

# **The Difference Between Conditional and Unconditional Insider Silence Effect: Evidence from China**

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## **Abstract**

When the litigation risk is higher, future stock returns are significantly lower following unconditional insider silence (no trade behavior during the last year) than following insider sales [5]. Specifically, Hong and Li [7] define the silence that routine-based insiders strategically choose as conditional insider silence and find that conditional insider silence following routine sell (buy) results in positive (negative) future return. In this paper, we examine whether there are different between the conditional and unconditional insider silence effects in the Chinese stock market. We find that the unconditional insider silence effect is greater than the conditional insider silence effect. Moreover, the firm would have positive abnormal compensation after quarterly earnings announcement under unconditional insider silence. We do not have enough evidence to support that the conditional (unconditional) insider silence effect is larger for companies with good corporate governance than for companies with poor corporate governance. Empirical results show that there are no significant difference between CEO and non-CEO's conditional and unconditional insider silence effects.

**JEL classification numbers:** G11, G14, G34.

**Keywords:** Insider silence, Earnings announcement, Corporate governance, CEO.

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## **1. Introduction**

Insider trading has always been a major concern for academics, media and regulators. Because corporate insiders have more undisclosed information, they can use this information to get excess return, and allow them to avoid losses from bad news about the company that could result in the stock price to drop. Seyhun [14] documents that insider purchase predicts a positive future company's stock return, while insider sale predicts a negative return. Fidrmuc et al. [4] suggest that insider purchase sends positive signals to the market and insider sale sends negative signals to the market. These papers suggest that corporate insider trading does provide a different message to the market.

Pervious literatures show that corporate insider trading can bring different kind of trading signal to the market. Nevertheless, when corporate insiders don't trade, it also send a signal to the market. Gao et al. [5] suggest that under the unconditional insider silence, rational insiders do not sell own-company stock in anticipation of bad news in order to avoid the risk of litigation. Meanwhile, because of the poor prospects, they are reluctant to buy. Thus, they remain silent. In addition, future stock returns are significantly lower following unconditional insider silence than following insider sales. In sum, insider silence is bad news. Hong and Li [7] suggest that if corporate insider buys (sells) in the same month for two consecutive years and does not trade (i.e. conditional insider silence) in the same month in the third year, they predict the future negative (positive) returns of the company. Conditional insider silence can also effectively predict the company's future fundamentals. In addition, in companies with poorer information environment and higher arbitrage costs, conditional insider silence has higher predictability of returns.

Although Gao et al. [5] and Hong and Li [7] both investigate the effect of insider silence of all insiders, there are different insider effects even in the same market because they measure insider silence differently. According to Hong and Li [7], if a corporate insider buys in the same month for two consecutive years and does not trade in the same month in the third year, this insider is classified as a conditional insider silence, which is expressed as PPN (Purchase-Purchase-No Purchase); if a corporate insider sells in the same month for two consecutive years and does not trade in the same month in the third year, this insider is classified as a conditional insider silence, which is expressed as SSN (Sell- Sell -No Sell). According to Gao et al. [5], if a corporate insider does not trade in past 6 month, this insider is classified as unconditional insider silence. Since the measurement method of conditional insider silence takes longer time, it is more informative than the unconditional insider silence. Thus, the effect of conditional insider silence should be greater. In this paper, we use Chinese market as a sample, and according to the data of World Bank, China's economic growth has been positive from 2006 to 2019. In order to facilitate the comparison of the difference between the conditional and unconditional insider silence effects, we focus on the insider silencing of SSN in the conditional insider silence. In this paper, we divide insider silence into conditional and unconditional ones and explore whether there are a different

between conditional and unconditional insider silence. Moreover, we explore which type of insider silence has the greater effect.

In order to provide investors with a better understanding of the company's operations and earnings, the company will make regular earnings announcements. Sivakumar and Waymire [15] indicates that a substantial number of insider buy (sell) occurs after the release of unfavorable (favorable) earnings news, which suggests that insider trading include undisclosed information in the earnings announcement. Nonetheless, when insiders are silent and don't trade, they can also get an alternative trading signal. Hong and Li [7] suggest that under the conditional insider silence, there is negative abnormal return after quarterly earnings announcement, indicating that corporate insider silence can be a trading signal in the market. This paper examines whether there is abnormal return after the company's quarterly earnings announcement under the unconditional insider silence.

The effect of insider silence may be different owing to different characteristics of the company and position of insiders. The lack of corporate governance is common in emerging markets. In the absence of monitoring, shareholders can take advantage of the information they possess to engage in insider trading to get excessive return. After the passage of the Sarbanes-Oxley Act, companies around the world began to focus on corporate governance issues. Rozanov [13] documents that good corporate governance reduces insider trading. Dai et al. [2] indicate that good corporate governance significantly reduces the profitability of insider sales because high legal risks are accompanied with insider sales. Hodgson et al. [6] suggest that a company with better corporate governance will have stricter insider trading regulations, which can reduce the profitability of insider trading and restrict insider trading. In this paper, we explore whether the insider silence effect for firms with better corporate governance is greater than those with worse corporate governance.

Although corporate insider have superior information about the company, not every insider has the same information advantage. Insider hierarchy hypothesis suggests that senior managers of a company have more information than basic managers. Chen [1] finds that CEO's insider trading has the best ability to predict future stock price profitability. To compare the difference in information content between the different positions, we divide the insiders into CEO and non-CEO and compares the different between the insider silence effects of the CEO and non-CEO. This paper examines whether the insider silence effect for CEOs is greater than for non-CEO's. Previous studies examine the information content of insider silence in the U.S. market. Since the rapid economic growth of China in recent decades and the gradual opening to foreign investors have made the China's economic status increase year by year, which has attracted more and more scholars to conduct research on the Chinese stock market. Therefore, we choose the Chinese market as a research sample to complement previous studies.

The remainder of the paper is organized as follows. In Section 2, we review the existing literatures and hypothesis. Section 3 describes the study sample and methodology. Section 4 discusses the empirical results. Section 5 presents the conclusion and research suggestion.

## 2. Literature Review and Hypotheses

The issue about transaction of corporate insider are always attract many academicians, but little attention has been paid to insider silence, i.e. insider does not trade. Gao et al. [5] suggest that the negative return following the unconditional insider silence is greater than net insider sales. Owing to avoid the risk of litigation, corporate insider will keep silence before significant bad news announcements. If investors use insider-silence based investment portfolio, they can get an excess return of approximately 7.36% per year. Hong and Li [7] propose that according to conditional insider silence, a long-short strategy that exploits the strategic silent behavior of insiders can generate abnormal returns of 6% to 10% annually.

