum, and industry controls, as defined in Appendix B. *t*-statistics (with standard errors clustered by firm and year) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Positive Coverage as a Proportion of All Articles in the News Source					
Dependant Variable is Coverage of Positive Press Releases as % of All Articles in the News Source					
Intercept	0.059 **	0.059 **	0.058 **	0.054 **	0.054 **
	(4.19)	(4.19)	(4.14)	(3.89)	(3.89)
IR firm	0.027 **	0.026 **	0.026 **	0.026 **	0.027 **
	(4.29)	(4.25)	(4.27)	(4.29)	(4.07)
IRFirmPaperMatch		0.066 **	0.058 **	0.057 **	0.060 **
		(3.43)	(3.04)	(3.06)	(3.08)
CompanyPaperMatch			0.044 ***	0.044 ***	0.046 ***
			(8.04)	(8.47)	(8.37)
Mutual Fund Ownership In State of Paper					-0.125 **
					(-4.25)
Mutual Fund Ownership In State of IR Firm					-0.313 *
					(-2.20)
Company Characteristics	Yes	Yes	Yes	Yes	Yes
State Controls	No	No	No	Yes	Yes
R^2	0.035	0.035	0.036	0.040	0.040
N	1534965	1534965	1534965	1534965	1534965

Panel B. Positive Coverage as a Proportion of Articles About That Company					
Dep. Var. is Coverage of Positive Press Releases as % of Articles About Company in News Source					
Intercept	24.496 ***	24.498 ***	24.627 ***	26.636 ***	26.662 ***
	(7.41)	(7.41)	(7.45)	(7.64)	(7.65)
IR firm	4.837 ***	4.806 ***	4.789 ***	4.640 ***	4.739 ***
	(5.93)	(5.89)	(5.86)	(5.81)	(5.45)
IRFirmPaperMatch		0.994	1.776 **	1.961 **	2.472 **
		(1.62)	(2.86)	(3.16)	(3.64)
CompanyPaperMatch			-4.174 ***	-4.219 ***	-3.753 ***
			(-5.17)	(-5.84)	(-5.10)
Mutual Fund Ownership In State of Paper					-31.613 *
					(-2.39)
Mutual Fund Ownership In State of IR Firm					-28.252
					(-1.69)
Company Characteristics	Yes	Yes	Yes	Yes	Yes
State Controls	No	No	No	Yes	Yes
R^2	0.056	0.056	0.056	0.060	0.060
N	318215	318215	318215	318215	318215

Table VI
News Announcement Returns, IR Firm Use and Reporter Turnover

This table examines regressions of announcement-day characteristic-adjusted returns on a company's use of an IR firm for U.S. publicly listed firms from January 2002 to December 2006. Panel A is for days in which a press release not containing an earnings announcement was issued, and Panel B is for earnings announcement days. The dependent variable is *Retadj*, the cumulative daily return (in %) in excess of the average returns for firms in the same size/book-to-market/momentum quintile, from one day before to one day after the announcement. *Connected Reporter Turnover* is the proportion of reporters connected to an IR firm (defined as any reporter who wrote about at least two of the IR firm's clients during the previous calendar year) who dropped out of the reporter sample during the current year. *Weighted Connected Reporter Turnover* is the same except each reporter is weighted by the log of the total number of articles in the sample in the media outlet they departed from. *Any Connected Reporters* is a dummy variable that equals one if the IR firm had any connected reporters last year, and zero otherwise. *Num of Connected Reporters* is the number of connected reporters last year. *Company Reporter Turnover* is the fraction of all reporters who wrote about that company last year who left the sample in the current year. Other variables are the same as in Table III (for Panel A) and Table IV (for Panel B). Company characteristics include log book-to-market, momentum, number of analysts, institutional ownership, the Heston and Sadka variable, last month's return, accruals, cuts to R&D, and industry dummies, as defined in Appendix B. *t*-statistics (with standard errors clustered by firm and month) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Non-Earnings Announcements					
Intercept	1.502 ***	1.509 ***	1.512 ***	1.510 ***	1.329 ***
	(3.95)	(3.94)	(3.95)	(3.94)	(3.69)
IRFirm	-0.001	0.004	0.004	0.007	0.025
	(-0.02)	(0.08)	(0.06)	(0.12)	(0.43)
Any Connected Reporters (Dummy)	0.234 ***	0.228 ***	0.203 ***	0.186 **	0.155 **
	(3.68)	(3.35)	(3.15)	(2.58)	(2.17)
Connected Reporter Turnover	-0.836 **	-0.821 *		-0.806 *	-0.774 *
	(-1.99)	(-1.88)		(-1.83)	(-1.76)
Weighted Connected Reporter Turnover			-0.650 **		
			(-2.14)		
Num of Connected Reporters (/100)				0.012 ***	0.009 **
				(2.66)	(2.26)
Company Reporter Turnover					0.066
					(0.31)
Controls					
Company Characteristics	Yes	Yes	Yes	Yes	Yes
Subject Code Dummies	No	Yes	Yes	Yes	Yes
R^2	0.004	0.008	0.008	0.008	0.007
N	245252	245252	245252	245252	230044

