Preliminary and Incomplete

The Media and Asset Prices

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Abstract

Does media coverage affect asset prices? If so, why? And what are the consequences? In this paper we try to answer these questions by looking at the effect media reporting has on stock market reactions to earnings announcement. We find that stock prices are most reactive to the type of earnings emphasized by the press. This effect is stronger for companies with fewer analysts and when the media outlet is more credible. Interestingly, we find that media spin tends to follow the spin promoted by the company. This is more so the fewer alternative sources of information about a company are available, the more demand for information there is, and the less reputable a newspaper is. The evidence is most consistent with a *quid pro quo* relation between journalists and their sources, where they receive private information in exchange for a positive spin on companies' news.

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Nothing but a newspaper can drop the same thought into a thousand minds at the same moment. A newspaper is an adviser that does not require to be sought, but that comes of its own accord and talks to you briefly every day of the common weal, without distracting you from your private affairs.

De Toqueville, *Democracy in America*, Vol II, Section II, Chapter VI.

I. Introduction

On May 3 1998 on the front page of the Sunday edition of the New York Times the editors chose to feature a story about the development of new cancer-cure drugs and mentioned EntreMed, a biotech company with the licensing right to the breakthrough (Huberman and Regev, 2001). None of the information reported in the article was new. In fact, Huberman and Regev (2001) document that all information was in the public domain before the publication of the article. In spite of this lack of news, the stock market price quadrupled the following day and part of that increase appears to have been permanent.

Is this an isolated case or does it reflect that media reporting can affect asset prices? If the latter, why does this occur? And what are the consequences? Should we expect the media to report in an unbiased way? If not, what is the direction of the bias and what effect can this have on financial markets?

This paper will attempt to answer all these questions. To do so we focus on the stock market reactions to earnings announcements. While this is certainly not the most interesting dimension of news reporting, it is an area where we can more easily quantify the impact of the way media report news, while controlling for the new information revealed to the market. It is also an area where we can more easily classify the spin chosen by the media. Media coverage is different than other information disclosure by

the firm in that space is at a premium and coverage is more selective. Newspaper editors inevitably provide a spin in their coverage, choosing whether to include or exclude a piece of news, positioning it on the first or last page, or in the first or the last paragraph.

We start by documenting that media reporting is systematically correlated with stock price responses to earning announcements, even after controlling for the size of the earnings surprise. To capture in a quantifiable way the spin of media coverage we focus on whether media choose to focus on GAAP earnings or "street" earnings (alternative earning estimates released by companies to eliminate the impact on earnings of "extraordinary" charges, also known as pro forma earnings). We find that if newspapers report GAAP earnings first, the stock price reaction is more sensitive to GAAP earnings and less to street earnings, even after controlling for the actual size of the earnings surprises. The opposite is true when newspapers report street earnings first. The responsiveness to street earnings is accentuated if newspapers' articles only report street earnings, the same is true (although the effect is weaker) if newspapers only report GAAP earnings.

These results suggest that Huberman and Regev (2001) touched upon the tip of an iceberg. But how is it possible that newspaper articles impact asset prices? In the most extreme version of frictionless markets it is sufficient that one trader is aware of a piece of news for this news to be embedded in stock prices. In an internet world where investors have at least as fast access to the same raw information as the reporter, media coverage should not matter.

We identify several reasons why media can have a role. In the presence of limits to arbitrage, the number (or better the wealth-weighted number) of informed people

matters. Even in an internet world where all the information is a 'click of the mouse' away, finding information might be time consuming. By including a piece of information a newspaper editor changes the cost of information collection for thousand of readers. Since media reporting affects the number of informed people, it can also affect the stock prices. Even in the internet era De Toqueville's statement remains true.

Second, media provide credibility. It is different if I read news on a random web site or if I read it in The *New York Times*. Last, but not least, media provides common knowledge. When I read news in the *New York Times*, not only do I learn about it, but I learn about the fact that millions of other people learn about it. This common knowledge may affect the stock price level (Morris and Shin , 2002).

Consistent with these hypotheses, we find that the impact of the media on asset prices is larger when investors have fewer alternative sources of information to turn to, which we proxy for using the number of analysts, and when the newspaper providing coverage is more reputable, which we proxy using Wall Street Journal coverage.

Once we admit that media reporting does matter, then understanding what drives media spin becomes a question of financial and economic interest. One view of the media is that they provide a public good, identifying the most relevant, credible information and presenting that information in a balanced way. In this view, there is no bias. Another view, which we focus on in the second part of the paper, is that journalists and newspaper owners have incentives in gathering and diffusing information that can bias their presentation of information.

We identify three potential explanations why reporters spin may be biased . First, we focus on what we call a *quid pro quo* bias. An important asset in a journalist's

professional portfolio is the privileged sources of information she has access to. After all the Watergate scandal would have never exploded if it were not for a "deep throat" tipping Woodward and Bernstein in the right direction. As one former journalist described the situation to us, "When I started I thought the client was the public, but I soon learned that my client is the source."[1] To maintain access to these sources journalists establish an implicit *quid pro quo*. The source repeatedly reveals valuable information to the journalist in exchange for a positive spin on the news being revealed. Of course, the reporter (and the newspaper) has a reputation to protect and the value of her services will decrease with the size of the bias. In equilibrium, however, the size of the pro-company bias will be positive.

The second explanation for positive spin, closely related to this, is that reporters are lazy or incompetent, and thus are duped by the information that is provided to them. This opinion is shared by the CEO of Pearson, the group owning the Financial Times, in a recent interview to the *Royal Society of Arts Journal*: "Sometimes I do think that the business press – and I include the FT in this – has not worked hard enough to ferret out these stories".[2]

The third theory focuses on biases arising from the demand side for news – what is it that readers want to read? Prominent in the literature on bubbles and panics (e.g. Kindleburger (1989), Galbraith (1990), Schiller(2000)), is the proposition that readers like to read positive news about firms they own and that this leads newspapers to tilt their coverage to putting a positive gloss on news. A version of this argument has recently

[1] Jonathan West, interview with author, November 17, 2002.
[2] Quoted in "City Scribblers smarting over questions of competence", *The Daily Telegraph*, Friday October 11, 2002, p. 18.

been formalized by Mullanaithan and Shleifer (2002) in the context of political reporting. They assume that readers are more inclined to believe articles that confirm their priors, while they discount others. With such behavior it pays for reporters to follow the herd.

We test predictions of these theories of media bias in our data on earnings announcements. All of these theories have a common prediction: the bias should be stronger during boom periods. The first two explanations also predict that the bias should be stronger when there are fewer additional sources of information and it should be weaker for media outlets with higher credibility.

We find that newspapers seem to be influenced by companies spin. If the press release emphasizes street earnings, newspapers are 45 % more likely to emphasize street earnings. If the press release reports only street earnings, the probability of a newspaper article emphasizing street earnings goes up by 34% and the probability of an article reporting only street earnings goes up by 43%.

