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# 최고경영자 교체가 감사시차에 미치는 영향

- 감사보고시차를 중심으로 -

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# 최고경영자 교체가 감사시차에 미치는 영향

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## 〈요 약〉

본 연구는 최고경영자 교체와 감사보고시차 간의 상관관계를 분석하여, 최고경영자 교체로 인한 정보비대칭에 대해 감사인이 어떻게 대응하는지 살펴보는데 연구 목적이 있다. 관련 선행연구에서는 최고경영자 교체에 가장 큰 영향을 미치는 요인으로 기업성과를 제시하고 있는데, 기업의 성과가 저조할수록 최고경영자 교체가 많이 발생하는 것으로 보고하고 있다. Sohn et al.(2014)에 따르면, 최고경영자가 교체된 기업일수록 불성실공시기업으로 지정될 확률이 높으며 재무분석가의 예측 정확도도 감소하는 것으로 나타났다. 뿐만 아니라, 자본시장의 경우 교체된 신임경영자의 big bath를 통한 증대된 불투명성에 대해 부정적인 평가를 하는 것으로 나타났다. 이처럼 최고경영자 교체는 경영자의 이익조정 수단으로 사용되기 쉽고, 외부 이해관계자와의 정보비대칭을 초래할 것으로 예측된다. 즉, 최고경영자 교체가 이루어진 기업의 경우, 외부감사인들은 이들 기업의 위험(감사위험)이 높다고 판단할 것이기 때문에 보다 더 감사노력을 투입할 것이며 이는 감사보고시차의 증대로 나타날 것이다.

분석결과, 최고경영자 교체는 종속변수인 감사보고시차와 통계적으로 유의한 양(+)의 관련성을 나타냈다. 이는 최고경영자가 교체된 기업일수록, 회계정보의 신뢰성 감소 및 기업경영의 불투명성으로 이어질 수 있기 때문에 감사인들은 이들 기업의 외부감사를 보다 보수적으로 접근(신중히)하는 것으로 해석된다.

**한글 색인어** : 최고경영자 교체, 감사보고시차

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# The Effect of CEO Turnover on Audit Report Lag: Evidence from Korea

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## <Abstract>

This study empirically investigates the effect of a CEO turnover on ARL. The object of this study is to provide empirical evidence for the responses of both the CEO and the external auditor on audit risk increases and information asymmetry that occur as a result of a CEO turnover. According to the previous study on CEO turnovers, the CEO turnover would increase audit risk and information asymmetry (Sohn et al., 2014). It is expected that an external auditor spends a large amount of time on audit procedures to lower the audit risk when the CEO changes. Therefore, the CEO turnover would have a conflicting effect on the ARL.

The results of the analysis are as follows. The ARL increases when the CEO changes, which suggests that an external auditor spends a great amount of time on audit procedures to lower the audit risk because the audit risk increases when the CEO changes. Additionally, the ARL increases when the frequency of CEO turnover increases. An external auditor would estimate the audit risk as being high if the CEO changes more frequently. To lower the audit risk to an acceptable level, many audit hours are spent on audit procedures by an external auditor, which increases the ARL.

**Keywords:** CEO Turnover, Audit Report Lag

## I. Introduction

Previous studies on audit report lag (ARL) have reported that this lag increases when the audit risk is high and information asymmetry is serious (Whittred, 1980; Ettredge et al., 2006; Lee and Jahng, 2008; Lee et al., 2008). These previous studies insist that the ARL increases because the auditor spends more time in the audit

process to decrease the audit risk and information asymmetry to an acceptable level when the audit risk is high and information asymmetry is serious. CEO turnover is expected to affect information asymmetry. According to a previous study on CEO turnover, audit risk and information asymmetry increase around the time of a CEO turnover(Sohn et al., 2014). Therefore, there would be a significant relation between CEO turnover and ARL. Because monitoring costs and the cost of debt increase when information asymmetry is serious, the CEO has an incentive to improve the timeliness of accounting information to reduce information asymmetry(Lee et al., 2008). However, the external auditor would then spend more time with audit procedures, and this extra time spent with auditing would increase the ARL because the external auditor estimates the audit risk as being high. Thus, the object of this study is to empirically prove these conflicting inferences.

The aim of this study is to present the empirical evidence for the reaction of the CEO and external auditor in the event of a CEO turnover, which affects both the audit risk and information asymmetry. In other words, the aim of this study is to prove whether the timeliness of the information is improved for reducing information asymmetry or whether many audit hours are spent reducing the audit risk. This paper is organized as follows. Previous studies on CEO turnover and the ARL are discussed, and the hypotheses are developed in the next section. The research model is presented in the third section. The empirical results are presented in the next section, followed by our conclusion.