Panel B. Earnings Announcements				
Intercept	-0.620	-0.627	-0.620	-0.806 *
	(-1.28)	(-1.30)	(-1.28)	(-1.71)
IRFirm	-0.184	-0.182	-0.183	-0.237
	(-0.75)	(-0.74)	(-0.75)	(-0.89)
Any Connected Reporters (Dummy)	-0.514 *	-0.375	-0.542 *	-0.498 *
	(-1.77)	(-1.39)	(-1.78)	(-1.68)
Connected Reporter Turnover	3.913 ***		3.923 ***	3.214 **
	(2.60)		(2.60)	(2.04)
Weighted Connected Reporter Turnover		2.487 *		
		(1.71)		
Num of Connected Reporters			0.012	
			(0.55)	
Company Reporter Turnover				0.209
				(0.56)
Controls				
Company Characteristics	Yes	Yes	Yes	Yes
R^2	0.022	0.022	0.022	0.020
N	50629	50629	50629	41455

Table VII
IR Firm Use and Management of Reported Earnings

This table examines earnings management and IR firm use. In Panel A, the dependent variables are the Gompers, Ishii, and Metrick (2003) measure of shareholder protection and a dummy variable for whether the firm restated earnings that year. In Panel B, the dependent variables are a dummy variable for whether the company cut R&D expenditures and a variable for accruals. All are defined in Appendix B. The main independent variable is *IRFirm*, a dummy variable equal to one if the company used an IR firm in the year in question and zero otherwise. *Log Market Cap*, *Log Book-to-Market*, *Turnover Last Year*, *Analyst Coverage* and *Institutional Ownership* are defined in Appendix B. Additional controls are included for raw values of *market cap*, *book-to-market ratio*, and the stock return over the previous year. *t*-statistics (with standard errors clustered by firm and year) are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Governance and Earnings Restatements						
	'G' Governance Measure (high G = low shareholder protection)			Earnings Restatements (=1 if earnings restated that year, 0 otherwise)		
Intercept	8.953 ***	5.372 ***	5.940 ***	0.072 ***	-0.174 ***	-0.316 ***
	(170.32)	(7.87)	(6.04)	(6.86)	(-2.93)	(-7.92)
IRFirm	0.325 ***	0.249 **	0.211 **	0.077 ***	0.024 ***	0.026 ***
	(3.45)	(2.50)	(2.12)	(5.17)	(3.65)	(3.62)
Log Market Cap		0.284 ***	0.258 ***		0.021 ***	0.023 ***
		(5.30)	(4.92)		(3.76)	(6.27)
Log Book-to-Market		0.163 **	0.132 *		0.019 ***	0.018 ***
		(2.31)	(1.73)		(4.71)	(4.31)
Turnover, Last Year		-0.234 ***	-0.195 ***		0.005 *	0.007 **
		(-5.15)	(-5.22)		(1.72)	(2.32)
Analyst Coverage		0.006	0.017 **		0.001 ***	0.001 **
		(0.86)	(2.36)		(2.94)	(2.48)
Institutional Ownership		0.264 *	0.314 **		-0.021	-0.024
		(1.75)	(2.16)		(-1.23)	(-1.53)
Industry, Year Controls	No	No	Yes	No	No	Yes
R^2	0.002	0.041	0.106	0.008	0.041	0.064
N	12689	10740	10740	20966	15537	15537

Panel B. Positive Coverage as a Proportion of Articles About That Company					
Dep. Var. is Coverage of Positive Press Releases as % of Articles About Company in News Source					
Intercept	24.496 ***	24.498 ***	24.627 ***	26.636 ***	26.662 ***
	(7.41)	(7.41)	(7.45)	(7.64)	(7.65)
IR firm	4.837 ***	4.806 ***	4.789 ***	4.640 ***	4.739 ***
	(5.93)	(5.89)	(5.86)	(5.81)	(5.45)
IRFirmPaperMatch		0.994	1.776 **	1.961 **	2.472 **
		(1.62)	(2.86)	(3.16)	(3.64)
CompanyPaperMatch			-4.174 ***	-4.219 ***	-3.753 ***
			(-5.17)	(-5.84)	(-5.10)
Mutual Fund Ownership In State of Paper					-31.613 *
					(-2.39)
Mutual Fund Ownership In State of IR Firm					-28.252
					(-1.69)
Company Characteristics	Yes	Yes	Yes	Yes	Yes
State Controls	No	No	No	Yes	Yes
R^2	0.056	0.056	0.056	0.060	0.060
N	318215	318215	318215	318215	318215