Because insider silence can be measured in different ways, we examine whether there will be different returns according to different insider-silence based trading strategies. Since conditional insider silence contains longer-horizon information, we infer that returns based on trading strategy of conditional insider silence are higher than those of unconditional insider silence. Therefore, hypothesis 1 is established as follows:

**Hypothesis 1:** The effect of conditional insider silence is greater than that of unconditional insider silence.

Hong and Li [7] indicate that if there were insider silence in the previous quarter, there would be significant positive abnormal return around three days following earnings announcement in the subsequent quarter, since the opportunistic insider can get abnormal return by conditional insider silence. We infer that such abnormal return may also occur in the case of unconditional insider silence, which leads to our second hypothesis.

**Hypothesis 2:** Following the unconditional insider silence, there is a positive abnormal return after quarterly earnings announcements.

Jeng et al. [10] indicate that corporate insider's trading result in the abnormal return. Specifically, insider purchases cause profits up to 6% annually. Nevertheless, after the passage of the Sarbanes-Oxley Act in 2002, governments began to focus on the mechanism of internal corporate governance. Rozanov [13] proposes that better governance, which result in closer supervision of managers decrease opportunistic insider trading. Jagolinzer et al. [9] find that when corporate insider trading require approval of General counsel to execute, the return of insider transaction and the ability of insider transaction to predict future operational performance will decrease. Dai et al. [2] propose that better degree of corporate governance is associated with lower rate of profitability of corporate insider trading, implying that insider silence is more likely to occur in companies with better corporate governance. Accordingly, we propose our third hypothesis. Hodgson et al. [6] suggest that stronger governance will lead to a stricter insider trading policy. Although insider trading

volumes do not decrease, the profitability of insider trading would be lower. Accordingly, we propose our third hypothesis.

**Hypothesis 3:** The insider silence effects for firms with better corporate governance are greater than those with worse corporate governance.

Lin and Howe [11] find that the returns following the insider transactions related to the company's operations are greater than those following large shareholders not related to the company's operations. Chen [1] shows that the performance for predicting future stock price following CEO's insider trading is best among all insiders. It indicates that higher abnormal return can be achieved by trading with insiders who are closely associated with the company's operations. Thus, the insider silence effects for insiders (senior executives/managers) who are closely related to the operation of the company appear should be greater than those for other insiders. Therefore, we formulate our fourth hypothesis.

**Hypothesis 4:** The insider silence effect of CEO is greater than that of non-CEO.

### **3. Data and Methodology**

#### **3.1 Sample Select**

We obtain the data of this paper from CSMAR (China Stock Market & Accounting Research Database). The sample period is from January 2006 to December 2019. Market return is from the aggregated monthly market return of China's A/B share in CSMAR. Individual stock return come from individual stock trading database in CSMAR. Company and insider data are derived from CSMAR's document on changes in shareholdings of directors, supervisors and related personnel, which include numbers of shareholding change, average transaction price, reason for change, percentage of shareholding change. The data of corporate governance is acquired from CSMAR's general information on corporate governance, which includes the situation of general manager to serve as chairman, number of directors, number of independent directors, number of supervisors, number executive, number of shares held by board, number of shares held by board of supervisors, number of shares held by executive, number of shares held by manager level. According to the degree of corporate governance, the firms are divided into better-governed and poor-governed. The companies with missing individual stock return and companies with missing control variables are removed from the data. After the removal of observations with missing data, we obtain 381,458 firm- months observations within 3,818 firms as the sample.

### 3.2 Variable definition

According to Piotroski, and Roulstone [12], the control variables are *Buy*, *Size*, *BM*, *LR*, and *Mom*, which are commonly used in previous studies of insider trading literature. *Buy* is a dummy variable, which is equal to one if the total number of shares buy by insiders is greater than the total number of shares sell by insiders in past 12 month, zero otherwise. *Size* and *BM* are the natural logarithms of a firm's market capitalization and book-to-market ratio. *LR* is the lagged period return of firm, *Mom* is the cumulative return of firm *i* in period *t-2* to *t-12*.

### 3.3 Methodology

This paper examines the impact of conditional and unconditional insider silence on the stock market. We use the three-factor model proposed by Fama and French [3] to calculate the abnormal return following the insider silence.

$$r_{i,t}^e = \alpha_0 + \alpha_1 MKTRF_t + \alpha_2 SMB_t + \alpha_3 HML_t + \varepsilon_{i,t} \quad (1)$$

The  $r_{i,t}^e$  indicates the monthly return of the firm,  $MKTRF_t$  indicates the return of value-weighted stock market index minus risk-free,  $SMB_t$  refers to the difference between the return on the portfolio of companies with small and large market capitalization,  $HML_t$  is the difference between the return on the portfolio of companies with higher and lower book value,  $\alpha_0$  is the abnormal return (AR).

#### 3.3.1 The effect of conditional and unconditional insider silence

We establish the following model to examine the effect of conditional and unconditional insider silence.

$$AR_{i,t} = \beta_0 + \beta_1 CIS_{i,t} + \beta_2 UIS_{i,t} + CV_{i,t} + \varepsilon_{i,t} \quad (2)$$

$AR_{i,t}$  is monthly abnormal return of the firm *i* in month *t*,  $CIS_{i,t}$  is a conditional-insider-silence dummy variable, which is equal to one if firm *i* has any insider who sells consecutively in the same calendar month for the previous two years, and does not trade in the same month this year and zero otherwise.  $UIS_{i,t}$  is unconditional-insider-silence dummy variable, which is equal to one if there is no insider trading activity over the past 12 months, and zero otherwise.  $CV_{i,t}$  is the control variables in the model (*Buy*, *Size*, *BM*, *LR*, and *Mom*),  $\varepsilon_{i,t}$  is the residual of the model.

Coefficient  $\beta_1$  indicates the effect of conditional insider silence, and  $\beta_2$  is the effect of unconditional insider silence. Since the abnormal returns following unconditional insider silence are positive, we focus on the positive conditional insider silence (SSN) to compare the effect of conditional and unconditional insider silence. If  $\beta_1$  is greater than  $\beta_2$ , supporting the hypothesis 1, i.e. the effect of conditional insider silence is greater than the effect of unconditional insider silence.