## **II. Literature Review and Hypothesis Development**

### **2.1. CEO Turnover**

Moore(1973) reports that companies that change management tend to reduce income discretionarily. Strong and Meyer(1987) state that an asset writedown often occurs in the event of a change in senior management. Beatty and Zajac(1987) find that CEO changes are significantly associated with a reduction in the value of the firm. They also find that this negative response in stock price is stronger when the CEO successors are insiders. Friedman and Singh(1989) find evidence similar to that of Beatty and Zajac(1987), which is that positive abnormal stock returns are observed when the presuccession performance is poor. In contrast, a negative abnormal stock return is observed in the event of a satisfactory presuccession performance. Warner et al.(1988) find that CEO turnover is not significantly associated with an abnormal return. However, Weisbach(1988) and Denis and Denis(1995) report that positive

abnormal stock returns are observed on the dates of CEO change disclosures. Francis et al.(1996) find that the frequency and magnitude of write-offs is significantly associated with a recent change in management. Denis et al.(1997) state that the likelihood of a CEO turnover is high when the CEO ownership percentage is low. They also find that the likelihood of CEO turnover is high when there is an outside blockholder. Suchard et al.(2001) find a significant relationship between CEO turnover and the lagging performance of company. Lausten(2002) states that the possibility of a CEO turnover is high when the firm performance is poor and that the relationship between CEO turnover and firm performance is strengthened by the status of the chairman of the board and family ties within the management and ownership of the company. Brunello et al.(2003) find that the possibility of CEO turnover is high when firm performance is poor. However, there is no significant association between CEO turnover and firm performance when the controlling shareholder is the CEO. Desai et al.(2006) find that CEO turnover occurs frequently in companies that attempt to present earnings restatements through accounting changes. Adams and Mansi(2009) find that CEO turnover is negatively related to bondholder value and positively related to stockholder value. They also find that the stock market reaction of a forced CEO turnover with an outsider successor is more positive than that of a voluntary CEO turnover with an insider successor.

## **2.2. Audit Report Lag(ARL)**

Previous studies on ARL include the characteristics of a company and the external auditor, which affect the ARL(Whittred, 1908; Whittred and Zimmer, 1984; Ashton et al., 1987; Bamber et al., 1993; Knechel and Payne, 2001) and the effect of a new system on the ARL(Ettredge et al., 2006). Whittred and Zimmer(1984) find that companies in financial distress have long ARLs. Ashton et al.(1987) find that the ARL is long for unlisted companies, non-financial companies, companies that receive qualified audit opinions, companies with a fiscal year-end in a month other than December, and companies with poor internal control systems. Bamber et al.(1993) find that the ARL is long when significant audit work is required. However, incentives to provide timely reports decrease the length of the ARL. Knechel and Payne(2001) find that incremental audit efforts, the presence of tax issues, and using less experienced auditors increase the ARL. Lee and Jahng(2008) find that non-audit fees paid to incumbent auditors, using a Big 4 auditor, unqualified audit opinions, abnormal audit hours, and tax services provided by incumbent auditors decrease the ARL. Bae and Woo(2014) find that

the ARL is positively associated with analysts' forecast error.

### 2.3. Hypothesis Development

A CEO turnover event is considered the expectation of future performance improvement or a signal of poor present performance. Lausten(2002) and Brunello et al.(2003) find that CEO turnover often occurs when the performance of a company is poor. A new CEO tends to report earnings conservatively because he or she wants to lower the expected level of future performance(Moore, 1973; Strong and Meyer, 1987). The new CEO is likely to reluctantly disclose information that addresses earnings management, which can aggravate information asymmetry. Sohn et al.(2014) find that the possibility of an unfaithful disclosure designation for a firm and the accuracy of an analyst forecast decrease when the CEO changes. Therefore, the CEO turnover would increase earnings management and aggravate information asymmetry. Because monitoring costs and the cost of debt increase when information asymmetry is serious, the CEO has an incentive to disclose timely information for decreasing information asymmetry(Lee et al., 2008). However, a significant amount of effort is spent in the auditing process because an external auditor would estimate the audit risk as being high in the event of a CEO turnover. The increase in audit effort increases the ARL. The first hypothesis is developed as follows.

