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**WHEN PAYING COMPANIES TALK,  
DO INVESTORS LISTEN?**

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PhD

The Hong Kong Polytechnic University

2024

The Hong Kong Polytechnic University

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DO INVESTORS LISTEN?**

JIHYE YOO

A thesis submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy

Jan 2024

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JIHYE YOO

# **When Paying Companies Talk, Do Investors Listen?**

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Doctor of Philosophy

## **Abstract**

### **When Paying Companies Talk, Do Investors Listen?**

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I study the effect of paid-for research coverage on investors' reactions to corporate financial disclosures. Despite prior research indicating that the informational content of paid-for research is valuable, practitioners have constantly cast doubt on the practical usefulness of such research due to the potential for conflict of interest and lack of independence. Investors may consider financial information less credible if the company uses paid-for research services because paid analysts are ineffective as monitors. Therefore, investors respond less intensively to earnings announcements.

Using data for U.S. paying companies for the period between 2000 and 2022 and investors' abnormal trading volume around quarterly earnings announcements as a proxy for their reaction to corporate disclosures, I find that investors exhibit a weaker reaction to the earnings announcements of firms after those firms begin using the services of paid-for research firms. The results support the proposition that investors' reactions to the disclosures of companies become less vigorous after companies engage with paid-for research, possibly due to the lower perceived credibility of the financial information in the eyes of investors.

The cross-sectional tests reveal that the negative effect is more substantial for paying companies with paid-for research contracts with less credible research firms or using low-quality auditors for financial reporting. In other words, high-quality research firms or auditors moderate the negative effect of paid-for research engagement on the perceived credibility of corporate information in the eyes of investors. Thus, investors' reactions to earnings announcements do not decline as much as in other cases.

The robustness tests show that paying companies in less uncertain businesses experience larger declines in investor sensitivity to earnings disclosure than those in highly uncertain businesses. I also find that the negative effect is more pronounced for

companies with high predisclosure levels. These results provide evidence that the decline in investors' sensitivity to earnings announcements after paid-for research engagement is not due to decreased information asymmetry. Another test suggests that the decline in investors' reactions to earnings announcements is not due to the initiation of the coverage of neglected stocks.

The additional analyses indicate that the negative effect of paid-for research subscriptions on investors' reactions to corporate disclosures is more substantial in the first year after the start of the subscription, and the effect disappears in the following year. The effect is also more significant at paying companies with low *ex ante* interest from investors.

In a nutshell, engagement with paid-for research by analysts causes investors to react less vigorously to earnings news because the perceived credibility of financial reporting declines after paid-for research engagement.

Keywords: financial analysts, investors, financial reporting, perceived credibility

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## Chapter 1: Introduction

In this paper, I assess whether and how paid-for research affects investors' usage of earnings information about paying companies.<sup>1</sup> Financial analysts are professionals who analyze and assess corporate, business, and financial information and provide their analyses, including earnings forecasts and stock recommendations, to investors. Since those analyses are based on information from companies, multiple studies have examined the relationship between research coverage and investors' usage of financial information. Those studies document the positive association between financial-analyst coverage and market reactions to earnings announcements (Francis et al. 2002; Frankel et al. 2006; Beaver et al. 2018; Beaver et al. 2020). I study whether this positive relationship applies to research by paid analysts who have unusual relationships with investors and coverage companies and is thus different from traditional research by sell-side analysts.

Paid-for research is fee-based equity research whereby a fee is paid by paying companies in exchange for regular analyst research coverage. Paid-for research reports are freely available to investors.<sup>2</sup> They contain financial information that is provided by companies, which serves as a basic source for analyses and earnings forecasts, similarly to reports by sell-side analysts. Given that financial analysts play critical roles in the capital market as information intermediaries and external monitors, the existing literature focuses on paid analysts' roles as information intermediaries. Prior studies

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<sup>1</sup> In this study, I follow Tsang and Yoo (2023) to define “paying companies” and “non-paying companies”. “Paying companies” refers to publicly traded companies that engage equity research analysts and compensate them with a fee for providing research coverage services to increase investors' awareness and visibility. Conversely, “Non-paying firms” are companies that sell-side analysts choose to make coverage and produce research reports without receiving a fee from those companies.

<sup>2</sup> In contrast, traditional sell-side analysts who produce majority of the equity research reports are compensated by investors through a bundle of trading commission.

indicate that paid-for research produces information that is valuable to investors, based on the stock recommendation ratings (Kirk 2011, Billings et al. 2014). However, practitioners have constantly cast doubt on the reliability of information from paid-for research due to the nature of the conflicts of interest to which paid analysts are subject.<sup>3</sup> Since paid analysts are not independent from the companies that pay them, they may be ineffective as external monitors, which affects the credibility of information about corporate earnings.<sup>4</sup>

Earnings announcements are crucial corporate events for investors because they have significant informational content (Beaver 1968; Ramnath 2002; Atiase et al. 2005; DeFond et al. 2007; Beaver et al. 2020). Various studies have explored the informational content of earnings announcements and found that market reactions to earnings announcements are significantly more acute at that time, relative to nonannouncement periods. At the same time, investors' perceptions of the credibility of information about companies is a critical factor that shapes stock-market activities (Guiso et al. 2008). Jennings (1987) notes that investors' reactions to corporate disclosures depend on surprise (new information) and believability. Since paid analysts have obvious agency problems (e.g., conflicts of interest due to compensation structure), they are less likely to be effective in discharging external governance roles, which lowers the perceived credibility of corporate financial disclosures. The lower credibility

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<sup>3</sup> For example, Wall Street Journal (2019) warns of the rapid rise of paid-for research in Europe following the implementation of the Markets in Financial Instruments Directive II [MiFID II] regulation and expresses their concern that paid-for research could potentially mislead investors (Sindreu, 2019). On April 10 in 2017, the Securities and Exchange Commission (SEC) announced enforcement actions against paid-for research reports and alerted investors to beware of stock recommendations on paid-for research websites. See the announcements 'SEC: Payments for Bullish Articles must be disclosed to investors' and 'Investor Alert: Beware of Stock Recommendations on Investment Research Websites'

<sup>4</sup> Literature document the analysts' role as external monitors that affect financial statements. For example, Chen et al. (2016) find that financial analysts work as external monitors to deter corporate fraud in China. Jung et al. (2012) argue that analysts play a crucial role in enhancing the monitoring of companies' activities.

of financial information, in turn, leads to a decline in the sensitivity of investors' responses to earnings news.

To test this conjecture, I inquire whether and how investors' responses to the financial disclosures of companies are affected by paid-for research engagements. In other words, I compare investors' reactions to the quarterly earnings announcements of paying companies prior to and subsequent to the commencement of paid-for research services to the paying company.

I formulate two competing hypotheses, with opposite predictions, on the effect of paid-for research engagement on investors' reactions to earnings announcements. On the one hand, *the perceived credibility hypothesis* proposes that investors react less acutely to earnings news after the company begins receiving coverage services due to the declining credibility of its corporate financial information. Research has shown that investors respond more strongly to earnings announcements when the reports are more reliable (Teoh and Wong 1993; Gul et al. 2003; Pevzner et al. 2015). Given that paid analysts are required to disclose their relationships with the paying companies in their research papers, investors recognize the conflict between their interests and those of the analysts.<sup>5</sup> Investors may perceive the analysts' lack of independence as reducing their effectiveness as monitors of the financial information of the paying companies. Therefore, the perceived credibility of corporate financial information will, as far as investors are concerned, decline once the company has engaged with paid-for research. In other words, market investors may respond less acutely to information from

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<sup>5</sup> Paid analyst research reports are required to disclose the relation between the issuer (the paying company) and the research firms. "In order to address the need for more independent research for smaller public companies, I recommend that the Commission: Maintain policies that allow company-sponsored research to occur with full disclosure by the research provider as to the nature of the relationship with the company being covered." [www.sec.gov/info/smallbus/acspc/acspc-finalreport.pdf](http://www.sec.gov/info/smallbus/acspc/acspc-finalreport.pdf) (SEC 2006).

corporate earnings disclosures after recognizing that a company subscribes to paid-for research.

Conversely, the *information complementarity hypothesis* argues that the paid-for research engagement increases investors' interest in paying companies and, thus, that it also increases the need for information from financial reporting. Pevzner et al. (2015) mention that investors' reactions to earnings announcements are affected by their need for information. Paying companies expect their visibility to investors in the capital markets to increase as a result of their use of paid-for research services, such as the provision of research reports, forecasting estimates, and the organization of meetings with potential investors. As more market participants recognize the paying company from paid analysts' research services, their interest in seeking information from earnings announcements increases. Several papers that study the relationship between analyst coverage and earnings information support this view. Francis et al. (2002) find that investors see the information from analyst research reports and quarterly earnings announcements as complementary. Beaver et al. (2018) also find a significant positive association between analyst coverage and market reactions to earnings announcements. Beaver et al. (2018) explain that the positive association between analyst coverage and investors' reactions to financial disclosure may be attributable to analysts' tendency to seek additional information from companies as market intermediaries during the period of earnings announcements.

Therefore, *ex ante*, it is unclear whether paid-for research affects the processing of information from earnings announcements among investors. Given the mixed evidence, I empirically study whether paid-for research affect investors' usage of information from financial reporting. While earnings announcements provide information about companies to investors and function as communication channels,



investors may be concerned about the credibility of corporate disclosures when companies engage with research by paid analysts.

I examine the two competing hypotheses by using a sample of 415 paying companies from the US. I use data from eight paid-for research firms that cover the period between 2000 and 2022. I take abnormal trading volume around the quarterly earnings-announcement events of the paying companies as a proxy for investors' reactions to corporate disclosures and compare trading activity before and after the engagement of paid-for research. I find that the abnormal trading volumes become significantly lower once a company begins receiving research-coverage services from paid analysts. This result supports the conjecture that, since investors are influenced by paid-for research engagement, they respond to the earnings announcements less strongly after the company subscribes to paid-for research. In other words, paid-for research engagements lower the perceived credibility of corporate financial information in the eyes of investors, which causes them to respond less strongly to earnings announcements.

Scholars have argued that there is a positive relationship between predisclosure information asymmetry and investors' trading responses to earnings information (Kim and Verrecchia, 1991; Atiase and Bamber, 1994; Lobo and Tung, 1997). Even though Francis et al. (2002) examine that analysts' research reports and earnings-announcement information are complementary, it could be argued that the negative association between paid-for research coverage and market reactions to corporate disclosures is attributable to the reduction in the information asymmetry between investors and companies, which, in turn, precipitates a decline in the sensitivity of investor reactions to financial reporting. In order to determine whether the credibility

of paid-for research is a factor that affects investors' reactions to earnings announcements, I conduct several cross-sectional tests.

First, suppose investors' responses to earnings announcements decline after the initiation of paid-for research coverage due to lower information asymmetry. The negative effect should be stronger for the paying companies that hire high-quality research firms. Investors value the reputation of a research house (Clement and Tse, 2003). It is easier for analysts at larger research firms to obtain information because they can share information with other analysts or investors more easily and because they are provided with more abundant resources (Clement, 1999; Clement and Tse, 2003). Conversely, if the main result is due to the credibility of paid-for research in the eyes of investors, the negative effect will be less apparent for high-quality paid-for research houses. Investors perceive information from analysts from reputable research firms as more credible. The study indicates that the monitoring that analysts from large institutions provide is more effective. Therefore, research-firm quality moderates the negative effect from the main result. To address this problem, I divide the sample into two groups, depending on the quality of the paid-for research house, which is measured by the number of analysts that it employs (Hong and Kubik 2003; Lehmer et al. 2022). The result demonstrates that investors respond less strongly to earnings announcements when the company has paid-for research contracts with lower-quality research companies. In other words, the findings support the proposition that investors' interest in the earnings announcements of a company declines after it subscribes to research by paid analysts due to the lower credibility of its financial information in the eyes of investors.

Secondly, I inquire whether external monitoring mechanisms, such as auditing, affect the influence of paid-for research coverage on investors' responses to information

about earnings. Financial analysts monitor the financial information of companies (Jensen and Meckling 1976; Moyer et al. 1989; Jung et al. 2012; Chen et al. 2016). Since paid analysts' relationship with paying companies is less independent than that of traditional financial analysts, the former are less effective as providers of external governance. Given that auditor quality affects the perceived credibility of corporate financial information in the eyes of investors (Teoh and Wong 1993; Knechel et al. 2007; Menon and Williams. 2010), having a high-quality auditor should mitigate the effect of paid-for research engagement on investors' responses to financial reporting. I find that the negative effect of paid-for research coverage on investors' use of financial information does not obtain for paying companies that hire high-quality audit firms. In contrast, the decrease in the acuity of investors' responses to earnings news after paid-for research coverage is initiated is significantly more pronounced at paying companies with low-quality auditors. These results confirm the effect of paid-for research coverage on the investors' perceived credibility of corporate financial information, in that investors' responses to quarterly earnings announcements become less acute.

In order to determine whether the negative effect from the main test is due to a reduction in information asymmetry, I conduct several robustness tests. First, if investors' reactions to earnings announcements becomes less pronounced after the initiation of paid-for research coverage because of the decline in information asymmetry, the effect in question would be stronger for paying companies in highly uncertain businesses. Information asymmetry is higher for companies in highly uncertain businesses. I find that investors' reactions to earnings announcements do not become significantly less acute at companies that are in highly uncertain businesses after they start using paid-for research. In contrast, abnormal trading volume around earnings disclosures becomes significantly lower after the initiation of paid-for research

coverage for paying companies that are in the less uncertain businesses. This finding supports the argument that the negative relationship between paid-for research, investors' trading activity, and earnings announcements is not due to a decline in information asymmetry.

Thereafter, I inquire whether the predisclosure information that is provided to investors during the quarter in which paid-for research coverage is initiated affects the relationship. If the main result is that the information environment improves as a result of engagement with paid-for research, the effect should be more pronounced for the group of paying companies that have relatively low predisclosure information. However, the results point to the opposite conclusion. The negative effect of paid-for research coverage on investors' responses to information about corporate earnings is more obvious in the group of companies that have abundant predisclosure information.

Thirdly, it could be argued that our finding is not explained by the paid analysts' lack of independence, but due to analysts' coverage initiation of the neglected stocks. Demiroglu and Ryngaert (2010) find that investors respond to analysts' coverage initiation of neglected stocks, such as paying companies. I apply the same regression to the nonpaying companies that sell-side analysts begin to cover. I only include the nonpaying companies that became the subject of a sell-side analyst research report for the first time at least six months after their IPO in order to compare the prevariables and the postvariables and to avoid stocks that gain investors' attention during an IPO. A total of 393 nonpaying U.S. companies began receiving sell-side coverage between 2000 and 2022. The results show that there is no significant decline in investors' reactions to earnings announcements after the first sell-side analyst's research is published. In other words, I do not determine whether the negative effect of paid-analyst coverage on investors' usage of financial information is due to the coverage-initiation

effect that pertains to the neglected stocks. On the whole, several robustness tests support the argument that the reduction in information asymmetry cannot explain the negative effect of paid-analyst coverage to investors' responses to financial disclosure.