### 3.3.2 Abnormal return after quarterly earnings announcements following the unconditional insider silence

We use the following model to investigate whether there is positive abnormal return after quarterly earnings announcements following the unconditional insider silence.

$$AR_{i,t+1} = \beta_0 + \beta_1 UIS_{i,t} + CV_{i,t} + \varepsilon_{i,t} \quad (3)$$

$AR_{i,t+1}$  is monthly abnormal return of firm in month t+1,  $UIS_{i,t}$  is unconditional-insider-silence dummy variable, which is equal to one if there is no insider trading activity over the past 12 months in firm i, and zero otherwise,  $CV_{i,t}$  is the control variables in the model,  $\varepsilon_{i,t}$  is the residual in the model.

According to the effect of unconditional insider silence, we accept hypothesis 2 if  $\beta_1$  is greater than zero.

### 3.3.3 Insider silence effect with corporate governance

The following model is developed to examine the relationship between the conditional and unconditional insider silence and corporate governance.

$$AR_{i,t} = \beta_0 + \beta_1 CIS_{i,t} + \beta_2 UIS_{i,t} + \beta_3 CG_{i,t} + \beta_4 CG_{i,t} CIS_{i,t} + \beta_5 CG_{i,t} UIS_{i,t} + CV_{i,t} + \varepsilon_{i,t} \quad (4)$$

$AR_{i,t}$  is monthly abnormal return of firm i in month t.  $CIS_{i,t}$  is conditional-insider-silence dummy variable, which is equal to one if firm i has any insider who sells consecutively in the same calendar month for the previous two years, and does not trade in the same month this year and zero otherwise.  $UIS_{i,t}$  is unconditional-insider-silence dummy variable, which is equal to one if there is no insider trading activity over the past 12 months, and zero otherwise.  $CG_{i,t}$  denotes the degree of the corporate governance.  $CV_{i,t}$  is the control variable in the model.  $\varepsilon_{i,t}$  is residual in the model.

Under the conditional insider silence, the effect of insider silence with the better corporate governance is  $\beta_1 + \beta_4$ , and the effect of insider silence with poor corporate governance is  $\beta_1$ . Hypothesis 3 is accepted if  $|\beta_1 + \beta_4| > |\beta_1|$ , i.e. there is greater effect of conditional insider silence in firm with better corporate governance. Under the unconditional insider silence, the effect of insider silence with the better corporate governance is  $\beta_2 + \beta_5$ , and the effect of insider silence with poor corporate governance is  $\beta_2$ . We accept hypothesis 3 if  $|\beta_2 + \beta_5| > |\beta_2|$ , i.e. there is greater effect of unconditional insider silence in the company with better corporate governance.

### 3.3.4 The insider silence effect of CEO

We use the following model to examine the difference between the insider silence effect of CEO and non-CEO.

$$AR_{i,t} = \beta_0 + \beta_1 CIS_{i,t} + \beta_2 UIS_{i,t} + \beta_3 CEO_{i,t} + \beta_4 CEO_{i,t} CIS_{i,t} + \beta_5 CEO_{i,t} UIS_{i,t} + CV_{i,t} + \varepsilon_{i,t} \quad (5)$$

$AR_{i,t}$  is monthly abnormal return of firm  $i$  in month  $t$ .  $CIS_{i,t}$  is conditional-insider-silence dummy variable, which is equal to one if firm  $i$  has any insider who sells consecutively in the same calendar month for the previous two years, and does not trade in the same month this year and zero otherwise.  $UIS_{i,t}$  is unconditional-insider-silence dummy variable, which is equal to one if there is no insider trading activity over the past 12 months, and zero otherwise.  $CEO_{i,t}$  is a dummy variable, which is equal to one if the person who does not trade is CEO of the firm in past three years and zero otherwise.  $CV_{i,t}$  is the control variable.  $\varepsilon_{i,t}$  is residual in the model.

Under the conditional insider silence, the insider silence effect of CEO is  $\beta_1 + \beta_4$ , and the insider silence effect of non-CEO is  $\beta_1$ . The hypothesis 3 is accepted if  $|\beta_1 + \beta_4| > |\beta_1|$ , i.e. the insider silence effect of CEO is greater than that of non-CEO. Under the unconditional insider silence, the insider silence effect of CEO is  $\beta_2 + \beta_5$ , and the insider silence effect of non-CEO is  $\beta_2$ . We accept hypothesis 3 if  $|\beta_2 + \beta_5| > |\beta_2|$ , i.e. the insider silence effect of CEO is greater than that of non-CEO.

## 4. Empirical Results

### 4.1 Descriptive Statistics

Table 1 shows that the mean of the conditional (unconditional) insider silence is 0.0032 (0.0575), indicating that the conditional insider silence is more difficult to achieve than unconditional insider silence. Such a situation can also be found in the CEO's insider silence since the mean of CEO1 (CEO2) is 0.0002 (0.0049).

Table 2 shows CIS and UIS12 are positively correlated with AR, implying that both insider silences result in positive abnormal return. CG is positively correlated with AR, indicating that good corporate governance cause positive abnormal return. CEO1 and CEO2 are positively correlated with AR, implying that both insider silences of the CEO are positively correlated with abnormal return.



**Table 1: Descriptive Statistics**

	<b>Mean</b>	<b>Std. Dev.</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>
<b>AR</b>	-0.0078	0.1737	-0.0125	21.9803	-0.8277
<b>CIS</b>	0.0032	0.0563	0	1	0
<b>UIS12</b>	0.0575	0.2328	0	1	0
<b>BUY12</b>	0.0237	0.1523	0	1	0
<b>LR</b>	0.015	0.1512	0.0016	12.3972	-0.7703
<b>MOM</b>	0.1881	0.6134	0.0961	22.2929	-2.5519
<b>SIZE</b>	15.4995	1.09	15.3745	22.3353	10.1641
<b>BTM</b>	-0.5777	0.5103	-0.4685	1.8788	-10.68
<b>CG</b>	0.2582	0.1619	0.1912	1.1467	0.0426
<b>CEO1</b>	0.0002	0.0138	0	1	0
<b>CEO2</b>	0.0049	0.0699	0	1	0

Table 1 presents the descriptive statistics. AR is the abnormal return. CIS is conditional insider silence. UIS12 is unconditional insider silence. CG is the degree of the corporate governance. CEO1 is a dummy variable, which is equal to one if the same person being the CEO of the firm t-2 to t years and zero otherwise. CEO2 is a dummy variable, which is equal to one if the same person being the CEO of the firm from time t-12 to t-1 month, and 0 otherwise. Buy12 is insider buying. LR is the lagged period return of the firm. MOM is momentum. Size is firm size. BTM is book to market ratio. Detailed definitions of the variables are presented in Appendix.