**Hypothesis 1: Ceteris paribus, CEO turnover is significantly positively associated with an audit report lag (ARL).**

## III. Research Design

### 3.1. Research Model

The empirical model used to test Hypothesis 1 and 2 is as follows.

$$ARL_t = \beta_0 + \beta_1 CEO_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 ROA_t + \beta_5 LOSS_t + \beta_6 SOSUB_t + \beta_7 CR_t + \beta_8 GP_t + \beta_9 OWN_t + \beta_{10} FOR_t + \beta_{11} BIG_t + \beta_{12} LNNAF_t + \beta_{13} SWITCH_t + \sum IND + \sum YEAR + \varepsilon_t \quad (1)$$

where

$ARL_t$  : the number of days from the fiscal year-end to the date on which the audit process is finished for year  $t$ ;  
 $SIZE_t$  : the natural logarithm of total assets at the end of year  $t$ ;  
 $LEV_t$  : the debt ratio at the end of year  $t$ ;  
 $ROA_t$  : the return on asset in year  $t$ ;  
 $LOSS_t$  : 1 if a company reports negative earnings in year  $t$ , 0 otherwise;  
 $SQSUB_t$  : the square root of the number of subsidiaries in year  $t$ ;  
 $CR_t$  : the current ratio at the end of year  $t$ ;  
 $GP_t$  : 1 if a company is included in a conglomerate, 0 otherwise;  
 $OWN_t$  : the ownership percentage of the manager in year  $t$ ;  
 $FOR_t$  : the ownership percentage of foreign shareholders in year  $t$ ;  
 $BIG_t$  : 1 if an external auditor is from the Big 4, 0 otherwise;  
 $LNNAF_t$  : the natural logarithm of non-audit service fees in year  $t$ ;  
 $SWITCH_t$  : 1 if an auditor offers an initial audit service, 0 otherwise;  
 $IND$  : industry dummy;  
 $YEAR$  : year dummy.

$ARL$  is dependent variables in model(1) and represent the audit report lag. The main independent variable in model(1) is  $CEO$ , which represent whether the CEO has changed. The other independent variables are control variables. An external auditor spends a large amount of time on an audit procedure when the size of auditee is large. However, a large auditee has an incentive to provide timely information because it has a well-organized internal control system or because there are many interested parties (Carslaw and Kaplan, 1991). Therefore,  $SIZE$  is included to control the effect of company's size on  $ARL$ . When the debt ratio is high, the audit risk is also high, and an external auditor would spend a great deal of time on an audit procedure. Thus,  $LEV$  is included in model(1).  $ROA$  is also used as a control variable (Jaggi and Tsui, 1999).  $LOSS$  is included to control the different reporting incentive of positive (good news) or negative earnings (bad news) (Ashton et al., 1987; Carslaw and Kaplan, 1991).  $SQSUB$  represents the complexity of the auditee. The complexity of the auditee is deepened as  $SQSUB$  increases.  $CR$  is included to control the effect of the company's financial condition on  $ARL$ . When the current ratio is low, the liquidity of a company is poor. Therefore, an external auditor would spend a large amount of time in audit procedures. When the current ratio is high, a company has sufficient current assets to pay the current liabilities. In this case, an external auditor would not spend much time on the audit procedures. When a company is included in a conglomerate, the regulatory bodies would monitor this company in various ways. Therefore, the audit risk would be low in a company that is included in a conglomerate. The low ownership percentage of a manager means that there are various interested parties and that the litigation risk is high. Therefore, an external auditor would be careful with the audit procedure, and consequently,  $ARL$  would increase. As the ownership percentage of

foreign shareholders increases, the audit risk would increase because the foreign investors are considered sophisticated investors who can analyze the accounting information of a company. Thus, FOR would increase the ARL. If an external auditor is from the Big 4, ARL would be short because large audit firms have many experienced staff members and a large amount of audit resources. LNNAF is used to control the effect of non-audit services by the incumbent auditor on ARL because audit hours would be reduced by the understanding of auditee from non-audit services (Knechel and Payne, 2001; Lee and Jahng, 2008). If an external auditor offers an initial audit service, it is necessary to spend more time in the audit procedure because understanding the entire situation of auditee is essential. This would make ARL long.

### **3.2. Sample Selection**

Our sample consists of listed companies on the Korean Exchange (KRX) from 2003 to 2010. Only firm years with a fiscal year-end on December 31 and non-financial companies are included in our sample. Firm years for which financial, ownership percentage and external auditor data are available in both the TS-2000 and Kis-Value are included in our sample. The data for CEO turnover are collected from the Corporate Disclosure Channel KIND, which is operated by KRX (<http://kind.krx.co.kr>). The final sample consists of 3,147 firm years.

## **IV. Empirical Results**

### **4.1. Descriptive Statistics**

Descriptive statistics of variables used in this study are presented in Table 1.

