The Dark Side of News Coverage: Evidence from Corporate Innovation

Lili Dai, Rui Shen, and Bohui Zhang[☆]

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[☆]Dai (lili.dai@anu.edu.au) is from the ANU College of Business and Economics, Australian National University, Acton ACT 0200, Australia. Shen (shenrui@ntu.edu.sg) is from the Nanyang Business School, Nanyang Technological University, Singapore 639798. Zhang (bohui.zhang@unsw.edu.au) is from the School of Banking and Finance, Australian School of Business, University of New South Wales, Sydney, NSW 2052, Australia.

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ABSTRACT

We examine the effect of media coverage on firm innovation. Using a comprehensive dataset of corporate news coverage from 2001 to 2012, we show that there is a negative relation between media coverage and firm innovation. Our identification tests suggest that the effect of media coverage on innovation is causal. We further find supports for several economic mechanisms underlying the negative innovation effect of news coverage, with regard to, meeting or beating analyst earnings forecasts, operating efficiency, exposure to high technology, and equity-based compensation. Our findings provide new insights on the real effect of news coverage.

JEL classification: **G14, G32, O31**

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1. Introduction

The business media are perhaps the broadest and most widely disseminated information intermediaries. By disclosing and disseminating information to the public, the media reduces information asymmetry in financial markets (e.g., Klibanoff, Lamont, and Wizman, 1998; Chan, 2003; Tetlock, 2007; Tetlock, Saar-Tsechansky, and Macskassy, 2008; Fang and Peress, 2009; Bushee, Core, Guay, and Hamm, 2010; Blankespoor, Miller, and White, 2014) and plays a corporate governance role in disciplining the managers (e.g., Miller, 2006; Dyck, Volchkova, and Zingales, 2008; Joe, Louis, and Robinson, 2009; Dyck, Morse, and Zingales, 2010; Liu and McConnell, 2013; Dai, Parwada, and Zhang, 2015). However, it is not clear whether the positive informational role of the media fosters firms' long-term growth through innovating.[1] In this study, we examine the effect of media coverage on corporate innovation.

Media coverage may enhance firm innovation. Innovation is a long-term, uncertain process with a large chance of failure (Holmstrom, 1989). Firms that invest heavily in innovative projects are subject to large information asymmetry (Bhattacharya and Ritter, 1983). When the market cannot observe the full spectrum of managerial actions, moral hazard will induce managers to steer their investment choice toward the short-term direction (e.g., Narayanan, 1985; Stein, 1988; Benmelech, Kandel, and Veronesi, 2010). Moreover, in the presence of information asymmetry, even well-meaning long-term managers feel it is difficult to convey the promising prospects of long-term projects to the market. Therefore, managers reduce investment in innovation. The media can serve as a solution to resolve the information asymmetry issue. The literature shows that the media collects, aggregates, disseminates, and amplifies information (e.g., Dyck and Zingales, 2002). If the media can effectively convey firms' inside information to the public and lower information asymmetry

[1] Firm innovation has long been established by economists as one of the most important drivers of firms' long-term economic growth and competitive advantages (Solow, 1957; Romer, 1987; Hall, Jaffe, and Trajtenberg, 2005).

between firms and investors, we expect that media coverage should increase firms' innovation activities. We call this view *the media-enhancing hypothesis*.

However, media coverage may also impede firm innovation. As a powerful market force, the concern on the negative tone of media coverage can force managers to forgo long-term investments, such as innovation, in exchange for short-term performance. Moreover, driven by profit-seeking incentives, the media may issue biased articles to cater to the interests of readers (Core, Guay, and Larcker, 2008; Gentzkow and Shapiro, 2010) or write articles favorably about firms for advertising revenue (Gurun and Butler, 2012). The threat of biased media coverage and interests in advertising revenue may induce managers to focus on short-term performance. For example, Graham, Harvey, and Rajgopal (2005) survey 401 chief financial officers (CFOs) in the U.S., and find that the majority of the CFOs are willing to sacrifice long-term value for short-term performance because they are pressured to meet short-term earnings targets. Therefore, we posit that the media, by imposing short-term pressure on managers and inducing managerial myopia, can impede firm innovation. We call this view *the media-impeding hypothesis*.

To test these two competing hypotheses, we use both a comprehensive database of firm-level patents and citations from the Google Patents, and corporate news coverage data from RavenPack, which provides us with the number of Dow Jones news releases. Our media coverage variable is constructed based on the number of earnings-related news articles. We focus on earnings-related news articles for several reasons. First, earnings-related news is the most value-relevant information that review firms' past profitability and help investors project firms' future performance (Beyer, Cohen, Lys, and Walther, 2010). Second, the Securities Exchange Commission mandated quarterly reporting for all exchange-listed firms in the U.S. from 1970, which makes earnings-related news comparable across firms by regulation. Third, the RavenPack database allows us to separate earnings-related news from other corporate news on firms, which makes the construction of our media coverage variables feasible.

Our baseline regression shows a negative relation between media coverage and corporate innovation output, consistent with our media-impeding hypothesis. The effect is not only statistically significant but also economically relevant. For example, a one standard deviation increase in media coverage is associated with a 33.3% decrease in patent counts and a 28.5% decrease in patent citations relative to their sample means. The results are robust to alternative media coverage and innovation measures, different econometric specifications, subsample periods, and clustering methods.

Endogeneity is an important consideration in this paper, given that the media can cater to public demand and that the extent of news coverage may be driven by the degree of sensationalism. For example, Miller (2006) finds that the media is more likely to report accounting fraud in firms with a larger public following. Core, Guay, and Larcker (2008) show that the negative press coverage is more severe for CEOs with more options exercised. Similarly, in our context, the media may be more likely to cover earnings-related news on large, value firms, which tend to have lower long-term growth and less innovation output. We employ the instrumental variable approach to establish a causal relation.

The instrumental variable approach is based on the number of earnings announcements on the same announcement day of a firm made by the firm's industry peers located less than 500 kilometers to the firm's closet Dow Jones office. This instrumental variable is negatively associated with the extent of media coverage because of limited media attention (Hirshleifer, Lim, and Teoh, 2009), but the variable does not imply firm investment strategies or innovation output (Engelberg and Parsons, 2011; Gurun and Bulter, 2012). We find that our main finding remains the same, when the number of earnings-related news articles is instrumented by the number of earnings announcements of firm's peers.

After we identify the causal relationship, we perform further analyses to understand the mechanisms through which the negative effect of media coverage on firm innovation operates. We propose four economic channels. First, managers in firms facing market pressures on short-term firm performance are more likely to reduce innovation activities. We use an indicator on whether the firm meets or beats consensus analyst earnings forecast as a proxy for market pressure, and find that the negative impact of media coverage on firm innovation is more pronounced for firms that meet or beat consensus analyst earnings forecasts. Second, firms with lower operating efficiency may suffer more criticism from the media, and hence managers in these firms are more concerned with public outrage. We use the inverse assets turnover ratio as a proxy for the firm's operating efficiency, and find that the media reduces firm innovation more significantly on firms with lower assets turnover ratio.

Third, media coverage may affect innovation through the firm's exposure to high technology. High-tech firms are usually engaged in the design, development, and introduction of innovative manufacturing processes or new products. Managers in high-tech firms are more sensitive to media coverage, especially coverage on short-term performance. The results suggest that the negative media effect concentrates on high-tech firms. Finally, shareholders incentivize managers to invest in long-term projects by providing equity-based compensation. We expect that equity-based compensation mitigates the negative impact of media coverage on firm innovation, and find consistent evidence.

In the last part of our study, we investigate the effect of media coverage on short-term corporate policy and long-term firm performance. First, we find that firms with a larger degree of media coverage have lower R&D expenditures, higher discretionary accruals, and more share repurchases. Second, these firms also experience a lower long-term growth in operating performance. These results are consistent with the negative effect of media coverage on firm innovation, and in supportive of the media-impeding hypothesis.

Our study contributes to two strands of literature. First, our paper contributes to the literature on the real effects of the media. The seminal works by Zingales (2000), and Dyck and Zingales (2002) propose that the media plays a significant role in affecting corporate policies and guiding firms in the allocation of firm resources. This role can either be positive or negative. For example, the following literature recognizes the positive role of the business media in detecting accounting fraud (Miller, 2006; Dyck, Morse, and Zingales, 2010), exposing board ineffectiveness (Joe, Louis, and Robinson, 2009), monitoring executive compensation (Kuhnen and Niessen, 2012), influencing managers' capital allocation decisions (Liu and McConnell, 2013), and disciplining insiders' transactions (Dai, Parwada, and Zhang, 2015). There is also some scarce evidence on the negative, real impact of media coverage. Core, Guay, and Larcker (2008) show that the media engages in sensationalism, and firms do not respond to negative tone of media coverage by decreasing excess CEO compensation, or increasing CEO turnover. Gurun and Bulter (2012) find that the positive media slate is associated with the firms' local media advertising expenditures. By linking media coverage with firm innovation, our paper is among the first to show the negative effect of media coverage on firms' long-term growth.