**Table 2: Correlation Table**

	AR	CIS	UIS12	BUY12	LR	MOM	SIZE	BTM01	CG_1	CEO1	CEO2
AR	1										
CIS	0.0059***	1									
UIS12	0.0197***	0.0570***	1								
BUY12	0.0145***	0.002	0.1188***	1							
LR	0.0235***	-0.0026	-0.0182***	-0.0011	1						
MOM	-0.0523***	0.0074***	0.0379***	0.0008	0.0038**	1					
SIZE	0.1112***	0.0044***	0.0363***	0.0448***	-0.0913***	0.1171***	1				
BTM	-0.0607***	-0.0290***	-0.0534***	-0.0158***	0.0059***	-0.2688***	-0.0063***	1			
CG	0.0115***	0.0341***	0.0866***	0.0332***	0.0083***	0.0284***	-0.1323***	-0.0149***	1		
CEO1	0.0001	0.2442***	0.0188***	0.0004	-0.0009	0.0005	0.0029*	-0.0094***	0.0071****	1	
CEO2	0.0048***	0.0188***	0.2845***	0.0431***	-0.0097***	0.0089***	0.0181***	-0.0136***	0.0240***	-0.001	1

Table 2 presents the correlation coefficients among the variables. AR is the abnormal return. CIS is conditional insider silence. UIS12 is unconditional insider silence. CG is the degree of the corporate governance. CEO1 is a dummy variable, which is equal to one if the same person being the CEO of the firm t-2 to t years, and zero otherwise. CEO2 is a dummy variable, which is equal to one if the same person being the CEO of the firm from time t-12 to t-1 month, and 0 otherwise. Buy12 is insider buying. LR is the lagged period return of the firm. MOM is momentum. Size is firm size. BTM is book to market ratio. Detailed definitions of the variables are presented in Appendix.

## **4.2 Conditional and unconditional insider silence effects**

During the sample period, Bo Xilai incident happens in 2012. Bo Xilai was dismissed by the central government due to bribery, corruption, and abuse of power. In the same year, Xi Jinping became the new leader of China, and at the end of 2012, after the 18th Communist Party Congress, he began to fight corruption, which had a significant impact on China's political and economic environment. Huang and Chan [8] find that Bo Xilai incident and Xi Jinping's corruption crackdown in 2012 would have an impact on China's stock market and the behavior of corporate insider. They divide the sample period into pre- and post-event periods, and removes the data in 2012. This paper follows the approach of Huang and Chan [8] and divides the sample into pre-Bo Xilai and post-Bo Xilai events. In Tables 3 to 6, we present empirical results of overall sample, 2006 to 2011, 2013 to 2019 period in Panel A, B and C respectively.

Panel A of Table 3 presents that the effects of conditional and unconditional insider silences have positive and significant impacts on abnormal returns. Since China's GDP per capita has been growing positively every year during the sample period, indicating that China's economy has been in a growth stage, insider silence has positive impact on the firm's abnormal return. Columns (6) of panel A shows that the impact of conditional insider silence on abnormal returns (the coefficient is 0.0089 and p value is 0.0728) is smaller than the impact of unconditional insider silence on abnormal returns (the coefficient is 0.0106 and p value is 0.0000), implying that hypothesis 1 is not supported. In Panel B, the impact of conditional insider silence on abnormal returns during pre-Bo Xilai incident period (the coefficient is 0.0120 and p value is 0.2972) is insignificantly larger than that of unconditional insider silence on abnormal returns (the coefficient is 0.0106 and p value is 0.0003), indicating that there is not enough evidence to support hypothesis 1. In panel C, the impact of conditional insider silence on abnormal returns during post-Bo Xilai incident period (the coefficient is 0.0092 and p value is 0.0936) is significantly larger than that of unconditional insider silence on abnormal returns (the coefficient is 0.0048 and p value is 0.0003), implying that hypothesis 1 is supported.

**Table 3: Conditional and unconditional insider silence effects**

<b>Panel A: Overall sample period</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	-0.0081*** (0.0000)	-0.0089*** (0.0000)	-0.0085*** (0.0000)	-0.0092*** (0.0000)	-0.0092*** (0.0000)	-0.3275*** (0.0000)
CIS	0.0181*** (0.0003)		0.0180*** (0.0003)		0.0149 *** (0.0030)	0.0089* (0.0728)
UIS12		0.0147 *** (0.0000)		0.0136*** (0.0000)	0.0134*** (0.0000)	0.0106*** (0.0000)
BUY12			0.0168*** (0.0000)	0.0144*** (0.0000)	0.0144*** (0.0000)	0.0072*** (0.0000)
LR						0.0423*** (0.0000)
MOM						-0.0255*** (0.0000)
SIZE						0.0198*** (0.0000)
BTM						-0.0283*** (0.0000)
N	381,458	381,458	381,458	381,458	381,458	381,458
Adjusted R <sup>2</sup>	0.0000	0.0004	0.0002	0.0005	0.0006	0.0249
<b>Panel B: 2006-2011</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	-0.0404*** (0.0000)	-0.0408*** (0.0000)	-0.0404*** (0.0000)	-0.0408*** (0.0000)	-0.0408*** (0.0000)	-0.1301*** (0.0000)
CIS	0.0172 (0.1390)		0.0171 (0.1402)		0.0159 (0.1703)	0.0120 (0.2972)
UIS12		0.0105*** (0.0002)		0.0106*** (0.0000)	0.0104*** (0.0003)	0.0103*** (0.0003)
BUY12			0.0018 (0.7052)	-0.0003*** (0.9465)	-0.0004 (0.9372)	-0.0043 (0.3630)
LR						0.1229*** (0.0000)
MOM						-0.0088*** (0.0000)
SIZE						0.0053*** (0.0000)
BTM						-0.0173*** (0.0000)
N	116,288	116,288	116,288	116,288	116,288	116,288
Adjusted R <sup>2</sup>	0.0000	0.0001	0.0000	0.0001	0.0001	0.0146