I conduct additional analyses to understand the relationship between paid-for research coverage and information processing among investors. The decline in the acuity of investors' reactions to earnings news after a company begins engaging with paid-for research is more substantial for paying companies that attract little investor interest before they begin subscribing to research services. Investors' attention to stocks and investors' reactions to earnings announcements have positive associations (DellaVigna et al. 2009). Investors tend to be more interested in stocks with solid price momentum or resilient business growth because these stocks are expected to exhibit positive performance (Lui et al. 1999; George et al. 2004; Chan et al. 2004). Engaging with paid-for research would further diminish investors' appetite for the financial information of paying companies that receive less attention in the market. In other words, investors respond to earnings announcements to a lesser degree than in the period that precedes the company's engagement with paid-for research services, especially when the price of company stock has been underperforming or when the company has grown slowly. I also find that the effect of paid-analyst coverage on investor's responses to corporate financial disclosures is stronger in the first year of analyst coverage. In the following year, the effect no longer exists.

This paper contributes to the literature in several ways. First, my study provides evidence that investors' responses to corporate disclosures depend on the perceived credibility of information. Pevzner et al. (2013) found that the trust level of a country affects investor reactions to corporate earnings announcements positively. Investor responses to earnings announcements are more pronounced at companies that hire

auditors that are perceived to be of higher quality (Teoh and Wong 1997). In contributing to prior research, this paper suggests that engagement with paid-for research affects investor perceptions of corporate financial information.

Second, the study adds to the literature on the effect of the conflicts-of-interest disclosures in the research reports of analysts on the behavior of capital-market participants. The disclosure of conflicts of interest in research reports, as part of the efforts of regulators to protect investors from potential biases, reduces participation in investment (Liu et al. 2020; Kelly et al. 2012). Specifically, conflicts-of-interest disclosures decrease willingness to invest by reducing the perceived credibility of analysts (Liu et al. 2020). My paper shows that conflicts-of-interest disclosure influences investors' perceptions of corporate disclosure as well, as in the case of companies that hire paid analysts.

Third, the paper broadens the literature on research by paid analysts. Most research on paid analysts focuses on their information-intermediary role by evaluating their value, in terms of information, for market participants and by examining short- or long-term changes in returns after the publication of recommendations in research reports (Demiroglu and Ryngaert 2010; Kirk 2011; Billings et al. 2014). This study explores the external monitoring role of paid analysts by linking paid-for research engagement and market reactions to financial disclosure.

Lastly, the study describes a bottleneck that (potential) paying companies face. Companies pay for research to increase investor interest. However, engagement with research by paid analysts undermines investor trust in corporate financial-information disclosures. The results show that the companies that need paid-for research would do well to retain higher-quality paid-for research houses or to hire high-quality auditors in order to moderate the effect in question.

In the following section, I describe the background of the industry. Section 3 reviews the relevant literature, and Section 4 presents the hypotheses. Section 5 explains the data, and Section 6 presents the design of the study and its results, which are followed by robustness tests and other checks in Section 7. Section 8 concludes the paper.

## **Chapter 2: Industry Background**

### **2.1. Paid Analysts**

Across the globe, multiple regulatory reforms in the securities industry such as Regulation Fair Disclosure, Regulation Analyst Certification, the Sarbanes–Oxley Act of 2002, and MiFID II have led to a decline in the coverage of small to mid-cap stocks by sell-side analysts in recent decades (Billings et al. 2014).<sup>6</sup> Consequently, there has been an increased demand for paid analysts during the same period (Kirk 2011). Paid analysts are directly compensated by paying companies for research coverage and forecasting services, while sell-side analysts are remunerated through trading commissions. Borrowing the figures from Tsang and Yoo (2023), Figures 1A and 1B provide illustration of the distinction between sell-side analysts and paid analysts.

Figure 1A shows the relationship between companies, sell-side analysts, and investors. Sell-side analysts provide research reports that contain company analysis to investors and are paid through trading commissions. Figure 1B shows the relationship between companies, paid analysts, and investors. Paid analysts receive compensation from paying companies for the research coverage and provide research reports to investors free of charge.

*[Insert Figures 1 Here]*

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<sup>6</sup> Find Appendix A to see the yearly trend of number of analysts since year 1995.

Unlike sell-side analysts who choose the companies to analyze, paid analysts are usually approached by companies. Paying companies, which are generally neglected by investors, receive limited or no coverage from sell-side analysts. These companies typically exhibit characteristics such as small market capitalization, low trading liquidity, and/or high business uncertainty (Kirk 2011).<sup>7</sup> Paid analysts offer a range of services, but commonly provide regular research reports and facilitate investor access, subject to a bilateral contract between the paying firm and the analyst.

## **2.2. Paid-for research Reports**

Unlike sell-side research reports, which are only available to institutional investors or brokerage clients, paid-for research reports are freely available online. Free access for investors is possible because paid-for research fees are paid by companies, not by investors.<sup>8</sup> Lists of paying companies are shown on the websites of paid-for research firms.<sup>9</sup> Even though the entities that are involved in paid and sell-side research are different, the format, content, and structure of the reports are similar to those of sell-side reports. Appendix B compares paid-for research reports and sell-side reports.

*[Insert APPENDIX B Here]*

Similarly to sell-side reports, paid-for research reports provide various types of information that pertain to the estimation of the value of the company, such as industry background, financial information, earnings forecasts, market information, risk, and valuation. Paid analysts also provide industry and company reports, as well as *ad hoc*

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<sup>7</sup> Paid-for research reports typically do not present stock recommendations but only present forecasts. Certain paid-for research firms provide stock recommendation ratings and Billings et al. (2014) analyze the stock recommendation quality provided by these paid-for research firms.

<sup>8</sup> This fee structure is different from typical equity research service that are provided by sell-side analysts. Sell-side analysts make the research coverage for the public firms that are interested in and provide the research service to institutional investors getting paid by trading commissions.

<sup>9</sup> Oftentimes, paid-for research firms require the registration to receive the research reports and other services.



notes on company news. Unlike sell-side reports, which provide investment recommendation ratings on their front pages, many recent paid-for research reports do not present target prices or recommendation ratings in order to avoid the possibility of misleading investors.

The US Securities and Exchange Commission (SEC) Advisory Committee on Smaller Public Companies encourages using paid-for research on the condition of full disclosure of the relationship between companies and analysts (SEC 2006). Paid-for research reports indicate that the research reports are compensated by the paying companies on both the front page and in the disclaimer section. Some paid-for research companies disclose details about compensation in the disclaimer. The red boxes in Appendix B contain examples of such disclosures in paid-for research reports. One of the paid-for research samples, Sidoti & Company's research report, clearly indicates that 1) it is a company-sponsored research report and that 2) Sidoti & Company charges fees on the basis of a detailed structure. Another research house in the sample, Edison Investment Research, also provides its fee structure in its disclaimers.<sup>10</sup> In contrast, JP Morgan, as a provider of sell-side research reports, does not provide such information on the front pages of its reports or in its disclaimers. Therefore, investors are aware of the nature of the research report when they obtain information.

### **2.3. Regulatory Reform and Concerns About Paid-for research**

After several regulatory reforms that were intended to improve the information asymmetry problem between investors and companies, which unintentionally have led

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<sup>10</sup> "This report has been commissioned by 4imprint Group and prepared and issued by Edison, in consideration of a fee payable by 4imprint Group. Edison Investment Research standard fees are £60,000 pa for the production and broad dissemination of a detailed note (Outlook) following by regular (typically quarterly) update notes. Fees are paid upfront in cash without recourse. Edison may seek additional fees for the provision of roadshows and related IR services for the client but does not get remunerated for any investment banking services"

to a reduction in the analyst coverage of small-cap companies (Gomes et al. 2007), the U.S. SEC recognized the need for research by paid analysts. The SEC recommends that small or microcap companies use paid-for research and requires that conflicts of interest be disclosed: “*In order to address the need for more independent research for smaller public companies, I recommend that the Commission: Maintain policies that allow company-sponsored research to occur with full disclosure by the research provider as to the nature of the relationship with the company being covered.*” (SEC 2006). This rule accords with Section 17(b), which requires all entities to disclose compensation of all kinds, be it direct or indirect, that they receive from issuing firms.

Some paid-for research firms that have not followed this rule have been fined. For example, one of the larger paid-for research firms that are used for academic research, J.M. Dutton & Associates, was ordered to pay a penalty for violating Section 17(b) and for publishing stock-analyst reports without disclosing the compensation that it had received from the paying companies fully.<sup>11</sup> In April 2017, SEC announced that it had initiated enforcement actions against paid-for research firms that had not included conflicts-of-interest disclosures in their research reports and issued alerts to warn investors about the risks of using information from undisclosed paid stock promotions.<sup>12</sup> The SEC investigation was not limited to writers or analysts and also included paying companies.<sup>13</sup>

When the implementation of MiFID II in Europe in 2018 increased demand for paid-for research, concerns from practitioners re-emerged. In 2018, the *Wall Street Journal* reported on market concerns about paid-for research under the title “The

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<sup>11</sup> Find the details in [www.sec.gov/litigation/admin/33-8524](http://www.sec.gov/litigation/admin/33-8524)

<sup>12</sup> Find the details in [www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-alerts/investor-41](http://www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-alerts/investor-41)

<sup>13</sup> Find the details in “SEC: Payments for Bullish Articles on Stock Must Be Disclosed to Investors” [www.sec.gov/news/press-release/2017-79](http://www.sec.gov/news/press-release/2017-79)

Dangerous Rise of Sponsored Stock Research.” In pointing to the increase in demand for paid-for research that had resulted from changes in the regulation of asset managers in Europe as well as to the skewed role that sponsored research played in the 2008 market crisis, the article warned about potential misinformation in research by paid analysts (Sindreu 2018). In 2017, Bloomberg published interviews with investors that covered concerns about paid-for research. For example, Luc Mouzon, head of European equity research at Amundi SA, the largest asset manager in Europe, was worried about “the conflict of interest in the paid-for research’s specific configuration.” Graham Clapp, a fund manager at RWC Partners in London, and Genjamin Quinlan, CEO of the financial-services consultancy Quinland & Associates, pointed out that paid-for research lacks independence (Lee 2017).

## **Chapter 3: Literature Review**

### **3.1. Paid Analysts and Paying Companies**

While most studies on financial analysts focus on sell-side research, a few exceptions study paid analysts and paying companies (Demiroglu and Ryngaert 2010; Kirk 2011; Billings et al. 2014; Tsang and Yoo 2023). They investigate the properties of paying companies (Kirk 2011) and paid analysts (Billings et al. 2014), and the information externalities that paid analysts generate (Tsang and Yoo 2023). This study focuses on the informational value that paid-for research and paid analysts produce.

In their examination of the effect of the initiation of coverage of neglected stocks, Demiroglu and Ryngaert (2010) categorize research firms based on the types of conflicts of interest and introduce fee-based research firms as one of the categories. The data for the initiation of analyst coverage of 549 neglected stocks between 1997 and 2005 in the U.S. market reveals that 8.4% are from fee-based research firms. The

authors find the positive abnormal returns from positive initiation reports. They also find that, compared to other research firms such as investment banks and brokerage/independent research firms, the effect of fee-based research firms on institutional ownership or liquidity increase is not significant.

Kirk (2011) identifies the equity research by paid analysts and the determinants of paying firms. He hand-collected paid-for research samples from 10 different research firms and examined more than 500 U.S. paying companies over the period between 1999 and 2006. He finds that paying firms tend to be smaller, younger, and to have fewer institutional investor holdings. Paying companies tend to operate in businesses with a high degree of uncertainty, have increasing research and development (R&D) foci, and tend to be associated with high expectations for future growth. High-technology sectors are a case in point. He also finds that companies with financing needs tend to engage in paid-for research services because they want to decrease the cost of capital through analyst engagement. In contrast to Demiroglu and Ryngaert (2010), Kirk (2011) finds that paying firms experience an increase in institutional ownership after paid-for research engagement.

Billings et al. (2014) focus on the informational content of paid-for research for buy-and-hold investors. They used 247 paid-analyst recommendations for U.S. paying companies that had been issued by eight paid-for research firms between 2000 and 2010. Even though Kirk (2011) presents the informational value of paid-for research by examining 2-day abnormal returns since the release of the paid-for research, Billings et al. (2014) argue that this positive effect could have been due to the “spinning” of positive news, as Solomon (2012) points out. Solomon (2012) finds that the positive

influence of investor-relations firms<sup>14</sup> on the stock prices of issuing companies disappears during earnings announcements because investors experience disappointment. Motivated by this finding, Billings et al. (2014) finds that paid-for research not only yields positive returns for short-term investors but also generates gains for long-term investors over a 60-day window. They find no evidence that paid-for research is of lower quality than sell-side research in their propensity-matching analyses of the accuracy of the earnings forecasts and stock recommendations of the two groups of analysts.

Meanwhile, both Kirk (2011) and Billings et al. (2014) use paid-for research recommendation ratings, such as “buy,” “hold,” or “sell,” as sources and acknowledged that the likelihood of bias towards “buy” is higher in paid-for research than in sell-side research. For example, 87.9% of the paid-for researchers in Kirk's (2011) sample and 83% of the paid-for researchers in Billings et al.'s (2014) issued “strong buy” or “buy” recommendations when the market aggregate for such favorable recommendations was only 46.5% (Richardson, 2006).

Recent research on paid analysts has focused more extensively on the European markets due to the rise of the paid-for research sector after the implementation of MIFID II in 2018 (Tsang and Yoo 2023; Gunvaldsen and Walmann 2021; Eriksson and Norberg 2020; Wijk 2019).<sup>15</sup> Tsang and Yoo (2023) extends research on paid analysts in order to find the information externalities that the analysts generate by using European data that cover both paying and nonpaying companies after MiFID II.<sup>16</sup> They

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<sup>14</sup> Solomon (2012)'s investor-relations (IR) firms are not paid-for research firms. He uses IR firm from the client lists in O'Dwyer's Directory of Public Relations Firms.

<sup>15</sup> Gunvaldsen and Walmann (2021), Eriksson and Norberg (2020), and Wijk (2019) are their master degree theses.