Second, we contribute to the growing literature on finance and innovation. There is a fast increasing body of literature that examines, various ways to promote innovation. Holmstrom (1989) shows that innovation activities may mix poorly with routine activities in an organization. Manso (2011) finds that managerial contracts that tolerate failure in the short run and reward success in the long run are best at motivating innovation. Nanda and Rhodes-Kropf (2013) argue that financial markets drive innovation activity and that "hot" rather than "cold" financial markets can facilitate innovation. Empirical evidence shows that laws

(Acharya and Subramanian, 2009; Acharya, Baghai, and Subramanian, 2014), financial market development (Hsu, Tian, and Xu, 2014), firm boundaries (Seru, 2014), stock liquidity (Fang, Tian, and Tice, 2014), financial analysts (He and Tian, 2013), banking competition (Cornaggia, Mao, Tian, and Wolfe, 2015), labor unions (Bradley, Kim, and Tian, 2014), product market competition (Aghion, Bloom, Blundell, Griffith, and Howitt, 2005), and corporate venture capital (Chemmanur, Loutskina, and Tian, 2014) all positively or negatively affect innovation. However, there is little insight into the causal effect of media coverage on innovation. We fill this gap by showing that the media is the key factor of firm innovation.

The remainder of the paper proceeds as follows. We review the related literature in Section 2, and develop our hypothesis in Section 3. In Section 4, we describe the data sources, empirical specifications, and summary statistics of our sample. In Section 5, we present the results on whether and how media coverage affects firm innovation, address the endogeneity concerns, and conduct tests on economics channels, other short-term corporate policies, and long-term firm performance. Finally, we provide concluding remarks in Section 6.

2. Literature review

There is extensive evidence on the capital market impact of the media. By disseminating old information and disclosing new information, the business media brings information to a broader audience and alleviates informational frictions. In an early work, Klibanoff, Lamont, and Wizman (1998) find that close-end country fund prices react quickly to country-specific news appearing on the front page of the New York Times, which supports their hypothesis that news events lead some investors to react more timely. Chan (2003) finds that firms covered by the media experience drifts on bad news while firms not covered by the media experience return reversals after large stock price jumps. Tetlock (2007) shows that media pessimism predicts downward pressure on market prices followed by a reversion to fundamentals using the linguistic content from a popular *Wall Street Journal* column. Tetlock, Saar-Rsechansky, and Macskassy (2008) document that negative words in firm-specific news stories predict lower firm earnings and stock returns.

Following these studies' conclusion that media coverage improves the efficiency of stock market, there is recent evidence in linking media coverage with financial costs. Fang and Peress (2009) find that media coverage reduces stocks' expected future stock returns, supporting their hypothesis that the breadth of information dissemination lowers the cost of capital. Using transaction costs around earnings announcements as proxies for information asymmetry, Bushee, Core, Guay, and Hamm (2010) find that greater press coverage leads to lower spreads and greater depth around earnings announcements, and also show that the news dissemination role of the media is more important than the news exploration role of the media. Lately, Blankespoor, Miller, and White (2014) examine the impact of firms' using Twitter on market liquidity and document that additional news dissemination via Twitter reduces abnormal bid-ask spreads and abnormal depths, which is also consistent with the negative effect of news dissemination on information asymmetry.

Relevant to the above evidence on the capital market impact of the media, there is also a growing strand of literature on the real effects of the media. The seminal works by Zingales (2000), and Dyck and Zingales (2002) propose that the media plays a significant role in affecting corporate policies and guiding firms in the allocation of firm resources. The positive effect of the media is that the media can place pressure on corporate managers by collecting and disseminating information, which is called the corporate governance role of the media. In support of this role of the media, Dyck, Volchkova, and Zingales (2008) use a unique sample of Russian firms in the period from 1999 to 2002 and find that media coverage in the Anglo-American press increases the probability that a corporate governance violation will be reversed. Consistently, Miller (2006) find that the media play a monitoring role with regard to accounting fraud by rebroadcasting information from other information intermediaries and by undertaking original investigation and analysis. By studying all reported fraud cases in large U.S. companies between 1996 and 2004, Dyck, Morse, and Zingales (2010) find that the business media is an important type of whistle-blower to detect corporate fraud.

Aligned with the general corporate governance impact of the media, the recent literature investigates the role of the media specifically in several governance attributes. For example, Joe, Louis, and Robinson (2009) examine how the media exposure of board ineffectiveness affects corporate governance and find that media coverage forces the targeted agents to take corrective actions and enhances shareholder wealth. Kuhnen and Niessen (2012) study the monitoring role of the media on executive compensation and find that after more negative press coverage of CEO pay, firms reduce option grants and increase less contentious types of pay, such as salaries. Using a 15-year sample of intense debate on dual class shares in the UK, Braggion and Giannetti (2013) show that negative media coverage limits firms' ability to use dual class shares. Liu and McConnell (2013) examine the role of the media on capital budgeting using value-reducing acquisition attempts and find that managers are more likely to abandon these attempts when there is more negative media coverage. To test whether news dissemination in itself exerts a corporate governance effect, Dai, Parwada, and Zhang (2015) show that the media reduce insiders' trading profits by disseminating the regulatory releases of insider trading activities.

There is also some scarce evidence on the negative, real impact of media coverage. Core, Guay, and Larcker (2008) show that the media engages in sensationalism, and firms do not respond to negative tone of media coverage by decreasing excess CEO compensation or increasing CEO turnover. Gurun and Bulter (2012) find that the positive media slate is associated with the firms' local media advertising expenditures. Theoretically, the ultimate goal of the firm is to maximize shareholders' wealth, which is determined by both the risk of cash flows and cash flows' growth prospect, especially its long-term growth. Therefore, it is important to know how media coverage affects firms' long-term growth through innovating. In this study, we examine the effect of media coverage on corporate innovation.

3. Hypothesis development

Media coverage may enhance firm innovation. Innovation is a long-term, uncertain process with a large chance of failure (Holmstrom, 1989). Firms that invest heavily in innovative projects are subject to large information asymmetry (Bhattacharya and Ritter, 1983). When the market cannot observe the full spectrum of managerial actions, moral hazard will induce managers to steer their investment choice toward the short-term direction (e.g., Narayanan, 1985; Stein, 1988; Benmelech, Kandel, and Veronesi, 2010). For instance, a manager may want to boost short-term cash flows – and thereby stock price – at the expense of future long-term cash flows when the market is unable to differentiate the "true" from the "distorted" components of the reported short-term cash flows.

Moreover, in the presence of information asymmetry, even well-meaning long-term managers feel it is difficult to convey the promising prospects of long-term projects to the market. Therefore, bad firms have incentives to mimic the investment decisions of good firms, creating a lemon problem (Myers and Majluf, 1984; Trueman, 1986): good firms either overinvest as a signal (Bebchuk and Stole, 1993) or underinvest completely following the preference of the market (Brandenburger and Polak, 1996).

Therefore, both in the case of moral hazard behavior and in the case of the pure lack of ability to convey to the market the true value of the investment, information asymmetry distorts investment and leads to managerial short-termism and myopic investment. In other words, managers reduce investment in innovation. The media can serve as a solution to resolve the information asymmetry issue. The literature show that the media collects, aggregates, disseminates, and amplifies information (e.g., Dyck and Zingales, 2002). If the media can effectively convey firms' inside information to the public and lower information asymmetry between firms and investors, we expect that media coverage should increase firms' innovation activities. We call this view *the media-enhancing hypothesis*. Our media-enhancing hypothesis has the following prediction:

H1: Media coverage is positively associated with firms' innovation outputs.

However, media coverage may also impede firm innovation. As a powerful market force, the concern on the negative tone of media coverage can pressure managers to forgo long-term investments, such as innovation, in exchange for short-term performance. Liu and McConnell (2013) argue that the media, through effects from both news dissemination and news creation, affects managerial reputational capital. Therefore, managers should be concerned about the possibility that extensive news coverage leads to the destruction of their reputational capital.

Moreover, driven by profit-seeking incentives, the media may issue biased articles to cater to the interests of readers (Core, Guay, and Larcker, 2008; Gentzkow and Shapiro, 2010), or write favorable reports about firms for advertising revenue (Gurun and Butler, 2012). The threat of biased media coverage and interests in advertising revenue may induce managers to focus on short-term performance. Graham, Harvey, and Rajgopal (2005) survey 401 chief financial officers (CFOs) in the U.S., and find that because of the pressure to meet short-term earnings targets, the majority of the CFOs are willing to sacrifice long-term value for short-term performance. Therefore, we posit that the media, by imposing short-term pressure on managers and inducing managerial myopia, impede firm innovation. We call this view *the media-impeding hypothesis*. Our media-impeding hypothesis has the following prediction:

H2: Media coverage is negatively associated with firms' innovation outputs.

4. Research design

4.1 Data

We estimate news coverage using RavenPack, a leading news database that includes Dow Jones Newswire alerts globally, which has been increasingly used in the literature (e.g., Kolasinski, Reed, and Ringgenberg, 2013; Dang, Moshirian, and Zhang, 2014; Shroff, Verdi, and Yu, 2014; Dai, Parwada, Zhang, 2015). We measure corporate innovation based on data extracted from Google Patents by Kogan, Papanikolaou, Seru, and Stoffman (2012, KPSS thereafter). Other studies using Google Patents include Moser and Voena (2012) and Moser, Voena, and Waldinger (2014).

Our initial sample starts from fiscal year 2001 and ends in 2008, and consists of 37,235 U.S. firm-year observations, since RavenPack data is available from calendar year 2000 and KPSS data is ended up to 2009.[2] As illustrated in Table 1, we take following steps to filter out the sample: (1) Drop regulated industries with two-digit SIC codes between 4900 and 4999, or between 6000 and 6999; (2) Less observations with missing values of control variables; (3) Eliminate firms with no information of headquarter location used to estimate instrumental variable; and (4) Cut the last two fiscal years 2007 and 2008 from the main analysis, in which, following He and Tian (2013), we use the news coverage in year *t* to forecast the innovation output in *t+3*. The final sample comprises 17,999 firm-year observations with news coverage variable estimated in year *t* from 2001 to 2006, and with innovation outcome variables estimated in year *t+3* from 2004 to 2009. In supplementary analyses, the sample period varies according to different specifications – for example, conducting robustness test using the innovation variable in year *t+2*.