This correlation does not necessarily prove the existence of a bias. Companies might choose to emphasize the earnings measure with the greater informational content for investors and newspapers might follow the companies' lead because they realize this. To test whether the correlation we find reflects some type of bias, as opposed to greater information content, we use two predictions unique to the bias explanation. The *quid-pro-quo* theory, for instance, predicts that in times when the demand for information is higher, the bias will be more severe. Since the demand for financial information was higher during the years of the boom, we expect the correlation between companies' spin

and newspapers' spin to be stronger during those years than afterwards. This is indeed what we find. In 1998-99 the correlation between companies' spin and newspapers' spin is 0.52, significantly greater than 0.20 we find in the period 2001-2002.

The second prediction is that the bias should be greater for companies for whom the cost of collecting information is higher. We test this prediction using as a proxy for the cost of finding information the number of analysts following a company: the larger the number of analysts, the easier it is to gather alternative information. Consistent with the *quid –pro quo* theory, we find that the correlation between companies' spin and newspapers' spin is higher for companies with fewer analysts (0.64 versus 0.49).

While our evidence is preliminary and limited by the high cost of collecting information on the spin in press releases and news stories, it does portray a consistent picture. The cost of gathering information biases the media in favor of their information sources, with this bias being stronger when the value of these sources is greater. Their bias is not without cost, because – as we show in the first part of the paper—media reporting affects the responsiveness of stock prices to news.

The rest of the paper proceeds as follows. Section I explains why we focus on earnings announcements and how we implement our analysis using different measures of earnings. Section II describes our data. Section III presents our results on the correlation between media coverage and asset prices. Section IV discusses why media can have an impact and presents some tests of the different hypotheses. Section V analyzes why media reporting can be biased and tests the implications of some of the different hypotheses of the incentives behind the production, revelation, and dissemination of

companies' information, introducing the idea of a supply side bias in media coverage. Section IV tests for this supply side bias. Conclusions follow.

I. Earnings Measures, Disclosure, and Spin

Why earning announcements?

To explore whether the EntreMed case is an isolated instance or one manifestation of a broader phenomenon, we would like events that occur repeatedly over time where, as with EntreMed, the information contained in the news coverage is already available to the market, or at least we can control for the actual news in a regression.. This requires that the news should be easily quantifiable. Finally, to explore questions of media bias, we would like events where the spin media choose is easily quantifiable.

We think that corporate earnings announcements satisfy all these criteria. It is clearly an event repeated over time. Furthermore, the news associated with this event is potentially available to investors regardless of media reporting, because companies are required (see below) to release earnings with a press wire. One unique feature of earning announcements is that we can easily quantify the news element in it. In fact, not only can we easily quantify the announcement, but also the unexpected component of that surprise, by looking at the difference between the announced earnings and expected earnings. Finally, we can easily quantify the spin, by looking at what type of earnings get emphasized (i.e., reported first). But this requires us to explain why different types of earnings get reported.

Earnings Measures

When accountants talk about earnings, they generally refer to earnings obtained following "generally accepted accounting principles", also known as 'GAAP earnings'. This standard earnings measure, however, includes some non recurrent items, which complicate the job of forecasting future earnings. For this reason, analysts may prefer to work with a GAAP-based measure of earnings that exclude non-recurrent charges. The generally accepted accounting principles, limit the arbitrariness of this correction by providing strict guidelines regarding what items can be labeled "non recurrent": they have to be both unusual and infrequent. Hence, even these adjusted GAAP earnings, which we will use on our analysis, are the most reliable measure of earnings.

Analysts and companies, however, resent the rigidity of GAAP. For this reason they have promoted alternative measures of earnings, often called 'pro-forma' earnings or 'street' earnings. The exact definition of this measure of earnings differs by company and industry, and importantly excludes additional items beyond the extraordinary items and discontinued operations, often under the heading other "non-operating expenses."[3] Since GAAP does not provide a definition of these non operating expenses, this alternative definition provides management with certain discretion, in so far as they can convince analysts and the tracking services that the modifications are appropriate.[4]

The use of street earnings can be defended as an approach that is a better source of information for predicting future firm value as a result of removing transitory items.

[3] As Bradshaw and Sloan (2002) report "these exclusions include restructuring charges, write-downs and impairments, research and development expenditures, mandatory stock compensation expense, goodwill amortization and certain results of subsidiaries" but sources of revenue are not excluded.

[4] I/B/E/S describes their methodology as follows: "Earning from operations means diluted earnings excluding all extraordinary items… and excluding certain non-recurring or non-operating items (but not extraordinary by accounting definition) that a majority of the contributing analysts want to exclude… There is no 'right' answer as to when an extraordinary charge is non-recurring or non-operating and deserves to be excluded from the earnings bases use to value the company's stock."

Alternatively (and more commonly), this approach has been condemned as a presentation of the firm's condition that is biased towards putting a better face on firm performance. As early as 1973, the SEC expressed concern for such unaudited accounts[5], and this view has been reiterated strongly more recently by SEC chairman Arthur Levitt, and his chief accountant who called such earnings EBS or Everything but Bad Stuff.[6] Amazon, for example, went so far as to exclude in its pro forma earnings not only these items but also interest expense on long-term debt. Such concerns about biased presentation of information led first to information advisories by the SEC: ""pro forma" financial results aren't prepared using GAAP, and they may not convey a true and accurate picture of a company's financial well-being. They often highlight only positive information. And because "pro forma" information doesn't have to follow established accounting rules, it can be very difficult to compare a company's "pro forma" financial information to prior periods or to other companies."[7]

This view is now reflected in Regulation G (passed March 28, 2003, after our sample period) that limits the public disclosure of non-GAAP financial information and requires a quantitative reconciliation with GAAP information in the same document.

Disclosure

Investors, in almost all cases, have access to both earnings measures, regardless of whether the company is covered by the media. Firms are required to prepare quarterly

[5] "If accounting net income computed in conformity with generally accepted accounting principles is not an accurate reflection of economic performance for a company or an industry, it is not an appropriate solution to have each company independently decide what the best measure of its performance should be and present that figure to its shareholders as Truth".

[6] See Levitt, Arthur, "The Numbers Game," www.sec.gov/news.speeches/spch220.txt, Turner quote in, "IN THE MONEY: A Reason To Look Behind Pro Forma Earnings"By Michael Rapoport 22 November 2000 Dow Jones News Service.

earnings according to GAAP and to file these earnings with the SEC on forms 10-Q and 10-K and investors can search the SEC database for this information. In addition, the exchanges require that firms disclose earnings information as soon as available through press releases, a requirement reinforced by the passage and introduction of regulation FD on October 23, 2000.[8] Reportedly, 97% of firms issue a news release to the general public via a commercial newswire as soon after the close of the quarter that financial results are available.[9]

The newswires add no editorial content, merely verifying that the information comes from the firm. Firms also often combine the press release with a conference call, web cast, or an 8-K filing with the SEC particularly if there is a gap between the press release and the 10-Q or 10-K filing.

