# Analyst Coverage, Group Affiliation, and Cost Stickiness: Evidence from South Korea

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## ABSTRACT

**Manuscript type**: Research paper
**Research aims**: Financial analysts may improve corporate governance by monitoring corporate behaviour, but close relationships with firms may exacerbate agency costs. We examine these competing theories by investigating the impact of affiliated analysts' coverage on the cost stickiness of firms within the same group.
**Design/Methodology/Approach**: We employ an empirical design using a sample of South Korean companies. We add four analyst coverage variables to the baseline cost stickiness equation from Anderson, Banker, and Janakiraman (2003), indicating whether the analyst is affiliated and whether affiliated analysts forecast firms affiliated within the same group. We compare results between when affiliated analysts forecast same-group-affiliated firms and when they do not.
**Research findings**: Analyst coverage is negatively associated with cost stickiness. However, when affiliated analysts forecast same-group-affiliated firms, analyst coverage is positively associated with cost

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stickiness. Hence, analysts' monitoring role is ineffective when they forecast the same group of firms. This positive relationship is more pronounced when the chief executive officer's power is high. The findings are robust to endogeneity concerns.
**Theoretical contribution/Originality**: Using a unique institutional setting in South Korea, we are able to investigate the effect of analysts' group affiliation on managers' cost management decisions. Our approach effectively separates the two competing theories of analyst coverage.
**Practitioner/Policy implication**: The findings provide a better understanding of the complex links underlying analysts' monitoring role, short-term horizon, and conflicts of interest to market participants.
**Research limitation**: We could not control for all factors that may influence the investigated relationship.

**Keywords**: Chaebol, Cost stickiness, Financial analysts, Group affiliation
**JEL Classification**: G14, G15, G17, M41

## 1. Introduction

Previously, financial analysts were considered mere recipients of corporate information rather than an influence on corporate policy. However, recent studies have found that financial analysts, as market intermediaries, actively communicate with corporate managers and influence corporate decisions in various ways (Chen & Matsumoto, 2006; Ke & Yu, 2006; Soltes, 2014). Brown, Call, Clement, and Sharp's (2015) survey indicates that 98.4 per cent of analysts have a direct conversation with companies' top management at least once a year, and 66 per cent of them noted that these private conversations with managers greatly help them with earnings forecasts. Since Healy and Palepu (2001) mentioned that analysts' monitoring role can be associated with lower agency costs, several studies have presented consistent empirical evidence. The larger number of analysts following is shown to be related to higher firm value measured by Tobin's q (Chung & Jo, 1996), higher liquidity (Irvine, 2003), less earnings manipulation (Yu, 2008), and more internal cash holdings, less frequent excessive managerial compensation, and less value-destroying acquisitions (Chen, Hartford, & Lin, 2015). All these prior studies capture various aspects of the analysts' monitoring role in the corporate earnings. However, another stream of literature has shown that analysts may be more short-term oriented (Graham, Harvey, & Rajgopal, 2005) and face conflicts of interest with the firms they follow (Dugar & Nathan, 1995; Lin & McNichols, 1998; Michaely & Womack, 1999; O'Brien, McNichols, & Hsiou-Wei, 2005). These factors may impede analysts' monitoring role in the face of

managerial discretion. Accordingly, we extend related literature and explore the analysts' monitoring role in the corporation's costs, which is one of the most integral parts of earnings.

In particular, this study focuses on asymmetric cost behaviour, also known as cost stickiness. We are interested in cost stickiness because it is not only an essential factor in earnings but also an indicator of the agency problem between shareholders and managers. Cost stickiness is a phenomenon in which the change in cost is smaller when the activity level decreases than when it increases (Anderson, Banker, & Janakiraman, 2003). Cost stickiness may occur for two reasons: economic factors and agency problems. Economic factors refer to managers' prudent cost management decisions aimed at achieving optimal costs. If the decline in sales is temporary and a rebound of sales is expected in the near future, or if it is costly to adjust and cut costs, the cost of retaining slack resources can be lower than the cost of reducing resources (Abel & Eberly, 1997; Anderson et al., 2003; Banker, Byzalov, & Chen, 2013). However, the cost stickiness may also result from a manager's empire-building motives to the extent that managers retain more resources than the optimal level (Chen, Lu, & Sougiannis, 2012). Managers generally prefer expansion for various reasons, such as higher compensation, greater decision-making power, and higher status (Jensen, 1986; Masulis, Wang, & Xie, 2007; Hope & Thomas, 2008). However, the managerial tendency towards greater firm size may conflict with shareholders' interests to the extent that firm size exceeds the level optimal for shareholders. Thus, managers may retain slack resources during a decline in sales, notwithstanding the detrimental effects on the firm and shareholders.

This study aims to examine whether financial analysts' coverage reduces cost stickiness. Since costs are among the most integral factors in earnings forecasts (Banker & Chen, 2006), one may expect that analysts' increased monitoring may hinder the managerial tendency to grow size beyond the optimal level, implying a negative relationship between analysts following and the degree of cost stickiness. However, if analysts have a conflict of interest with the firm they follow, they may not effectively reduce agency costs or the cost stickiness caused by managers' opportunistic motives. We use the South Korean *chaebol* structure to address the difficulty of examining the impact of analyst coverage on a firm's cost behaviour due to conflicting factors. A *chaebol* is defined as a group of companies owned and controlled by a single family in South Korea. They differ from the conglomerates or business groups in other countries, such as Japan, India, Spain, and Chile (Khanna

& Palepu, 2000; Guillen, 2000; Lim & Jung, 2012), in that the entire huge business group belongs to a single family and is controlled by an individual in many cases, which is not common in other countries. Many chaebols also own financial institutions as a part of their business group, as South Korea allows nonfinancial companies to own financial institutions, except for banks. To our knowledge, South Korea is the only country where nonfinancial companies may own financial subsidiaries, provided that the group's entire debt-to-equity ratio is below two (Korea Institute of Finance, 2007).