[2] The patent data is matched to RavenPack database in one year forward, because we predict corporate innovation outcome by lagged media coverage.

Moreover, we obtain the data of financial information, and CEO compensation from Compustat, institutional ownership from Thomson Reuters Institutional (13f) Holdings, and analyst coverage from I/B/E/S. To construct our instrumental variable, we use the information of firm's headquarter location from Compustat and that of Dow Jones' U.S. offices.[3]

[Insert Table 1 Here]

4.2 Empirical specification

RavenPack classifies news articles into different categories using her proprietary text and part-of-speech tagging or labelling, which allows us to focus on the "earnings" related news articles, and sum them up for each firm-year as the media coverage measure, *News*.[4] We define two metrics of innovation productivity (He and Tian, 2013). *Patent* is the number of patents granted to a firm annually. *CitePat* is the average number of citations per patent granted in a year adjusted for truncation, i.e., raw value divided by sample annual mean (Hall, Jaffe, and Trajtenberg, 2001), since the information of citation was extracted from Google Patents by KPSS in 2011. For robustness, we also perform the analyses using two alternative measures of corporate innovation, *Citation*, the number of citations of patents granted in a year, and *CitePatRaw*, the average number of citations per patent granted, unadjusted for truncation.

[3] See http://new.dowjones.com/contact-us-thank/office-locations. These offices include New York, Boston, Chicago, Minneapolis, Princeton, San Francisco, Waltham, and Washington.

[4] The subcategories regarding "earnings" include, for example, "earnings-above-expectations", "earnings-below-expectations", "earnings-meet-expectations", and so on.

To examine the effect of news coverage on corporation innovation outcomes, we specify our baseline model as follows, based on recent studies investigating the impact of media coverage on corporate decisions:[5]

$$Innovation_{t+3} = \alpha + \beta_{News} News_t + \beta_{CV} Control\ Variables_t + \beta_{FE}\ Fixed\ Effects + \varepsilon, \qquad (1)$$

where $News_t$ is our main variable of interest, estimated in year *t*, and $Innovation_{t+3}$ denotes the logarithm transformed value, *log (Patent+1)* or *log (CitePat+1)* in year *t+3*. We expect coefficient on $News_t$ to be significantly negative (positive) based on our *media-impeding hypothesis* (*media-enhancing hypothesis*). We control for firm and year fixed effects, and adjust standard errors for firm-level clustering.

Following He and Tian (2013), we include also control variables of firm and industry characteristics estimated in year *t* that affect corporate innovation outcomes: $Assets_t$, logarithm value of book value of total assets; $R\&D_t$, research and development expenses scaled by assets; Age_t, logarithm value of firm age in years; ROA_t, net income scaled by assets; PPE_t, property, plant and equipment scaled by assets; $Leverage_t$, sum of debt in current liabilities and long term debt scaled by assets; $Capex_t$, capital expenditures scaled by assets; $TobinQ_t$, market value over book value of assets; $Kzindex_t$, Kaplan and Zingales (1997) index; $Hindex_t$ and $Hindex^2_t$, Herfindahl index of four-digit SIC industry using sales data and its square term; $InstOwn_t$, shares owned by institutions scaled by total shares outstanding (Aghion, Van Reenen, Zingales, 2013); $Analyst_t$, number of analysts issuing annual EPS forecast; and $Spread_t$, average of daily bid-ask spread estimated based on CRSP following Corwin and Schultz (2012).[6]

We next conduct two-stage instrumental variable analysis to address the potential endogenous concern as below:

[5] For example, see the papers related to media impact on executive compensation (Core, Guay and Larcker, 2008; Kuhnen and Niessen, 2012), and on limited voting shares (Braggion and Giannetti, 2013).
[6] See Appendix for detailed variable definitions.

$$News_t = \alpha + \beta_{Ann}\, Announcement_t + \beta_{CV}\, Control\ Variables_t + \beta_{FE}\, Fixed\ Effects + \varepsilon, \quad (2)$$

and

$$Innovation_{t+3} = \alpha + \beta_{Predicted\ News}\, Predicted\ News_t + \beta_{CV}\, Control\ Variables_t + \beta_{FE}\, Fixed\ Effects + \varepsilon, \quad (3)$$

where we include the same set of control variables as in Equation (1) in both stages, as well as controlling for industry and year fixed effects, and clustering stand errors at firm level.

In the first stage (Equation 2), we calculate the number of earnings announcements made by other firms on the same announcement day of firm *i* in year *t*, $Announcement_t$. We require those firms to be operationally and geographically proximate, i.e., they are incorporated in the same two-digit SIC industry of firm *i*, and located less than 500 kilometers to firm *i*'s closet Dow Jones office. We expect the coefficient on $Announcement_t$ to be significantly negative, because given the limited media's attention, more earnings announcements made by proximate firms can reduce the earnings-related news coverage of firm *i*. In the second stage (Equation 3), we plug the predicted value of $News_t$ from the first stage ($Predicted\ News_t$) into the model, and expect the coefficient on it to be negative according to the *media-impeding hypothesis*.

Furthermore, we run the following model to identify the economic mechanisms of the main effect of media coverage on innovation:

$$Innovation_{t+3} = \alpha + \beta_{News}\, News_t + \beta_{NewsCF}\, News_t \times Channel\ Factor_t + \beta CF\ Channel\ Factor_t + \beta_{CV}\, Control\ Variables_t + \beta_{FE}\, Fixed\ Effects + \varepsilon, \quad (4)$$

where $Control\ Variables_t$ is the same set of control variables as in Equation (1), and *Fixed Effects* refers to firm and year fixed effects.

$Channel\ Factor_t$ in Equation (4) is a list of following moderator variables tested separately: (1) $Meet/Beat_t$, an indicator equal to one if actual annual EPS ≥ consensus analyst forecast; (2) *Inverse* ATO_t, sales divided by assets multiplied by -1; (3) *High* $Tech_t$, an indicator equal to one for industries with SIC codes starting with 28 (Chemicals), 36 (Electronic), 357 (Computers), and 737 (Software); and (4) *Equity* $Incentive_t$, percentage of equity-based CEO compensation. Aligned with the *media-impeding hypothesis*, for *Meet/Beat* firms, firms with lower *ATO*, and firm in *High Tech* industries, we expect stronger media impact on innovation (negative coefficients on $News_t \times Channel\ Factor_t$), while for CEOs with higher *Equity Incentive*, we expect the media effect to be mitigated (positive coefficients on $News_t \times Channel\ Factor_t$).

Lastly, we analyse the media's impact on short-term corporate policies and long-term firm performance as follows:

$$Policy_{t+1} = \alpha + \beta_{News} News_t + \beta_{CV} Control\ Variables_t + \beta_{FE}\ Fixed\ Effects + \varepsilon, \quad (5)$$

and

$$Performance_{t+s} = \alpha + \beta_{News} News_t + \beta_{CV} Control\ Variables_t + \beta_{FE}\ Fixed\ Effects + \varepsilon, \quad (6)$$

where we control for the same set of control variables as in Equation (1), and firm and year fixed effects.

We examine four variables of corporate policy in Equation (5), including $\Delta Capex_{t+1}$ for change of *Capex* from year *t* to *t+1*, $\Delta R\&D_{t+1}$ for change of *R&D*, $\Delta Disc\ Accruals_{t+1}$ for change of performance-matched discretionary accruals (Kothari, Leone, and Wasley, 2005), and $Repurchase_{t+1}$ for number of shares repurchased scaled by total shares outstanding. We intend to explore, other than the innovation productivity observed in three years, whether earnings-related news coverage impacts managerial decisions regarding one-year forward corporate policies, e.g., cutting R&D expenses, inflating discretionary accruals, and buying back shares.

In Equation (6), $Performance_{t+s}$ represents $\Delta ROA_{Adj\ t+s}$, which is the change of industry-adjusted *ROA* from year *t+s-2* to *t+s* (*s = 2*, *4*, and *6*, respectively). We expect that not only the innovation productivity, but also the firm's long-term performance can be hurt by the pressures from media regarding short-term earnings target, and thus a negative coefficient on $\Delta ROA_{Adj\ t+s}$.

4.3 Summary statistics

Table 2 reports the descriptive statistics of the variables in our baseline model for the sample of 17,999 firm-year observations from 2001 to 2006. All the continuous variables are winsorized at bottom 1 and top 99 percent. The mean, median, and 90 percentile values of $Patent_{t+3}$ are 7.54, zero, and zero, respectively, indicating the distribution of this measure is right-skewed, consistent with He and Tian (2013). Similarly, the distribution of $CitePat_{t+3}$ is also right-skewed, with median value equal to zero, and 90 percentile equal to 0.82. On average, a firm is reported for 8.72 times per year regarding earnings-related news; R&D expenses accounts for 6.4 percent of total assets; age of a firm is around 18.89 years old; Tobin'Q is 2.14; and a firm is covered by 5.47 analysts.

[Insert Table 2 Here]

5. Results

5.1 Baseline findings

We present the results of our main analysis of Equation (1) in Table 3. In Model (1), when we use $Log\ Patent_{t+3}$ as the dependent variable, the coefficient on $News_t$ is significantly negative (-0.015, t-stat = -8.37), suggesting that the productivity of corporate innovation is attenuated by earnings-related media coverage, consistent with our *media-impeding hypothesis*. This coefficient is also economically significant, i.e., one standard deviation increase in $News_t$ leading to one third decline of patent number (mean of $Log\ Patent_{t+3}$ = 0.45).