Spin

In our empirical analysis we focus on whether the stock market response to the earnings announcement is influenced by media coverage and the measure of earnings that media choose to emphasize. Consider the following example of the news surrounding the quarterly earnings release of October 22, 1998 of Baxter International. The company press release touts the positives of the company in the title of the press release: "Baxter

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[7] SEC, ""Pro Forma" Financial Information: Tips for investors" available at http://www.sec.gov/investor/pubs/proforma12-4.htm

[8] Exchange requirements include: Section 202.6(A) of the NYSE Listed Company Manual, NASD Rule 4320(e)(14). Regulation FD was proposed on December 20, 1999, adopted on August 10, 2000 and put into effect on Oct 23, 2000 requires public disclosure of material information and while it does not specify a method it recommends issuing of a press release.

[9] Charles H. Morin, PR Newswire Association LLC, December 13, 2002. available at http://www.sec.gov/rules/proposed/s74302/chmorin1.htm#P32_4154

Third Quarter Sales Up 10 Percent; Net Income Rises 11 Percent; Company Generates $160 Million in Operational Cash Flow." Earnings of 61 cents per share are noted in the opening paragraph. Only after reading 11 additional paragraphs of text, in an accompanying data chart, does one discover that earnings according to GAAP produced a loss of 43 cents per share. The Wall Street Journal has a different take with a headline, "Baxter Registers Loss for 3rd-Period; Shares Fall 12% on '99 Outlook." The loss of 43 cents per share is highlighted first, in the second paragraph, with the 61 cents gain also mentioned in the same paragraph.

To capture the extent of spin, we identify whether the story highlights the street number or GAAP number first as well as other features such as whether the information is presented in the headline, the number of paragraphs between the different earnings numbers (if the story mentions more than one number). We emphasize the order of presentation in our empirical analysis because it provides a clean measure of spin - the reporter (either the press release or the news account) can only present one piece of information first. When that information presents the earning measure that puts the company in the most positive light (i.e., the number that is larger), we say that the report put a positive spin on the companies earnings situation. Alternatively, if the first piece of information presented puts the company in a less positive light by leading with the number that is more negative, we say that the report has negative spin. [10]

II. Data

[10] Of course, the order of presentation may overstate the spin, as the other numbers might be presented in the same paragraph or even the same sentence. For this reason we also track whether the alternative earning measure is mentioned in the same paragraph or not, as well as noting whether the other number is included in the report or not.

To test whether media reporting is systematically correlated with stock price responses to earning announcements, and to control for the size of the earnings surprise, we assembled the following data: GAAP and Street earnings, unexpected earnings (actual earnings - earnings forecasts), stock prices, measures of news coverage,and the 'spin' in the news coverage. We present variable definitions in Table 1 and Descriptive Statistics in Table 2.

As noted above, our definition of GAAP based earnings is basic GAAP earnings excluding extraordinary and discontinued operations (Compustat item DATA 19). We extract this number from Compustat. Our definition of 'street' earnings are the earnings numbers calculated by I/B/E/S, with the principal difference between the two being the exclusion of"other non-operating items" from street earnings. To concentate on earnings observations where there was a possibility for spin we required that Street earnings exceed GAAP-based earnings by at least one cent.[11]

From the universe of all earnings observations that met these criteria, we randomly identified 600 observations - 200 observations from 1998-1999, 200 observations from 2001-2002 (through 3rd quarter), and an additional 200 observations from 1998-1999 identified in Bradshaw and Sloan (2002) and generously provided to us by the authors who used these criteria in a part of their study of the increasing importance of street earnings.[12] As in Bradshaw and Sloan, the sample is equally distributed over the quarters in our sample period. To facilitate comparisons between the 1998-1999 sample

[11] In the 19,830 earnings observations from 1998-1999, and 2001-2002 (3rd quarter), in 54 percent of the cases the difference in earnings measures was less than one cent, in 28 percent of the cases street exceeded GAAP and in 18 percent of cases GAAP exceeded Street.

[12] Utilizing the data assembled by Bradshaw and Sloan also faciliatates comparisons with existing studies of earnings announcements and market returns.

and the 2001-2002 sample, the 2001-2002 sample is based on observations from the same companies in the 1998-1999 sample, and since this did not generate enough observations, additional companies randomly drawn from the same 3 digit SIC.

After requiring that each earnings announcement have a press release, and that announcement dates match between the I/B/E/S and Compustat sample, we arrived at our core sample of 526 observations. As we see in Table 2, the typical street earnings are vastly greater than the typical GAAP earnings, with a median EPS of -0.15 for GAAP and 0.10 for Street.

To construct unexpected earnings we follow the accounting literature and base our earnings surprise measure on the difference between the actual earnings and the median estimate in the I/B/E/S summary file. I/B/E/S provides only one earnings forecast which we use for both Street and GAAP earnings.[13] To make these surprises comparable across firm, we divide the difference between actual earnings and earnings forecast by the market price 5 days before the earnings announcement. Forecasts were available for 436 observations and prices for 492 observations, leaving us 426 observations with earnings surprises. The median street earnings surprise was 0.0, exceeding the gaap earnings surprise of –0.02.

We gathered daily price series for these companies from CRSP and constructed excess returns for the 5 day trading window surrounding the announcement (t-1 to t+3).

[13] We only include earnings forecasts if they were made in the 30 days prior to the earnings announcement.

In the few instances where announcement dates differed between Compustat and I/B/E/S we used the company press release to identify the relevant date. The mean excess return was –0.3 percent, with a median excess return of – 0.5 percent.

For each company earning announcement, we collect company press releases.

To identify news stories, we looked for articles using the Factiva search engine and we restricted ourselves to news stories in the three day trading window surrounding the announcement using the company name, company ticker and the search string 'earnings,' 'results,' or 'EPS'. Where there was more than one news report on the earnings announcement, we focused on the news report from the more reputable and larger newspaper. Specifically we use the article in the Wall Street Journal, if it publishes a story. If there is no Journal story, we randomly draw a news report from one of the stories published by the 50 largest American newspapers (according to Factiva). If we still do not find a story, we searched all remaining stories in American newspapers and randomly draw one from these.[14] As described in Table 2, we identified news stories for 226 of the 526 earnings announcements, with 95 of these observations from the Wall Street Journal and 131 from other newspapers.

For each company we identified a measure of spin in the company press release and spin in the news story, if a news story was available. Specifically, we identify which earnings measure is identified first in the story, what paragraph it is mentioned in, and if the other measure is also discussed, in what paragraph it is presented.