This legal exception provides a natural quasi-experimental setting as analysts' group affiliation results from an exogenous institutional factor. We expect that the analysts' group affiliation may both improve and worsen their monitoring role and corporate governance. Affiliated analysts may be expected to reduce agency costs by more actively monitoring the member companies of the same business group with superior information compared to unaffiliated analysts. In addition, an affiliated analyst's superior information may inject a longer-term perspective into the analyst of which the manager may be less concerned about sending incorrect signals to the analyst. Information sharing may facilitate the analyst's monitoring role and improve the firm's cost behaviour, leading to a stronger negative relationship between affiliated analyst followings and the degree of cost stickiness of companies affiliated with the same group, compared with either unaffiliated analysts' or unaffiliated companies' cases. However, affiliated analysts also face a greater conflict of interest. Affiliated analysts may serve the interests of the controlling owners who employed them, rather than those of external shareholders. A large body of studies has shown that analysts tend to issue positively biased opinions when they have various conflicts of interest (e.g., Dugar & Nathan, 1995; Lin & McNichols, 1998; Michaely & Womack, 1999; O'Brien et al., 2005). Likewise, analysts' group affiliation may hinder their monitoring role rather than putting the brakes on managers' discretionary cost management decisions. Regarding these two conflicting impacts of analysts' group affiliation on cost behaviour, the relationship between affiliated analysts' coverage and the cost stickiness of the affiliated firm remains an empirical question.

We find that analyst followings are negatively related to the agency factor of cost stickiness, consistent with our expectation of analysts' governance role in the cost stickiness. Our main test shows that when a group-affiliated analyst follows a firm within the same group, it aggravates the analyst's governance role, whereas in other cases, analyst coverage is positively or insignificantly related to cost

stickiness. This implies that when a group-affiliated analyst tracks and forecasts a firm affiliated with the same group, they are more likely to issue biased positive opinions, rather than thoroughly scrutinise the firm's cost behaviour for the firm's value and shareholders, given their superior information and long-term horizon. Additionally, the positive relationship between the group-affiliated analysts and the firm's cost stickiness is even more pronounced when the affiliated firm's chief executive officer (CEO) power is high. The additional analysis results strengthen our interpretation that conflicts of interest affect the affiliated analysts more strongly than the advantages from superior information and a long-term horizon when they forecast firms affiliated with the same group. An additional robustness test with firm-fixed effects and lagged analyst-following variables confirms that our inferences are robust to endogeneity concerns.

We expect that our results on the relationship between affiliated financial analysts and the agency factor of cost stickiness will lead to a better understanding of the governance role analysts play in a firm's sustainable management. Furthermore, we find that the different institutional settings in South Korea help us better understand this relationship. Throughout our study, we expand on previous work by analysing how the monitoring role differs across different types of analyst affiliations. Although many studies have already demonstrated the governance role of analysts, we provide novel findings on analysts' group affiliation and cost stickiness. These results can be used to maintain and improve sustainable management. Moreover, we contribute to a deeper understanding of the role of analysts in monitoring versus conflict of interest by introducing the *chaebol* structure.

Following this introduction, Section 2 introduces the extant literature and hypotheses, before Section 3 explains the research model and sample. The results of the study are presented in Section 4, and Section 5 provides the conclusions.

## 2. Literature Review and Hypothesis Development

### *2.1. Financial Analysts*

Since Jensen and Meckling (1976), agency costs have been a fundamental issue in accounting and finance, constituting a substantial portion of the literature. A stream of related literature focused on a variety of mechanisms to address agency costs between managers and shareholders (Healy & Palepu, 2001), which include

financial analysts. With their financial knowledge and industry-level and firm-level expertise, financial analysts regularly track the companies they follow, actively communicate with managers, closely monitor the policies and behaviours of the firms, predict earnings, and provide their opinions about companies (Bradshaw, Ertimur, and O'Brien, 2017). For example, Chen et al. (2015) find that financial analysts contact company management through conference calls, and Brown et al. (2015) also show that most analysts surveyed have direct communication with companies' top management. Lang and Lundholm (1996) and Miller (2006) also support the financial analysts' critical role in reducing the information asymmetry between managers and external stakeholders. Another body of literature, including Hope (2003), Chen and Matsumoto (2006), Ke and Yu (2006), Yu (2008), and Soltes (2014), shows that analysts scrutinise managerial decisions, influence corporate decisions in various ways, and occasionally place pressure on managers to reach more efficient and optimal decisions. The negative relationship between analyst coverage and agency costs has been empirically shown in various prior studies. For example, Yu (2008) found a negative relationship between analyst followings and earnings management, and Chen et al. (2015) demonstrated that greater analyst coverage is associated with less frequent excessive managerial compensation and value-destroying acquisitions. A recent study by Huang, Jeanjean, and Lui (2023) finds a negative relationship between analyst independence and earnings management, while Canace, Li, and Ma (2024) demonstrate that analysts facilitate R&D investment, a result consistent with Doukas, Kim, and Pantzalis (2008) and Derrien and Kecskés (2013). Jing, Keasey, Lim, and Xu (2024) further extended the analysts' governance role in corporate environmental policies.

However, financial analysts may also exacerbate the corporate governance and agency costs. Since analysts often focus on short-term performance, they may lead managers to focus more on short-term earnings and make more myopic decisions (Graham et al., 2005). Analysts may also be subject to pressure from their clients and have an incentive to report favourable opinions on them, according to the conflict-of-interest theory. A large body of literature—including Dugar and Nathan (1995); Lin and McNichols (1998); Michaely and Womack (1999); Dechow, Hutton, and Sloan (2000); O'Brien et al. (2005); and Barber, Lehavy, and Trueman (2007)—has found that analysts issue fewer negative opinions for clients with significant holdings, as financial analysts are expected to more likely experience conflicts of interest with them.

### 2.2 *Cost Stickiness*

This research extends the literature on the role of financial analysts in relation to cost stickiness. As mentioned above, several studies have observed that the decrease in costs is smaller when activity levels decrease than when they increase (Anderson et al., 2003; Banker & Chen, 2006; Anderson, Banker, Huang, & Janakiraman, 2007; Banker, Byzalov, & Chen, 2014; Via & Perego, 2014), a phenomenon called cost stickiness. This asymmetric cost behaviour may result from managers' prudent decision-making if the sales drop is expected to be temporary or if the cost of retaining slack resources is lower than the cost of reducing resources, in which case retaining slack resources would be the optimal decision. In other words, cost stickiness may arise from the firm's economically optimal decisions (Abel & Eberly, 1997; Gu, Tang, and Wu, 2020; Yang, Kuang, and Li, 2020), when it is expensive to adjust costs (Anderson et al., 2003; Banker et al., 2013) or when capacity utilisation is high (Balakrishnan, Petersen, & Soderstrom, 2004).