We find similar result in Model (2) when we regress $CitePat_{t+3}$ on $News_t$ (coefficient = -0.002, t-stat = -2.77), which indicates that not only the quantity of patent but also the quality of patent, measured by the average number of citations per patent, is also reduced by earnings-related news reports. The results are robust to alternative measures of innovation, $Log\ Citation_{t+3}$ and $Log\ CitePatRaw_{t+3}$, as illustrated in Models (3) and (4).

[Insert Table 3 Here]

5.2 Endogeneity and robustness tests

The results of endogeneity tests are reported in Table 4. Our instrument variable is the number of same-day earnings announcements of firms which are in the same two-digit SIC industry of firm *i*, and are located less than 500 kilometers to firm *i*'s closet Dow Jones office in year *t* ($Announcement_t$). The first column of Table 4 presents the first-stage result which is specified in Equation (2). As predicted, $Announcement_t$ is negatively and significantly associated with Earnings related news coverage of firm *i* ($News_t$) with a t-stats of -4.38. The Cragg-Donald F statistic is 35.608 suggesting that $Announcement_t$ is not a weak instrument.[7] Throughout column 2 to 5, we present the second-stage results for our key innovation variables. All standard errors are adjusted by two-step procedure and are clustered at firm level. All the results remain negative and statistically significant suggesting that our inferences are not biased by endogeneity concerns.

We conduct more robustness checks in Table 5. We cluster the standard errors by year instead of by firm (column 1 and 2), measure innovation variables in year *t+2* instead of *t+3*, and use natural log of news coverage variables ($Log\ News_t$). Our conclusions are not affected.

[7] The critical value of Stock-Yogo test is 16.38 for 10% maximal IV size (Stock and Yogo, 2005).

In sum, our results are robust to endogeneity concerns, to different variable measurement and to different standard error adjustment.

[Insert Tables 4 and 5 Here]

5.3 Economic channels

In this section, we further examine economic channels through which earnings related news coverage can affect corporate innovation activities. In particular, we examine four channels: market pressure, operating efficiency, the nature of the industry and executive incentives.

First, managers face capital market pressures on short-term financial performance. When facing such pressures, managers are willing to scarify long-term opportunities such as innovation to meet or beat short-term financial performance benchmark (Graham, Harvey and Rajgopal, 2005). We measure the market pressure by whether or not managers can meet or beat consensus analyst earnings forecast because analyst consensus is regarded as one of the most important short-term earnings benchmarks (Graham, Harvey and Rajgopal, 2005; He and Tian, 2013). The results are reported in Column 1 and 2 of Table 6. *Meet/Beat* is an indicator taking the value of one if firm *i*'s actual EPS in year *t* meet or beat the consensus analyst earnings forecasts, and zero otherwise. Managers may try hard to achieve the earnings benchmark by scarifying long-term innovation activities. Consistent with our expectation, the intersections between earnings related news coverage ($News_t$) and *Meet/Beat* dummy are negative and statistically significant for both quantity (*Log Patent*) and quality (*Log CitePat*) of corporate innovation activities in the future.

Second, media report and analyze firms' financial performance. Low efficiency firms will face more critiques when their poor efficiency is revealed by media analyses. Therefore, these firms have stronger incentives to increase their short-term performance when there is more media attention on them. It is thus likely that these firms cut their innovation activities to boost short-term earnings because of news coverage. We measure operating efficiency by asset turnover ratio multiplied by minus one (*Inverse ATO*). Asset turnover ratio is defined as sales divided by average total assets and it is a popular measure of operating efficiency. Firms with higher *Inverse ATO* are those with lower operating efficiency. The results in Column 3 and 4 of Table 6 indicate that the negative effects of news coverage on corporate innovation activities are more salient for firms with low operating efficiency.

Third, firms in different industries have different exposure to innovation activities. High-tech firms invest heavily in innovation and thus they have more discretion in innovation spending such as R&D. Meanwhile, high-tech firms are opaque to investors because of the complication of their high technologies. Therefore, managers of high-tech firms may rely more on media coverage to communicate with investors and may be more sensitive to media coverage of financial performance. We define high-tech firms based on their SIC codes. *High Tech* is an indicator taking the value of one if the firm's two-digit SIC code is 28 (Chemical) or 36 (Electronic) or if the firm's three-digit SIC code is 357 (Computer) or 737 (Software), and zero otherwise. The results in Column 5 and 6 of Table 6 confirm our expectation that media effect on corporate innovation activities concentrates on high-tech firms.

Last, managers with more equity incentive in their compensation plans care more about short-term share prices as well as short-term financial performance. As media attention can affect share prices significantly, managers with more equity incentive will be more willing to scarify future growth opportunities for short-term performance. Executive equity incentive (*Equity Incentive*) is measured by the percentage of equity-based CEO compensation. Consistent with our expectation, the results in Column 7 and 8 of Table 6 suggest that the impact of media coverage on corporate innovation activities are more pronounced in firms with more executive equity incentives.

[Insert Table 6 Here]

5.4 Corporate policies and firm performance

The results analyzed so far confirm the impeding impact of news coverage on the long-term outcomes from corporate innovation. However, it can be equally important to understand whether managers take real actions to alter corporate policies when face media short-term pressures regarding earnings targets, and whether this media effect has meaningful value implications for investors on firm performance in the long run.

We conduct relevant analyses in Table 7 to answer these questions. In Panel A, we find that managers indeed make decisions that can temporarily boost earnings. For example,, we find a negative association between $\Delta R\&D_{t,t+1}$ and $News_t$ in Model (2), and positive impacts of $News_t$ on $\Delta Disc\ Accruals_{\ t,t+1}$ in Model (3) and on $Repurchase_{t+1}$ in Model (4), implying that R&D expenses are reduced, discretionary accruals are manipulated upward, and shares are purchased back when managers face the pressures from media. Interestingly, we find insignificant result in Model (1) when examining the change of capital expenditure, $\Delta Capex_{t,t+1}$, which might be attributed to the fact that capital expenditure is not expensed and therefore unrelated to reported earnings.

We also find that news coverage introduces a long-term value impact on corporate performance in Panel B. Specifically, in Model (3), the coefficient on $\Delta ROA_{Adj\ t+4,t+6}$ is significantly negative (-0.002, t-value = -1.95), which suggests a significant and negative impact of news coverage on firm performance in six years. In contrast, there is a lack of short-term media effect on performance, e.g., the coefficient on $News_t$ is insignificant when we focus on Δ ROA$_{Adj\ t,t+2}$ in Model (1).

[Insert Table 7 Here]

6. Conclusion

Theoretically, the ultimate goal of the firm is to maximize shareholders' wealth, which is determined by both the risk of cash flows and cash flows' growth prospect, especially its long-term growth. Therefore, it is important to understand how media coverage affects firms' long-term growth through innovating. In this study, we examine the effect of media coverage on corporate innovation based on two competing hypotheses: the media-encouraging hypothesis, and the media-impeding hypothesis.

We perform our analyses using a comprehensive dataset of corporate news coverage from 2001 to 2012. Our baseline finding is consistent with the media-impeding hypothesis that media coverage exerts a negative causal effect on firm innovation. Moreover, we find supports for several economic mechanisms underlying the negative innovation effect of news coverage, with regard to, meeting or beating analyst earnings forecasts, operating efficiency, exposure to high technology, and equity-based compensation.

We believe that our work provides avenues for further research on the real effects of media coverage. The promising direction for future research is to further investigate the economic implications of this effect on the managerial decision making process related to other corporate policies. Such work would contribute to the question of the fundamental benefits of the media's role in the corporate market.

Appendix

Variable definition and data source.

This appendix presents variable definition and data source.

Variable	Definition
Innovation outcome variables	
Patent	Number of patents granted in year *t+3* based on the data provided by *KPSS* (Kogan, Papanikolaou, Seru,and Stoffman, 2012) and extracted from *Google Patents*.
CitePat	Average number of citations per patent granted in year *t+3* based on the data provided by *KPSS* (2012). The information of number of citations is extracted from *Google Patents* in 2011. Number of citations per patent is adjusted for truncation - raw value divided by sample annual mean (Hall, Jaffe, and Trajtenberg, 2001).
Citation	Number of citations of patents granted in year *t+3* based on the data provided by *KPSS* (2012).
CitePatRaw	Average number of citations per patent granted in year *t+3* based on the data provided by *KPSS* (2012), unadjusted for truncation.
News coverage variables	
News	Number of earnings related news articles released in year *t* based on *RavenPack*.
Predicted News	Predicted number of earnings related news articles released in year *t*, which is estimated in an instrumental variable approach based on *RavenPack*.
Firm-level control variables	
Assets	*Book value of total assets* in billions (*US dollars*) in year *t* based on *Compustat*. Log value of (*1 + Assets × 1000*) is taken in regression analysis.
R&D	*Research and development expenses* / *Assets* in year *t* based on *Compustat*.
Age	Firm age (*in years*) in year *t* based on *Compustat*. Log value is taken in regression analysis.
ROA	*Net income* / *Assets* in year *t* based on *Compustat*.
PPE	*Property, plant and equipment* / *Assets* in year *t* based on *Compustat*.
Leverage	(*Debt in current liabilities* + *Long term debt*) / *Assets* in year *t* based on *Compustat*.
Capex	*Capital expenditures* / *Assets* in year *t* based on *Compustat*.
TobinQ	(*Assets – Book value of equity* + *Number of common shares* × *Year-end share price*) / *Assets* in year *t* based on *Compustat*.
KZindex	Kaplan and Zingales index measured in year *t* based on *Compustat*. See Kaplan and Zingales (1997) for details.
Hindex	Herfindahl index of four-digit standard industrial classification (*SIC*) using *Sales* data in year *t* based on *Compustat*.