[14] It was often the case that stories not picked up by the larger newspapers were covered by local newspapers.

As detailed in the second section of Table 2, companies emphasize street earnings mentioning these earnings first in their press releases in 61 percent of our observations, and in 65 percent of the cases where the company also had a news story. The press behaves differently, leading with street earnings in only 31 percent of the cases. Looking at the differences in paragraphs between one number and the other, the differences are even more stark, with on average 1.45 paragraphs separating the street from the GAAP number in company press releases, whereas the gap was only 0.85 paragraphs in the news stories. This difference is even greater if one focuses on stories where street was presented before GAAP (2 paragraphs versus 0.87 paragraph difference).

III. Impact of media coverage on stock prices

There is a large literature in accounting on the stock price repose to earnings announcements. We build on this literature to identify what impact media coverage has on stock prices.

The basic specification, used in many accounting studies, regresses the cumulative abnormal return on one measure of earning surprises. This is what we do in the first two columns of Table 3. As found in all these studies stock prices respond positively to either measure of earnings surprise, with the coefficient for Street earnings surprises being larger than the coefficient for GAAP' earnings surprises. Note, however, that the standard deviation of GAAP earnings surprises is two and a half times the

standard deviation of ‘street” earnings surprises. Thus, the impact of one standard deviation in Street earnings is a 1.4 percentage point increase in stock prices, while a one standard deviation increase in GAAP earnings is a comparable but smaller 1.3 percentage point increase in stock prices.

When we insert both measures of earning surprises on the right hand side the two coefficients drop somewhat, but remain of the same order of magnitude, albeit they lose statistical significance because of multicollinearity. The ratio of the two coefficients is similar to the one obtained by Bradshaw and Sloan (2002), but their coefficients are more highly statistically significant because they have many more observations.

In column 4 we repeat the same regression after inserting an indicator variable for the companies whose earnings announcement was reported in a newspaper. On average, this has no impact. This is hardly surprising. It is not the news per se that matters, but its content.

Hence, in column 5 we break down the media news depending on the type of earnings measure they emphasize and we interact this with the actual amount of the earnings surprise, using that type of news. The overall result is that a media emphasis on GAAP earnings increases the sensitivity of stock prices to GAAP earnings surprises and decreases their sensitivity to ‘street’ earnings surprises, while media emphasis on street earnings increases the sensitivity of stock prices to ‘street’ earnings surprises and decreases their sensitivity to GAAP earnings surprises. When no news is published, one standard deviation increase in a GAAP earnings surprise translates into only a 0.3 percentage point increase in stock prices, and this increase is not statistically significant. When news is published and it emphasizes the GAAP earnings, this impact rises to 2.8

percentage point and becomes statistically different from zero and from the impact in the absence of a news. Similarly, when no news is published, one standard deviation increase in a street earnings surprise translates into only a 1.8 percentage point increase in stock prices, and this increase is statistically significant. When news is published and it emphasizes the street earnings, this impact raises to 5.8 percentage point (statistically different from zero and from the impact in the absence of a new), while if the article emphasizes GAAP earnings, this impact goes to zero.

To test whether this effect is really associated to the spin chosen by the media, in column 6 we focus on the most extreme observations, i.e. cases where the media report only the street earnings measure or only the GAAP one. Consistent with our priors, the effect becomes even more pronounced. When the media report only the GAAP number, the impact of a one standard deviation increase in GAAP earnings surprises increases by another three percentage points, while the impact of a one standard deviation increase in street earnings surprises when only street earnings are reported is another 15 percentage points.

One possible concern is that sometimes earnings news are announced at the beginning of the day or during trading (9am- 4pm for the NYSE). In such cases the articles appearing in a newspaper on day t+1 benefit from having seen the initial reaction of the price on day t. For this reason, we repeat our basic specification excluding all the articles that mention the stock price reaction. As column 7 shows, the results are if anything stronger, so its is unlikely that the direction of causality goes from stock price reactions to news spin.

IV. Why Do Media Have an Impact?

Having excluded that the direction of causality runs from stock price reaction to news spin does not establish that the direction of causality runs in the other direction. In fact, the correlation could be spurious. One possible story, for example, would be that financial journalists are very accounting savvy and emphasize in their story the measure of earnings that best represents the actual performance of the company. In this sense, both the stock market and the journalists respond to unobservable differences in the informativeness of street vs GAAP earnings.

While our accounting colleagues laughed at this hypothesis, we cannot rule it out directly. What we do, instead, is to explore in the rest of the paper why media can have a causal effect on stock prices and test whether the stock price response is consistent with that interpretation.

Some theoretical considerations

Nobody would dispute that information can affect stock prices. The standard efficient market assumption, however, is that when a piece of news is released, it gets immediately incorporated into stock prices. For this to be true, regardless of the process of diffusion of information, we need that the few informed people are able to take extremely large positions in any stock. But this assumption is increasingly under attack in the asset pricing literature (e.g., see Shleifer and Vishny, 1997, and Lamont and Thaler, 2003). If there exist limits to arbitrage activity, then the number (or better the wealth-weighted number) of informed people matters. If that is the case, the way a piece of information is diffused affects the way it is incorporated into asset prices. In particular, media play a big role in determining whether news arrive to a large set of investors and

how it is perceived. Hence, they can have an impact on asset prices just for this information role.

Since a well-followed company is more likely to have lots of well-informed traders, if the transmission of information was an important factor in explaining our estimates, we would expect the impact of media reporting to be stronger for poorly followed companies than well followed one. In our empirical analysis we will use the number of analysts as a proxy for a company's following.

Another way in which the media can affect asset prices is because they can help in certifying information. News reported in an authoritative outlet carries greater credibility. "It must be true – asserts Dr Strangelove in the anonymous movie – I read it in the *New York Times*". Hence, the market can react more to a measure of earnings if this is emphasized by an authoritative outlet. In our empirical analysis we will differentiate between the *Wall Street Journal* and other journals, with the *Wall Street Journal* being more authoritative.

Finally, media can have an impact also because they create common knowledge among traders. As Morris and Shin (2002) have recently pointed out, prices can be different if all the traders know about a piece of information, but they do not know that everyone else knows, or if they are aware this information is common knowledge. Media reporting, especially in national journals, create this common knowledge.

It is not easy to test this hypothesis. If this is the main driving force, though, the impact of the media should be stronger when traders have the benefit of seeing the media report before start trading or not. Therefore, we will divide the sample on the basis of when the information got released. When a company announces its earnings after 4 p.m.,

traders in that company will be able to observe media reports before they start trading. If media's role in creating common knowledge is important, we expect news to have more of an impact for this subset of announcements than for the rest of the rest of the sample.