Conversely, the cost stickiness may arise from principal-agent conflicts between the manager and shareholders. Previous studies have found that managers generally prefer expansion for a multitude of motives, including higher compensation, greater decision-making power, and higher social and professional status (Jensen, 1986; Masulis et al., 2007; Hope & Thomas, 2008; Gantchev, Sevilir, & Shivdasani, 2020). This 'empire-building motive' may conflict with shareholders' interests because the managers may have incentives to increase the firm size beyond the optimal level. Thus, managers may retain slack resources during a decrease in sales, even if it is suboptimal to do so for the firm and its shareholders (Banker & Chen, 2006; Roychowdhury, 2006; Balakrishnan & Gruca, 2008; Cohen, Dey, & Lys, 2008; Diervnck, Landsman, & Renders, 2012; Kama & Weiss, 2013). Chen et al. (2012) found a positive relationship between the degree of cost stickiness and the manager's empire-building motive, as measured by free cash flow, the CEO's prospects, CEO tenure, and at-risk CEO compensation. Moreover, Kuang, Monhan, and Qin (2015) and Chen, Nasev, and Wu (2022) found a positive relationship between managerial overconfidence and the degree of cost stickiness. A stream of empirical and case studies also adds evidence that the agency factor contributes to cost stickiness (Banker & Chen, 2006; Roychowdhury, 2006; Balakrishnan & Gruca, 2008; Cohen et al., 2008; Dierynck, Landsman, & Renders, 2012; Kama & Weiss, 2013). Several studies also highlight that managers consider cost stickiness and management as strategies that appear less risky and problematic than

tax avoidance or excessive expenditures (Banker & Fang, 2022; Jeon & Ra, 2025). Habib and Costa (2022) define the degree of cost stickiness as the extent of deviation from efficient, optimal cost allocations. In sum, the degree of cost stickiness is influenced by both economic and agency factors (Balakrishnan et al., 2004; Chen et al., 2012) and is affected by managerial incentives, corporate governance mechanisms, and information asymmetry.

### *2.3 Hypothesis Development*

In this study, we document the relationship between the financial analysts' coverage and cost stickiness. To better predict earnings, financial analysts will closely monitor the cost-related behaviours of the companies they follow, as costs are among the most integral factors to earnings forecasts (Banker & Chen, 2006; Weiss, 2010). Given that cost stickiness includes the agency factor stemming from managers' empire-building motive, increased external monitoring from greater financial analysts' coverage may help discourage excessive resource retention and reduce the cost stickiness. Banker, Basu, Byzalov, and Chen (2016) also list information asymmetry and external monitoring as factors influencing a company's cost behaviours. In their monitoring role, analysts are expected to mitigate agency costs, leading to a negative relationship between the analyst following and the agency factor of cost stickiness.

However, analysts' short-term perspective may discourage managers from cutting necessary costs as they want to avoid sending negative signals (Lim, 2001; Hong & Kacperczyk, 2010). Additionally, if analysts have conflict of interest with the firms they follow due to various reasons, such as underwriting relationships (Dugar & Nathan, 1995; Lin & McNichols, 1998; Michaely & Womack, 1999; O'Brien et al., 2005), trading commissions (Cowen, Groysberg, & Healy, 2006; Jacob, Rock, & Weber, 2008), or other personal relationships with management (Francis & Philbrick, 1993; Das, Levine, & Sivaramakrishnan, 1998), the analyst's coverage may not effectively pressure the management and may instead aggravate the principal-agent conflict and corporate governance. Lee (2016) also shows that *chaebol*-affiliated financial analysts often face pressure from companies affiliated with the same group to issue positive opinions on them. Either the analyst's myopic focus or a conflict of interest may fail to discourage managers from maintaining slack resources, leading to increased cost stickiness.

To better examine the impact of analysts' various characteristics (monitoring role, short-term focus, and conflict of interest), we

introduce *chaebol*, a South Korean conglomerate. A *chaebol* is defined as a group of companies controlled by a single family in South Korea. According to Pae (2018), more than 27 per cent of business assets in South Korea belong to the top ten *chaebol* groups. *Chaebols* are a unique business structure, as in many cases the entire group is controlled by a few individuals from the same family (Khanna & Palepu, 2000; Guillen, 2000; Lim & Jung, 2012). According to a 2007 report by the Korea Institute of Finance, South Korea is the only country that allows nonfinancial companies to own financial institutions. As a result, many financial institutions, such as securities firms and stock brokerages, are directly affiliated with *chaebol* groups in South Korea.

This regulatory exception provides a natural quasi-experimental setting for our empirical design. Because analysts' group affiliations in South Korea do not arise from firm choice but from the country's unique ownership laws, analyst–firm affiliation is strongly shaped by exogenous institutional constraints rather than endogenous matching. Consequently, we can use the presence or absence of *chaebol*-affiliated analysts to isolate the effect of conflict of interest from analysts' general monitoring role or short-term focus. In other words, South Korea's unusual financial ownership laws enable us to separately identify how these conflicts influence corporate governance and cost stickiness.

To effectively separate the analyst's conflict of interest based on group affiliation, we divide financial analysts into four groups based on whether they belong to *chaebol*-affiliated financial institutions. We first classify cases based on whether the analyst is group-affiliated (GA) or non-group-affiliated (NGA), i.e., whether the analyst works at a group-affiliated financial institution, and whether the analyst tracks a group-affiliated firm (GF) or a non-group-affiliated firm (NGF). This results in the following four cases:

1. GAGF: Where a group-affiliated analyst follows a company in the same business group (e.g., an analyst of Samsung Securities follows Samsung Electronics Company)
2. GANGF: Where a group-affiliated analyst follows a company that does not belong to the same business group
3. NGAGF: Where an unaffiliated analyst follows a company in any group-affiliated company (e.g., an analyst of a securities firm that does not belong to any business group follows Hyundai Motor Company)
4. NGANGF: Where an unaffiliated analyst follows a company that does not belong to any business group.

By comparing the impact of these four different types of analyst coverage on cost stickiness, we construct two competing theories regarding the relationship between an analyst's group affiliation and cost stickiness. Particularly in GAGF cases, affiliated analysts have superior information on the member companies of the same business group—compared to unaffiliated analysts—following prior studies' evidence that the legally independent member companies within the same business group (*chaebol*) operate as a single unit under the control of the owner-manager (Chang & Hong, 2000; Baek, Kang, & Park, 2004). Affiliated analysts benefit from shared resources and information within the group. On the one hand, this may help the affiliated analyst better monitor and pressure the firm's cost behaviours from a long-term perspective. They are expected to be aware of the optimal extent of cost stickiness and of the degree of non-optimal cost stickiness resulting from managerial discretion. This theory predicts a negative relationship between GAGF analyst coverage and the degree of cost stickiness. However, in the other cases (GANGF, NGAGF, NGANGF), analysts do not have superior information in GAGF cases, and they would have weaker monitoring capabilities and be more inclined towards short-term orientation. Hence, in the other three cases, analyst coverage is expected to be positively or insignificantly related to cost stickiness.