Variable	Definition
InstOwn	Shares owned by institutions scaled by total shares outstanding in year *t* based on *Thomson Reuters Institutional (13f) Holdings*, multiplied by 100 in regression analysis.
Analyst	Number of analysts issuing annual *EPS* forecast firm *i* in year *t* based on *I/B/E/S Summary Statistics*. Log value of (*1 + Analyst* × *1000*) is taken in regression analysis.
Spread	Average of daily bid-ask spread estimated in year *t* based on *CRSP*. See Corwin and Schultz (2012) for details.
Other variables	
Announcement	Number of earnings announcements made by other same two-digit SIC firms on the same day of firm *i*, located less than 500 kilometers to firm *i*'s closet Dow Jones office.
Meet/Beat	Indicator equal to one if actual annual EPS ≥ consensus analyst forecast in year *t* based on *I/B/E/S Summary Statistics*.
Inverse ATO	*Sales* in year *t* / (*Assets* in year *t-1* + *Assets* in year *t*) multiplied by *-1* based on *Compustat.*
High Tech	Indicator equal to one for industries with SIC codes starting *28* (Chemicals), *36* (Electronic), *357* (Computers), and *737* (Software) based on *Compustat*.
Equity Incentive	Percentage of equity-based CEO compensation (Stock + Option) in year *t* based on *Compustat Execucomp*.
Δ *Capex*	Change of *Capex* from year *t* to *t+1* based on *Compustat*.
Δ *R&D*	Change of *R&D* from year *t* to *t+1* based on *Compustat.*
Δ *Disc Accruals*	Change of performance-matched discretionary accruals from year *t* to *t+1* based on *Compustat*. See Kothari, Leone, and Wasley (2005) for details.
Repurchase	Number of shares repurchased scaled by number of total shares outstanding in year *t+1* based on *Compustat*.
Δ ROA_{Adj}	Change of *ROA* adjusted by two-digit SIC industry median from year *t* to *t+2* (*t+2* to *t+4*, or *t+4* to *t+6*) based on *Compustat*.

References

Acharya, V., Baghai, R., Subramanian, K., 2014. Wrongful discharge laws and innovation. Review of Financial Studies 27, 301–346.

Acharya, V., Subramanian, K., 2009. Bankruptcy codes and innovation, Review of Financial Studies 22, 4949–4988.

Aghion, P., Bloom, N., Blundell, R., Griffith, R., Howitt, P., 2005, Competition and innovation: An inverted-U relationship. Quarterly Journal of Economics 120, 701–728.

Aghion, P., Van Reenen, J., Zingales, L., 2013. Innovation and institutional ownership. American Economic Review 103, 277–304.

Bebchuk, L., Stole, L., 1993. Do short-term objectives lead to under-or overinvestment in long-term projects? Journal of Finance 48, 719–730.

Benmelech, E., Kandel E., Veronesi, P., 2010. Stock-based compensation and CEO (dis)incentives. Quarterly Journal of Economics 125, 1769–1820.

Beyer, A., Cohen, D., Lys, T., Walther, B., 2010. The financial reporting environment: Review of the recent literature. Journal of Accounting and Economics 50, 296–343.

Bhattacharya, S., Ritter, J., 1983. Innovation and communication: Signalling with partial disclosure. Review of Economic Studies 50, 331–346.

Blankespoor, E., Miller, G., White, H., 2014. The role of dissemination in market liquidity: Evidence from firms' use of Twitter. The Accounting Review 89, 79–112.

Braggion, F., Giannetti, M., 2013. On the determinants of the non-voting shares' discount: Investor preferences and fundamentals. Working paper, Tilburg University.

Brandenburger, A., Polak, B., 1996. When managers cover their posteriors: Making the decisions the market wants to see. RAND Journal of Economics 1996, 523–541.

Bradley, D., Kim, I., Tian, X., 2014. Do unions affect innovation? Working paper, University of South Florida.

Bushee, B., Core, J., Guay, W., Hamm, S., 2010, The role of the business press as an information intermediary. Journal of Accounting Research 48, 1–19.

Chan, W., 2003. Stock price reaction to news and no-news: Drift and reversal after headlines. Journal of Financial Economics 70, 223–260.

Chemmanur, T., Loutskina, E., Tian, X., 2014. Corporate venture capital, value creation, and innovation. Review of Financial Studies 27, 2434–2473.

Core, J., Guay, W., Larcker, D., 2008. The power of the pen and executive compensation. Journal of Financial Economics 88, 1–25.

Cornaggia, J., Mao, Y., Tian, X., Wolfe, B., 2015, Does banking competition affect innovation? Journal of Financial Economics 115, 189–209.

Corwin, S., Schultz, P., 2012. A simple way to estimate bid-ask spreads from daily high and low prices. Journal of Finance 67, 719–760.

Dai, L., Parwada, J., Zhang, B., 2015. The governance role of the media through news dissemination: Evidence from insider trading. Journal of Accounting Research, Forthcoming.

Dang, T., Moshirian, F., Zhang, B., 2015. Commonality in news around the world. Journal of Financial Economics, Forthcoming.

Dyck, A., Morse, A., Zingales, L., 2010. Who blows the whistle on corporate frauds? Journal of Finance 65, 2133–2255.

Dyck, A., Volchkova, N., Zingales, L., 2008. The corporate governance role of the media: Evidence from Russia, Journal of Finance 63, 1093–1135.

Dyck, A., Zingales, L., 2002. The corporate governance role of the media. Working paper, National Bureau of Economic Research, No. 9309.

Engelberg, J., Parsons, C., 2011. The causal impact of media in financial markets. Journal of Finance 66, 67–97.

Fang, L., Peress, J., 2009. Media coverage and the cross-section of stock returns. Journal of Finance 64, 2023–2052.

Fang,V., Tian, X., Tice, S., 2014. Does stock liquidity enhance or impede firm innovation, Journal of Finance 69, 2085–2125.

Gentzkow, M., Shapiro, J., 2010. What drives media slant? Evidence from U.S. daily newspapers. Econometrica 78, 35–71.

Graham, J., Harvey, C., Rajgopal, S., 2005. The economic implications of corporate financial reporting. Journal of Accounting and Economics 40, 3–73.

Gurun, U., Butler, A., 2012. Don’t believe the hype: Local media slant, local advertising, and firm value. Journal of Finance 67, 561–698.

Hall, B., Jaffe, A., Trajtenberg, M., 2001. The NBER patent citation data file: Lessons, insights and methodological tools. Working paper, National Bureau of Economic Research, No. 8498.

Hall, B., Jaffe, A., Trajtenberg, M., 2005. Market value and patent citations. RAND Journal of Economics 36, 16–38.

He, J., Tian, X., 2013. The dark side of analyst coverage: The case of innovation, Journal of Financial Economics 109, 856–878.

Hirshleifer, D., Lim, S., Teoh, S., 2009. Driven to distraction: Extraneous events and underreaction to earnings news. Journal of Finance 64, 2289–2325.

Holmstrom, B., 1989. Agency costs and innovation. Journal of Economic Behavior and Organization 12, 305–327.

Hsu, P., Tian, X. Xu, Y., 2014. Financial development and innovation: Cross-country evidence, Journal of Financial Economics 112, 116–135.

Joe, J., Louis, H., Robinson, D., 2009. Managers’ and investors’ responses to media exposure of board ineffectiveness, Journal of Financial and Quantitative Analysis 44, 579–605.

Kaplan, S., Zingales, L., 1997. Do investment–cash flow sensitivities provide useful measures of financing constraints? Quarterly Journal of Economics112, 169–215.

Klibanoff, P., Lamont, O., Wizman, T., 1998. Investor reaction to salient news in closed-end country funds. Journal of Finance 53, 673–699.

Kogan, L., Papanikolaou, D., Seru, A., Stoffman, N., 2012. Technological innovation, resource allocation, and growth. Working paper, National Bureau of Economic Research, No. 17769.

Kolasinski, A., Reed, A, Ringgenberg, M., 2013. A multiple lender approach to understanding supply and search in the equity lending market. Journal of Finance 68, 559–595.

Kothari, S., Leone, A., Wasley, C., 2005. Performance matched discretionary accrual measures. Journal of Accounting and Economics 39,163–197.

Kuhnen, C., Niessen, A., 2012. Public opinion and executive compensation. Management Science 58, 1249–1272.

Liu, B., McConnell, J., 2013. The role of the media in corporate governance: Do the media influence managers' capital allocation decisions? Journal of Financial Economics 110, 1–17.

Manso, G., 2011. Motivating innovation, Journal of Finance 66, 1823–1860.

Miller, G., 2006. The press as a watch dog for accounting fraud. Journal of Accounting Research 44, 1001–1033.

Moser, P., Voena, A., 2012. Compulsory licensing: Evidence from the trading with the enemy act. American Economic Review 102, 396–427.

Moser, P., Voena, A., Waldinger F., 2012. German Jewish Émigrés and US Invention. American Economic Review 104: 3222–3255.

Myers, S., Majluf, N., 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187–221.

Nanda, R., Rhodes-Kropf, M., 2013. Investment cycles and startup innovation. Journal of Financial Economics 110, 403–418.

Narayanan, M., 1985. Managerial incentives for short-term results. Journal of Finance 40, 1469–1484.

Romer, P., 1987. Growth based on increasing returns due to specialization. American Economic Review 77, 56–62.