<sup>16</sup> The European Commission introduced the Markets in Financial Instruments Directive II (MiFID II) as a measure to enhance investor protection and increase transparency in financial markets. MiFID II requires asset managers who have clients in Europe to separate the research cost from the execution trading costs. This means that asset managements are now required to treat analyst research services as

find that, due to the easy access to private information that paying companies enjoy, paid analysts obtain benefits when they analyze other nonpaying companies, especially when they are in the peer group as the paying companies. They also find that paid analysts tend to extend coverage to nonpaying companies that are in the same industry as paying companies in order to support the argument that the industry knowledge that they acquire affects their coverage portfolios.

Gunvaldsen and Walmann (2021) and Wijk (2019) study the Swedish market, in which there has been a significant increase in paid-for research. They ascertain the informational value of paid analysts by studying investor reactions to paid-for research releases. Eriksson and Norberg (2020) conduct a qualitative analysis by interviewing the CEOs of 12 paying companies and paid analysts. Companies hire paid analysts because they are not covered by traditional sell-side analysts, and they expect those analysts to increase their visibility. Some of the analysts expressed concerns about independence because they came under pressure from paying companies to generate more positive analyses.

Overall, the literature on paid analysts focuses on their informational role as market intermediaries. Scholars have found research by paid analysts to be informative by examining short- and long-term market responses to their reports and recommendation ratings. Here, I examine whether the extent to which investors find corporate earnings disclosures to be valuable is influenced by paid-for research engagement. On the pages that follow, I review the literature that is relevant to investors' reactions to earnings announcements, focusing on the factors that shape investors' responses to financial reporting.

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a separate expense and include them in the operating costs of asset management companies. As a result of this regulation, some sell-side brokers in Europe have begun offering paid-for research services. (Tsang and Yoo 2023)

### **3.2. Investors' Reactions to Earnings Announcements**

Investors react to earnings announcements because of the informational content of the latter (Ball and Brown 1968; Beaver 1968; Ramnath 2002; Atiase et al. 2005; DeFond et al. 2007; Beaver et al. 2018; Beaver et al. 2020). Specifically, Beaver et al. (2020) find that, in the 21<sup>st</sup> century, earnings announcements are becoming more important as a valuable of information for investors. At the same time, investors' reactions to earnings announcements are affected by their perceptions of companies, which take forms such as attention to stock (DellaVigna et al. 2009), as well as by their views about managerial credibility (Pevzner et al. 2013) and auditor quality (Teoh and Wong, 1993; Knechel et al. 2007; Poretti et al. 2018). Those reactions also depend on the capital-market environment (Alford et al. 1993; Ali and Hwang 2000; Pevzner et al. 2013), analyst coverage (Francis et al. 2002; Kanagaretnam et al. 2005; Frankel et al. 2007; Huang et al. 2017; Beaver et al. 2018; Beaver et al. 2020), predisclosure information (Kim and Verrecchia, 1991; Atiase and Bamber, 1994; Lobo and Tung, 1997), and concurrent information (Beaver et al. 2020).

#### *3.2.1. Perceived Credibility and Investors' Reactions to Earnings Announcements*

Pevzner et al. (2013) find that national trust levels affect the perceived credibility of financial disclosures positively. They argued that investors from countries with higher societal trust levels may consider managers to be more reliable and expect lower probabilities of opportunistic behavior and financial manipulation. Therefore, those investors respond more strongly to news about earnings because they believe corporate information to be reliable.

Multiple papers supply evidence for the proposition that perceived auditor quality affects responses to earnings information among investors. Using the earnings-response coefficient as a proxy for investors' responses to earnings reports and auditor size as a proxy for auditor quality, earnings quality, or credibility, Teoh and Wong (1993) find that auditor quality and the earnings-response coefficient are positively associated. Knechel et al. (2007) suggest auditors' industry expertise as proxies for perceived auditor quality and find that change to auditors with industry expertise generates significantly positive abnormal returns, supporting the notion that auditor quality is important for the perceived credibility of financial information. Poretti et al. (2018) emphasize the importance of audit quality, which they define as audit-committee independence, for the perceived credibility of earnings announcements in the eyes of investors.

### *3.2.2. Analyst Coverage and Investors' Reactions to Earnings Announcements*

Studies have also found an association between the work of financial analysts and market reactions to earnings announcements. Francis et al. (2002) document the positive relationship between the information in analyst reports and quarterly earnings announcements by using data from the 1986-1995 period. Before Francis et al. (2002) provided empirical evidence of this positive relationship, the view that investors are not as responsive to earnings announcements as they otherwise would be because analyst coverage improves the information environment of the company held sway, in line with Atiase (1985)'s theory about the relationship between predisclosure information and investor behavior around the time of earnings announcements. Multiple empirical studies support Francis et al.'s (2002) findings. Frankel et al. (2007) also find that the informativeness of analyst reports and financial statements are complementary, especially when stocks are difficult to evaluate on the basis of accounting information.



Huang et al. (2017) examine the positive association between analyst coverage and market reactions to negative earnings surprises. They suggest that analyst coverage prompts company officers to manage earnings so as to meet the earnings forecasts of analysts. Beaver et al. (2018) also support the notion of a complementary relationship between analyst coverage and earnings news. On the whole, research has found that the insights that investors acquire from analyst research and earnings announcements are complementary.

## **Chapter 4: Hypotheses Development**

### **4.1. Paid-for research Coverage and Investors' Reaction to Earnings Announcements**

How strongly investors respond to financial reports depends on how much they expect (or need) the information that those reports contain. Investors' reactions to corporate disclosures depend on surprise (new information) and credibility (Jennings 1987). In other words, investors respond more vigorously to earnings announcements when financial disclosures are informative and reliable. I make two competing predictions about the effect of engagement with paid analysts on investors' reactions to the corporate announcements of paying companies.

Research suggests that investors respond to earnings announcements more strongly when the information that those announcements contain is more trustworthy (Teoh and Wong, 1993; Pevzner et al., 2013; Poretti et al., 2018). However, the lack of independence that typifies the research that paid analysts produce accentuates concerns about the reliability of corporate financial information. Analysts, who analyze financial statements professionally, play a critical role as external monitors of financial reporting.

Lack of independence makes them less effective in this role. Insofar as the perceived credibility of corporate disclosure is an important factor for the investors who respond to those disclosures, I predict that the latter respond less energetically to earnings announcements after the company engages with research by paid analysts. I see this tendency as an outcome of the investors' concern about the paid analysts' lack of independence and the attendant decline in the credibility of financial information. I call this notion the *“perceived credibility hypothesis.”*

There is a positive association between investors' attention to stocks and investors' reactions to earnings announcements (DellaVigna et al. 2009). Research also suggests that analyst coverage affects the activities that investors engage in upon receipt of news about earnings positively (Francis et al. 2002; Kanagaretnam et al. 2005; Beaver et al. 2018). Companies hire paid analysts to increase their market visibility and to receive more attention from investors (Kirk 2011). Since research by paid analysts helps companies to attract attention from investors, I predict that investors' reactions to news about earnings becomes stronger after the company engages with paid-for research services. In other words, due to the increase in the need for information from financial reports that analyst coverage induces, *the information complementarity hypothesis* suggests an opposite prediction about the effect of engagement with paid-for research services on investors' reactions to earnings news.

Given that the paid-for research can either strengthen or weaken stock investors' reactions to corporate financial-information disclosures, I formulate the first hypothesis as a null statement.

***H<sub>1</sub>: Paid-for research affects investors' reactions to corporate earnings announcements.***

In my discussion of the next two hypotheses, I refer to the factors that can affect the relationship between research by paid analysts and investor reactions to financial news. Since I posit that the perceived credibility of corporate financial information in the eyes of investors is influenced by paid analysts' lack of independence, I point to two factors that can moderate the effect.

#### **4.2. Paid-for research House Quality and the Effect of Paid-for research Coverage on Investors' Reactions to Earnings Announcements**

The quality of brokerage firms is transmitted through the credibility of the analysts that they employ. Investors exhibit stronger responses to information that is provided by analysts from large research firms, which are perceived as more credible (Clement and Tse, 2003; Fang and Yasuda 2010). Since it takes much time and effort to build and preserve a reputation, reputable research firms have incentives to supervise their analysts' activities (Fang and Yasuda 2010). For example, optimism and biases among analysts are suppressed by the reputations of brokerage firms (Cowen et al. 2006; Xu et al. 2013; Al-Aamri et al. 2022). Accordingly, analysts from reputable brokerages provide more accurate forecasts (Clement 1999; Jacob et al. 1999).

I posit that the negative effect of paid-analyst coverage on investor reactions to earnings releases is higher for paying companies that engage with low-quality research houses than for companies that engage with high-quality research houses. This is so because investors believe that high-quality paid-for research firms supervise analysts' activities more closely in order to preserve their reputations, which enables their analysts to scrutinize corporate information thoroughly during their analyses of the paying firms. Therefore, the perceived credibility of corporate information in the eyes of investors is not damaged by engagement with high-quality research firms. In contrast, the credibility of financial reporting remains low when the paid-for research originates

from low-quality firms because investors do not expect such firms to provide effective monitoring.

The foregoing suggests that the credibility of paid-for research firms affects the association between paid-for research and investors' reactions to news about corporate earnings. I formulate this nondirectional prediction as a second hypothesis.

***H<sub>2</sub>: The relationship between paid-for research subscriptions and investors' reactions to earnings announcements depends on the quality of the paid-for research house.***

### **4.3. Auditor Quality at Paying Companies and the Effect of Paid-for research Coverage on Investors' Reactions to Earnings Announcements**

In the text that accompanies H<sub>1</sub>, I indicated that the perceived credibility of financial reporting can decrease after engagement with paid-for research because investors may be concerned about paid analysts' lack of independence, which can lower the effectiveness with which analysts discharge their monitoring roles in financial accounting. In presenting the third hypothesis, I suggest that these concerns can be mitigated by other external monitors, such as auditors.

Auditor quality is a critical factor for investors' ability to gauge the credibility of information about corporate earnings. Investors respond more acutely to audited reports when the auditors are of high quality because they perceive the corporate information as more credible (Teoh and Wong 1993; Knechel et al. 2007; Menon and Williams. 2010). Teoh and Wong (1993) find that auditor size is correlated with auditor quality and that investors' responses to earnings reports are significantly more acute when the reports in question have been audited by large auditors. Menon and Williams (2010) find that investors respond more vigorously to the going-concern audited reports of companies when the auditor is one of the Big4.

Similarly, the relationship between paid-for research engagement and investor reactions to earnings announcements can be affected by auditor quality. When paying companies use high-quality auditors, the perceived credibility of financial information in the eyes of investors is high, which moderates the negative effect of paid-for research on reactions to earnings announcements among investors. In other words, investors perceive financial reports that are audited by high-quality auditors as credible, even though they do not expect paid analysts to be effective monitors. In contrast, when the earnings reports of paying companies are issued by lower-quality auditors, the perceived credibility of the financial information remains low, and the negative effect of research by paid analysts on corporate financial disclosures persists. The foregoing suggests that the effect of paid-for research on investors' reactions to news about corporate earnings can vary with the quality of the auditor. I formulate this nondirectional prediction as my third hypothesis.

*H<sub>3</sub>: The relationship between paid-for research engagement and investors' reactions to earnings announcements depends on auditor quality.*

## **Chapter 5: Data and Descriptive Statistics**

### **5.1. Collection of Data on Paid-for research**

I first identify a sample of paid analysts who cover U.S. firms by composing a list of paid-for research firms. Following the method that were used in prior paid-for research studies (Kirk 2011; Billings et al. 2014; Tsang and Yoo 2023), I find paid-for research firms through search engines and by searching for terms such as “issuer-paid-for research,” “commissioned research,” “paid for research,” and “company-sponsored research.” I also add paid-for research companies that had been studied in previous papers (Kirk 2011; Billings et al. 2014; Tsang and Yoo 2023). I find the brokerage

codes in the Institutional Brokers' Estimate System (IBES) database by matching the name of the paid-for research firm and its abbreviated estimator code and by confirming the list of paying companies that each paid-for research firm covers through the IBES list. I choose the paying companies that had been covered by paid-for research firms for the first time in order to eliminate the potential effect of other coverage on investors' reactions to earnings announcements.

Appendix C contains the list of paid-for research firms that I collected from various sources. Among the 45 paid-for research companies, 19 are matched to IBES data. The final sample contains eight research firms and 415 paying companies that were chosen by reference to the available IBES analyst-forecast data and Capital IQ company and market data.<sup>17</sup> Most paid-for research firms cover U.S. or European companies; my sample only covers U.S. companies. At least six research firms provide both paid and sell-side research and work as both sell-side brokerages and paid-for research firms.<sup>18</sup> Figure 2 presents the yearly distribution of the number of paying companies in the sample that had initiated paid-for research coverage between 2000 and 2022. On average, 19.3 U.S. companies had paid-for research initiations each year. The number of paid-for research initiations in the sample was highest in 2011 (45 companies), while coverage initiation was lower in 2001 (7 companies) and 2009 (6 companies). The paid-for research trend has been increasing since 2017.<sup>19</sup>

*[Insert Appendix C about here]*

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<sup>17</sup> Zacks Sponsored Research firm is deleted from the sample because it is paid by both investors and paying firms.

<sup>18</sup> Mostly, paid-for research have been conducted in paid-for research firm. However, after the implementation of MiFID II in Europe, certain traditional sell-side investment banks have initiated the paid-for research business as a means to supplement their revenue (Tsang and Yoo 2023).

<sup>19</sup> Since the implementation of MiFID II, the paid-for research especially in European markets has significantly risen. According to Nasdaq, the number of Nordic paying firms increased by 50% from around 300 firms to 450 firms in less than 2 years since 2018 (Hoikkala and Rolander 2019). French paying companies also increased by 27% during the same period (Eli-Namer and Giami 2020).

*[Insert Table 2 about here]*

## **5.2. Sample Data**

I obtain paid-analyst forecast-initiation data from IBES. The trading-volume data, the firm-level data, and the market-level data for the period between 2000 and 2022 are obtained from the Capital IQ database. This study examines the abnormal trading volumes of paying companies that occur upon the release of quarterly earnings announcements before and after the receipt of services from paid-for research companies, and I take one year of preperiods and postperiods for each paying company. The final sample has 2,711 firm-quarterly earnings-announcement dates for 415 paying U.S. companies, and it is based on data from eight paid-for research firms.