However, in GAGF cases, affiliated analysts face a greater conflict of interest with the company affiliated with the same business group. Even though they are better informed, they have stronger incentives to issue positively biased forecasts and opinions about companies within the same *chaebol* group. Previous studies have shown similar results when analysts have underwriting relationships with firms (Dugar & Nathan, 1995; Lin & McNichols, 1998; Michaely & Womack, 1999; Dechow et al., 2000; O'Brien et al., 2005; Barber et al., 2007), trading commissions (Cowen et al., 2006; Jacob et al., 2008), or other personal relationships with management (Francis & Philbrick, 1993; Das et al., 1998; Lim, 2001). We also expect that analysts in *chaebol*-affiliated finance companies may face greater pressure from affiliated companies in the same group, as evidenced by a 2016 joint statement by thirty-two South Korean finance firms aimed at protecting analysts from pressure, to release only optimistic reports (Lee, 2016). Based on these circumstances, if the influence of conflict of interest outweighs the affiliated analysts' improved governing capacity from superior information, affiliated analysts are not expected to effectively or sufficiently monitor and influence the firm's cost behaviour and the extent of cost stickiness arising from managerial empire-building

incentive at shareholders' cost would not be reduced. In this case, compared to the other three cases, the group affiliation is likely to increase the agency factor in cost stickiness, which would be reflected in a stronger positive relationship between the number of affiliated analysts and the cost stickiness of companies affiliated with the same group (GAGF).

Based on these two competing theories, we propose our hypotheses in null form without explicit directional predictions. Nonetheless, we expect different results in the GAGF case from those in the other three cases.

*H1. The number of analysts following is not related to cost stickiness in GAGF cases, even after controlling for economic factors.*

*H2. The number of analysts following is not related to the cost stickiness for the other three (GANGF, NGAGF, and NGANGF) cases after controlling for economic factors.*

*H3. The relationship between the number of analysts following and cost stickiness for GAGF cases significantly differs from that for the other three cases.*

## 3. Research Model and Sample

Following Anderson et al. (2003) and Chen et al. (2012), we use the following time-series regression model to estimate cost stickiness:

$$\Delta Costs_{it} = \beta_0 + \beta_1 \Delta Sales_{it} + \beta_2 \Delta Sales_{it} * Dec_{it} + \epsilon_{it} \quad (1)$$

where

$\Delta Costs_{i,t}$: natural logarithm of change ($Costs_{i,t}/Costs_{i,t-1}$) in the cost elements of firm i in year t relative to year t–1.

$\Delta Sales_{i,t}$: natural logarithm of change ($Sales_{i,t}/Sales_{i,t-1}$) in the sales of firm *i* in year t relative to year t–1.

$Dec_{i,t}$: 1 if sales decrease ($Sales_{i,t}<Sales_{i,t-1}$) and zero otherwise.

We use selling, general, and administrative costs for the change in costs ($\Delta Costs_{i,t}$).

In equation (1), $\beta_1$ represents the change in costs for a change in sales, and because the costs are positively correlated with the sales, we expect a positive $\beta_1$. Because $Dec_{i,t}$ is an indicator variable of the sales decrease, $\beta_1$ captures cost increases in response to an increase in sales ($Dec_{i,t}$ = 0), whereas the sum of $\beta_1$ and $\beta_2$ captures cost decreases in response to a decrease in sales ($Dec_{i,t}$ = 1). Thus, $\beta_2$ indicates the degree of asymmetry in the change in the costs between a sales increase and a sales decrease, or the degree of cost stickiness.

Because we expect a smaller magnitude of change (decrease) in the costs for the sales decrease, compared to the change (increase) in the costs for the sales increase, we predict a negative $\beta_2$, consistent with prior research.

To this baseline cost stickiness equation (1), we add our main variable, the number of analysts forecasting firm *i*. Its interaction with $\Delta Sales_{it}{*}Dec_{it}$ is included in the main regression model. Furthermore, we add economic factors to focus on the agency factor of cost stickiness. Following Anderson et al. (2003) and Banker et al. (2014), we control for asset intensity, employee intensity, successive decrease in sales, and GDP growth.

First, the manager may determine that a smaller cost reduction is needed in response to a decrease in sales, given the adjustment costs. Adjustment costs are measured by asset intensity and employee intensity. Asset intensity is defined as the ratio of total assets to sales revenue, and employee intensity is the ratio of the number of employees to the natural logarithm of sales revenue. Second, a manager's pessimistic forecast of the future may also adversely affect the cost stickiness. This is measured by a successive decrease in the sales dummy variable and real GDP growth. The successive decrease variable equals one if the sales decrease in two consecutive fiscal years ($Sales_{i,t} > Sales_{i,t-1} > Sales_{i,t-2}$) and zero otherwise. All these variables represent economic incentives for the manager regarding the cost stickiness, and their interaction terms with $\Delta Sales_{it}{*}Dec_{it}$ are included in our regression model.

Additionally, year- and industry-fixed effects, according to the Korean Standard Industrial Classification, are included in the following regression model:

$$\begin{aligned} \Delta Costs_{it} = {} & \beta_0 + \beta_1 \Delta Sales_{it} + \beta_2 \Delta Sales_{it} * Dec_{it} + \beta_3 \Delta Sales_{it} * Dec_{it} \\ & * Analyst\ followings_{\ it} + \beta_4 \text{Asset Intensity}_{it} * Dec_{it} \\ & * Analyst\ followings_{\ it} + \beta_5 \text{Employee Intensity}_{it} * Dec_{it} \\ & * Analyst\ followings_{\ it} + \beta_6 \text{Successive Decrease}_{\ it} * Dec_{it} \\ & * Analyst\ followings_{\ it} + \beta_7 \text{GDP Growth}_{it} * Dec_{it} \\ & * Analyst\ followings_{\ it} + \sum Year\ fixed\ effect \\ & + \sum Industry\ fixed\ effect + \epsilon_{it} \end{aligned} \quad (2)$$

Furthermore, we include the interaction terms of GAGF, GANGF, NGAGF, and NGANGF with $\Delta Sales_{it}{*}Dec_{it}$, rather than with the total number of analyst followings, in the regression equation (2). GAGF is defined as the number of *chaebol*-affiliated analysts who forecast

the company *i* when the firm *i* belongs to the same business group. Likewise, GANGF is the number of *chaebol*-affiliated analysts who forecast the company *i* when the firm *i* does not belong to the same business group, NGAGF is the number of unaffiliated analysts who forecast the company *i* when the firm *i* belongs to any business group (*chaebol*), and NGANGF is the number of unaffiliated analysts who forecast the company *i* when the firm *i* does not belong to any business group.