Empirical results

In the first two columns of Table 4 we divide the sample between companies with low (below the median) number of analysts and companies with high number of analysts. As expected, the impact of media reporting is always bigger for companies with low number of analysts than for companies with high number of analysts. This difference is particularly pronounced when media emphasize street earnings (which is less frequent). In such cases, the stock price response to one standard deviation increase in street earnings sore to 30 percentage points, while it is only 2 percentage points when a stock is followed by many analysts. As Column 3 shows, this difference is statistically significant at conventional levels. These results suggest that for stocks that are not well followed media reporting does influence the set of investors that are aware of a certain news.

Column 4 and 5 split the sample between firms whose news is reported in *The Wall Street Journal* and firms whose news is reported in other newspapers. Consistent with our prior, the impact of media reporting is stronger when the media reporting the news is *The Wall Street Journal*. If *The Wall Street Journal* emphasizes GAAP earnings, street earnings have no impact on stock prices, while if it emphasizes street earnings one standard deviation increase in street earnings increase stock prices by 50 percentage points. As Column 6 shows, this difference is statistically significant at conventional levels. Hence, there is some support for the hypothesis that media matter because they certify existing information.

Finally, columns 7 and 8 re-estimate our basic specification for companies announcing their earnings after market closing and before market closing. If anything, the impact of media reporting is stronger for companies announcing before market closing, but this difference is not statistically significant. Hence, we find no evidence that media impact asset prices because they create common knowledge among traders.

The Impact of Press Releases

Another way to test why media have an impact on stock prices is to compare this impact with the impact of press releases. If the market is simply responding to the different informativeness of various earnings measures, it should behave in the same way with respect to the spin chosen by the company in its press release. In equilibrium companies should choose to emphasize the most informative measure of earnings. Hence, the market should respond more to the measure emphasized by the press release as well. In Table 5 we show this not to be true. The spin of the press releases have no significant impact on the stock price response to earnings surprises.

IV How Do Media Choose Their Spin?

Thus far, we have shown some evidence that media spin affects the stock price response to earnings. This impact is consistent with some explanations of why media can have an impact. This evidence, however, cannot rule out the possibility that media spin is chosen optimally, and thus it appears to have an impact only because it conveys some information about the informativeness of the underlying earnings measures.

One way to shed light on this hypothesis is to probe deeper into the economics of media reporting and identify when it could be biased. Then we can test whether this bias shows up in the data as predicted by theory and how it impacts the stock price response.

Media Bias

In a recent paper, Mullanaithan and Shleifer (2002) show why it might pay a reporter to follow the herd. They assume that readers are more inclined to believe articles that confirm their priors, while they discount others. With such behavior, it pays a reporter to herd unless s/he has a very credible alternative story. If this hypothesis is true, we expect media to be biased in favor of street earnings (which by sample design are higher than GAAP earnings) during boom periods, and to focus on GAAP during a bear market.

The possibility of a bias in media reporting, however, does not require any behavioral assumption. It is sufficient to probe deeper into the economics of media reporting. How do journalists gather information? Some information is obtained from public sources, other information (generally the most valuable kind) is from private sources. In fact, an important asset in a journalist's professional portfolio is the privileged sources of information she has access to.

Why do insiders reveal private information? We distinguish two possibilities. One is that the informed insider has an interest in the diffusion of information per se. For example, in the Watergate case, Richard Nixon's adversaries had political reasons to leak information. They did not need to be rewarded: the diffusion of information was their own reward. This case is more frequent in environments, like the political one, where there are open conflicting interests. This is relatively rare in the case of corporations, with

the exception of contested takeovers or internal fights to succeed a failing CEO. The second scenario is a *quid pro quo* between the source and the journalist. The source repeatedly reveals valuable information to the journalist in exchange for a positive spin on the news being revealed. In general, all corporate insiders have a strong vested interest in a higher stock price and, hence, in leaking only positive news. For companies, thus, the quid pro quo scenario appears more likely.

The quid pro quo bias applies not only to journalists, but at least as much to analysts. In fact, this was one motivation for the passage of regulation FD in the United States. The bias arising from non-public preferential access is clear in the regulation, "*Second, the regulation likely also will provide benefits to those seeking unbiased analysis. This regulation will place all analysts on equal footing with respect to competition for access to material information. Thus, it will allow analysts to express their honest opinions without fear of being denied access to valuable corporate information being provided to their competitors. Analysts will continue to be able to use and benefit from superior diligence or acumen, without facing the prospect that other analysts will have a competitive edge solely because they say more favorable things about issuers.*"[15] While regulation FD may have limited this kind of bias through new rules requiring public disclosure of all material information, notably this rule did not apply to the business press.

[15] *Final Rule:Selective Disclosure and Insider Trading, SECURITIES AND EXCHANGE COMMISSION,17 CFR Parts 240, 243, and 249,Release Nos. 33-7881, 34-43154, IC-24599, File No. S7-31-99.*

We can formalize the idea that the suppliers of information (the companies) want to be rewarded for their tips with a positive spin by writing a sources' supply of news as a function of the bias produced:

$$N^s = \gamma + \delta b \, .$$

Demand side bias

It has also been suggested that the demand side can also introduce a bias, particularly regarding political news. Mullinaithan and …While the suppliers of information want positive spin, the demanders (readers of newspapers) would like as accurate a reporting as possible. This is simply to say that people's demand for news is negatively correlated with the extent of the bias *b,* so we can write it as

$$N^d = \alpha - \beta b \, .$$

What will be the equilibrium level of bias? Assuming a competitive market and treating media reporters as simply brokers who set the level of bias in order to equate demand and supply we have

$$b = \frac{\alpha - \gamma}{\beta + \delta} \, .$$

With a lower level of bias, sources would provide fewer stories based on private information and there would be excess demand for news. With a higher level of bias, there would be an excess supply of news as sources would divulge much more private information, but readers would have less demand, knowing that the news was biased.

Cyclicality of media bias

Imagine now a positive shock to the demand of financial news, as might have been triggered by the explosion in the popularity of stocks and the interest in day trading. This corresponds to an increase in α, which will automatically lead to an increase in *b* since $\frac{db}{d\alpha} > 0$. The idea is very simple. An increase in the demand for news increases the relative power of the sources vis-à-vis the reporters. To capture time with sources, the reporters will have to cater more to the sources, increasing their spin. This problem is fully recognized by journalists. "As the number of news outlets grows, -- writes the Program for Excellence in Journalism --they are chasing a static number of sources. This means sources are gaining leverage over the journalists who cover them. Sources are setting the terms of interacting with the press." [16]

Bradshaw and Sloan (2002)) report that the responsiveness of stock prices to street earnings increased more than three fold during the latest period of euphoria of the 1990s. Similarly, Conrad, Cornell and Landsman (2002) report that the stock price response to negative earnings surprises increases as the relative level of the market rises. These results suggest that demand for news is higher during booms. Hence, we should expect a larger bias during boom than during recessions.[17]

Cross Sectional Variation in the Extent of Bias

Let's now compare the equilibrium level of bias across companies where there is variation in the access reporters have to news aside from that coming from the source. Companies with more alternative sources of information will have a higher base level of

[16] http://www.journalism.org/resources/tools/reporting/watchdog/clear.asp?from=print
[17] The bubble of the 1990s, perhaps more accurately, shifted out both the demand for news, and the potential supply of news by introducing more firms. All that is necessary for the cyclical bias we describe,

news (i.e., a higher γ) shifting the supply of news curve up. Newspapers can satisfy demand for company news with a lower level of bias, or stated differently since $\frac{db}{d\gamma} < 0$, in equilibrium the media will bias less the reporting of companies with more alternative sources of information. As a proxy for the availability of alternative sources of information in the empirical analysis we will use the number of analysts following a stock.