Seru, A., 2014. Firm boundaries matter: Evidence from conglomerates and R&D activity. Journal of Financial Economics 111, 381–405.

Shroff, N., Verdi, R., Yu, G., 2014. Information environment and the investment decisions of multinational corporations. The Accounting Review 89, 759–790.

Stock, J., Yogo, M., 2005. Testing for weak instruments in linear IV regression. In identification and inference for econometric models: A Festschrift in honor of Thomas Rothenberg. Cambridge University Press, Cambridge.

Solow, R., 1957. Technical change and the aggregate production function. Review of Economics and Statistics 39, 312–320.

Stein, J., 1988. Takeover threats and managerial myopia, Journal of Political Economy 96, 61–80.

Tetlock, P., 2007. Giving content to investor sentiment: The role of media in the stock market. Journal of Finance 62, 1139–1168.

Tetlock, P., Saar-Tsechansky, M., Macskassy, S., 2008. More than words: Quantifying language to measure firms' fundamentals. Journal of Finance 63, 1437–1467.

Trueman, B., 1986. The relationship between the level of capital expenditures and firm value. Journal of Financial and Quantitative Analysis 21, 115–129.

Zingales, L., 2000. In search of new foundations. Journal of Finance 55, 1623–1653.

Table 1
Sample Selection.

This table presents the sample selection procedure. We start with a panel sample of 37,235 firm-year observations from fiscal year 2001 to 2008 in a combined sample based on *Compustat* and *RavenPack*. The sample period is ended in 2008 for the estimation of news coverage variables, because one-year forward patent data to estimate innovation outcome variables from Kogan, Papanikolaou, Seru, and Stoffman (2012) is available up to 2009. The sample in our main analysis comprises 17,999 firm-year observations with news coverage variable estimated in year *t* from 2001 to 2006, and with innovation outcome variables estimated in year *t+3* from 2004 to 2009. In supplementary analyses, the sample period varies according to different specifications.

Step	Selection Criteria	Observations
1.	Firm-year observations from fiscal year 2001 to 2009 in a combined sample based on *Compustat* and *RavenPack*.	***37,235***
2.	- Less observations with two-digit SIC codes between 4900 and 4999, or between 6000 and 6999.	*26,611*
3.	- Less observations with missing values of control variables estimated based on *Compustat*, such as *Assets*, *PPE*, *Leverage*, *Capex*, and *KZindex*.	*24741*
4.	- Less observations with missing value of *Spread* estimated based on *CRSP*.	*24,423*
5.	- Less observations with missing value of *Announcement* estimated based on the information of firm's headquarter location from *Compustat*.	*23,932*
6.	- Less observations in fiscal year 2008.	*21,074*
7.	- Less observations in fiscal year 2007.	***17,999***

Table 2

Summary statistics.

This table presents the summary statistics of the variables in our main analysis for the mean, median, standard deviation (*STD*), decile (90% and 10%) distribution of the variables, and number of observations. The panel sample comprises 17,999 firm-year observations from 2001 to 2006 based on news coverage estimation period. Variable definitions are detailed in the Appendix.

	Mean	*STD*	*10%*	*Median*	*90%*	Observations
$Patent_{t+3}$	7.543	74.966	0.000	0.000	5.000	17,999
$CitePat_{t+3}$	0.211	0.589	0.000	0.000	0.821	17,999
$News_t$	8.722	6.327	4.000	7.000	16.000	17,999
$Assets_t$	2.310	8.632	0.022	0.278	3.986	17,999
$R\&D_t$	0.064	0.120	0.000	0.008	0.187	17,999
Age_t	18.887	13.909	6.000	13.000	42.000	17,999
ROA_t	-0.053	0.259	-0.340	0.030	0.119	17,999
PPE_t	0.235	0.215	0.031	0.163	0.569	17,999
$Leverage_t$	0.177	0.181	0.000	0.134	0.439	17,999
$Capex_t$	0.049	0.055	0.007	0.031	0.111	17,999
$TobinQ_t$	2.142	1.526	0.955	1.633	3.948	17,999
$Kzindex_t$	-11.191	42.696	-21.963	-1.321	1.881	17,999
$Hindex_t$	0.224	0.173	0.067	0.169	0.444	17,999
$InstOwn_t$	0.443	0.349	0.000	0.460	0.912	17,999
$Analyst_t$	5.466	6.419	0.000	3.000	15.000	17,999
$Spread_t$	0.020	0.012	0.008	0.016	0.035	17,999

Table 3
News coverage and innovation outcomes.

This table presents regressions of corporate innovation outcome variables on news coverage, as well as other control variables and unreported firm- and year-fixed effects (*FY*). The dependent variables are various proxies of corporate innovation outcome measured in year *t+3*, including logarithm values of number of patents (*Log Patent*), average number of citations per patent (*Log CitePat*), number of citations (*Log Citation*), and unadjusted average number of citations per patent (*Log CitePatRaw*). News coverage (*News*) is the number of earnings related news articles estimated in year *t*. The panel sample comprises 17,999 firm-year observations from 2001 to 2006 based on news coverage estimation period. Variable definitions are detailed in the Appendix. Key results are highlighted in bold. The *t*-statistics shown in parentheses are based on standard errors adjusted for heteroskedasticity and firm-level clustering.

DV	*Log* $Patent_{t+3}$	*Log* $CitePat_{t+3}$	*Log* $Citation_{t+3}$	*Log* $CitePatRaw_{t+3}$
	M1	M2	M3	M4
$News_t$	**-0.015**	**-0.002**	**-0.024**	**-0.004**
	(-8.37)	**(-2.77)**	**(-9.22)**	**(-6.15)**
$Assets_t$	0.067	0.007	0.079	0.006
	(2.76)	(0.79)	(2.30)	(0.65)
$R\&D_t$	-0.003	-0.001	-0.003	-0.000
	(-2.05)	(-1.24)	(-1.76)	(-0.53)
Age_t	0.406	0.022	0.634	0.089
	(4.23)	(0.73)	(4.49)	(2.78)
ROA_t	-0.150	-0.032	-0.219	-0.041
	(-3.85)	(-1.70)	(-3.79)	(-2.12)
PPE_t	0.075	0.039	0.141	0.016
	(0.65)	(0.81)	(0.84)	(0.33)
$Leverage_t$	-0.145	-0.059	-0.223	-0.050
	(-1.89)	(-1.91)	(-2.04)	(-1.65)
$Capex_t$	0.443	0.035	0.622	0.118
	(2.84)	(0.49)	(2.87)	(1.84)
$TobinQ_t$	0.032	0.006	0.045	0.007
	(4.93)	(2.00)	(4.60)	(2.36)
$Kzindex_t$	-0.000	-0.000	-0.000	-0.000
	(-0.43)	(-0.90)	(-0.91)	(-1.04)
$Hindex_t$	1.293	0.311	2.098	0.445
	(3.27)	(2.07)	(3.84)	(3.07)
$Hindex^2_t$	-0.991	-0.247	-1.676	-0.379
	(-2.84)	(-1.82)	(-3.55)	(-2.90)
$InstOwn_t$	-0.001	-0.000	-0.001	-0.000
	(-1.20)	(-0.74)	(-1.56)	(-1.47)
$Analyst_t$	0.007	-0.007	-0.002	-0.008
	(0.44)	(-1.07)	(-0.12)	(-1.32)
$Spread_t$	2.959	0.691	5.105	1.207
	(3.57)	(1.98)	(4.17)	(3.39)
Intercept	-0.891	0.050	-1.520	0.470
	(-3.19)	(0.53)	(-3.63)	(4.53)
Fixed Effects	FY	FY	FY	FY
Observations	17,999	17,999	17,999	17,999
R^2_{Adj}	79.91%	48.88%	67.41%	19.32%

Table 4
Endogeneity tests.

This table presents endogeneity tests based on two-stage instrumental variable analysis. In the first stage, the number of earnings related news articles (*News*) of firm *i* is regressed on the instrumental variable (*Announcement*) in year *t*, as well as other control variables and unreported industry- and year-fixed effects (*IY*). Announcement is the number of earnings announcements made by other same two-digit SIC firms on the same day of firm *i*, located less than 500 kilometers to firm *i*'s closet Dow Jones office. In the second stage, corporate innovation outcome variables estimated in year *t+3* are regressed on the predicted news coverage (*Predicted News*) estimated in year *t* from the first stage. The corporate innovation outcome variables include logarithm values of number of patents (*Log Patent*), average number of citations per patent (*Log CitePat*), number of citations (*Log Citation*), and unadjusted average number of citations per patent (*Log CitePatRaw*). The panel sample comprises 17,999 firm-year observations from 2001 to 2006 based on news coverage estimation period. Variable definitions are detailed in the Appendix. Key results are highlighted in bold. The *t*-statistics shown in parentheses are based on standard errors adjusted for heteroskedasticity and firm-level clustering.