We use the DataguidePro database, which includes financial and accounting data, including the analyst coverage, of companies listed on the South Korean stock exchanges, the Korean Stock Exchange (KSE), and the Korean Securities Dealers Automated Quotation (KOSDAQ) markets. The financial industry is excluded. Using the 2002-2017 sample period, we perform an empirical analysis of 9,724 firm-year observations.

Table 1 shows the sample selection process. Out of 51,760 observations from 2002 to 2017, we subtract 3,799 observations of financial companies (Korean Standard Industrial Classification Code with 'K'), 24,002 observations without data for the variables used in our regression model, and 14,235 observations without data for the analyst followings. Thus, our final sample includes 9,724 observations.

**Table 1: Sample selection process**

| Sample Selection Process | Number of firm-year observations |
|---|---|
| All firm-year observations in the FnDataguide Pro database for companies listed in the Korean Stock Exchange (KSE) and the Korean Securities Dealers Automated Quotation (KOSDAQ) for the period from 2002 to 2017 | 51,760 |
| Less: financial companies (Korean Standard Industrial Classification Code with "K") | (3,799) |
| Less: Firm-year observations without information in obtaining variables used in our main regression model (Δ*Cost*, Δ*Sale*, *Asset Intensity*, *Employ Intensity*, *Successive Decrease*, and *GDP Growth*) | (24,002) |
| Less: Firm-year observations without information about analyst followings | (14,235) |
| Final sample | 9,724 |

Table 2 illustrates the distribution of our sample by year and industry. Panel A shows an even distribution of our sample across years, whereas Panel B indicates that more than half (63.69 per cent) of our observations are concentrated in the manufacturing industry.

**Table 2: Distribution**

**Panel A: Distribution by Fiscal Year**

| Year | Frequency | Per centage |
|---|---|---|
| 2002 | 607 | 6.24 |
| 2003 | 494 | 5.08 |
| 2004 | 482 | 4.96 |
| 2005 | 597 | 6.14 |
| 2006 | 634 | 6.52 |
| 2007 | 665 | 6.84 |
| 2008 | 609 | 6.26 |
| 2009 | 691 | 7.11 |
| 2010 | 714 | 7.34 |
| 2011 | 534 | 5.49 |
| 2012 | 379 | 3.90 |
| 2013 | 592 | 6.09 |
| 2014 | 713 | 7.33 |
| 2015 | 821 | 8.44 |
| 2016 | 752 | 7.73 |
| 2017 | 440 | 4.52 |
| Total | 9,724 | 100 |

**Panel B: Distribution by Industry**

| Korean Standard Industrial Classification Code (KIC Code) | Frequency | Per centage |
|---|---|---|
| Construction | 339 | 3.49 |
| Mining industry | 2 | 0.02 |
| Education service industry | 68 | 0.70 |
| Agriculture, forestry, and fisheries | 38 | 0.39 |
| Wholesale and retail | 694 | 7.14 |
| Real estate and leasing industry | 3 | 0.03 |
| Business facilities management and business support Service | 84 | 0.86 |
| Lodging and restaurant business | 31 | 0.32 |
| Arts, sports, and leisure-related services | 61 | 0.63 |
| Transportation industry | 170 | 1.75 |
| Electricity, gas, steam, and waterworks | 104 | 1.07 |
| Professional, scientific, and technical service | 770 | 7.92 |

| Korean Standard Industrial Classification Code (KIC Code) | Frequency | Per centage |
|---|---|---|
| Manufacturing industry | 6,189 | 63.69 |
| Publication, video, broadcasting, and communication services | 1,124 | 11.57 |
| Sewage and waste disposal, raw material regeneration, and environmental restoration work | 24 | 0.25 |
| Associations and organisations, repairs, and other personal services | 23 | 0.16 |
| Total | 9,724 | 100 |

## 4. Results

Table 3 presents descriptive statistics of the variables in our analysis. On average, sales increased by 10.2 per cent whereas costs increased by 13 per cent annually during the sample period. Of 9,724 observations, about 27.8 per cent experienced a decrease in sales, as shown by the average in *Dec* (decreased sales dummy variable). For each observation, there were about seven analyst followings on average (7.016), whereas the median observation had three analyst followings. We also observe that the mean of the analyst followings (7.016) equals the sum of the averages of GAGF, GANGF, NGAGF, and NGANGF (0.044, 1.312, 3.434, and 2.227, respectively).

**Table 3: Descriptive Statistics**

| Variable | N | Mean | Median | S.D. | Q1 | Q3 |
|---|---|---|---|---|---|---|
| Δ*Cost* | 9,724 | 0.130 | 0.103 | 0.328 | 0.009 | 0.228 |
| Δ*Sales* | 9,724 | 0.102 | 0.087 | 0.347 | -0.016 | 0.215 |
| *Dec* | 9,724 | 0.278 | 0.000 | 0.448 | 0.000 | 1.000 |
| *Analyst Followings* | 9,724 | 7.016 | 3.000 | 8.274 | 1.000 | 9.000 |
| *GAGF* | 9,724 | 0.044 | 0.000 | 0.265 | 0.000 | 0.000 |
| *GANGF* | 9,724 | 1.312 | 0.000 | 3.647 | 0.000 | 0.000 |
| *NGAGF* | 9,724 | 3.434 | 1.000 | 4.398 | 1.000 | 5.000 |
| *NGANGF* | 9,724 | 2.227 | 1.000 | 3.265 | 0.000 | 3.000 |
| *Asset Intensity* | 9,724 | 1.410 | 1.132 | 1.583 | 0.824 | 1.567 |
| *Employ Intensity* | 9,724 | 69.178 | 18.402 | 220.635 | 9.107 | 45.143 |
| *Successive Decrease* | 9,724 | 0.239 | 0.000 | 0.427 | 0.000 | 0.000 |
| *GDP Growth* | 9,724 | 0.071 | 0.080 | 0.091 | 0.020 | 0.130 |

Note: This table reports the descriptive statistics of the dependent and independent variables in the final sample of 9,724 firm-year observations. The mean, median, standard deviation, 25th percentile, and 75th percentile values are presented.