Panel C:2013-2019						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
C	0.0172***	0.0169***	0.0170***	0.0167***	0.0167***	-0.3071***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
CIS	0.0118**		0.0119**		0.0106*	0.0092*
	(0.0337)		(0.0330)		(0.0564)	(0.0936)
UIS12		0.0053***		0.0047***	0.0045***	0.0048***
		(0.0001)		(0.0004)	(0.0007)	(0.0003)
BUY12			0.0088***	0.0080***	0.0080***	0.0035*
			(0.0000)	(0.0001)	(0.0001)	(0.0725)
LR						-0.0002
						(0.9279)
MOM						-0.0397***
						(0.0000)
SIZE						0.0198***
						(0.0000)
BTM						-0.0303***
						(0.0000)
N	236,873	236,873	236,873	236,873	236,873	236,873
Adjusted R <sup>2</sup>	0.0000	0.0001	0.0001	0.0001	0.0001	0.0294

Table 3 shows the difference in insider silence effect in all sample companies. Panel A is the empirical result of the effect of insider silence during the overall sample period; Panel B and Panel C are divided into pre-event and post-event according to the Bo Xilai incident. The sample period of Panel B is from 2006 to 2011, and the sample period of Panel C is from 2013 to 2019. Dependent variable is abnormal return of the firm (AR). Main explanatory independent variables are conditional insider silence (CIS), unconditional insider silence (UIS12), and insider buying (Buy12). Control variables are lagged period return of the firm (LR), the momentum (MOM), market capitalization (SIZE), and book to market ratio (BTM). Detailed definitions of the variables are presented in Appendix. P-value are given in brackets. \*\*\*, \*\*, \* Represent statistical significance at 1%, 5%, and 10% levels, respectively.

### 4.3 Insider silence effect following the quarterly earnings announcement

In Panel A of Table 4, the coefficients of UIS12 are all positive and significant in columns (1) to (3), supporting the hypothesis 2. That is, there are positively abnormal return after firm's quarterly earnings announcements in the firms following the unconditional insider silence. The coefficients of UIS12 in Panels B and C are still all positive and significant, indicating that hypothesis 2 is still supported. In sum, unconditional insider silence has positive impact on abnormal return in the month after firm's quarterly earnings announcements during the overall sample, pre-Bo Xilai and post-Bo Xilai incident periods.

**Table 4: Insider silence effect following the quarterly earnings announcement**

<b>Panel A: Overall sample period</b>			
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
C	-0.0113***	-0.0116***	-0.2870***
	(0.0000)	(0.0000)	(0.0000)
UIS12	0.0438***	0.0427***	0.0369***
	(0.0000)	(0.0000)	(0.0000)
BUY12		0.0148***	0.0099***
		(0.0000)	(0.0001)
LR			-0.0511***
			(0.0000)
MOM			-0.0047***
			(0.0000)
SIZE			0.0166***
			(0.0000)
BTM			-0.0324***
N	125,302	125,302	125,302
Adjusted R <sup>2</sup>	0.0054	0.0057	0.0322
<b>Panel B: 2006-2011</b>			
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
C	-0.0623***	-0.0623***	0.0138
	(0.0000)	(0.0000)	(0.2213)
UIS12	0.0290***	0.0293***	0.0321***
	(0.0000)	(0.0000)	(0.0000)
BUY12		-0.0041	-0.0042
		(0.5395)	(0.5306)
LR			0.1435***
			(0.0000)
MOM			0.0058***
			(0.0000)
SIZE			-0.0051***
			(0.0000)
BTM			-0.0031*
N	37,369	37,369	37,369
Adjusted R <sup>2</sup>	0.0015	0.0015	0.0246

<b>Panel C: 2013-2019</b>			
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
C	0.0241***	0.0240***	-0.1782***
	(0.0000)	(0.0000)	(0.0000)
UIS12	0.0369***	0.0366***	0.0298***
	(0.0000)	(0.0000)	(0.0000)
BUY12		0.0048*	0.0029
		(0.0802)	(0.2803)
LR			-0.1565***
			(0.0000)
MOM			0.0012
			(0.2284)
SIZE			0.0115***
			(0.0000)
BTM			-0.0354***
N	78,500	78,500	78,500
Adjusted R <sup>2</sup>	0.0053	0.0053	0.0512

Table 4 shows the insider silence effect following the quarterly earnings announcement. Panel A is the empirical result of the effect of insider silence during the overall sample period; Panel B and Panel C are divided into pre-event and post-event according to the Bo Xilai incident. The sample period of Panel B is from 2006 to 2011, and the sample period of Panel C is from 2013 to 2019. Dependent variable is abnormal return for the month following the firm's quarterly earnings announcement. ( $AR_{i,t+1}$ ) for the month following the firm's quarterly earnings announcement. ( $AR_{i,t+1}$ ). Main explanatory independent variables are unconditional insider silence (UIS12), and insider buying (Buy12). Control variables are lagged period return of the firm (LR), the momentum (MOM), market capitalization (SIZE), and book to market ratio (BTM). Detailed definitions of the variables are presented in Appendix. P-value are given in brackets. \*\*\*, \*\*, \* Represent statistical significance at 1%, 5%, and 10% levels, respectively.

#### 4.4 Insider silence effect for firm with different company governance

In Panel A of Table 5, we find that the coefficient of CIS is 0.006 ( $\beta_1$ ,  $p=0.9625$ ) and the coefficient of intersection term of CIS and CG in columns (6) is 0.0168 ( $\beta_4$ ,  $p=0.5840$ ), indicating that the effects of conditional insider silence for firms with better corporate governance are insignificantly greater than those with poor corporate governance ( $|\beta_1 + \beta_4|=0.0174 > |\beta_1|=0.0006$ ). Thus, there is not enough evidence to support the hypothesis 3. In the same model, the coefficient of UIS12 is 0.0136 ( $\beta_2$ ,  $p=0.0000$ ) and the coefficient of intersection term of UIS12 and CG is -0.0162 ( $\beta_5$ ,  $p=0.0187$ ). It indicates that the effects of unconditional insider silence for firms with better corporate governance are significantly smaller than those with poor corporate governance ( $|\beta_2 + \beta_5|=0.0026 < |\beta_2|=0.0136$ ), which does not support hypothesis 3.