	Stage 1	Stage 2	Stage 2	Stage 2	Stage 2
DV	$News_t$	$Log\ Patent_{t+3}$	$Log\ CitePat_{t+3}$	$Log\ Citation_{t+3}$	$Log\ CitePatRaw_{t+3}$
	M1	M2	M3	M4	M5
$Predicted\ News_t$		**-0.290**	**-0.120**	**-0.362**	**-0.048**
		(-3.91)	**(-5.91)**	**(-4.56)**	**(-3.72)**
$Announcement_t$	**-0.035**				
	(-4.38)				
$Assets_t$	1.814	0.804	0.259	0.917	0.086
	(22.29)	(6.01)	(7.06)	(6.40)	(3.70)
$R\&D_t$	0.010	0.011	0.003	0.010	0.000
	(1.87)	(8.73)	(7.76)	(7.83)	(0.99)
Age_t	2.135	0.744	0.263	0.874	0.091
	(21.30)	(4.62)	(5.98)	(5.08)	(3.27)
ROA_t	-1.306	-0.229	-0.116	-0.346	-0.070
	(-6.40)	(-2.15)	(-3.93)	(-3.05)	(-3.65)
PPE_t	-0.216	-0.282	-0.080	-0.304	-0.022
	(-0.51)	(-3.11)	(-3.57)	(-3.23)	(-1.88)
$Leverage_t$	-1.971	-0.863	-0.293	-1.005	-0.109
	(-5.64)	(-5.39)	(-6.83)	(-5.92)	(-4.03)
$Capex_t$	-0.894	0.489	0.002	0.517	0.038
	(-0.79)	(2.25)	(0.03)	(2.25)	(0.93)
$TobinQ_t$	0.330	0.176	0.057	0.206	0.022
	(8.38)	(6.70)	(7.93)	(7.28)	(4.80)
$Kzindex_t$	0.003	0.001	0.000	0.001	0.000
	(3.69)	(3.97)	(4.85)	(4.18)	(2.64)
$Hindex_t$	0.982	-0.211	0.024	-0.019	0.098
	(0.83)	(-0.80)	(0.33)	(-0.07)	(2.13)
$Hindex^2_t$	-0.310	0.632	0.104	0.429	-0.085
	(-0.23)	(2.22)	(1.28)	(1.51)	(-1.69)
$InstOwn_t$	-0.017	-0.007	-0.002	-0.008	-0.001
	(-7.43)	(-5.23)	(-5.29)	(-5.61)	(-2.88)
$Analyst_t$	0.746	0.269	0.102	0.315	0.032
	(7.58)	(4.73)	(6.52)	(5.20)	(3.00)
$Spread_t$	56.749	26.568	8.053	29.586	2.447
	(11.74)	(6.32)	(6.94)	(6.54)	(3.22)
Intercept	-10.480	-4.605	-1.414	-5.085	0.300
	(-18.78)	(-5.85)	(-6.54)	(-6.03)	(2.19)
Fixed Effects	IY	IY	IY	IY	IY
Observations	17,999	17,999	17,999	17,999	17,999
R^2_{Adj}	45.72%	37.60%	20.82%	32.07%	6.64%

Table 5
Robustness tests.
This table presents robustness tests. The dependent variables are the logarithm values of number of patents (*Log Patent*), and average number of citations per patent (*Log CitePat*) measured in year *t+3*. News coverage (*News*) is the number of earnings related news articles estimated in year *t*. In Models (1) and (2), we cluster standard errors by year. In Models (3) and (4), the dependent variables are replaced by the same metrics but measured in year *t+2*. In Models (5) and (6), *News* is substituted by its logarithm value (*Log News*). Other control variables and unreported firm- and year-fixed effects (*FY*) are included as well. The panel sample comprises 17,999 firm-year observations from 2001 to 2006 based on news coverage estimation period, except for Models (3) and (4), in which the sample period is extended to 2007 and sample size is increased to 21,074. Variable definitions are detailed in the Appendix. Key results are highlighted in bold. The *t*-statistics shown in parentheses are based on standard errors adjusted for heteroskedasticity and firm-level clustering, except for Models (1) and (2).

DV	*Log* $Patent_{t+3}$	*Log* $CitePat_{t+3}$	*Log* $Patent_{t+2}$	*Log* $CitePat_{t+2}$	*Log* $Patent_{t+3}$	*Log* $CitePat_{t+3}$
	M1	M2	M3	M4	M5	M6
$News_t$	**-0.015**	**-0.002**	**-0.011**	**-0.002**		
	(-2.77)	**(-1.80)**	**(-7.13)**	**(-3.23)**		
Log $News_t$					**-0.065**	**-0.015**
					(-5.14)	**(-2.66)**
$Assets_t$	0.067	0.007	0.075	0.015	0.061	0.007
	(3.36)	(1.11)	(3.62)	(1.79)	(2.47)	(0.75)
$R\&D_t$	-0.003	-0.001	-0.002	-0.001	-0.003	-0.001
	(-2.10)	(-2.10)	(-2.00)	(-1.41)	(-2.11)	(-1.24)
Age_t	0.406	0.022	0.353	-0.010	0.471	0.031
	(3.16)	(1.04)	(4.37)	(-0.37)	(4.73)	(1.03)
ROA_t	-0.150	-0.032	-0.129	-0.060	-0.150	-0.033
	(-2.67)	(-1.55)	(-3.45)	(-3.03)	(-3.82)	(-1.72)
PPE_t	0.075	0.039	0.125	-0.020	0.061	0.038
	(2.12)	(1.12)	(1.20)	(-0.50)	(0.53)	(0.79)
$Leverage_t$	-0.145	-0.059	-0.169	-0.037	-0.139	-0.058
	(-1.92)	(-1.63)	(-2.45)	(-1.44)	(-1.80)	(-1.89)
$Capex_t$	0.443	0.035	0.309	0.051	0.449	0.038
	(2.77)	(0.54)	(2.31)	(0.78)	(2.86)	(0.53)
$TobinQ_t$	0.032	0.006	0.023	0.011	0.033	0.006
	(1.82)	(1.16)	(3.86)	(3.78)	(5.05)	(2.00)
$Kzindex_t$	-0.000	-0.000	-0.000	0.000	-0.000	-0.000
	(-0.48)	(-0.97)	(-0.47)	(0.05)	(-0.61)	(-0.86)
$Hindex_t$	1.293	0.311	1.107	0.342	1.315	0.313
	(2.80)	(5.91)	(3.09)	(2.62)	(3.27)	(2.08)
$Hindex^2_t$	-0.991	-0.247	-0.738	-0.198	-1.005	-0.249
	(-3.66)	(-3.81)	(-2.23)	(-1.69)	(-2.81)	(-1.84)
$InstOwn_t$	-0.001	-0.000	-0.000	0.000	-0.001	-0.000
	(-1.62)	(-1.28)	(-0.03)	(0.01)	(-1.21)	(-0.71)
$Analyst_t$	0.007	-0.007	0.033	0.001	0.006	-0.007
	(0.27)	(-4.63)	(2.18)	(0.09)	(0.40)	(-0.98)
$Spread_t$	2.959	0.691	3.756	1.020	2.950	0.697
	(3.09)	(3.22)	(4.64)	(2.99)	(3.51)	(1.99)
Intercept	-0.891	0.050	-0.797	0.089	-0.998	0.044
	(-2.03)	(0.49)	(-3.32)	(1.07)	(-3.49)	(0.46)
Fixed Effects	FY	FY	FY	FY	FY	FY
Observations	17,999	17,999	21,074	21,074	17,999	17,999
R^2_{Adj}	79.91%	48.88%	81.21%	50.59%	79.72%	48.87%

Table 6
Economic channels.

This table presents the tests on economic channels through which news coverage affects corporate innovation outcomes. The dependent variables are the logarithm values of number of patents (*Log Patent*), and average number of citations per patent (*Log CitePat*) measured in year *t+3*. We add the proxies for four economic channels and their interactions with news coverage (*News*) in the regressions, including meeting or beating consensus analyst earnings forecast (*Meet/Beat*), assets turnover ratio multiplied by minus one (*Inverse ATO*), high-tech industry dummy (*High Tech*), and percentage of equity-based CEO compensation (*Equity Incentive*) in year *t*. News coverage (*News*) is the number of earnings related news articles estimated in year *t*. Other control variables and unreported firm- and year-fixed effects (*FY*) are included as well. The panel sample comprises 17,999 firm-year observations from 2001 to 2006 based on news coverage estimation period, except for Models (7) and (8) in which sample is limited due to the unavailability of CEO compensation data. Variable definitions are detailed in the Appendix. Key results are highlighted in bold. The *t*-statistics shown in parentheses are based on standard errors adjusted for heteroskedasticity and firm-level clustering.

Channel	*Meet/Beat*		*Inverse ATO*		*High Tech*		*Equity Incentive*	
DV	$Log\ Patent_{t+3}$	$Log\ CitePat_{t+3}$	$Log\ Patent_{t+3}$	$Log\ CitePat_{t+3}$	$Log\ Patent_{t+3}$	$Log\ CitePat_{t+3}$	$Log\ Patent_{t+3}$	$Log\ CitePat_{t+3}$
	M1	M2	M3	M4	M5	M6	M7	M8
$News_t \times Channel_t$	**-0.013**	**-0.002**	**-0.009**	**-0.001**	**-0.029**	**-0.005**	**0.002**	**-0.000**
	(-5.17)	**(-1.88)**	**(-4.94)**	**(-1.57)**	**(-7.23)**	**(-3.44)**	**(5.09)**	**(-0.59)**
$Channel_t$	0.082	0.008	0.089	0.014	0.360	0.113	-0.019	0.002
	(3.93)	(0.88)	(4.00)	(1.48)	(5.31)	(4.46)	(-3.26)	(0.86)
$News_t$	-0.007	-0.001	-0.025	-0.003	-0.005	-0.000	-0.028	-0.001
	(-3.52)	(-0.99)	(-8.01)	(-2.81)	(-2.73)	(-0.27)	(-6.80)	(-0.56)
$Assets_t$	0.066	0.007	0.061	0.006	0.068	0.007	0.171	0.031
	(2.74)	(0.76)	(2.48)	(0.64)	(2.86)	(0.80)	(2.77)	(1.64)
$R\&D_t$	-0.003	-0.001	-0.003	-0.001	-0.003	-0.001	-0.011	-0.005
	(-2.05)	(-1.23)	(-1.95)	(-1.21)	(-1.92)	(-1.21)	(-1.76)	(-2.55)
Age_t	0.402	0.021	0.413	0.022	0.429	0.025	0.368	-0.001
	(4.21)	(0.71)	(4.31)	(0.76)	(4.49)	(0.86)	(1.41)	(-0.02)
ROA_t	-0.145	-0.031	-0.137	-0.029	-0.147	-0.032	-0.331	-0.082
	(-3.76)	(-1.64)	(-3.39)	(-1.54)	(-3.79)	(-1.67)	(-2.46)	(-1.84)
PPE_t	0.088	0.040	0.052	0.036	0.093	0.042	0.916	0.310
	(0.77)	(0.84)	(0.45)	(0.74)	(0.82)	(0.87)	(3.02)	(3.07)
$Leverage_t$	-0.149	-0.060	-0.132	-0.057	-0.135	-0.057	-0.096	-0.024
	(-1.95)	(-1.94)	(-1.72)	(-1.87)	(-1.77)	(-1.86)	(-0.60)	(-0.41)
$Capex_t$	0.425	0.032	0.462	0.040	0.404	0.029	0.027	-0.242
	(2.75)	(0.45)	(2.94)	(0.56)	(2.63)	(0.41)	(0.07)	(-1.60)