## **5.3. Distribution of Sample Data**

Table 1 presents the descriptive statistics (Panel A) of the full sample, the pairwise correlation matrix (Panel B), and the industry distribution of the paying companies in the sample (Panel C). I winsorize all dependent and control variables at the first and ninety-ninth percentiles in order to avoid the outlier effect. It emerges that 54.9% of the observations ( $N = 2,711$ ) are from post-paid-for research-initiation periods. Furthermore, 61.9% of the quarterly observations had 8-K disclosures. Panel B shows the significant negative correlation between abnormal trading volumes around earnings announcements (*TradVol*) and the paid-for research dummy variable (*Paid*). *Paid* is also negatively correlated with cumulative abnormal returns around earnings announcements (*CAR*). The correlation between abnormal trading volume around quarterly earnings announcements (*TradVol*) and the other control variables is mostly in line with the previous literature. *TradVol* is positively correlated with cumulative

abnormal return (*CAR*) and negatively correlated with abnormal trading volume before earnings announcements (*PreTrad*) and with company size (*Size*). *TradVol* is also positively correlated with stock return over the preceding 12 months (*Momentum*) and with financial accounting ratios such as *ROE* and *Margin*. Panel C shows the GICS-industry-group distribution of 415 paying companies.<sup>20</sup> The finance sector, especially banks (70 paying companies) and financial-services firms (44 companies), account for more than 27.6% of all paying firms in the sample. It is followed by the capital-goods sector (41 companies, 9.9%) and the software-and-services (31 companies, 7.51%) industry.

*[Insert Table 1 about here]*

In line with prior research, I use several firm-level control variables that affect investors' reactions. *Size* is measured as the natural log of the market value of the company at the end of previous month. Small-size companies tend to have stronger investors' reactions to earnings announcements due to their low information environment. The earnings information that companies announce carries value-relevant information and reduces the information asymmetry between investors and companies. Therefore, the relative importance of earnings announcements is higher for small-size companies, in weak information environments. *Leverage* is the long-term debt-to-common-equity ratio. *Intangibles* is calculated by dividing intangible assets by total assets. *ROE* is a profitability measure, and it is calculated by dividing net income by equity. Net income is the sum of income from the last four quarters, and equity is derived from the most recent quarterly data. *Margin* is calculated as net income over the last four quarters divided by sales over the last four quarters. *Momentum* is measured

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<sup>20</sup> The Global Industry Classification Standard (GICS) structure consists of 11 sectors, 25 industry groups, 74 industries, and 163 sub-industries.



as the last 12 months' total stock price return at the end of previous month. *Predisc* indicates whether the company made public disclosures before its quarterly earnings announcement. *PreTrad* is investor activity, measured as abnormal trading volume in recent 60-trading days. *Big4* is a proxy for auditor quality and takes a value of 1 if auditor quality is high (e.g., the firm that audits the paying company is one of the Big4 auditors) and 0 otherwise.

## Chapter 6. Research Design and Empirical Results

### 6.1. Research Design

I apply the regression model that follows to determine whether abnormal trading volume changes for paying companies during the earnings-announcement period after the initiation of paid-for research. I set the event date as the date on which a paid analyst initiates the earnings forecasts that is shown in I/B/E/S system for a paying company.

$$\begin{aligned} TradVol_{j,t} = & \alpha + \beta_j Paid_{j,t} + \gamma_1 Size + \gamma_2 Leverage + \gamma_3 Intangibles \\ & + \gamma_4 ROE + \gamma_5 Margin + \gamma_6 Momentum + \gamma_7 Predisc + \gamma_8 PreTrad \\ & + \gamma_9 Big4 + Year\ Fixed\ Effect + Firm\ Fixed\ Effect + \varepsilon \quad (1) \end{aligned}$$

I follow Pevzner et al. (2015) to measure investor reactions to earnings announcements by using the 2-day-average abnormal trading volume around the day of the quarterly earnings announcement of a particular paying company.  $TradVol_{j,t}$  indicates the abnormal average trading volume as measured by average trading volume over the event (i.e. the day of the quarterly earnings announcement) window (0, +1), which is scaled by average trading volume over the estimation window (-120, -21), with trading volume defined as the number of shares in paying company  $j$  that is traded on day  $t$  divided by the total number of outstanding shares in paying company  $j$  that are traded on day  $t$ . The independent variable *Paid* takes a value of 1 if the earnings announcement is made after the paid analyst initiated the earnings forecast for the

paying company and 0 otherwise. Standard errors are robust to heteroskedasticity and clustered by companies.

## 6.2. Control Variables

The control variables include firm and market factors that affect investor reactions, in line with the prior literature. *Size* is defined as a logarithm of market capitalization as of the end of the preceding month. Investors tend to react to the corporate disclosures of smaller firms more strongly because the informational content of their earnings announcements is relatively higher (Atiase 1985; Ro 1988). I expect the coefficient of *Size* to be negative. *Leverage* is a long-term debt-to-common equity ratio. *Intangibles* is calculated as intangible assets divided by total assets. Firms with high *Leverage* or *Intangibles* operate in a weak information environment, and investors seek information from earnings announcements. I expect the signs of the coefficients of *Leverage* and *Intangibles* to be positive. *ROE* (Return on Equity) is net income on common equity, and *Margin* is net income divided by sales. *Momentum* is the 12-month-price total return. Investors tend to be more interested in stocks that have superior accounting or market performance and respond more vigorously to news about their earnings. I expect the signs of the coefficients of *ROE*, *Margin*, and *Momentum* to be positive.

Research has shown that investor responses to corporate disclosures are associated with predisclosure information (Kim and Verrecchia, 1991; Atiase and Bamber, 1994). I add two control variables to capture investors reactions to pre-quarterly earnings-announcement information. *Predisc* is an indicator variable that takes a value of 1 if the paying company disclosed 8-K filings between the preceding quarterly earnings announcement and the quarterly earnings announcement under

observation. I expect the sign of the coefficient of *Predisc* to be negative because the information environment of the paying company improves with additional corporate disclosures. Therefore, investors respond less acutely to quarterly earnings announcements when the company makes a public announcement before its quarterly earnings are released.

*PreTrad* captures investor activity between the previous earnings announcement and the one that is under observation, and it is measured by average trading volume over the window of the day of the quarterly earnings announcement (-61, -1) scaled by average trading volume over the estimation window (-162, -62), with trading volume defined as the number of shares in the paying company divided by its total number of outstanding shares. I expect the effect of *PreTrad* on investor responses to quarterly earnings announcements to be negative.

Auditor quality affects investor responses to financial reports. The credibility of financial information depends on auditor quality, and investors react more strongly to financial information that has been audited by a high-quality firm (Teoh and Wong 1993; Knechel et al. 2007; Menon and Williams 2010). I add a dummy variable, *Big4*, to capture differences in audit quality between paying firms. I also add year and firm fixed effects to further control for the unobservable variables that may affect investor reactions to corporate disclosures.

## **6.3. Empirical Results**

### *6.3.1. Main Result (Hypothesis 1)*

My interest is on the sign of the coefficient  $\beta$ . A negative  $\beta$  indicates that, possibly due to the lack of independence of paid analysts and the lower effectiveness of their monitoring, investors perceive corporate financial information as less credible,

which reduces their appetite for responding to the earnings announcements of the paying company, which would support *the perceived credibility hypothesis*. Conversely, a positive  $\beta$  coefficient indicates that paid-for research helps paying companies to increase their visibility and thus increases the need for corporate information from disclosures, relative to the period before engagement with paid-for research. Consequently, abnormal trading volume increases after paid analysts initiate the research service, which would support *the information complementarity hypothesis*.

Table 2 presents the main results from Model (1). Columns (1), (2), (3), and (4) present the results with different control variables; the main result remains the same. Column (1) displays the results from Model (1) without predisclosure level variables, auditor quality, and fixed effects. Columns (2), (3), and (4) show the results from the models that include year and firm fixed effects. Column (3) displays the results that include the predisclosure level of the control variables *PreDisc* and *PreTrad*, and column (4) displays the result that includes the dummy variable for auditor quality. The coefficient of the independent variable *Paid* is significantly negative in all four columns. The findings suggest that, after paying companies receive the research service, abnormal trading volume around earnings announcements declines more sharply than before they receive that service. This finding supports *the perceived credibility hypothesis*, which posits that investors respond to financial-information announcements to a lower extent than at the time before the company obtained a paid-for research service, possibly because they perceive the financial information of paying companies as less credible. In other words, this result supports the importance of trust for investors.

As expected, the coefficient of the control variable *Size* is negative, confirming the well-documented theory that the information environment of the company is negatively associated with investors' responses to corporate disclosures. Similarly, investors in companies with high *Leverage* and *Intangibles* tend to respond more vigorously to earnings announcements because they are more difficult to analyze and because they are considered to operate in less favorable information environments. Column (3) shows that *PreDisc* and *PreTrad* are negative and statistically significant, especially *PreTrad*. The existence of corporate disclosures that are published prior to quarterly earnings announcement reduces the acuity of investors' reactions to quarterly disclosures (*PreDisc*). Similarly, abnormal trading volumes during the period that precedes the earnings announcement and investors' reactions to news about earnings are associated negatively. Even after controlling for the variables that serve as proxies for investor activity before quarterly earnings announcements, the effect of *Paid* remains negative, with a marginally higher absolute coefficient (-0.338) and a higher *t*-value (-2.009). The result in column (4) is similar to that in column (3).

***[Insert Table 2 about here]***

Low trust in corporate disclosures translates into negative stock returns (Wang and Li 2016). I conduct a test to determine whether a paid-for research subscription affects stock returns to earnings news. The stock returns to an earnings announcement would be lower if the perceived credibility of the disclosure is lower. I use two days of cumulative abnormal returns ( $CAR[0,+1]$ ) as the dependent variable, as well as the same independent and control variables as in Model (1).

$$CAR(0,+1)_{j,t} = \alpha + \beta_j Paid_{j,t} + \gamma Control\ variables + Year\ Fixed\ Effect + Firm\ Fixed\ Effect + \varepsilon \quad (2)$$

Table 3 presents the results. The coefficient of *Paid* is significantly negative (-0.017), with a *t*-value of -3.714. Cumulative abnormal returns decrease around quarterly earnings announcements after the company has initiated paid-for research coverage. This result supports the proposition that, after the paid-for research engagement, investors' abnormal stock returns around earnings disclosures becomes lower because of the attendant loss of trust.

*[Insert Table 3 about here]*

### 6.3.2. Cross-Sectional Tests (Hypothesis 2)

I conduct several cross-sectional tests to understand the mechanism by which paid-for research affects investor reactions to corporate news. It can be argued that the decline in investors' sensitivity to financial information is due to the mitigation of information asymmetries after paid-for research coverage is initiated. Since paid-for research coverage reduces information asymmetries at paying companies, it is possible that investors come to require less information from financial reporting after the company begins paying for such coverage. In order to determine whether the decline of the investors' reaction to financial information is due to the perceived credibility of the disclosures or to a change in information asymmetry, I first inquire whether the quality of the paid-for research house affects the results. It has been shown that the perceived quality of research companies affects investment decisions (Clement and Tze, 2003). If the result of the main test is due to the mitigation of information asymmetries, then the effect would be stronger for companies that hire paid analysts from higher-quality research houses.

I divide the sample into two subsamples, based on the size of the paid-for research houses as measured by the number of analysts that they employ. The first group of companies includes the research houses that have a number of analysts that is

lower than the median, while the second group includes the research firms that have more analysts than the median. I employ Model (1) to each individual group independently, with the anticipation that the coefficient  $\beta$  to be smaller and more significant for the sample with lower research-house credibility. Column (1) of Table 4 shows the regression results for the sample that is associated with the paying firms that have contracts with less credible paid-for research houses, and column (2) presents the regression results for the sample of paying firms that have contracts with more credible paid-for research houses.

In column (1), the coefficient of *Paid* is significantly negative. This finding suggests that investors' reactions to earnings announcements become significantly less acute after paying companies receive the paid-for research services from the less credible paid-for research houses. In contrast, column (2) shows that the coefficient of *Paid* is not statistically significant, indicating that abnormal trading volume does not change statistically at paying companies that use relatively credible paid-for research firms. The results show that paid-for research reports negatively influence perceptions of the credibility of disclosures among investors, who thus become less likely to seek earnings information.

*[Insert Table 4 about here]*

### 6.3.3. Cross-Sectional Tests (Hypothesis 3)

In order to determine whether audit quality affects the relationships between paid-for research coverage and the processing of the information from earnings announcements, I divide the sample into two categories that are based on auditor quality at the time of the initiation of paid-for research coverage. In line with the literature (Geiger and Rama 2006; Chang et al. 2006; Menon and Williams 2010; Robin et al.

2017), I treat the Big4 as high-quality auditors, while non-Big4 firms are assumed to be of low quality. Given the negative effect of paid-for research coverage on investors' reactions to earnings announcements, I expect that this effect would be higher for paying companies that use low-quality audit firms. Low trust in financial information can be mitigated by high-quality auditors. Therefore, the negative effect of paid-for research engagement on investors' usage of financial information may be assumed to diminish if the financial statements of the firm are audited by a high-quality firm. I apply Model (1) to each group separately, expecting  $\beta$  to be smaller (more negative) and more significant for the sample of low-quality audit firms. Column (1) of Table 5 shows the regression results for the sample that is associated with paying firms that use low-quality audit firms, and column (2) presents the regression results for the sample that contains paying firms that use high-quality audit firms.

In column (1), the coefficient of *Paid* is significantly negative. The finding suggests that investors' reactions to earnings announcements become significantly less acute after subscriptions to paid-for research services, especially when the financial reports are audited by low-quality firms. In contrast, column (2) shows that the coefficient of *Paid* is not statistically significant, which indicates that abnormal trading volume does not change statistically for paying companies that use high-quality audit firms. Economic significance also varies between low- and high-quality firms of auditors. The economic significance of *Paid* in the low-quality-auditor group is larger than in the high-quality-auditor group.

Column(3) and Column(4) of Table 5 show investors' profitability around quarterly financial reports for each category of auditor quality. I use Model (2) to each group separately, expecting  $\beta$  to be smaller (more negative) and more significant for the sample of low-quality audit firms. Similarly to column (1) of Table 5, column (3)



shows the regression results for the sample that is associated with paying firms that use low-quality audit firms, and column (4) presents the regression results for the sample that contains paying firms that use high-quality firms. Both the economic and the statistical significance of the coefficient of *Paid* are more obvious in the cases of the low-auditor-quality groups. It emerges that investors receive lower abnormal returns on stock during the period of quarterly earnings announcements after companies begin to pay for research coverage. This effect is more significant when the financial reporting of the company is audited by a low-quality firm.

On the whole, the results indicate that paid-for research engagement lowers the perceived credibility of financial disclosures in the eyes of investors, probably due to paid analysts' poor monitoring. This negative effect can be moderated by another external monitor, audit firms.