**Table 4: Pearson (above triangle) and Spearman (below triangle) correlation matrix**

| | Variables ($N$ = 9,724) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | Δ*Cost* | 1 | 0.600 | -0.291 | -0.008 | -0.026 | -0.048 | 0.000 | 0.035 | -0.183 | -0.040 | -0.063 | 0.039 |
| | | | (0.000) | (0.000) | (0.404) | (0.011) | (0.000) | (0.989) | (0.001) | (0.000) | (0.000) | (0.000) | (0.000) |
| (2) | Δ*Sales* | 0.529 | 1 | -0.560 | 0.003 | -0.018 | -0.028 | 0.008 | 0.031 | -0.311 | -0.021 | -0.023 | 0.029 |
| | | (0.000) | | (0.000) | (0.744) | (0.084) | (0.005) | (0.430) | (0.002) | (0.000) | (0.037) | (0.024) | (0.004) |
| (3) | *Dec* | -0.364 | -0.776 | 1 | -0.049 | -0.002 | -0.004 | -0.049 | -0.054 | 0.124 | -0.024 | 0.123 | -0.041 |
| | | (0.000) | (0.000) | | (0.000) | (0.874) | (0.680) | (0.000) | (0.000) | (0.000) | (0.020) | (0.000) | (0.000) |
| (4) | *Analyst Followings* | 0.019 | 0.039 | -0.057 | 1 | 0.332 | 0.696 | 0.948 | 0.453 | -0.031 | 0.502 | -0.060 | 0.054 |
| | | (0.057) | (0.000) | (0.000) | | (0.000) | (0.000) | (0.000) | (0.000) | (0.002) | (0.000) | (0.000) | (0.000) |
| (5) | *GAGF* | -0.032 | -0.026 | -0.003 | 0.246 | 1 | 0.435 | 0.287 | -0.112 | -0.028 | 0.303 | -0.015 | 0.020 |
| | | (0.002) | (0.011) | (0.753) | (0.000) | | (0.000) | (0.000) | (0.000) | (0.005) | (0.000) | (0.138) | (0.044) |
| (6) | *GANGF* | -0.078 | -0.045 | -0.003 | 0.446 | 0.416 | 1 | 0.637 | -0.245 | -0.036 | 0.558 | -0.010 | -0.007 |
| | | (0.000) | (0.000) | (0.776) | (0.000) | (0.000) | | (0.000) | (0.000) | (0.000) | (0.000) | (0.305) | (0.497) |
| (7) | *NGAGF* | 0.024 | 0.032 | -0.043 | 0.845 | 0.236 | 0.421 | 1 | 0.320 | -0.032 | 0.440 | -0.067 | 0.067 |
| | | (0.019) | (0.002) | (0.000) | (0.000) | (0.000) | (0.000) | | (0.000) | (0.002) | (0.000) | (0.000) | (0.000) |
| (8) | *NGANGF* | 0.084 | 0.076 | -0.047 | 0.364 | -0.216 | -0.529 | 0.062 | 1 | 0.007 | 0.032 | -0.050 | 0.053 |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | (0.515) | (0.002) | (0.000) | (0.000) |
| (9) | *Asset Intensity* | -0.063 | -0.166 | 0.150 | -0.033 | -0.029 | -0.032 | -0.031 | 0.000 | 1 | -0.025 | 0.075 | -0.037 |
| | | (0.000) | (0.000) | (0.000) | (0.001) | (0.004) | (0.002) | (0.002) | (0.997) | | (0.014) | (0.000) | (0.000) |
| (10) | *Employ intensity* | -0.119 | -0.049 | -0.049 | 0.491 | 0.236 | 0.447 | 0.422 | -0.017 | -0.153 | 1 | -0.016 | -0.002 |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.090) | (0.000) | | (0.118) | (0.822) |
| (11) | *Successive Decrease* | -0.108 | -0.082 | 0.123 | -0.068 | -0.010 | -0.002 | -0.065 | -0.045 | 0.106 | -0.040 | 1 | 0.043 |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.338) | (0.846) | (0.000) | (0.000) | (0.000) | (0.000) | | (0.000) |
| (12) | *GDP Growth* | 0.080 | 0.074 | -0.051 | 0.069 | 0.007 | -0.026 | 0.100 | 0.044 | -0.080 | 0.002 | 0.027 | 1 |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.481) | (0.011) | (0.000) | (0.000) | (0.000) | (0.878) | 0.0073 | |

Note: This table reports the Pearson (upper-triangle) and Spearman (lower-left triangle) correlation coefficients among the dependent and independent variables. The numbers in parentheses represent the p-values of the main regression results.

Table 4 reports the Pearson and Spearman correlation coefficients between our variables. We observe significant positive correlations between Δ*Sales* and Δ*Cost* (0.600 and 0.529), consistent with our expectation.

Table 5 reports the regression results for equation (1) for the first hypothesis. The first column displays the regression results without the four control variables of the economic factor of cost stickiness, whereas the second column shows the results including these control variables. Column (3) presents the coefficient of our main variable, the interaction of Δ*Sales*Dec*Analyst followings*. In all three columns, we observe a significant positive coefficient of Δ*Sales* and a significantly negative coefficient of Δ*Sales*Dec*. Thus, all three columns indicate that cost stickiness exists. Specifically, the coefficient of Δ*Sales*Dec* in the fully specified model (3) is –0.192 ($t = -2.79$, $p < 0.01$), indicating that when sales decrease, costs drop by 19.2 per cent less than when sales increase.

When we focus on the coefficient of Δ*Sales*Dec*Analyst followings* in the third column, we can observe a significantly positive value of 0.006 ($t = 1.74$, $p < 0.10$). This means that greater analyst coverage is associated with a smaller degree of cost stickiness. For example, a firm with a median of three (3.000 from Table 3) analyst followings would show a $0.006 \times 3 = 0.018$ less degree of cost stickiness ($-0.192 + 0.018 = -0.174$) compared to a firm with zero analyst coverage, which is translated as a 9.4 per cent reduction (0.018/0.192) in the cost stickiness. This finding demonstrates that the analyst following plays a significant role in mitigating the agency factor of cost stickiness. In other words, it implies that firms tracked by more analysts may incur lower agency costs because analysts monitor management more closely and provide more information to outside investors, thereby improving corporate governance. Overall, our result is consistent with the analysts' monitoring role.