So far we have considered the market equilibrium with competition. It is possible that news outlets are differentiated, with some outlets more interested in their reputation and willing to safeguard it by demonstrating less bias and others without a reputation to protect and being more willing to introduce bias. To test for this in our empirical analysis, we will compare the correlation between the company spin and the news spin between *The Wall Street Journal*, which we identify ex ante as having a larger stake in maintaining its reputation, and other news outlets.

Empirical Evidence of Media Bias

According to the quid pro quo theory there should be a relationship between company spin and media. In Table 6 we test whether such a relationship exists. We estimate the impact of the company spin on the likelihood the press would choose the same spin. Notice that the company spin is not correlated with the stock price response, hence we cannot simply say that the company spin reflects the "right" spin.

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and what seems an accurate characterization of this period, is that the demand shock exceed the supply response.

As Table 6 shows, the spin pushed by the company significantly increases the likelihood that the media will put the same spin on the earnings announcement. If the company press release emphasizes street earnings, newspapers are 45 % more likely to emphasize street earnings (column 1). Similarly, if the company press release reports only street earnings, the press is significantly more likely to report only street earnings (column 2). Finally, if the company press release reports only GAAP earnings, the press is significantly more likely to report only GAAP earnings (column 3).

That the media might bias their spin in the direction of the company's spin does not mean that they completely buy into company's spin. In fact, as Table 7 shows, during the 1998-99 period the company emphasized street earnings 58% of the time, while the media only 36 percent. The difference is even bigger during the 2001-02 period: 71% vs. 16%. This suggests a fluctuation over time of this bias, which is consistent both with the Mullanaithan and Shleifer (2002) model and with the quid-pro-quo theory.

In Table 8 we explore other cross sectional implications of the quid pro quo theory. The first three columns show that the media spin is more highly linked to the company spin when there are fewer analysts following a company. This is consistent with our causal empiricism. A financial reporter we interviewed admitted he was not that comfortable with accounting numbers and that his strategy was to triangulate any information he received with a few analysts. In this scenario, the fewer the number of analysts, the more likely it is that he will buy into the company's spin.

Columns 3 to 6 of Table 8 estimate the effect of media credibility on the relation between company's spin and press spin. As predicted, Wall Street Journal reporters are

half as likely to buy into company's spin as any other reporter. When estimated in the same regression, this differential effect is statistically different from zero (column 6).

Finally, the last three columns show the cyclicalilty in this bias. After the stock market bubble burst, the media increased their reporting of GAAP numbers, with the percentage of stories leading with GAAP numbers rising from 64 to 84 percent. At the same time, firms are pushing street numbers even more, increasing the percentage of press releases leading with street numbers from 58 to 71 percent. Consistent with these descriptive statistics, we find that in 2001 -02 there no longer is a significant link between the spin in press releases and the spin in news coverage, with the coefficient on company spin dropping by more than half (column 7).

Does the Market Discount Media's Bias?

In a rational market investors form their expectations factoring in the bias present in media reporting. If this is the case we should find that stock price respond less to media spin, when this spin is more likely to be biased. Is this true?

It is definitely true when we look at the time series variation (column 1). Media impact goes up during the second half of the sample. This is the period when, as we showed in Table 8, media's spin is less affected by the spin promoted by the company.

It is also true when we look at the credibility of the media outlet. More credible outlets, such as the Wall Street Journal, are less influenced by the company's spin and thus have more impact on stock prices (column 3 of Table 9).

But it is not true when we examine the differences in analysts following a company. The fewer the number of analysts, the more important is the stock market

reaction to the media spin (column 2 of Table 9). But this is also the time where media bias was also more severe. Thus, it does not seem that the market is fully able to undo the bias embedded in media reporting.

IV. Conclusions

We find that media spin affects the stock market response to earning announcement and that this link is not benign, since media tend to report information biased in favor of companies.

While our results should be regarded as preliminary, they potentially carry important policy implications. First, they suggest that more attention should be dedicated to the study of the economics of the media. Such a study could lead to new rationale for public disclosure. Public disclosure makes media less capitive to their sources and thus less biased. Second, from a company point of view it suggests that managing their relation with the media is important, since it can affect their stock price.

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Table 1 – Description of variables

Cumulative excess returns
Cumulative excess return cumulated over [t-1 t+3] window**. I**ndex return is constructed from CRSP by using the value-weighted average of the returns on NYSE, AMEX and NASDAQ.
CRSP data Item: *Value weighted Index*

Street earnings
The eps of the company reported by IBES in the quarterly financial reports. GAAP earnings adjusted by IBES to "exclude discontinued operations, extraordinary charges and other non operating items."
The data item in the I/B/E/S Database: *ACTUAL earnings per share*

GAAP earnings
The eps of the company reported in the quarterly results given in COMPUSTAT. The data item: *DATA19* (Earnings per share ExcludingExtraordinary charges)

Median estimate
Median of the eps estimates reported to I/B/E/S dates closest to the announcement date. We exclude the estimates that are more than 3-months away from the announcement date. IBES data item: MEDIAN (in Summary section of IBES)

Price
price of the company's stock in $. CRSP data item: PRICE

GAAP earnings surprise
unexpected earnings= (gaap earnings – median estimates)/stock price 5 days before announcement

Street earnings surprise
unexpected earnings= (street earnings – median estimates)/stock price 5 days before announcement

Number of Analysts
Number of analysts issuing earnings forecasts.
Source: I/B/E/S

News coverage
Dummy variable that takes the value 1 if there is a news story in an American newspaper in the three trading days surrounding the earnings announcement.
Source: FACTIVA.

Press release spin
Takes on the value "S" when the first item mentioned in the press release was street earnings (alternative earning estimates released by companies to eliminate the impact on earnings of "extraordinary" charges, also known as pro forma earnings). Alternatively takes on the value "G" if first reported item is GAAP earnings. Source: company press releases from PR Newswire, Business Newswire, as made available through FACTIVA, and company web sites.