*[Insert Table 5 about here]*

## **Chapter 7. Robustness and Additional Tests**

### **7.1. Robustness Tests**

#### *7.1.1. The Information Environment of Paying Firms*

I next inquire whether the information environment of the paying companies affects the investors' usage of financial information after the initiation of the research services. If the decline in investors' responsiveness to earnings news is due to the decline in information asymmetry, this effect would be more pronounced for paying companies in weaker information environments, such as those in highly uncertain businesses. Companies in highly uncertain businesses are difficult to analyze; therefore,

they should experience higher decreases in information asymmetry as a consequence of coverage by analysts.

To test this conjecture, I divide the sample into two subgroups according to the R&D expenditure or industry of the paying companies. There is a positive association between R&D investment and uncertainty (Van Vo and Le 2017). I categorize the paying companies had engaged in no R&D expenditure over the four quarters before the paid-for research subscription started as belonging to the low-uncertainty-business group and the rest as belonging to the low-uncertainty-business group. Highly uncertain businesses include information technology and healthcare (Dyer et al. 2014).<sup>21</sup> I use the definitions of industry groups of the Global Industry Classification Standard (GICS) to categorize each company. The low-uncertainty group includes companies in other industries.

The first two columns in Table 6 display the regression results for the group of paying companies in low-uncertainty businesses. The negative signs of the coefficient of *Paid* in columns (1) and (2) indicate that paying companies that are in less uncertain businesses experience less acute investor reactions to earnings announcements after they engage with paid-for research. In contrast, no such effect is observed for the paying companies that are in highly uncertain businesses, as is evident from columns (3) and (4). The results support the argument that the negative effect of paid-for research coverage on investor reactions to corporate earnings announcements is not due to an improvement in the information environment.

*[Insert Table 6 about here]*

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<sup>21</sup> Dyer et al. (2014) ranks industries by level of uncertainty based on the demand uncertainty measured by industry revenue volatility and firm turnover and technology uncertainty measured by industry R&D as a percentage of revenue using the data between 2002 and 2011. Top 5 most uncertain industries include medical equipment, computers, computer software, pharmaceutical products, measuring & control equipment that are the sub-industry of healthcare and information technology sectors by GICS.

### *7.1.2. Paying Firms' Predisclosure Levels*

In order to determine whether the negative effect of a paid-for research subscription on investors' reactions to earnings announcements is due to the decline in information asymmetry or not, I divide the sample into two, depending on levels of predisclosure. The first group contains paying companies that exhibit high predisclosure levels before quarterly earnings announcements, and the second group includes paying companies that exhibit low predisclosure levels before quarterly earnings announcements. If the negative effect of paid-for research on investors' reactions to quarterly disclosures is due to an improvement in information asymmetry after paid-for research engagements, this effect should be more significant for paying companies with limited public disclosures or for which less public information is available before quarterly earnings announcements.

Table 7 displays the results. Panel A displays the results for each group. I use two measurements to define predisclosure levels. One has to do with whether the paying company issues 8-K-filing disclosures during the quarter in which it initiates the paid-for research engagement. The "8-K filings" group includes paying companies that meet this criterion. The group without 8-K filings includes companies that do not meet it. The other measurement is abnormal trading volume during the quarter in which the company obtains a paid-for research subscription. The high-trading-volume group includes the paying companies that have above-median abnormal trading volumes during the quarter in question. The low-trading-volume group includes paying companies that have below-median abnormal trading volumes during said quarter.

Columns (1) and (2) show the results for the groups of paying companies with high predisclosure levels (companies with 8-K filings and companies with high trading

volumes). Columns (3) and (4) show the regression results for paying companies with low predisdisclosure levels (companies without 8-k filings and with low trading volumes). The coefficients of *Paid* in column (2) is significantly negative, while those in column (3) and column (4) are not significant and their economic significances are less than those in column (1) and column (2). Investors' reactions to news about earnings do not change significantly when predisdisclosure levels are low, supporting the proposition that the effect of *Paid* is not attributable to a decline in information asymmetry. Conversely, investors' reactions to quarterly earnings announcements are significantly negative when predisdisclosure levels are high.

The same result obtains when  $CAR(0,+1)$  is used as a dependent variable. In Panel B, the coefficients of *Paid* are significantly negative when the paying companies are in the high-predisdisclosure group, but they are not as statistically significant in the low-predisdisclosure group. On the whole, these results support the argument that the negative effect of paid-for research subscriptions on investors' reactions to earnings announcements cannot be explained by a reduction in information asymmetry.

*[Insert Table 7 about here]*

### *7.1.3. The Effect of Non-paying Firm Analyst Coverage*

I test whether this result only applies to paid-for research coverage. It may be argued that the decline in the acuity of investor reactions to earnings announcements is not due to paid-for research but to the initiation of research coverage. This argument is plausible because the cost of analyzing companies becomes lower in consequence of the extension of coverage. As a result, investors may respond less strongly to earnings news after the initiation of analyst coverage, which would support the notion of an information substitution effect (Kim and Verrecchia, 1991; Atiase and Bamber, 1994;

Lobo and Tung, 1997). I choose U.S. companies that began receiving nonpaid coverage from analysts (i.e., sell-side analyst coverage) between 2000 and 2022, and I test whether they experienced the same results as those that emerge from the main test. I only include the nonpaying companies that became the subject of a research report by a sell-side analyst for the first time at least six months after their IPO in order to avoid the IPO-analyst-coverage effect (Weber et al., 2023; Cliff et al., 2004; Dambra et al., 2018). A total of 393 nonpaying U.S. companies were covered for the first time between 2000 and 2020. I apply Model (3) to examine the effect in question. It is similar to Model (1).

$$\begin{aligned} TradVol_{j,t} = & \alpha + \beta PostCoverage + \gamma Control Variables \\ & + Year Fixed Effect + Firm Fixed Effect + \varepsilon \quad (3) \end{aligned}$$

*PostCoverage* takes a value of 1 if the earnings announcement is issued after the sell-side analyst initiates the earnings forecast for a company and a value of 0 otherwise. The other variables are the same as in Equation (1). Table 8 presents the results from Model (3) by reference to the sell-side analysts who compiled the first research reports for the nonpaying companies.

The coefficient of primary interest, *PostCoverage*, is negative but insignificant. Investors do not respond less acutely to earnings announcements after they receive sell-side research services for the first time. In other words, it is not clear whether investors' reactions to earnings announcements weaken after the nonpaying companies receive analyst coverage.

*[Insert Table 8 about here]*

## 7.2. Additional Tests

In order to further understand the effect of paid-for research on investors' reactions to earnings disclosures, I conduct several additional tests.

### 7.2.1. *Investors' Ex Ante Interest in Paying Firms*

First, I test whether investors' *ex ante* interest in paying companies affects the relationship between paid-for research subscriptions and changes in reactions to earnings announcements. Investors tend to have a stronger interest in companies with higher stock returns and in higher-earnings-growth stocks that are expected to deliver larger returns (Lui et al. 1999; George et al. 2004; Chan et al 2004). Therefore, demand for financial information about companies with higher stock or accounting returns is stronger. In contrast, a paid-for research subscription causes investors to lose interest in financial information if stock in the company is associated with low returns on the stock market or with weak business growth because of credibility concerns. I conjecture that paying companies that have experienced lower returns, in either stock-price or accounting terms, experience further declines in demand for accounting information after they subscribe to paid-for research.

To test this conjecture, I conduct regression tests by using several proxies. I divide the sample into two subsamples according to the stock-price momentum of the paying companies, as measured by 6-month performance, 12-month performance, and the most recent annual earnings-growth figures. Price momentum and past accounting performance affect investor preferences about stocks (Lui et al. 1999; George et al. 2004; Chan et al 2004). I posit that, due to the lower credibility of corporate information after a company engages with paid-for research services, news about the earnings of paying companies that have had low *ex ante* returns or low accounting growth attracts less interest after the companies in question subscribe to the research services that paid analysts provide.

The first three columns in Table 9 present the regression results for the paying companies with low *ex ante* investor appetite. The negative signs of the coefficient of *Paid* in columns (1) to (3) indicate that the companies that attract less interest from investors also experience less acute reactions to earnings announcements after they pay for research coverage. In contrast, no such effect is found to obtain for paying companies that attract more *ex ante* investor interest, as shown in columns (4) to (6). The results support the proposition that *ex ante* interest, that is, interest before the conclusion of paid-for research contracts, affects investor reactions to earnings announcements after companies begin to receive research services from paid analysts.

*[Insert Table 9 about here]*

#### *7.2.2. The Effect of Paid-for research: First Year versus Following Year*

I test whether the effect of paid-for research coverage on investors' reactions to earnings disclosures changes over time. I conduct the regression for two different samples, depending on the period in which quarterly earnings are announced. The first group includes the observations from the year before and after the initiation of paid-for research coverage, which is the sample for the main study. The second group includes the observations from the year that follows the initiation of paid-for research coverage. The second group also includes pre-event data that are observed between one and two years before the initiation of coverage. Table 10 presents the results, which show that the negative effect of paid-for research subscriptions on investors' reactions to earnings announcements is stronger during the first year. The coefficient of *Paid* is negative at the 10% significance level in column (1), while *Paid* has no significant effect on abnormal trading volume in the second year after the initiation of the paid-for research (column [2]).

*[Insert Table 10 about Here]*

### **7.3. Identification Concerns**

Overall, the empirical results provide evidence that investors react less vigorously to corporate earnings announcements after the companies pay for the research coverage, possibly due to the lack of credibility on the paying companies' information. In this section, I address several identification concerns.

First, one of the key assumptions in this research is that investors recognize the research report is 'company sponsored'. Paid analysts are required to disclose their conflicts of interest in the research report. However, there is no hard evidence that all sample companies disclose the conflict of interest in their research reports or that every investor would recognize the research report as paid-for research. To marginally mitigate this concern, I conduct the test for the sample with the period since 2007, when the SEC urges the full disclosure of paid-for research. Table 11 shows the effect of paid-for research subscriptions on investors' reactions to earnings announcements since 2007. The result still holds with higher economic significance.

*[Insert Table 11 about Here]*

Secondly, another frequent issue in analyst effect studies, including this study, is the omitted variable problem. This arises from the challenge of effectively accounting for all the factors that can influence investors' response to earnings announcements. Specifically, potential factors can affect the differences between paid and sell-side analysts, resulting in a negative effect on investors' reactions to corporate disclosure. For example, whether the CEO's decision can affect the analyst coverage decision is one of the major differences between paid-for research and sell-side research. For paid-for research, company management makes the decision of analyst coverage, while sell-side analysts do not make the coverage decision depending on the CEO's will. To check



whether CEO or top management changes affect the effect of paid research engagement on investors' reactions to earnings announcements, I added dummy variables of CEO change, CEO or CFO change, or CEO, CFO, or Chairman change to the regression model together with the interaction term between each variable and the independent variable *Paid*.

Table 12 exhibits the result of the effect of the management change on the relationship between paid-for research engagement and investors' activity to earnings announcements. The negative effect of paid-for research on investors' perceived credibility of corporate information remains strong even after controlling the CEO effect. In other words, even though the CEO's decision is a critical factor for the paid-for research, it does not affect the relationship between the paid-for engagement and the investors' reactions to earnings announcements. The main results continue to hold.

*[Insert Table 12 about Here]*

Thirdly, it's possible that paying companies reduce information provision during earnings announcements so investors do not respond as much as before. The amount of information provision and abnormal trading volume have a positive association. Beaver et al. (2020) suggest that abnormal trading volume during earnings announcements has risen in 21<sup>st</sup> Century, possibly because companies provide more information in their financial statements. It can be argued that the reduction of investors' reactions to corporate information is because companies decide to provide less information in their financial statements for some reason after they pay for the research coverage. To see whether this can be the case, I first check the effect of paid-for research engagement on the amount of financial information. Following the measurement of disclosure ratio (DR) defined in D'Souza et al. (2010), I use *DR* to proxy for the amount of financial information provided by companies. *DR* is the ratio of the number of

announced financial statement items of the company divided by the total number of items.<sup>22</sup>

Panel A in Table 13 shows that companies provide more information after the paid-for research engagement. Panel B exhibits that the amount of financial information provision does not affect the relation between the paid-for research engagement and the investors' reactions to earnings announcements. Overall, the result does not support the argument that the decline in the investors' reactions to earnings announcements is due to the reduction of the financial information provision.

*[Insert Table 13 about Here]*

Despite multiple robustness tests and the tests to address some identification concerns, it is possible that some other unobservable factors or confounding events may cause the decline in investors reactions to quarterly earnings announcements after the paid-for research engagement. I leave this as the future research.

## **Chapter 8: Conclusion**

In addition to the prior studies that have examined the informational value of paid-for research services (Kirk 2011; Billings et al. 2014), I study whether retaining a paid analyst to provide coverage services to the firm affects the latter in terms of investor perceptions of company disclosures. To that end, I examine market reactions to financial reporting.

I examine the effect of paid-for research engagement on investor reactions to quarterly earnings announcements. I present two competing hypotheses. On the one hand, research by paid analysts may increase the visibility of firms and the need for

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<sup>22</sup> The total number of financial statement items is 84 and consists of 23 income statement items, 28 balance sheet items and 33 cash flow statement items (D'Souza et al. 2010; Roh and Zarowin 2019).

financial information; consequently, investors may respond more vigorously to earnings announcements. On the other hand, paid-for research exacerbates concerns about the credibility of disclosures; as a result, the value that investors extract from corporate earnings announcements may fall, causing weaker reactions to such events. I analyze abnormal trading volumes during the period of quarterly earnings announcements for U.S. paying companies and find that investor reactions to earnings announcements are significantly lower after companies subscribe to paid-for research.

In the additional analyses, I found significant evidence for the proposition that the negative effect of paid-for research coverage on investor reactions to earnings announcements is more pronounced when the paid-for research firms are of lower quality and when the financial statements of the paying company are audited by a low-quality firm. These cross-sectional variations are consistent with the evidence that indicates that research by paid analysts affects the perceived credibility of financial reporting negatively and reduces the strength of reactions to financial reporting.

My study is valuable to practitioners, market regulators, and academics. Despite the rise of the paid-for research industry, practitioners have cast doubt on its potential due to the possibility of conflicts of interest between investors and firms. By using paid-analyst data from the US, I find that paid-for research has a negative effect on investors' reactions to earnings announcements, possibly due to the investors' concerns about the lack of paid analysts' independence and their less effective monitoring role. Unlike the prior literature, which has examined the informational content that paid analysts deliver (Kirk 2011, Billings et al. 2014, Tsang and Yoo 2023), this study compares investor behavior before and after a company subscribes to paid-for research services.