In columns (6) of panel B, the coefficient of CIS is -0.0013 ( $\beta_1$ ,  $p=0.9658$ ) and the coefficient of intersection term of CIS and CG is 0.0455 ( $\beta_4$ ,  $p=0.5743$ ), indicating that the effects of conditional insider silence for firms with better corporate

governance are insignificantly greater than those with poor corporate governance ( $|\beta_1 + \beta_4| = 0.0442 > |\beta_1| = 0.0013$ ). Therefore, there is not enough evidence to support the hypothesis 3. In the same model, the coefficient of UIS12 is 0.0293 ( $\beta_2$ ,  $p=0.0000$ ) and the coefficient of intersection term of UIS12 and CG is -0.0631 ( $\beta_5$ ,  $p=0.0005$ ). It indicates that the effects of unconditional insider silence for firms with better corporate governance are significantly greater than those with poor corporate governance ( $|\beta_2 + \beta_5| = 0.0338 > |\beta_2| = 0.0293$ ). Therefore, we support the hypothesis 3.

In columns (6) of panel C, the coefficient of CIS is 0.0059 ( $\beta_1$ ,  $p=0.6547$ ) and the coefficient of intersection term of CIS and CG is -0.0149 ( $\beta_5$ ,  $p=0.0013$ ), indicating that the effects of conditional insider silence for firms with better corporate governance are smaller than those with poor corporate governance ( $|\beta_1 + \beta_4| = 0.0017 < |\beta_1| = 0.0059$ ). Thus, it does not support hypothesis 3. In the same model, the coefficient of UIS12 is 0.0057 ( $\beta_2$ ,  $p=0.0316$ ) and the coefficient of intersection term of UIS12 and CG is -0.0149 ( $\beta_5$ ,  $p=0.0013$ ). It indicates that the effects of unconditional insider silence for firms with better corporate governance are significantly greater than those with poor corporate governance ( $|\beta_2 + \beta_5| = 0.0092 > |\beta_2| = 0.0057$ ). Therefore, we support hypothesis 3.

**Table 5: Insider silence effect for firm with different company governance**

Panel A: Overall sample period						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
C	-0.0110*** (0.0000)	-0.0114*** (0.0000)	-0.0113*** (0.0000)	-0.3437*** (0.0000)	-0.3440*** (0.0000)	-0.3440*** (0.0000)
CIS	0.0170*** (0.0007)		0.0139*** (0.0058)	0.0018 (0.8774)	0.0065 (0.1891)	0.0006 (0.9625)
UIS12		0.0140*** (0.0000)	0.0138*** (0.0000)	0.0086*** (0.0000)	0.0136*** (0.0000)	0.0136*** (0.0000)
CG	0.0121*** (0.0000)	0.0105*** (0.0000)	0.0104*** (0.0000)	0.0302*** (0.0000)	0.0313*** (0.0000)	0.0312*** (0.0000)
BUY12				0.0060*** (0.0000)	0.0059*** (0.0014)	0.0059*** (0.0013)
LR				0.0413*** (0.0011)	0.0413*** (0.0000)	0.0413*** (0.0000)
MOM				-0.0258*** (0.0000)	-0.0258*** (0.0000)	-0.0258*** (0.0000)
SIZE				0.0203*** (0.0000)	0.0203*** (0.0000)	0.0203*** (0.0000)
BTM				-0.0284*** (0.0000)	-0.0284*** (0.0000)	-0.0284*** (0.0000)
CIS*CG				0.0127 (0.6784)		0.0168 (0.5840)



UIS12*CG					-0.0160**	-0.0162**
					(0.0201)	(0.0187)
N	379,110	379,110	379,110	379,110	379,110	379,110
Adjusted R <sup>2</sup>	0.0002	0.0005	0.0005	0.0255	0.0255	0.0255
<b>Panel B: 2006-2011</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	-0.0344***	-0.0347***	-0.0346***	-0.1236***	-0.1246***	-0.1245***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
CIS	0.0195*		0.0183	0.0012	0.0142	-0.0013
	(0.0966)		(0.1205)	(0.9681)	(0.2246)	(0.9658)
UIS12		0.0112***	0.0110***	0.0106***	0.0292***	0.0293***
		(0.0001)	(0.0001)	(0.0002)	(0.0000)	(0.0000)
CG	-0.0221***	-0.0228***	-0.0230***	-0.0128***	-0.0092**	-0.0093**
	(0.0000)	(0.0000)	(0.0000)	(0.0022)	(0.0323)	(0.0305)
BUY12				-0.0051	-0.0054	-0.0054
				(0.2836)	(0.2570)	(0.2592)
LR				0.1217***	0.1216***	0.1216***
				(0.0000)	(0.0000)	(0.0000)
MOM				-0.0087***	-0.0087***	-0.0087***
				(0.0000)	(0.0000)	(0.0000)
SIZE				0.0051***	0.0051***	0.0051***
				(0.0000)	(0.0000)	(0.0000)
BTM				-0.0168***	-0.0168***	-0.0168***
				(0.0000)	(0.0000)	(0.0000)
CIS*CG				0.0377		0.0455
				(0.6419)		(0.5743)
UIS12*CG					-0.0628***	-0.0631***
					(0.0005)	(0.0005)
N	114,398	114,398	114,398	114,398	114,398	114,398
Adjusted R <sup>2</sup>	0.0002	0.0004	0.0004	0.0144	0.0145	0.0145
<b>Panel C: 2013-2019</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	0.0071***	0.0070***	0.0070***	-0.3462***	-0.3465***	-0.3465***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
CIS	0.0075		0.0069	0.0072	0.0044	0.0059
	(0.1787)		(0.2179)	(0.5842)	(0.4247)	(0.6547)
UIS12		0.0025*	0.0024*	0.0011*	0.005**	0.0057**
		(0.0583)	(0.0696)	(0.4270)	(0.0309)	(0.0316)
CG	0.0402***	0.0399***	0.0399***	0.0599***	0.0610***	0.0610***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
BUY12				0.0014	0.0013	0.0013
				(0.4772)	(0.5184)	(0.5186)

LR				-0.0009	-0.0009	-0.0009
				(0.6934)	(0.6904)	(0.6902)
MOM				-0.0409***	-0.0409***	-0.0409***
				(0.0000)	(0.0000)	(0.0000)
SIZE				0.0214***	0.0214***	0.0214***
				(0.0000)	(0.0000)	(0.0000)
BTM				-0.0292***	-0.0292***	-0.0292***
				(0.0000)	(0.0000)	(0.0000)
CIS*CG				-0.0084		-0.0042
				(0.8027)		(0.9005)
UIS12*CG					-0.0150**	-0.0149**
					(0.0420)	(0.0431)
N	236,463	236,463	236,463	236,463	236,463	236,463
Adjusted R <sup>2</sup>	0.0018	0.0018	0.0018	0.0331	0.0332	0.0331