News spin
Takes on the value "S" when the first item mentioned in the news story was street earnings (alternative earning estimates released by companies to eliminate the impact on earnings of "extraordinary" charges, also known as pro forma earnings). Alternatively takes on the value "G" if first reported item is GAAP earnings.
Source: Newspaper stories as made available through Factiva.

Newspaper tier
We searched in the three day trading window surrounding the announcement using the company name and the search string 'earnings,' 'results,' or 'EPS'. Where there was more than one news report on the earnings announcement, we focused on the news report from the more reputable and larger newspaper. Specifically we use the article in the Wall Street Journal, if it publishes a story (tier 1). If there is no Journal story, we randomly draw a news report from one of the stories published by the 50 largest American newspapers. If we still do not find a story, we searched all remaining stories in American newspapers and randomly draw one from these ().
Source: Newspaper stories as made available through Factiva.

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Source: Newspaper stories as made available through Factiva.

Table 2 - Descriptive statistics

	Number of observations	mean	Median	Standard deviation	Minimum	Maximum
cumulative excess return(-1 to +3)	500	-0.003	-0.005	0.109	-0.441	0.447
GAAP eps	526	-0.34	-0.15	0.85	-5.53	1.66
"Street" eps	526	0.10	0.10	0.45	-2.87	2.52
Median earnings forecast	436	0.13	0.10	0.44	-2.54	2.28
Stock price (t-5)	492	17.65	12.59	17.03	0.31	107.33
GAAP earnings surprise	426	-0.055	-0.015	0.118	-1.168	0.217
Street earnings surprise	426	-0.004	0.000	0.048	-0.480	0.310
Analyst coverage	406	15.05	11.00	13.09	1.00	66.00

	Spin in Company Press Release			Spin in News Stories			
		Number of observations	Percentage			Number of observations	Percentage
	GAAP first	205	38				
	Street first	321	61				
Full sample	*Overall*	*526*	*100*				
	GAAP first	77	34		GAAP first	155	68
Sample with	Street first	149	65		Street first	71	31
News Stories	*Overall*	*226*	*100*		*Overall*	*226*	*100*
				Wall	GAAP first	70	73
				Street	Street first	25	26
				Journal	*Overall*	*95*	*100*
				Other	GAAP first	85	64
				Newspap	Street first	46	35
				ers	*Overall*	*131*	*100*

	Paragraph Difference in Press Release		Paragraph Difference in News Stories		
	observations	mean paragraph difference		observations	mean paragraph difference
GAAP only	84	-		85	-
Street only	116	-		56	-
GAAP then Street	121	0.51		70	0.84
Street then GAAP	205	2.00		15	0.87
Overall	*526*	*1.45*		*226*	*0.85*

Table 3 - Does Media Coverage affect Asset Prices?

							Excluding news stories that mention stock market returns
	dependent variable = cumulative excess return						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GAAP earnings surprise	0.114		0.078	0.078	0.025	0.018	0.021
	[0.054]**		[0.058]	[0.057]	[0.046]	[0.047]	[0.047]
Street earnings surprise		0.29	0.207	0.208	0.376	0.378	0.377
		[0.136]**	[0.149]	[0.149]	[0.211]*	[0.213]*	[0.212]*
Spin on GAAP*GAAP earnings surprise					0.209	0.044	0.208
					[0.097]**	[0.110]	[0.098]**
Spin on GAAP*Street earnings surprise					-0.595	-0.642	-0.592
					[0.272]**	[0.246]***	[0.274]**
Spin on Street*Street earnings surprise					0.84	0.729	2.076
					[0.711]	[0.378]*	[1.015]**
Spin on Street*GAAP earnings surprise					-0.467	-1	-0.694
					[0.262]*	[0.365]***	[0.278]**
Only report Street *news*Street earnings surprise						2.618	
						[1.006]***	
Only report GAAP *news*GAAP earnings surprise						0.264	
						[0.112]**	
News				-0.005			
				[0.011]			
Observations	426	426	426	426	426	426	396
R-squared	0.02	0.02	0.02	0.02	0.05	0.08	0.05

Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 - Why Does Media Coverage Affect Asset Prices?

	Role of alternative information sources			*Role of newspaper reputation*			*Correlated equilibium*		
	Firms with low number of analysts	Firms with large number of analysts	Interaction with low analyst dummy	Firms with news in Wall Street Journal or no news	Firms with news in regional paper or no news	Interaction with Wall Street Journal dummy	Firms reporting after 4pm	Firms reporting before 4pm	Interaction with after 4pm dummy
	dependent variable = cumulative excess return								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GAAP earnings surprise	0.095	-0.007	0.024	0.015	0.035	0.023	0.028	0.005	0.02
	[0.066]	[0.075]	[0.047]	[0.048]	[0.045]	[0.047]	[0.085]	[0.064]	[0.047]
Street earnings surprise	0.305	0.336	0.376	0.379	0.373	0.377	0.349	0.415	0.377
	[0.280]	[0.291]	[0.212]*	[0.213]*	[0.209]*	[0.212]*	[0.107]***	[0.376]	[0.213]*
Spin on GAAP*GAAP earnings surprise	0.229	0.217	0.192	0.234	0.167	0.16	0.183	0.237	0.199
	[0.110]**	[0.134]	[0.118]	[0.135]*	[0.091]*	[0.092]*	[0.175]	[0.114]**	[0.106]*
Spin on GAAP*Street earnings surprise	-0.675	-0.268	-0.316	-0.981	-0.386	-0.371	0.208	-0.687	-0.636
	[0.332]**	[0.389]	[0.333]	[0.302]***	[0.269]	[0.272]	[0.440]	[0.416]	[0.281]**
Spin on Street*Street earnings surprise	6.779	0.502	0.436	10.49	0.239	0.278	0.718	3.323	3.55
	[2.955]**	[0.460]	[0.410]	[2.760]***	[0.355]	[0.359]	[0.306]**	[2.001]*	[1.978]*
Spin on Street*GAAP earnings surprise	-2.188	-0.421	-0.431	-0.473	-0.254	-0.266	-0.778	-1.037	-1.125
	[0.848]**	[0.323]	[0.318]	[0.833]	[0.175]	[0.178]	[0.291]***	[0.594]*	[0.590]*
Below median analyst dummy *Spin on GAAP*GAAP earnings surprise			0.088						
			[0.141]						
Below median analyst dummy *Spin on GAAP*Street earnings surprise			-0.413						
			[0.315]						
Below median analyst dummy *Spin on Street*Street earnings surprise			6.322						
			[2.976]**						
Below median analyst dummy *Spin on Street*GAAP earnings surprise			-1.711						
			[0.906]*						
Wall Street Journal dummy*Spin on GAAP*GAAP earnings surprise						0.074			
						[0.148]			
Wall Street Journal dummy*Spin on GAAP*Street earnings surprise						-0.612			
						[0.271]**			
Wall Street Journal dummy*Spin on Street*Street earnings surprise						10.178			
						[2.747]***			
Wall Street Journal dummy*Spin on Street*GAAP earnings surprise						-0.183			
						[0.848]			
After 4pm dummy*Spin on GAAP*GAAP earnings surprise									0.097
									[0.198]
After 4pm dummy*Spin on GAAP*Street earnings surprise									0.662
									[0.459]
After 4pm dummy*Spin on Street*Street earnings surprise									-3.012
									[1.979]
After 4pm dummy*Spin on Street*GAAP earnings surprise									0.482
									[0.656]
Observations	165	261	426	318	337	426	147	279	426
R-squared	0.14	0.04	0.08	0.12	0.04	0.11	0.06	0.08	0.07

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 - Do Company Press Releases affect Asset Prices?