I use data from the US due to availability issues. Given that paid-for research is more popular in Europe, especially since the implementation of MiFID II in 2018, the

effect of paid-for research on investors' responses to corporate disclosures may be different in Europe. At several large European investment banks, even sell-side analysts provide paid-for research services. Since research by paid analysts is more widely accepted in Europe than in the US, investors may have different perspectives and may not lose interest in the financial information of the paying companies.

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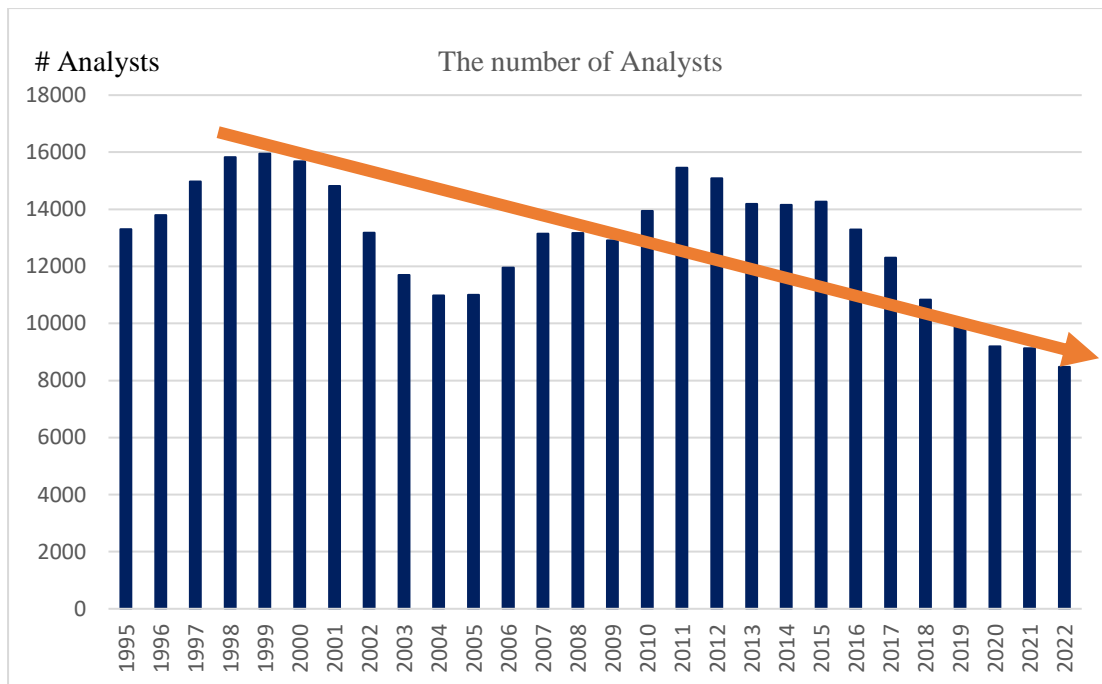
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## APPENDIX A: The Total Number of Analysts Since 1995

This figure presents the number of analysts who provided earnings forecasts on a yearly basis between 1995 and 2022. The data are from IBES and include both U.S. and global analysts.



## Appendix B. Paid-for research Reports Versus Sell-Side Research Reports

The figures present the samples of paid-for research reports (B1) and sell-side reports (B2). Figure B1a displays the first page of a report that Sidoti & Company prepared for a paying company, ACCO Brands Corporation. The red box in Figure B1a indicates that this document is a company-sponsored research report. Figure B1b is a disclaimer that Sidoti & Company uses when conducting research for clients. The red box in Figure B1b indicates the compensation that Sidoti & Company received from ACCO Brands Corporation. Figure B1c displays the disclaimer that Edison Investment Research used in their work for 4imprint Group. The red box in Figure B1c indicates the compensation that Edison Investment Research received from 4imprint Group. Figures B2a and B2b show the first page and the disclaimer from a JP Morgan research report on Toyota Motors.

### B1. Paid-for research Report Sample

#### B1a. The First Page of a Sidoti & Company Paid-for research Report

July 27, 2022 Company Sponsored Research Report  
Re-Initiation of Coverage

ACCO Brands Corporation (ACCO)

Re-Initiate Coverage Of Acco Brands, With A \$20 Price Target And Moderately Risky Rating

	2021	2022E	2023E	2024E
Mar.	\$0.10	\$0.11A	\$0.15	\$0.19
June	0.43	0.42	0.46	0.55
Sep.	0.33	0.45	0.51	0.59
Dec.	0.54	0.53	0.61	0.69
EPS	\$1.41	\$1.51	\$1.71	\$2.00
P/E		4.7x	4.1x	3.5x

Note: NR = Not Rated. Risk Ratings: H = Highly risky; M = Moderately risky. 2021 and 2022 EPS exclude a net \$0.01 and \$0.05 of one-time restructuring, tax and other charges. 2021-2024E EPS exclude \$0.35, \$0.33, \$0.33 and \$0.35 amortization expense. Sum of quarterly results may not equal full-year total due to rounding and/or change in share count. The Russell 2000 Index includes ACCO.

Year	2015	2016	2017	2018	2019	2020	2021	2022E	2023E	2024E
Rev.(Mil.)	\$1510.4	\$1567.1	\$1948.8	\$1941.2	\$1955.7	\$1655.2	\$2025.3	\$2108.4	\$2160.0	\$2213.1
GAAP EPS	\$0.78	\$0.87	\$1.19	\$1.00	\$1.06	\$0.65	\$1.05	\$1.12	\$1.38	\$1.64

Description: ACCO Brands Corporation ([www.accobrands.com](http://www.accobrands.com)) supplies branded office, school and technology products. Top brands include ACCO, Five Star, Mead, Kensington, PowerA, Letz, Esselte, Swingline, A-A-GLANCE and Tilibra. ACCO's geographic revenue mix is U.S. 51%, EMEA 33% and International 16%. Headquarters is in Lincolnshire, IL.

- We think ACCO's transformation from a North American office products to a global consumer brands company remains unappreciated.
- Transformed through acquisitions, the mix of higher-growth consumer categories positions ACCO for 12% five-year compound annual EPS growth, by our model.
- With office and school markets still recovering from the pandemic, we think back-to-office has room to go and expect a strong back-to-school season this year.
- Free cash flow is sufficient to drive shareholder returns through a combination of share buybacks, debt reduction, acquisitions and dividend growth, as we see it, and along with an improving balance sheet underpins our moderate risk assessment.
- Our \$20 price target is based on 10x our 2024 EPS estimate of \$2.00.

**A transformed portfolio can deliver stable long-term growth and is underappreciated.** ACCO faces channel and product category constraints. Yet whereas the company once was mainly a North American office products seller through office channels, ACCO is now globally diverse, with an expanding portfolio of faster-growing consumer brands and less dependent on declining distribution channels. We think ACCO is not getting credit despite reaching the point where it can deliver sustainable organic growth and contend the stock has been overly discounted for historical risks that will have less effect. Management also has the opportunity to use free cash flow, which we expect will exceed \$2 a share in 2024, to repurchase stock, reduce debt and pursue acquisitions and dividend growth.

**Pivoting to consumer-centric categories was needed.** ACCO recognized traditional office products like storage and organization, calendars, stapling/punching and laminating/binding are in secular decline. ACCO countered this via acquisitions and organic investment in more consumer-centric brands. Six acquisitions magnify the shift, with the latest (PowerA) entering ACCO into gaming peripherals. Together with Kensington computer accessories, tech is now ACCO's largest and fastest-growing product category (23% of 2021 sales). It also launched into new categories like wellness organically, with 2019's introduction of TruSens air purifiers, a \$25 million category for ACCO with potential to become a \$100 million-plus business. Consumer, school and tech products are 60% of revenue and we expect the mix to shift further from commercial office supplies, supporting ACCO's case for 2%-4% long-term revenue growth.

**Sidoti & Company, LLC**  
Member FINRA & SIPC

NR

Price Target: \$20  
Price: \$7.07  
Risk Rating: M

**Gregory Burns**  
(212) 894-  
(gburns@ )

**Key Statistics**

Analysts Covering	3
Market Cap (Mil)	\$690
Enterprise Value	\$1,855
52-Week Range (NYSE)	10-6
5-Year EPS CAGR	12%
Avg. Daily Trading Volume	620,000
Shares Out (Mil)	96,200
Floa: Shares (Mil)	93,397
Insider Ownership	3%
Institutional Holdings	89%
Annualized Dividend	\$0.27
Dividend Yield	4.2%
FCF Per Share (2024E)	\$2.07
FCF Yield (2024E)	29.3%
Net Cash Per Share (2024E)	(\$7.31)
Price to Book Value	0.8x
Return on Equity (2024E)	12.9%
Total Debt to Capital	59%
Interest Coverage Ratio	0.75
Short Interest %	3.7%
Short Interest Days To Cover	7.1
Russell 2000	1,805
Russell 2000 - Last 12 Months	-18.6%
ACCO - Last 12 Months	-14.1%

## B1b. The Disclaimer in a Paid-for research Report by Sidoti & Company

**Compensation.** Sidoti & Company, LLC receives a flat fee of \$40,000, renewable annually from the company discussed in Company Sponsored Research reports for the creation and dissemination of an Initiation Report and three Update Reports. The purpose of the fee is to subsidize the high costs of research and monitoring. Sidoti holds multiple conferences a year and charges a fee up to \$6,000 per conference to presenting companies depending on the event. Sidoti does not currently have a current investment banking services relationship with companies discussed in Company Sponsored Research Reports, or contemporaneously with any other companies discussed in other (Sidoti) Company Sponsored Research reports. Investment banking services, as defined under FINRA Rule 2241, include, among other things, acting as an underwriter in, or as a member

Sidoti & Company, LLC

7

### Appendix

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## B1c. The Disclaimer in a Paid-for research Report by Edison Investment Research

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## B2. Sell-Side Research Report Sample

### B2a. The First Page of a JP Morgan Equity Research Report

This document is being provided  
LFL3

**J.P. Morgan**

13 June 2023

**Toyota Motor (7203)**

**Technical Workshop memo: Completes cutting-edge tech; renewed ASSB launch, as well as next-gen batteries**

**Overweight**

7203.T, 7203.JP  
Price: ¥2,069  
12 Jun 2023  
Price Target: ¥2,600  
PI End Date: 31 Dec 2023

**Japan Equity Research  
Autos & Auto Parts  
Akira Kishimoto AC**  
(81-3) 6796-  
akira.kishimoto@  
JP Morgan JPM A KISHIMOTO -GO-  
**Wencong Zhang**  
(81-3) 6736  
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JP Morgan Securities Japan Co., Ltd

Toyota Motor hosted a Technical Workshop, exhibiting a wide range of technology under development. We focus on (1) the presentation of battery technology development, including all solid-state batteries (ASSB), and (2) inverters using 8-inch SiC wafers. In batteries, it plans to roll out a high-performance battery with double the range and 20% cost savings with its next-gen battery electric vehicles (BEV) in 2026, followed by a low-priced bi-polar battery based on lithium ferrophosphate (LFP), aiming for 2026-27. Disclosure of a more concrete battery road map is reassuring, including renewed plans to roll out ASSB for BEVs in 2027-28 after going back to the drawing board with this battery type. Toyota plans full-scale xEV development beyond its existing framework at the BEV Factory founded in May as an independent specialist organization.

- **Exhibits wide range of development technology:** Toyota held a Technical Workshop at its Higashi Fuji Technical Center on June 8, exhibiting a wide range of technology under development under the themes of "electrification", "intellectualization" and "diversification." Management has only rarely announced the details of technology under development in the past, and we sensed commitment to ensuring competitive strength via electrification and intellectualization under the new management team.
- **Batteries: Full roadmap for high-performance, bi-polar, ASSB:** In the automotive battery field the company plans to roll out a high-performance battery with its next-gen BEVs in 2026 (double the range, 20% cost reduction compared with current models) followed in around 2027 by a bi-polar battery (LFP based; 20% range improvement, 40% cost reduction) co-developed with Toyota Industries. In all solid-state batteries (ASSB), too, the renewed plan disclosed this time to use these in BEVs in 2027-28 was a positive after it had gone back to the drawing board with this battery type for BEVs. Management expects this to deliver a further 20% range improvement even compared with the high-performance battery launched in 2026. It also has its sights on developing ASSBs with performance ramped up a step higher in future. We are positive on the setting of development timeframes for LFP bi-polar batteries and ASSB, which were regarded as difficult (details shown in Figure 1)
- **Inverters: Set for full-scale rollout of gas method SiCs:** In E-Axle business the Toyota-Denso joint venture Mirise Technologies has already developed not only 6-inch SiC wafers but also 8-inch wafers based on its proprietary "gas method" process. The gas method's competitive strengths are that it accelerates crystal growth by 10x compared with the sublimation method, while yields are also high. We think Mirise Technologies has reached the point at which it is capable of mass-producing 8-inch SiC wafers, as well, and that it is at the final stage towards full scale SiC inverter sales expansion from 2024. Mirise Technologies covers all stages from crystal growth to epitaxial growth, but Denso will handle processes through the subsequent power card (inverter), with final assembly (E-Axle) handled by BluE Nexus (Toyota/Denso/Aisin).

**See page 4 for analyst certification and important disclosures, including non-US analyst disclosures.**

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## Appendix C. List of Paid-for research Firms

This table presents the list of paid-for research firms that I compile from various sources. The coverage region is the regional capital market that the firm covers. “P” indicates that the research firm only covers paying companies, while “NP” indicates that the firm provides both sell-side research and paid-for research. “#” indicates that the research firm is matched to IBES brokerage data. “\*” indicates that the research firm is used in the paper.