**Table 5: Effect of Analyst Followings on Cost Stickiness**

| | Dependent variable = Δ*Cost* | | |
|---|---|---|---|
| Independent Variable | (1) | (2) | (3) |
| *Intercept* | 0.147 ** | 0.147 *** | 0.147 *** |
| | (2.22) | (13.21) | (13.09) |
| Δ*Sales* | 0.591 *** | 0.601 *** | 0.603 *** |
| | (51.16) | (16.98) | (17.00) |
| Δ*Sales*Dec* | -0.063 *** | -0.145 ** | -0.192 *** |
| | (-3.32) | (-2.00) | (-2.68) |
| Δ*Sales*Dec*Analyst Followings* | | | 0.006 * |
| | | | (1.74) |
| *Interaction terms:(ΔSales*Dec*Control variable)* | | | |
| *Asset Intensity* | | 0.007 *** | 0.005 ** |
| | | (2.83) | (2.21) |
| *Employ Intensity* | | 0.001 ** | 0.000 |
| | | (2.28) | (1.31) |
| *Successive Decrease* | | -0.117 * | -0.081 |
| | | (-1.79) | (-1.18) |
| *GDP Growth* | | 0.035 | 0.017 |
| | | (0.10) | (0.05) |
| Year-fixed Effect | Yes | Yes | Yes |
| Industry-fixed Effect | Yes | Yes | Yes |
| $R^2$ | 0.378 | 0.383 | 0.385 |
| F-value | [79.35] *** | [47.86] *** | [46.65] *** |
| N | 9,724 | 9,724 | 9,724 |

Note: This table reports the regression results of the association between cost stickiness and analyst followings. The t-statistics are reported in parentheses, and the F-values are in square brackets. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

In Table 6, we divide the analyst followings into four cases based on the analyst's group affiliation and the company they follow. This table relates to our main analysis of the impact of affiliated and unaffiliated analysts on cost stickiness. The coefficients for Δ*Sales* and Δ*Sales*Dec* are significantly positive (0.604, t = 17.19) and negative (–0.185, t = –2.63, p < 0.01), respectively, providing empirical evidence of cost stickiness. The coefficient of Δ*Sales*Dec*GAGF* is significantly negative (–0.180, t = –1.69, p < 0.10), implying that for the GAGF case, the affiliated analyst's coverage enlarges the cost stickiness from

–0.185 to –0.365 (–0.185 + (–0.180)), which is a 97.3 per cent increase. This is contrary to the results in Table 5. Combined, the total number of analyst followings is negatively related to cost stickiness, but when a group-affiliated analyst forecasts a firm in the same business group (GAGF), the number of affiliated analysts is positively related to cost stickiness. This finding indicates that analysts generally mitigate the agency cost and the agency factor of cost stickiness, whereas affiliated analysts do not play a monitoring role but rather exacerbate the agency cost and corporate governance of the same-group-affiliated company, as shown by the increased agency factor of the cost stickiness in Table 6.

Nonetheless, the coefficient of Δ*Sales*Dec*GANGF* is significantly positive (0.059, $t = 2.25$, $p < 0.05$). Specifically, when the affiliated analyst tracks and forecasts a firm unaffliated to the same business group, the number of analyst followings is negatively associated with cost stickiness. Compared to the degree of cost stickiness without analysts (–0.185), an affiliated analyst covering an unaffiliated firm (GANGF) reduces cost stickiness by 31.9 per cent to –0.126 (–0.185 + 0.059). This finding implies that the analyst's monitoring role mitigates the agency factor of cost stickiness when free from conflicts of interest. In other words, the analyst's effectiveness in a monitoring role is conditional on their institutional independence.

While Table 5 confirms the general monitoring role of analysts, Table 6 shows that this role is particularly evident in the absence of a direct conflict (GANGF). Table 6 further shows that affiliated analysts may worsen agency costs rather than play an external monitoring role when they cover the same-group firm (GAGF). This reversal can be explained by the unique nature of the South Korean chaebol structure, in which the ultimate control lies with a single family that views the entire group as a single entity. Often, the family has goals that differ from the interests of minority shareholders in each subsidiary. The GAGF analyst's primary allegiance is to the *chaebol* group's controlling family, who employs them, not to the external shareholders of their coverage firm. This structure makes the analyst's incentive to support the controlling family's opportunistic interests outweigh their monitoring role in favour of external shareholders. The increase in cost stickiness for GAGF cases may facilitate the retention of slack resources, which can be used to fund related-party transactions or support other group companies, at the expense of minority shareholders. We use South Korea's legal structure, which permits vertical integration of financial and nonfinancial entities, as an exogenous factor that strengthens our regression analysis and interpretation. In summary, the conflict of interest disincentivises the

analyst from the monitoring role and instead incentivises supporting the controlling owner and family, as demonstrated in Table 6.

**Table 6: Effect of Affiliated Analyst on Cost Stickiness**

| **Variables** | **Dependent variable = Δ*Cost*** |
|---|---|
| *Intercept* | 0.151 *** |
| | (13.03) |
| Δ*Sales* | 0.604 *** |
| | (17.19) |
| Δ*Sales*Dec* | -0.185 *** |
| | (-2.63) |
| Δ*Sales*Dec*GAGF* | -0.180 * |
| | (-1.69) |
| Δ*Sales*Dec*NGAGF* | -0.010 |
| | (-0.77) |
| Δ*Sales*Dec*GANGF* | 0.059 ** |
| | (2.25) |
| Δ*Sales*Dec*NGANGF* | 0.014 |
| | (1.10) |
| *Interaction Terms: (ΔSales*Dec*Control variable)* | |
| *Asset Intensity* | 0.008 *** |
| | (3.04) |
| *Employ Intensity* | 0.000 |
| | (-0.44) |
| *Successive Decrease* | -0.112 |
| | (-1.64) |
| *GDP Growth* | 0.016 |
| | (0.05) |
| Year-fixed effect | Yes |
| Industry-fixed effect | Yes |
| $R^2$ | 0.388 |
| F-value | [46.77] *** |
| N | 9,724 |

Note: This table reports the regression results of the association between cost stickiness and analysts' chaebol affiliation. The t-statistics are reported in parentheses, and the F-values are in square brackets. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

As an additional analysis, we further examine the impact of affiliated analysts on the cost stickiness associated with the CEO power. Table 6 shows a positive relationship between group-affiliated analyst followings and the cost stickiness of a firm within the same business group. This result seems related to the conflict-of-interest hypothesis, and the affiliated analyst may have incentives to issue positive opinions on the group member firm and maintain a good relationship with its manager. This incentive will be even greater if the forecasted company's managerial power is stronger. Therefore, we performed regression analysis across two subsamples based on the level of the CEO's power. We measure the CEO power by free cash flow (FCF), consistent with Jensen (1986), Richardson (2006), and Masulis et al. (2007). Jensen (1986) argued that greater amounts of free cash flow enable managers to spend more than the optimal level for their empire-building purposes. Accordingly, we divide our sample into high- and low-FCF subsamples, based on the median FCF value.

Table 7 presents the results of this subsample analysis. The coefficient of $\Delta Sales*Dec*GANGF$ is significantly negative in the first column (high-FCF subsample) but insignificantly positive in the second column (low-FCF subsample). This indicates a positive association between affiliated analyst followings and cost stickiness of the same-group-affiliated firm when the CEO's power, measured by FCF, is stronger, although this significant positive relationship disappears when the CEO's power is weaker. This result also supports the conflict-of-interest hypothesis for the affiliated analysts forecasting the affiliated firm in the same group and strengthens our interpretations of the results in Table 6.