			Firms with below median number of analysts	Firms with above median number of analysts
dependent variable = cumulative excess return				
	(1)	(2)	(3)	(4)
GAAP earnings surprise	0.081	-0.052	0.018	-0.087
	[0.107]	[0.089]	[0.088]	[0.137]
Street earnings surprise	0.145	0.424	0.344	0.412
	[0.215]	[0.266]	[0.327]	[0.342]
Spin on Street in Company press release*GAAP earnings surprise	0.007	0.141	0.207	0.119
	[0.108]	[0.091]	[0.121]*	[0.132]
Spin on Street in Company press release*Street earnings surprise	0.303	0.217	0.213	0.052
	[0.265]	[0.374]	[0.550]	[0.565]
Spin on GAAP*GAAP earnings surprise		0.255	0.292	0.265
		[0.105]**	[0.117]**	[0.138]*
Spin on GAAP*Street earnings surprise		-0.607	-0.689	-0.326
		[0.297]**	[0.365]*	[0.379]
Spin on Street*Street earnings surprise		0.565	6.369	0.365
		[0.770]	[2.883]**	[0.667]
Spin on Street*GAAP earnings surprise		-0.521	-2.265	-0.446
		[0.261]**	[0.823]***	[0.327]
Observations	426	426	165	261
R-squared	0.03	0.06	0.15	0.05

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 - Firm Spin and Media Spin

	logit		
	dependent variable: media report street first=1	dependent variable: media report street only	dependent variable: media report GAAP only
	(1)	(2)	(3)
Company reports street first	1.684 [0.393]***		
Company reports only street		2.197 [0.371]***	
Company reports only GAAP			1.753 [0.421]***
Observations	226	226	226

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 - Time Series Variation in Spin

Panel A - Spin		Company Press Release		News Stories	
		Number of observations	Percentage	Number of observations	Percentage
1998-	GAAP first	168	42	108	64
1999	Street first	229	58	62	36
Sample	*Overall*	*397*	*100*	170	100
2001-	GAAP first	37	29	47	84
2002	Street first	92	71	9	16
Sample	*Overall*	*129*	*100*	*56*	*100*

Panel B - Paragraph Difference		Company Press Release		News Stories	
		Number of observations	mean paragraph difference	Number of observations	mean paragraph difference
	GAAP only	77	-	60	-
1998-	Street only	97	-	50	-
1999	GAAP then Street	91	0.48	48	0.89
Sample	Street then GAAP	132	1.74	12	1.00
	Overall	*397*	*1.23*	*170*	*0.92*
	GAAP only	7		25	
2001-	Street only	19		6	
2002	GAAP then Street	30	0.60	22	0.73
Sample	Street then GAAP	73	2.45	3	0.33
	Overall	*129*	*1.91*	*56*	*0.68*

Table 8 - Cross-Sectional Variation in the Impact of Company Spin on News Spin

	logit						regression		logit
	Firms with below median number of analysts	Firms with above median number of analysts	Interaction with low analyst dummy	Firms with news in Wall Street Journal or no news	Firms with news in regional paper or no news	Interaction with Wall Street Journal dummy	1998-1999 sample	2001-2002 sample	Interaction with 2001-2002 dummy
	dependent variable: media report street first=1								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company reports street first	2.951 [0.831]***	1.257 [0.452]***	1.511 [0.403]***	0.878 [0.606]	2.269 [0.523]***	2.072 [0.420]***	0.352 [0.066]***	0.214 [0.064]***	2.004 [0.405]***
Company reports street first* low number of analyst dummy			0.859 [0.422]**						
Company reports street first * wall street journal dummy						-0.877 [0.345]**			
Company reports street first * 2001/2002 dummy									-1.281 [0.424]***
Observations	58	168	226	95	131	226	170	56	226
R-squared							0.13	0.06	

Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 9 - Media Bias and Asset Prices

dependent variable = cumulative excess return			
	(1)	(2)	(3)
GAAP earnings surprise	0.023	0.024	0.023
	[0.047]	[0.047]	[0.047]
Street earnings surprise	0.377	0.376	0.377
	[0.212]*	[0.212]*	[0.212]*
Spin on GAAP*GAAP earnings surprise	0.195	0.192	0.16
	[0.114]*	[0.118]	[0.092]*
Spin on GAAP*Street earnings surprise	-0.579	-0.316	-0.371
	[0.283]**	[0.333]	[0.272]
Spin on Street*Street earnings surprise	0.838	0.436	0.278
	[0.737]	[0.410]	[0.359]
Spin on Street*GAAP earnings surprise	-0.453	-0.431	-0.266
	[0.264]*	[0.318]	[0.178]
2001-2002 dummy*Spin on GAAP*GAAP earnings surprise	0.076		
	[0.148]		
2001-2002 dummy*Spin on GAAP*Street earnings surprise	-0.117		
	[0.787]		
2001-2002 dummy*Spin on Street*Street earnings surprise	3.725		
	[1.379]***		
2001-2002 dummy*Spin on Street*GAAP earnings surprise	-3.824		
	[1.186]***		
Below median analyst dummy *Spin on GAAP*GAAP earnings surprise		0.088	
		[0.141]	
Below median analyst dummy *Spin on GAAP*Street earnings surprise		-0.413	
		[0.315]	
Below median analyst dummy *Spin on Street*Street earnings surprise		6.322	
		[2.976]**	
Below median analyst dummy *Spin on Street*GAAP earnings surprise		-1.711	
		[0.906]*	
Wall Street Journal dummy*Spin on GAAP*GAAP earnings surprise			0.074
			[0.148]
Wall Street Journal dummy*Spin on GAAP*Street earnings surprise			-0.612
			[0.271]**
Wall Street Journal dummy*Spin on Street*Street earnings surprise			-0.183
			[0.848]
Wall Street Journal dummy*Spin on Street*GAAP earnings surprise			10.178
			[2.747]***
Observations	426	426	426
R-squared	0.06	0.08	0.11

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%