Paid-for research Firm	Coverage		Source
	Region	P/NP	
ABG Sundal Collier #	Europe	P	Online search
ACF	Europe	P	Online search
AlphaValue #	Europe	P/NP	Tsang and Yoo (2023)
BankM #	Europe	P	Online search
Blue Gem Research	South Africa	P	Online search
BlueFire Research	US	P	Online search
Cohen Independent Research	US	P	Kirk (2011)
Danske Bank	Europe	P	Online search
Diamond Equity Research	US	P	Online search
DNB	Europe	P	Online search
Edison Investment Research *#	Europe & US	P	Online search
Eightfold Group	Japan	P	Online search
EquityNet Research #	US	P	Kirk (2011)
Erste Group *#	Europe & US	P/NP	Online search
Exane BNP Paribas #	Europe	P/NP	Tsang and Yoo (2023)
Forun Tech	US	P	Online search
Fundamental Research Corp *#	US	P	Kirk (2011)
Goldman Small Cap Research	US	P	Online search
Hardman & Co #	US	P	Online search
Howlett Research	US	P	Kirk (2011)
Investrend	US	P	Kirk (2011)
J.M. Dutton Associates	US	P	Kirk (2011)
Jarl Securities	Europe	P	Online search
Litchfield Hills Research *#	US	P	Online search
Noble Capital Markets *#	Europe & US	P/NP	Online search
Nordea #	Europe	P/NP	Tsang and Yoo (2023)
Pitt Street Research	Australia	P	Online search
Redchip	US	P	Online search
Redeye #	Europe	P	Online search
Researchstock.com	US	P	Kirk (2011)
SEB #	Europe	P	Online search
Sessa Partners	Japan	P	Online search
Sidoti & Company LLC *#	US	P/NP	Online search
SISM Research #	US	P	Kirk (2011)
Small Cap Consumer Research	US	P	Online search
Spelman Research Associates	US	P	Kirk (2011)
Taglich Brothers *#	US	P	Kirk (2011)
Telsey Advisory Group *#	US	P	Kirk (2011)
The Equity Group	US	P	Online search
Water Tower Research	US	P	Online search
Zacks Sponsored Research #	US	P	Online search

## APPENDIX D. Variables Definitions

Variable	Definition
<u>Dependent Variables</u>	
<i>TradVol<sub>jt</sub></i>	Indicates abnormal average trading volume, measured by average trading volume over the quarterly earnings announcement-day window (0, +1) scaled by average trading volume over the estimation window (-120, -21), with trading volume defined as the number of shares in paying company <i>j</i> that are traded on day <i>t</i> divided by the total number of outstanding shares in paying company <i>j</i> that are traded on day <i>t</i>
<i>CAR(0,+1)</i>	Cumulative abnormal return over the quarterly earnings announcement-day window (0,+1)
<u>Independent Variables</u>	
<i>Paid</i>	Takes a value of 1 if quarterly earnings are announced after the analyst initiates the research coverage of a paying company and a value of 0 otherwise
<i>PostCoverage</i>	Takes a value of 1 if quarterly earnings are announced after the sell-side analyst initiates the research coverage of a nonpaying company and a value of 0 otherwise
<u>Control Variables</u>	
<i>Size</i>	The natural logarithm of the market value of the company at the end of the preceding month
<i>Leverage</i>	Long-term debt to shareholder's equity as of the end of the most recent fiscal quarter
<i>Intangibles</i>	Intangible assets to total assets as of the end of the most recent fiscal quarter
<i>ROE</i>	Net income to shareholder equity. Net income is the sum of the incomes from the four most recent fiscal quarters and shareholder equity is measured at the end of the most recent fiscal quarter
<i>Margin</i>	Net income to sales. Net income is the sum of the net incomes from the four most recent fiscal quarters, and sales is the sum of sales from the four most recent fiscal quarters
<i>Momentum</i>	12 months' price returns at the end of preceding month
<i>Predisc</i>	Dummy variable that takes a value of 1 if a company issued 8-K filings before the quarterly earnings announcement under observation and a value of 0 otherwise
<i>PreTrad</i>	Indicates average abnormal trading volume between the two most recent quarterly earnings announcements, measured by average trading volume over the quarterly earnings announcement-day window (-61, -1) scaled by average trading volume over the estimation window (-162,

-62), with trading volume defined as the number of shares in a paying company that are traded on day  $t$  divided by the total number of outstanding shares in a paying company that are traded on day  $t$ .

*Big4*

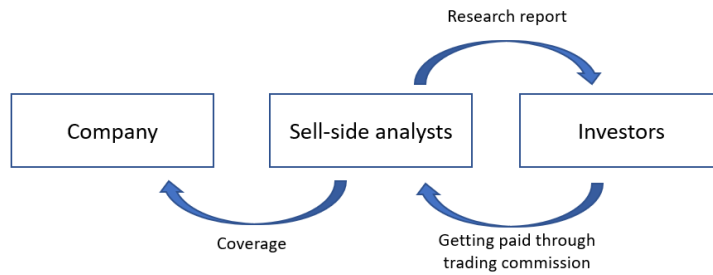
Dummy variable that takes a value of 1 if the auditor of the company is one of the Big Four firms.

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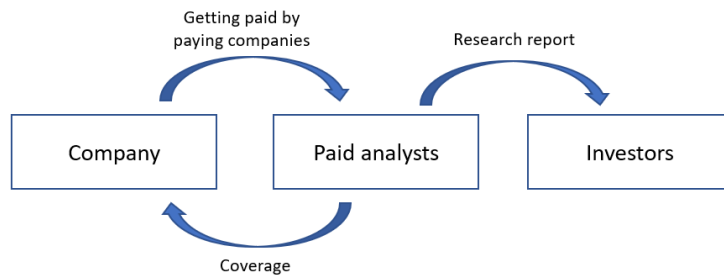
### Figure 1. Comparison between Paid Analysts and Sell-side analysts

The figures illustrate the relationship between companies, financial analysts, and investors for sell-side analysts (Figure 1A) and paid analysts (Figure 1B), respectively. (Below figures are from Tsang and Yoo (2023))

#### Figure 1A. Sell-Side Analysts



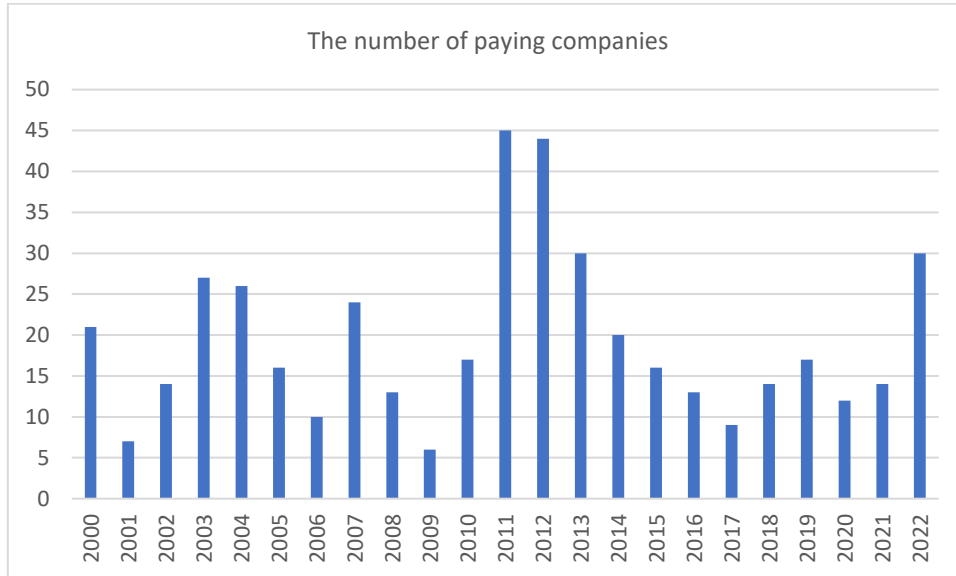
#### Figure 1B. Paid Analysts





**Figure 2. Yearly Distribution of the Number of Paying Companies in the Sample (N = 415)**

This figure presents the yearly distribution of the number of paying companies in the sample that obtained paid-for research subscriptions between 2000 and 2022.



**Table 1. Descriptive Statistics, Correlation Matrix, and Sector Distribution**

Panel A presents the descriptive statistics of the sample, and Panel B shows the pairwise correlations of the variables. Panel C is the Global Industry Classification Standard (GICS) industry-group distribution of the paying companies in the sample. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

**Panel A. Descriptive Statistics**

Variables	Obs	Mean	Std	25%	50%	75%
<i>TradVol</i>	2,711	1.688	2.481	0.511	0.953	1.820
<i>CAR</i>	2,711	0.000	0.085	-0.037	0.000	0.035
<i>Paid</i>	2,711	0.549	0.498	0.000	1.000	1.000
<i>Size</i>	2,711	1.754	0.268	1.590	1.768	1.974
<i>Leverage</i>	2,711	0.130	0.164	0.002	0.066	0.201
<i>Intangibles</i>	2,711	0.116	0.186	0.000	0.015	0.168
<i>ROE</i>	2,711	0.000	0.062	0.000	0.008	0.022
<i>Margin</i>	2,711	-0.210	1.528	0.000	0.025	0.071
<i>Momentum</i>	2,711	38.152	85.658	-11.257	17.515	61.792
<i>Predisc</i>	2,711	0.619	0.486	0.000	1.000	1.000
<i>Big4</i>	2,711	0.108	0.311	0.000	0.000	0.000
<i>PreTrad</i>	2,711	1.592	2.187	0.645	1.004	1.605

**Panel B. Pairwise Pearson Correlation Matrix (N = 2,711), \*  $p < 0.05$** 

	<i>TradVol</i>	<i>CAR</i>	<i>Paid</i>	<i>Size</i>	<i>Leverage</i>	<i>Intangibles</i>	<i>ROE</i>	<i>Margin</i>	<i>Momentum</i>	<i>Predisc</i>	<i>Big4</i>	<i>PreTrad</i>
<i>TradVol</i>	1											
<i>CAR</i>	0.075*	1										
<i>Paid</i>	-0.080*	-0.104*	1									
<i>Size</i>	-0.081*	0.002	0.125*	1								
<i>Leverage</i>	-0.012	-0.035	0.035	0.158*	1							
<i>Intangibles</i>	-0.017	-0.049*	0.026	-0.063*	0.185*	1						
<i>ROE</i>	0.059*	0.143*	-0.007	0.248*	-0.068*	-0.067*	1					
<i>Margin</i>	0.029	0.088*	0.019	0.183*	-0.029	-0.080*	0.475*	1				
<i>Momentum</i>	0.068*	0.002	-0.139*	-0.123*	-0.010	0.009	0.148*	0.050*	1			
<i>Predisc</i>	-0.025	-0.006	0.069*	0.153*	-0.029	-0.029	0.077*	0.159*	0.011	1		

<i>Big4</i>	-0.060*	0.025	0.002	0.113*	-0.018	0.009	0.029	0.041*	-0.011	-0.010	1	
<i>PreTrad</i>	-0.076*	-0.008	-0.050*	-0.043*	-0.012	0.014	-0.017	-0.091*	0.228*	-0.044*	-0.05*	1

**Panel C. GICS Industry Group Distribution (N = 415)**

	Frequency	Percent
Energy	11	2.66
Materials	11	2.66
Capital Goods	41	9.93
Commercial & Professional Services	21	5.08
Transportation	4	0.97
Automobiles & Components	5	1.21
Consumer Durables & Apparel	18	4.36
Consumer Services	14	3.39
Consumer Discretionary Distribution & Retail	22	5.33
Consumer Staples Distribution & Retail	3	0.73
Food, Beverage & Tobacco	11	2.66
Household & Personal Products	6	1.45
Health Care Equipment & Services	26	6.30
Pharmaceuticals, Biotechnology & Life Sciences	14	3.39
Banks	70	16.95
Financial Services	44	10.65
Insurance	17	4.12
Software & Services	31	7.51
Technology Hardware & Equipment	22	5.33
Semiconductors & Semiconductor Equipment	4	0.97
Telecommunication Services	5	1.21
Media & Entertainment	7	1.69
Utilities	4	0.97
Equity Real Estate Investment Trusts (REITs)	2	0.48
<b>Total</b>	<b>415</b>	<b>100</b>

**Table 2. Effects of Paid-for research Subscription on Investors' Reactions to Earnings Announcements (Hypothesis 1)**

This table presents the regression results that capture the effect of paid-for research subscriptions on investors' reactions to quarterly earnings announcements. The dependent variable is *2-day abnormal trading volume* on the day of and the day after [0, +1] a quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). Column (1) displays the result from the regression model that does not include fixed effects, predisclosure variables such as *PreDisc* and *PreTrad*, and auditor quality. Column (2) displays the results from the regression model that adds fixed effects to the model that is displayed in column (1). Column (3) displays the results from the regression model that adds predisclosure variables to the model that is displayed in column (2). Column (4) displays the results from the regression model that adds auditor quality to the model that is displayed in column (3). The *t*-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 447 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)	(3)	(4)
	<i>Abnormal Trading Volume</i>			
<i>Paid</i>	<b>-0.311***</b> (-2.745)	<b>-0.318**</b> (-1.985)	<b>-0.338**</b> (-2.009)	<b>-0.338**</b> (-2.009)
<i>Size</i>	-0.758*** (-2.905)	-2.980** (-2.206)	-2.587** (-2.071)	-2.593** (-2.072)
<i>Leverage</i>	0.169 (0.456)	1.690* (1.840)	1.476* (1.802)	1.475* (1.802)
<i>Intangibles</i>	-0.216 (-0.876)	1.510* (1.829)	1.765** (2.131)	1.776** (2.145)
<i>ROE</i>	2.927** (2.227)	3.891* (1.735)	3.871* (1.759)	3.898* (1.763)
<i>Margin</i>	0.010 (0.210)	0.019 (0.206)	0.014 (0.159)	0.014 (0.156)
<i>Momentum</i>	0.002*** (2.909)	0.000 (0.087)	0.001 (1.569)	0.001 (1.573)
<i>Predisc</i>			-0.138 (-0.818)	-0.139 (-0.820)
<i>PreTrad</i>			-0.169*** (-5.080)	-0.169*** (-5.081)
<i>Big4</i>				0.194 (0.745)
Fixed Effects	No No	Year Firm	Year Firm	Year Firm
Constant	3.412*** (7.590)	4.709* (1.955)	4.335* (1.925)	4.357* (1.931)
Observations	2,711	2,711	2,711	2,711
Adj. R-squared	0.027	0.049	0.066	0.065

**Table 3. Effects of Paid-for research Subscription on Investors' Profitability Around Earnings Announcements**

This table presents the effect of paid-for research coverage on cumulative abnormal returns (CAR) around earnings announcements. The dependent variable is *2-day cumulative abnormal return* on the day of and the day after [0, +1] the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (2). The *t*-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1) CAR
<i>Paid</i>	-0.017*** (-3.714)
<i>Size</i>	-0.170** (-1.986)
<i>Leverage</i>	-0.063* (-1.746)
<i>Intangibles</i>	-0.053 (-1.404)
<i>ROE</i>	0.324*** (3.323)
<i>Margin</i>	0.001 (0.484)
<i>Momentum</i>	-0.000*** (-4.328)
Predisc	0.005 (0.863)
Pretrad	0.001 (0.706)
Big4	-0.005 (-0.180)
Fixed Effects	Year Firm
Constant	0.207 (1.306)
Observations	2,711
Adj. <i>R</i> -squared	0.069