Table VIII

Calendar-Time Portfolios Around Earnings Announcements, Sorted By IR Firm Use

This table shows regressions of calendar-time portfolios of stocks around earnings announcements, according to whether or not the company used an IR firm, for U.S. publicly listed firms from 2002 to 2006. Portfolios are formed using equal-weighted daily returns (in per cent), and rebalanced daily. These portfolios are regressed on the excess return on the market (Mkt-Rf), as well as portfolios of SMB, HML, and UMD from Ken French's website. "Holding Period" indicates how long the stock is held in the portfolio for, with *t*=0 being the day of the earnings announcement according to Compustat, *t*=1 being one day after the announcement, etc. "No IR" includes companies that did not use an IR firm that year, and "IR" indicates companies that did use an IR firm that year. "(No IR – IR)" is a difference portfolio that is long the "No IR" portfolio and short the "IR" portfolio. For the "IR" and "No IR" portfolios, a day is only included if the portfolio contains at least five stocks, and in the case of the "(No IR – IR)" portfolio, both component portfolios must contain at least five stocks. *t*-statistics are in parentheses, and *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Holding	No IR	IR	(No IR - IR)	(No IR - IR)					
Period	Intercept	Intercept	Intercept	Mkt-Rf	SMB	HML	UMD	R^2	N
t=0 : t=1	0.136 ***	-0.133 ***	0.198 ***	-0.171 ***	0.025	0.367 **	0.086	0.027	1037
	(4.84)	(-2.81)	(3.71)	(-2.90)	(0.22)	(2.26)	(0.94)		
t=0 : t=5	0.051 ***	-0.028	0.074 ***	-0.154 ***	0.050	0.380 ***	0.060	0.069	1358
	(3.95)	(-1.13)	(2.83)	(-5.20)	(0.90)	(4.66)	(1.32)		
t=0 : t=10	0.062 ***	0.015	0.044 **	-0.172 ***	0.060 *	0.238 ***	0.090 ***	0.132	1379
	(6.37)	(0.93)	(2.57)	(-8.89)	(1.67)	(4.47)	(3.06)		
t=0 : t=20	0.057 ***	0.030 ***	0.028 **	-0.200 ***	0.092 ***	0.156 ***	0.067 ***	0.263	1389
	(7.63)	(2.73)	(2.57)	(-16.12)	(3.98)	(4.56)	(3.51)		

Table IX
Four-Factor Alphas by News Level and IR Firm Use

This table shows four-factor alphas for companies split according to U.S. newspaper coverage and IR firm usage for U.S. publicly listed firms from January 2002 to December 2006. The coefficient is the intercept from the regression of monthly excess stock returns on the Fama French three factors plus momentum: excess market return, SMB, HML, and UMD. Panel A examines companies that use an IR firm. For the rows, "No IR Firm" refers to companies that did not use an IR firm that year, "IR Firm" to companies that used an IR firm that year, and "No IR – IR" to the difference. Panel B sorts on whether the company added an IR firm for the first time that year. Panel C sorts on whether companies used an IR firm, but excluding companies that added an IR firm for the first time from the "IR Firm" category. The columns divide companies according to levels of news coverage – "No" refers to companies without any articles last month, "Low" and "High" to companies with at least one article last month, and are respectively below or above the median of all companies with some coverage in newspapers last month, and "No-High" to the difference of the two categories. *t*-statistics are in parentheses, and *, **, and *** indicate statistical significance at a 10%, 5%, and 1% level, respectively.

Panel A. All IR Firm Clients					
		News level			
	All	No	Low	High	N - H
No IR Firm	0.528 **	0.633 **	0.176	-0.124	0.757 ***
	(2.14)	(2.34)	(0.86)	(-0.59)	(2.62)
IR Firm	0.175	0.173	0.137	0.132	0.041
	(1.20)	(0.82)	(0.68)	(0.73)	(0.17)
No IR - IR	0.203	0.301	-0.140	-0.217	
	(1.32)	(1.43)	(-0.64)	(-1.21)	
Panel B. Companies That Added an IR Firm for the First Time					
		News level			
	All	No	Low	High	N - H
No IR Firm	0.518 **	0.618 **	0.216	-0.045	0.663 **
	(2.15)	(2.33)	(1.10)	(-0.23)	(2.40)
IR Firm	-0.617 **	-0.789 **	-0.529	-0.094	-0.695
	(-2.08)	(-2.21)	(-1.04)	(-0.18)	(-1.21)
No IR - IR	0.885 ***	1.150 ***	0.405	0.076	
	(3.03)	(3.35)	(0.83)	(0.15)	
Panel C. IR Firm Clients Other Than Those Who Added an IR Firm for the First Time					
		News level			
	All	No	Low	High	N - H
No IR Firm	0.510 **	0.618 **	0.161	-0.146	0.764 ***
	(2.08)	(2.29)	(0.79)	(-0.68)	(2.64)
IR Firm	0.272 *	0.311	0.224	0.171	0.139
	(1.75)	(1.36)	(1.01)	(0.93)	(0.56)
No IR - IR	0.085	0.145	-0.245	-0.278	
	(0.50)	(0.61)	(-0.99)	(-1.41)	