**Table 7: Effect of Free Cash Flow on the Relationship Between the Analyst's Group Affiliation and Cost Stickiness**

| | **Dependent variable = $\Delta Cost$** | |
|---|---|---|
| **Independent Variable** | ***High free cash flow*** | ***Low free cash flow*** |
| *Intercept* | 0.118 *** | 0.075 ** |
| | (7.53) | (2.00) |
| $\Delta Sales$ | 0.761 *** | 0.474 *** |
| | (12.66) | (14.38) |
| $\Delta Sales*Dec$ | -0.088 | -0.107 |
| | (-0.64) | (-1.42) |
| $\Delta Sales*Dec*GAGF$ | -0.273 *** | 0.332 |
| | (-3.10) | (0.97) |

| Independent Variable | Dependent variable = Δ*Cost* | |
|---|---|---|
| | *High free cash flow* | *Low free cash flow* |
| Δ*Sales*Dec*NGAGF* | -0.002 | -0.027 |
| | (-0.17) | (-1.20) |
| Δ*Sales*Dec*GANGF* | 0.035 | 0.080 |
| | (1.50) | (1.57) |
| Δ*Sales*Dec*NGANGF* | -0.007 | 0.032 |
| | (-0.65) | (1.32) |
| *Interaction terms: (ΔSales*Dec*Control variable)* | | |
| *Asset Intensity* | 0.006 ** | 0.003 |
| | (2.48) | (1.11) |
| *Employ intensity* | 0.000 | 0.000 |
| | (-0.96) | (0.18) |
| *Successive Decrease* | -0.090 | -0.047 |
| | (-0.85) | (-0.59) |
| *GDP Growth* | -0.370 | -0.200 |
| | (-0.64) | (-0.54) |
| Year-fixed Effect | Yes | Yes |
| Industry-fixed Effect | Yes | Yes |
| $R^2$ | 0.513 | 0.293 |
| F-value | [39.11] *** | [67.53] *** |
| N | 4,862 | 4,862 |

Note: This table reports the regression results of the impact of free cash flow on the association between cost stickiness and chaebol affiliation. The t-statistics are reported in parentheses, and the F-values are in square brackets. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Our results consistently imply the existence of cost stickiness, the financial analysts' monitoring role in the absence of conflict of interest, and affiliated analysts' adverse effect on corporate governance due to the conflicting interest dominating the monitoring role. However, there is also the possibility that unobservable time-invariant firm-specific characteristics, such as cost management policies or corporate culture, might simultaneously drive both cost stickiness and analyst coverage decisions, creating bias in our results. To mitigate concerns that analyst coverage is endogenously determined by firms' cost behaviour or unobserved time-invariant firm characteristics, we provide a robustness test in Table 8 by re-

estimating equation (2) utilising firm fixed effects and lagged analyst coverage variables ($GAGF_{t-1}$, $NGAGF_{t-1}$, $GANGF_{t-1}$, and $NGANGF_{t-1}$). Table 8 shows a significantly negative coefficient of $\Delta Sales*Dec*Lag\_GAGF$ of –0.136 (t = –2.83, p < 0.01), which remains qualitatively unchanged. This finding suggests that our results are robust to endogeneity concerns and our inferences are not driven by reverse causality or omitted time-invariant firm heterogeneity.

**Table 8: Endogeneity Test (Firm fixed effects and lagged analyst coverage)**

| **Variables** | **Dependent variable = ΔCost** |
|---|---|
| *Intercept* | -0.034 *** |
| | (-4.04) |
| Δ*Sale* | 0.593 *** |
| | (9.52) |
| Δ*Sale*Dec* | -0.031 |
| | (-0.26) |
| Δ*Sale*Dec*Lag_GAGF* | -0.136 *** |
| | (-2.83) |
| Δ*Sale*Dec*Lag_NGAGF* | 0.048 |
| | (0.93) |
| Δ*Sale*Dec*Lag_GANGF* | -0.006 |
| | (-0.59) |
| Δ*Sale*Dec*Lag_NGANGF* | 0.003 |
| | (0.25) |
| *Interaction terms:(ΔSale*Dec*Control variable)* | |
| *Asset Intensity* | 0.006 * |
| | (1.91) |
| *Employ Intensity* | 0.000 |
| | (-1.27) |
| *Successive Decrease* | -0.182 ** |
| | (-2.20) |
| *GDP Growth* | 0.102 |
| | (0.26) |
| Year-fixed effect | Yes |
| **Firm-fixed effect** | Yes |
| $R^2$ | 0.397 |
| F-value | [46.95] *** |
| N | 6,826 |

Note: This table reports the regression results of the association between cost stickiness and the previous year's analysts' chaebol affiliations with firm fixed effects. The t-statistics are reported in parentheses, and the F-values are in square brackets. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

## 5. Conclusion

We find that the number of analyst followings is negatively associated with the degree of cost stickiness. When analysts monitor management closely, provide more information to outside investors, influence managerial decisions and firm behaviour to enhance firm value and shareholder returns, thereby improving corporate governance, firms will have reduced agency costs. If group-affiliated analysts follow the firm within the same business group (GAGF), the firm's cost stickiness is commensurate with the number of affiliated analysts. In general, analysts mitigate agency costs and the agency factor of cost stickiness. However, the affiliated analysts aggravate agency costs and corporate governance within the same-group-affiliated company, increasing the agency factor in cost stickiness, rather than fulfilling their monitoring role. When affiliated analysts follow a firm that does not belong to the same business group, the number of analyst followings is negatively associated with cost stickiness. Our results support the conflict-of-interest theory when group-affiliated analysts follow the affiliated firm in the same group and support the monitoring role theory in the other cases. Our examination of the impact of affiliated analysts on the cost stickiness associated with the CEO power also supports the conflict-of-interest hypothesis when affiliated analysts forecast for affiliated firms in the same group. Our analysis can reinforce the argument that the cost stickiness may indicate agency costs, and additional results support the conflict-of-interest hypothesis.

Beyond academic contributions, our findings also hold practical implications for regulators and capital market participants. Given the affiliated analysts' exacerbating effect on corporate governance and minority shareholders, regulators may impose additional restrictions on the legal exemption that allows nonfinancial companies to own financial institutions and require greater disclosure of the group affiliations of financial analysts. The corporation's board of directors should also be aware that the GAGF firms may face significant stock market discounts due to a lack of a governance system that protects external investors' interests against those of the controlling family. The board may consider several mechanisms to increase board independence and enhance transparency in corporate policies, including cost management.

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