**Table 4. Effects of Research-House Credibility (Hypothesis 2)**

This table presents the regression results that capture whether the research-house credibility affects the relationship between paid-for research subscriptions and investors' reaction to quarterly earnings announcements. The dependent variable is 2-day abnormal trading volume on the day of and the day after [0, +1] the quarterly earnings announcement. The key independent variable, Paid, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The "Low Credible Research House Group" contains the paid-for research firms that have a smaller number of analysts in the sample (column [1]), while the "High Credible Research House Group" includes the paid-for research firms that have a larger number of analysts (column [2]). The t-statistics are reported in parentheses, and "\*", "\*\*," and "\*\*\*" indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)
	<i>Low Credible Research House</i>	<i>High Credible Research House</i>
	<i>Abnormal Trading Volume</i>	
<i>Paid</i>	<b>-0.485**</b> <b>(-2.190)</b>	<b>-0.272</b> <b>(-1.388)</b>
<i>Controls</i>	Included	Included
Fixed Effects	Year Firm	Year Firm
Constant	1.829 (0.681)	9.042** (2.133)
Observations	835	1,876
Adj. R-squared	0.030	0.060

**Table 5. Effects of Auditor Quality (Hypothesis 3)**

This table presents the regression results to see whether auditor quality affects the effects of paid-for research subscriptions on investors' reactions to earnings announcements. The dependent variables are 2-day abnormal trading volume and 2-day cumulative abnormal return on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, Paid, takes a value of 1 if the abnormal trading volume occurs after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1) and as presented in Model (2). The table presents the effects of paid-for research subscriptions on investors' reactions to earnings announcements (measured by abnormal trading volume) and investor profitability around earnings announcements (CAR [0,+1]), respectively. The "Low Auditor Quality" group includes the companies that hire low-quality auditors containing the paying companies that hired non-Big Four auditors. The "High Auditor Quality" group includes the companies that hired high-quality auditors containing the paying companies that hired Big Four. The t-statistics are reported in parentheses, and "\*", "\*\*," and "\*\*\*" indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)	(3)	(4)
	<i>Abnormal Trading Volume</i>		<i>CAR</i>	
	<i>Low Auditor Quality</i>	<i>High Auditor Quality</i>	<i>Low Auditor Quality</i>	<i>High Auditor Quality</i>
<i>Paid</i>	<b>-0.386**</b> (-2.043)	<b>0.082</b> (0.354)	<b>-0.018***</b> (-3.731)	<b>0.001</b> (0.077)
<i>Controls</i>	Included	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm	Year Firm
Constant	4.488* (1.880)	-9.377 (-1.337)	0.260 (1.547)	0.186 (0.375)
Observations	2,426	285	2,426	285
Adj. R-squared	0.064	0.057	0.096	0.020

**Table 6. Effects of Business Uncertainty**

This table presents the regression results to see whether paying companies' business uncertainty affects the effect of paid-for research subscriptions on investors' reactions to quarterly earnings announcements. The dependent variable is 2-day abnormal trading volume on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, Paid, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The sample is divided into two, depending on the R&D expenditure or sector of the companies in the sample. The "Low Uncertainty Group" contains paying companies that had engaged in no R&D expenditure over the four quarters before the paid-for research subscription started ("No R&D Exp," column [1]), while the "High Uncertainty Group" includes paying companies that had engaged in such expenditure ("With R&D Exp," column [3]). The "Low Uncertainty Group" contains paying companies in sectors in which business uncertainty is relatively low ("Low uncertain sectors," column [2]). The "High Uncertainty Group" includes paying companies in sectors in which business uncertainty is relatively high, such as information technology and healthcare ("High uncertain sectors," column [4]). The t-statistics are reported in parentheses, and "\*", "\*\*," and "\*\*\*" indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)	(5)	(6)
	<i>Abnormal Trading Volume</i>			
	<i>Low uncertainty</i>		<i>High uncertainty</i>	
	<i>No R&amp;D Exp</i>	<i>Low uncertain sectors</i>	<i>With R&amp;D Exp</i>	<i>High uncertain sectors</i>
<i>Paid</i>	<b>-0.376*</b> (-1.717)	<b>-0.379*</b> (-1.787)	<b>-0.243</b> (-1.234)	<b>-0.144</b> (-0.667)
<i>Controls</i>	Included	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm	Year Firm
Constant	4.034 (1.100)	5.263 (1.209)	4.027 (1.273)	4.477 (1.409)
Observations	1,759	1,946	952	765
Adj. R-squared	0.046	0.061	0.084	0.090



**Table 7. Effects of Predisclosure Level**

This table presents the regression results to see whether paying companies' predisclosure level affects the effects of paid-for research subscriptions on investors' reaction to earnings announcements. The key independent variable, *Paid*, takes a value of 1 if the abnormal trading volume occurs after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1) and Model (2) for Panel A and Panel B, respectively. Panel A presents the effect of paid-for research on investors' reaction (measured by abnormal trading volume) to earnings announcement. The dependent variable is 2-day abnormal trading volume on the day of and the day after (0, +1) the quarterly earnings announcement. Panel B presents the effect of paid-for research on investors' reaction (measured by CAR [0,+1]) to earnings announcements. The dependent variable is the 2-day cumulative abnormal return on the day of and the day after [0, +1] the quarterly earnings announcement. The sample is divided into two, depending on the predisclosure level as measured by 8-K filings or abnormal predisclosure trading volumes. The "with 8-K filings" group includes the paying companies that had issued 8-K filings during the quarter in which the paid-for research subscription was initiated (column [1]). The "without 8-K filings" group includes the paying companies that did not issue 8-K filings during the quarter in which the paid-for research subscription started (column [3]). The other measurement is abnormal trading volume during the quarter in which the company purchased a paid-for research subscription. The "high trading volume" group includes paying companies that had above-median abnormal trading volumes during the quarter in which they purchased their paid-for research subscriptions (column [2]). The "low trading volume" group includes paying companies that had below-median abnormal trading volumes during the quarter in which they engaged with paid-for research coverage (column [4]). The t-statistics are reported in parentheses, and "\*", "\*\*," and "\*\*\*" indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

**Panel A. Investors' Reactions to Earnings Announcements (Abnormal Trading Volume)**

VARIABLE	(1)	(2)	(3)	(4)
	<i>Abnormal Trading Volume</i>			
	<i>High Predisclosure</i>		<i>Low Predisclosure</i>	
	<i>With 8-k filings</i>	<i>High trading volume</i>	<i>Without 8-k filings</i>	<i>Low trading volume</i>
<i>Paid</i>	<b>-0.249</b> (-1.365)	<b>-0.525**</b> (-2.383)	<b>-0.044</b> (-0.172)	<b>0.096</b> (0.500)
<i>Controls</i>	Included	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm	Year Firm
Constant	7.673** (2.389)	2.283 (0.788)	3.915 (1.169)	4.345 (1.110)

Observations	1,718	1,276	793	1,235
Adj. R-squared	0.069	0.062	0.088	0.092

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**Panel B. Investors' Profitability Around Earnings Announcements (CAR[0,+1])**

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VARIABLE	(1)	(2)	(5)	(6)
	<i>High Predisclosure</i>		<i>Low Predisclosure</i>	
	<i>With 8-k filings</i>	<i>High trading volume</i>	<i>Without 8-k filings</i>	<i>Low trading volume</i>
<i>Paid</i>	<b>-0.021***</b> (-3.571)	<b>-0.021***</b> (-3.342)	<b>-0.006</b> (-0.798)	<b>-0.015**</b> (-2.213)
<i>Controls</i>	Included	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm	Year Firm
Constant	0.389** (2.187)	0.265 (1.039)	0.040 (0.210)	0.242 (1.255)
Observations	1,615	1,147	679	1,147
Adj. R-squared	0.080	0.053	0.039	0.074

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**Table 8. Investors’ Reactions to Earnings Announcements: Initiation of Non-paying Firm Coverage**

This table presents the regression result that capture the effects of the initiation of non-paying firm coverage on investors’ reactions to earnings announcements. The dependent variable is *2-day abnormal trading volume* on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (3). The sample includes 2,733 firm-quarter observations of 393 non-paying companies that analysts began to cover between 2000 and 2022. The *t*-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The definitions of the variables can be found in Appendix D.

VARIABLE	(1) <i>Abnormal Trading Volume</i>
<i>PostCoverage</i>	<b>-0.030</b> <b>(-0.211)</b>
Controls	Included
Fixed Effects	Year Firm
Constant	3.631** (2.480)
Observations	2,733
Adj. <i>R</i> -squared	0.092

**Table 9. Effects of Investors' *Ex Ante* Appetite**

This table presents the regression results to see whether investors' *ex ante* appetite level affects the effects of paid-for research subscriptions on investors' reactions to earnings announcements. The dependent variable is *2-day abnormal trading volume* on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The sample is divided into two, depending on the *ex ante* appetite level of the companies as measured by their past stock returns or earnings-growth figures. The "Low Investor *Ex Ante* Appetite Group" contains paying companies whose returns over the last 6 (12) months are lower than the median of the sample ("Low 6Mon (12Mon) Rtn," column [1] and column [2]). The "High Investor *Ex Ante* Appetite Group" contains paying companies whose returns over the past 6 (12) months are larger than the median of the sample ("High 6Mon (12Mon) Rtn," column [4] and column [5]). Similarly, the "Low Investor *Ex Ante* Appetite Group" contains paying companies whose annual earnings growth is lower than the median of the sample ("Low Growth," column [3]). The "High Investor *Ex Ante* Appetite Group" contains the paying companies whose annual earnings growth is larger than the median of the sample ("High Growth," column [6]). The *t*-statistics are reported in parentheses, and "\*", "\*\*," and "\*\*\*" indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. Standard errors are robust to heteroskedasticity and clustered by companies. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Abnormal Trading Volume</i>					
	Low Investor <i>Ex Ante</i> Appetite			High Investor <i>Ex Ante</i> Appetite		
	Low 6Mon Rtn	Low 12Mon Rtn	Low Growth	High 6Mon Rtn	High 12Mon Rtn	High Growth
<i>Paid</i>	<b>-0.405</b> <b>(-1.639)</b>	<b>-0.371*</b> <b>(-1.683)</b>	<b>-0.488**</b> <b>(-2.249)</b>	<b>-0.082</b> <b>(-0.395)</b>	<b>-0.167</b> <b>(-0.741)</b>	<b>-0.320</b> <b>(-1.587)</b>
Controls	Included	Included	Included	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm	Year Firm	Year Firm	Year Firm
Constant	3.236 (0.804)	11.086** (2.079)	1.176 (0.419)	3.745 (1.135)	5.530* (1.677)	8.680* (1.686)
Observations	1,371	1,244	1,205	1,152	1,216	1,318
Adj. <i>R</i> -squared	0.025	0.130	0.082	0.078	0.105	0.113

**Table 10. The Effect of Paid-for research: First Year versus Following Year**

This table presents the regression results to see whether paid analysts' earnings forecast frequency affects the effects of coverage initiation on investors' reaction to earnings announcements. Column (1) shows the result for the sample of observations that occurred one year before and one year after the paid-for research subscription event. Column (2) shows the results for the sample of observations that occurred a year after the paid-for research subscription. The dependent variable is *2-day abnormal trading volume* on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and the market control variables are as presented in Model (1). The *t*-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. The sample includes 5,345 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)
	<i>Abnormal Trading Volume</i>	
	Within the first year	During the following year
<i>Paid</i>	<b>-0.338**</b> (-2.009)	<b>0.127</b> (0.767)
Controls	Included	Included
Fixed Effects	Year Firm	Year Firm
Constant	4.357* (1.931)	3.304 (1.622)
Observations	2,711	2,634
Adj. <i>R</i> -squared	0.065	0.115

**Table 11. The effect of paid research on investors' reactions to earnings announcements since 2007**

This table presents the regression results to see whether paying companies' management change affects the effects of paid-for research subscriptions on investors' reactions to earnings announcements. The dependent variable is 2-day abnormal trading volume on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The t-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. The sample includes 1,935 firm-quarter observations during the years between 2007 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)
<i>Paid</i>	<b>-0.327*</b> <b>(-1.785)</b>
<i>Controls</i>	Included
Fixed Effects	Year Firm
Constant	4.924** (2.400)
Observations	1,935
Adj. R-squared	0.080

**Table 12. The Effect of CEO Change**

This table presents the regression results to see whether paying companies' management change affects the effects of paid-for research subscriptions on investors' reactions to earnings announcements. The dependent variable is 2-day abnormal trading volume on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The t-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

VARIABLE	(1)	(2)	(3)
	<i>Abnormal Trading Volume</i>		
<i>Paid</i>	<b>-0.296**</b> (-2.051)	<b>-0.297**</b> (-2.045)	<b>-0.283**</b> (-2.152)
CEO Change	-0.503* (-1.954)		
CEO Change *Paid	0.316 (1.122)		
CEO/CFO Change		-0.434* (-1.773)	
CEO/CFO Change*Paid		0.297 (1.099)	
CEO/CFO/Chairman Change			-0.356 (-1.417)
CEO/CFO/Chairman Change*Paid			0.151 (0.501)
<i>Controls</i>	Included	Included	Included
Fixed Effects	Year Firm	Year Firm	Year Firm
Constant	3.879* (1.805)	3.897* (1.826)	3.868* (1.809)
Observations	2,711	2,711	2,711
Adj. R-squared	0.077	0.076	0.076

**Table 13. Effects of Disclosure Ratio**

This table presents the regression results to see the relation between the paid-for research engagement and companies' financial information provision (Panel A) and whether paying companies' disclosure ratio affects the effects of paid-for research subscriptions on investors' reactions to earnings announcements. The dependent variable is 2-day abnormal trading volume on the day of and the day after (0, +1) the quarterly earnings announcement. The key independent variable, *Paid*, takes a value of 1 if the earnings announcement is made after the initiation of paid-for research and a value of 0 otherwise. The firm and market control variables are as presented in Model (1). The t-statistics are reported in parentheses, and “\*,” “\*\*,” and “\*\*\*” indicate significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests. The sample includes 2,711 firm-quarter observations of 415 paying companies during the years between 2000 and 2022. The definitions of the variables can be found in Appendix D.

**Panel A. The Association between Paid and Disclosure Ratio**

VARIABLE	<i>Disclosure Ratio</i>
<i>Paid</i>	<b>0.010***</b> <b>(4.827)</b>
Fixed Effects	Year Firm
Constant	0.943*** (56.700)
Observations	2,711
Adj. R-squared	0.856

**Panel B. The Effects of Disclosure Ratio**

VARIABLE	<i>Abnormal Trading Volume</i>
<i>Paid</i>	<b>-0.355**</b> <b>(-2.104)</b>
<i>DR</i>	1.753 (1.221)
Fixed Effects	Year Firm
Constant	2.742 (1.041)
Observations	2,711
Adj. R-squared	0.066