$TobinQ_t$	0.032	0.006	0.032	0.006	0.030	0.006	0.077	0.012
	(4.92)	(2.00)	(4.98)	(2.02)	(4.64)	(1.88)	(3.82)	(1.66)
$Kzindex_t$	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.001	-0.000
	(-0.51)	(-0.91)	(-0.21)	(-0.83)	(-0.30)	(-0.86)	(0.67)	(-0.68)
$Hindex_t$	1.289	0.311	1.258	0.307	1.256	0.305	1.692	0.057
	(3.29)	(2.07)	(3.21)	(2.05)	(3.24)	(2.03)	(2.06)	(0.23)
$Hindex^2_t$	-0.987	-0.247	-0.977	-0.245	-0.951	-0.240	-1.221	0.029
	(-2.86)	(-1.82)	(-2.83)	(-1.81)	(-2.80)	(-1.76)	(-1.74)	(0.14)
$InstOwn_t$	-0.001	-0.000	-0.001	-0.000	-0.001	-0.000	0.001	0.001
	(-1.24)	(-0.76)	(-1.23)	(-0.75)	(-1.36)	(-0.81)	(0.54)	(1.68)
$Analyst_t$	0.008	-0.006	0.006	-0.007	0.008	-0.007	-0.024	-0.013
	(0.53)	(-0.94)	(0.38)	(-1.09)	(0.50)	(-1.05)	(-0.69)	(-1.11)
$Spread_t$	2.976	0.695	2.709	0.661	2.338	0.588	21.878	3.243
	(3.63)	(2.00)	(3.30)	(1.90)	(2.90)	(1.69)	(6.60)	(2.64)
Intercept	-0.921	0.047	-0.760	0.072	-1.060	0.004	-1.803	-0.083
	(-3.33)	(0.50)	(-2.69)	(0.74)	(-4.01)	(0.04)	(-2.18)	(-0.35)
Fixed Effects	FY	FY	FY	FY	FY	FY	FY	FY
Observations	17,999	17,999	17,999	17,999	17,999	17,999	7,257	7,257
R^2_{Adj}	80.02%	48.90%	79.98%	48.89%	80.16%	48.96%	84.35%	56.64%

Table 7
News coverage, short-term corporate policies, and long-term firm performance.

This table presents regressions of short-term corporate policy and long-term firm performance variables on news coverage, as well as other control variables and unreported firm- and year-fixed effects (*FY*). The dependent variables in Panel A are various proxies of corporate policy measured in year *t+1*, including change of capital expenditure (Δ *Capex*), change of R&D expenditure (Δ *R&D*), change of discretionary accruals (Δ *Disc Accruals*), and stock repurchase percentage (*Repurchase*). The dependent variables in Panel B are the changes of industry adjusted return on assets from year *t* to year *t+2* ($\Delta\ ROA_{Adj\ t,t+2}$), from year *t+2* to year *t+4* ($\Delta\ ROA_{Adj\ t+2,t+4}$), and from year *t+4* to year *t+6* ($\Delta\ ROA_{Adj\ t+4,t+6}$). News coverage (*News*) is the number of earnings related news articles estimated in year *t*. In Panel, the panel sample comprises 21,913 firm-year observations from 2001 to 2008 based on news coverage estimation period, except for Model (3) in which sample is limited due to the missing values of discretionary accruals estimate. In Panel B, the panel sample comprises 19,395 firm-year observations from 2001 to 2007 based on news coverage estimation period in Model (1), which is further reduced when $\Delta\ ROA_{Adj}$ is estimated up to year *t+4* and year *t+6*. Variable definitions are detailed in the Appendix. Key results are highlighted in bold. The *t*-statistics shown in parentheses are based on standard errors adjusted for heteroskedasticity and firm-level clustering.

Panel A: Short-term corporate policies

DV	$\Delta\ Capex_{t,t+1}$	$\Delta\ R\&D_{t,t+1}$	$\Delta\ Disc\ Accruals_{t,t+1}$	$Repurchase_{t+1}$
	M1	M2	M3	M4
$News_t$	**-0.011**	**-0.023**	**0.001**	**0.004**
	(-1.39)	**(-2.05)**	**(2.16)**	**(7.45)**
$Assets_t$	-0.471	1.855	0.002	0.044
	(-3.47)	(8.19)	(0.42)	(8.08)
Age_t	1.016	-1.596	0.020	0.027
	(2.57)	(-2.68)	(2.05)	(1.58)
PPE_t	-24.701	-2.592	0.030	-0.044
	(-19.24)	(-2.09)	(1.24)	(-1.55)
$Leverage_t$	-1.275	-0.599	0.035	-0.259
	(-2.77)	(-0.81)	(2.34)	(-13.32)
$TobinQ_t$	0.085	-0.777	0.001	0.002
	(1.99)	(-7.63)	(0.36)	(1.55)
$Kzindex_t$	0.003	-0.013	-0.000	0.000
	(2.71)	(-3.74)	(-0.90)	(1.05)
$Hindex_t$	-1.976	1.938	0.056	0.171
	(-1.21)	(1.04)	(1.20)	(1.81)
$Hindex^2_t$	1.228	-1.124	-0.042	-0.128
	(0.85)	(-0.71)	(-1.02)	(-1.46)
$InstOwn_t$	-0.000	-0.002	-0.000	0.000
	(-0.16)	(-0.58)	(-2.34)	(0.98)
$Analyst_t$	-0.422	-0.242	-0.011	0.003
	(-4.51)	(-1.60)	(-3.34)	(0.56)
$Spread_t$	7.711	7.925	1.080	-0.069
	(1.18)	(0.75)	(5.13)	(-0.35)
$Capex_t$		-4.424	0.065	-0.135
		(-3.00)	(1.48)	(-2.90)
$R\&D_t$	-0.023		0.003	0.001
	(-2.78)		(5.87)	(4.85)
ROA_t	0.669	9.745		0.030
	(2.17)	(12.63)		(3.31)
Intercept	6.366	-2.223	-0.121	-0.229
	(4.59)	(-1.24)	(-3.34)	(-3.99)
Fixed Effects	FY	FY	FY	FY
Observations	21,913	21,913	19,437	21,913
R^2_{Adj}	7.65%	8.83%	10.27%	48.63%

Panel B: Long-term firm performance			
DV	$\Delta\ ROA_{Adj\ t,t+2}$	$\Delta\ ROA_{Adj\ t+2,t+4}$	$\Delta\ ROA_{Adj\ t+4,t+6}$
	M2	M3	M4
$News_t$	**0.000**	**0.001**	**-0.002**
	(0.51)	**(0.70)**	**(-1.95)**
$Assets_t$	-0.033	0.028	0.002
	(-1.92)	(1.32)	(0.06)
$R\&D_t$	0.015	0.002	0.001
	(9.73)	(1.32)	(0.27)
Age_t	-0.221	0.019	0.125
	(-5.00)	(0.42)	(1.78)
PPE_t	0.268	-0.069	-0.101
	(3.47)	(-0.57)	(-0.86)
$Leverage_t$	0.279	-0.141	-0.004
	(6.38)	(-2.37)	(-0.04)
$Capex_t$	-0.112	0.040	-0.075
	(-1.01)	(0.28)	(-0.36)
$TobinQ_t$	-0.010	-0.002	-0.003
	(-1.54)	(-0.28)	(-0.35)
$Kzindex_t$	0.001	0.000	0.000
	(3.24)	(0.43)	(1.03)
$Hindex_t$	-0.029	-0.109	0.086
	(-0.19)	(-0.53)	(0.35)
$Hindex^2_t$	0.000	0.119	-0.039
	(0.00)	(0.68)	(-0.18)
$InstOwn_t$	0.000	0.000	-0.001
	(1.21)	(0.36)	(-2.03)
$Analyst_t$	0.004	-0.015	0.020
	(0.46)	(-1.27)	(1.40)
$Spread_t$	4.814	-0.681	-0.937
	(6.28)	(-0.83)	(-0.88)
Intercept	0.432	-0.133	-0.283
	(2.98)	(-0.76)	(-1.10)
Fixed Effects	FY	FY	FY
Observations	19,395	14,988	11,205
R^2_{Adj}	27.07%	10.55%	11.96%