Table 5 presents insider silence effect for firms with different company governance. Panel A is the empirical result of the effect of insider silence during the overall sample period; Panel B and Panel C are divided into pre-event and post-event according to the Bo Xilai incident. The sample period of Panel B is from 2006 to 2011, and the sample period of Panel C is from 2013 to 2019. Dependent variable is abnormal return of the firm (AR). Main explanatory independent variables are conditional insider silence (CIS), unconditional insider silence (UIS12), firm's degree of corporate governance (CG), and insider buying (Buy12). Control variables are lagged period return of the firm (LR), the momentum (MOM), market capitalization (SIZE), and book to market ratio (BTM). Detailed definitions of the variables are presented in Appendix. P-value are given in brackets. \*\*\*, \*\*, \* Represent statistical significance at 1%, 5%, and 10% levels, respectively.

#### 4.5 Insider silence effect of CEO and non-CEO

In Panel A of Table 6, we find that the coefficient of CIS is 0.0104 ( $\beta_1$ ,  $p=0.0407$ ) and the coefficient of intersection term of CIS and CEO1 in columns (6) is -0.0261 ( $\beta_4$ ,  $p=0.2107$ ), indicating that the effects of conditional insider silence of CEO are insignificantly greater than those of non-CEO ( $|\beta_1 + \beta_4|=0.0157 > |\beta_1|=0.0104$ ). Thus, there is not enough evidence to support the hypothesis 4. In the same model, the coefficient of UIS12 is 0.0109 ( $\beta_2$ ,  $p=0.0000$ ) and the coefficient of intersection term of UIS12 and CEO2 is -0.0045 ( $\beta_5$ ,  $p=0.2763$ ). It indicates that the effects of unconditional insider silence of CEO are smaller than those of non-CEO ( $|\beta_2 + \beta_5|=0.0064 < |\beta_2|=0.0109$ ), which does not support hypothesis 4.

In columns (6) of panel B, the coefficient of CIS is 0.0129 ( $\beta_1$ ,  $p=0.2750$ ) and the coefficient of intersection term of CIS and CEO1 in columns (6) is -0.0145 ( $\beta_4$ ,  $p=0.7962$ ), indicating that the effects of conditional insider silence of CEO are smaller than those of non-CEO ( $|\beta_1 + \beta_4|=0.0016 < |\beta_1|=0.0129$ ). Thus, we cannot support the hypothesis 4. In the same model, the coefficient of UIS12 is 0.0111 ( $\beta_2$ ,  $p=0.0002$ ) and the coefficient of intersection term of UIS12 and CEO2 is -0.0135 ( $\beta_5$ ,  $p=0.2568$ ). It indicates that the effects of unconditional insider silence of CEO are smaller than those of non-CEO ( $|\beta_2 + \beta_5|=0.0024 < |\beta_2|=0.0111$ ) ( $|\beta_2 + \beta_5|=0.0024 < |\beta_2|=0.0111$ ), which does not support hypothesis 4.

In columns (6) of panel C, the coefficient of CIS is 0.0113 ( $\beta_1$ ,  $p=0.0464$ ) and the coefficient of intersection term of CIS and CEO1 is -0.0340 ( $\beta_4$ ,  $p=0.1358$ ), indicating that the effects of conditional insider silence of CEO are insignificantly greater than those of non-CEO ( $|\beta_1 + \beta_4|=0.0227 > |\beta_1|=0.0113$ ). Thus, we cannot support the hypothesis 4. In the same model, the coefficient of UIS12 is 0.0054 ( $\beta_2$ ,  $p=0.0001$ ) and the coefficient of intersection term of UIS12 and CEO2 is -0.0063 ( $\beta_5$ ,  $p=0.1468$ ). It indicates that the effects of unconditional insider silence of CEO are smaller than those of non-CEO ( $|\beta_2 + \beta_5|=0.0009 < |\beta_2|=0.0054$ ), which does not support hypothesis 4.

**Table 6: Insider silence effect of CEO and non-CEO**

Panel A: Overall sample period						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
C	-0.0081*** (0.0000)	-0.0089*** (0.0000)	-0.0089*** (0.0000)	-0.3275*** (0.0000)	-0.3276*** (0.0000)	-0.3276*** (0.0000)
CIS	0.0192*** (0.0002)		0.0158*** (0.0022)	0.0104** (0.0412)	0.0089* (0.0000)	0.0104** (0.0407)
UIS12		0.0149*** (0.0000)	0.0147*** (0.0000)	0.0106*** (0.0000)	0.0109*** (0.0000)	0.0109*** (0.0000)
BUY12				0.0072*** (0.0001)	0.0072*** (0.0000)	0.0072*** (0.0001)
LR				0.0423*** (0.0000)	0.0423*** (0.0000)	0.0423*** (0.0000)
MOM				-0.0255*** (0.0000)	-0.0255*** (0.0000)	-0.0255*** (0.0000)
SIZE				0.0198*** (0.0000)	0.0198*** (0.0000)	0.0198*** (0.0000)
BTM				-0.0283*** (0.0000)	-0.0283 (0.0000)	-0.0283*** (0.0000)
CEO1	-0.0178 (0.3996)		-0.0191 (0.3648)			
CEO2		-0.0020 (0.6408)	-0.0020 (0.6305)			
CIS*CEO1				-0.0259 (0.2137)		-0.0261 (0.2107)
UIS12*CEO2					-0.0045 (0.2804)	-0.0045 (0.2763)
N	381,458	381,458	381,458	381,458	381,458	381,458
Adjusted R <sup>2</sup>	0.0000	0.0004	0.0004	0.0249	0.0249	0.0249

<b>Panel B:2006-2011</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	-0.0404*** (0.0000)	-0.0408** (0.0000)	-0.0408*** (0.0000)	-0.1301*** (0.0000)	-0.1302*** (0.0000)	-0.1302 (0.0000)
CIS	0.0178 (0.1337)		0.0168 (0.1578)	0.0126 (0.2837)	0.0122 (0.2886)	0.0129 (0.2750)
UIS12		0.0113*** (0.0001)	0.0112*** (0.0001)	0.0103*** (0.0003)	0.0111*** (0.0002)	0.0111 (0.0002)
BUY12				-0.0043 (0.3625)	-0.0043 (0.3643)	-0.0043 (0.3638)
LR				0.1229*** (0.0000)	0.1229*** (0.0000)	0.1228*** (0.0000)
MOM				-0.0088*** (0.0000)	-0.0088*** (0.0000)	-0.0088*** (0.0000)
SIZE				0.0053*** (0.0000)	0.0053*** (0.0000)	0.0053*** (0.0000)
BTM				-0.0173*** (0.0000)	-0.0173*** (0.0000)	-0.0173*** (0.0000)
CEO1	-0.0143* (0.0800)		-0.0147 (0.7944)			
CEO2		-0.0126 (0.2925)	-0.0129 (0.2813)			
CIS*CEO1				-0.0141 (0.8012)		-0.0145 (0.7962)
UIS12*CEO2					-0.0135 (0.2574)	-0.0135 (0.2568)
N	116,288	116,288	116,288	116,288	116,288	116,288
Adjusted R <sup>2</sup>	0.0000	0.0001	0.0001	0.0146	0.0146	0.0146
<b>Panel C:2013-2019</b>						
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
C	0.0172*** (0.0000)	0.0169*** (0.0000)	0.0169*** (0.0000)	-0.3071*** (0.0000)	-0.3071*** (0.0000)	-0.3071*** (0.0000)
CIS	0.0134** (0.0194)		0.0121** (0.0357)	0.0113** (0.0466)	0.0092* (0.0000)	0.0113** (0.0464)
UIS12		0.0059*** (0.0000)	0.0057*** (0.0000)	0.0048*** (0.0003)	0.0053*** (0.0001)	0.0054*** (0.0001)
BUY12				0.0035* (0.0724)	0.0035* (0.0704)	0.0035* (0.0703)
LR				-0.0002 (0.9272)	-0.0002 (0.9219)	-0.0002 (0.9210)
MOM				-0.0397*** (0.0000)	-0.0397*** (0.0000)	-0.0397*** (0.0000)
SIZE				0.0198***	0.0198***	0.0198

				(0.0000)	(0.0000)	(0.0000)
BTM				-0.0303***	-0.0303***	-0.0303***
				(0.0000)	(0.0000)	(0.0000)
CEO1	-0.0262		-0.0271			
	(0.2584)		(0.2415)			
CEO2		-0.0061	-0.0061			
		(0.1650)	(0.1623)			
CIS*CEO1				-0.0338		-0.0340
				(0.1391)		(0.1358)
UIS12*CEO2					-0.0062	-0.0063
					(0.1504)	(0.1468)
N	236,873	236,873	236,873	236,873	236,873	236,873
Adjusted R <sup>2</sup>	0.0000	0.0001	0.0001	0.0294	0.0294	0.0294

Table 6 presents insider silence effect of CEO and non-CEO of CEO and non-CEO. Panel A is the empirical result of the effect of insider silence during the overall sample period; Panel B and Panel C are divided into pre-event and post-event according to the Bo Xilai incident. The sample period of Panel B is from 2006 to 2011, and the sample period of Panel C is from 2013 to 2019. Dependent variable is abnormal return of the firm (AR). Main explanatory independent variables are conditional insider silence (CIS), unconditional insider silence (UIS12), CEO1 dummy variable, which is equal to one if same person being firm's CEO from t-2 to t year and 0 otherwise, CEO2 dummy variable, which is equal to one if same person being firm's CEO in past year and 0 otherwise, and insider buying (Buy12). Control variables are lagged period return of the company (LR), the momentum (MOM), market capitalization (SIZE), and book to market ratio (BTM). Detailed definitions of the variables are presented in Appendix. P-value are given in brackets. \*\*\*, \*\*, \* Represent statistical significance at 1%, 5%, and 10% levels, respectively.

## 5. Conclusion

This study examines the impact of conditional and unconditional insider silences on abnormal returns in China. We find that there are positive impacts of conditional and unconditional insider silences on corporate abnormal returns and the effect of unconditional insider silence is greater than the effect of conditional insider silence. The impact of unconditional insider silence on abnormal return is positive in the month following the firm's quarterly earnings announcement. Moreover, the effect of conditional insider silence in the firm with better corporate governance is insignificantly greater than that with poor corporate governance and the effect of unconditional insider silence in the firm with better corporate governance is smaller than the firm with poor corporate governance. The effect of conditional insider silence of CEO is insignificantly greater than that of non-CEO and the effect of unconditional insider silence of CEO is significantly smaller than that of non-CEO. In this paper, we only consider SSN in conditional insider silence. Future research could also include PPN and examine the difference between the effects of SSN and PPN. In addition, we divide insiders into CEO and non-CEO. Future research could also consider other senior managers of the firm to explore.

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**Appendix: Variable definition**

<b>Variable</b>	<b>Variable Code</b>	<b>Definition</b>
Abnormal return	$AR_{i,t}$	Abnormal return of firm
Conditional insider silence	$CIS_{i,t}$	A dummy variable equals to one if a firm has any insider who sells (purchases) consecutively in the same calendar month for the previous two years, but does not trade in the same month this year and zero otherwise.
Unconditional insider silence	$UIS12_{i,t}$	A dummy variable equals to one if there is no insider trading activity over the past 12 months, and zero otherwise.
Abnormal return for the month following the quarterly earnings announcement	$AR_{i,t+1}$	Monthly abnormal return following the quarterly earnings announcement
Degree of corporate governance	$CG_{i,t}$	Company's degree of corporate governance (Measured as the average ratio of percentage of independent directors on the board and percentage of shares held by institutional investors and percentage of equity ownership by all board members and senior managements with the higher the average the better corporate governance.
Company's CEO1	$CEO1_{i,t}$	A dummy variable equals to one if the same person being the CEO of the firm in past three years and zero otherwise. (Non-CEO, COO, CFO)
Company's CEO2	$CEO2_{i,t}$	A dummy variable equals to one if the same person being the CEO of the firm in past year and zero otherwise. (Non-CEO, COO, CFO)
Insider buy	$Buy_{i,t}$	A dummy variable equals to one if the total number of shares buy by insiders is greater than the total number of shares sell by insiders in past 12 month, otherwise equal to zero
Firm size	$Size_{i,t}$	Log of market capitalization
Book to market ratio	$BTM_{i,t}$	Log of Book to Market ratio
Lagged return	$LR_{i,t}$	The lagged period return of the company
Momentum	$Mom_{i,t}$	The cumulative return of firm in period t-2 to t-12