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Insert Table 1 around Here

\*\*\*\*\*

The mean and median of ARL is approximately 46, which means that the number of days from the fiscal year-end to the date on which the audit process is finished is 46 days. The mean of CEO is 0.295, which means that 30% of our sample companies changed CEOs. The mean and median of LEV are each approximately 46%. This result shows that



the total equity is larger on average than the total liabilities in our sample. The mean of LOSS is 0.187, which means that 19% of our sample report net loss in a sample period. The mean of CR is 1.770. This result shows that the total current assets are greater than total current liabilities. The mean of GP is 0.278, which means that 28% of our samples are included in a conglomerate. There is a large difference between the mean and the median of FOR. This result states that foreign investors invest in some companies intensively. The mean of BIG is 0.701, which means that 70% of our samples are audited by Big 4 audit firm.

## 4.2. Regression Results

Table 2 presents the results of the regression analysis in Hypotheses 1. CEO is significantly positively associated with ARL. This result means that the external auditor conducts audits conservatively in companies where the CEO changed because CEO turnover is related to the impairment of the accounting information's reliability and transparency. This attitude of an external auditor increases the ARL. Therefore, Hypothesis 1 is supported.

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Insert Table 2 around Here

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## 4.3. Additional Analysis Results

We focus on the frequency rather than the existence of CEO turnovers in the additional analysis. The audit risk would be high in companies where the CEO changes more frequently because a CEO turnover can affect the audit risk and information asymmetry. The results of the additional analysis on the relation between the frequency of CEO turnover and the ARL is shown in Table 3. The empirical results show that the ARL and TRL<sup>2)</sup> increase as the frequency of the CEO turnover increases.

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Insert Table 3 around Here

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2) the number of days from the fiscal year-end to the earnings release date of year t.

## V. Conclusion

This study empirically investigates the effect of a CEO turnover on ARL. The object of this study is to provide empirical evidence for the responses of both the CEO and the external auditor on audit risk increases and information asymmetry that occur as a result of a CEO turnover. According to the previous study on CEO turnovers, the CEO turnover would increase audit risk and information asymmetry(Sohn et al., 2014). In this situation, the CEO has an incentive to provide timely information to decrease the monitoring costs and cost of debt(Lee et al., 2008). It is expected that an external auditor spends a large amount of time on audit procedures to lower the audit risk when the CEO changes.

The results of the analysis are as follows. First, the ARL increases when the CEO changes, which suggests that an external auditor spends a great amount of time on audit procedures to lower the audit risk because the audit risk increases when the CEO changes. A new CEO provides information faster to reduce monitoring costs and cost of debt that occur due to information asymmetry. Additionally, ARL increases as the frequency of CEO turnover increases. An external auditor would estimate the audit risk as being high if the CEO changes more frequently. To lower the audit risk to an acceptable level, many audit hours are spent on audit procedures by an external auditor, which increases the ARL.

This study provides additional evidence for the proposal of previous studies that an external auditor and the management would behave differently when the audit risk is high and information asymmetry is serious.

## References

- Adams, J. C., and S. A. Mansi, 2009, CEO Turnover and Bondholder Wealth, *Journal of Banking & Finance* 33: 522-533.
- Ashton, R. H., J. J. Willingham, and R. K. Elliott, 1987, An Empirical Analysis of Audit Delay, *Journal of Accounting Research* 25(2): 275-292.
- Bae, C. H., and Y. S. Woo, 2014, The Effect of Audit Report Lag and Management Discretionary Report Lag on Analyst Forecasts: Evidence from Korea, *Investment Management and Financial Innovations* 12(1): 318-329.
- Bamber, E. M., L. S. Bamber, and M. P. Schoderbek, 1993, Audit Structure and Other

- Determinants of Audit Report Lag: An Empirical Analysis, *Auditing: A Journal of Practice & Theory* 12(1): 1-23.
- Beatty, R. P., and E. J. Zajac, 1987, CEO Change and Firm Performance in Large Corporations: Succession Effects and Manager Effects, *Strategic Management Journal* 8: 305-317.
- Brunello, G., C. Graziano and B. M. Parigi, 2003, CEO Turnover in Insider-Dominated Boards: The Italian Case, *Journal of Banking & Finance* 27: 1027-1051.
- Carslaw, C. A. P. N. and S. E. Kaplan, 1991, An Examination of Audit Delay: Further Evidence from New Zealand, *Accounting and Business Research* 22(85): 21-32.
- Denis, J. D., and D. K. Denis, 1995, Performance Changes Following Top Management Dismissals, *The Journal of Finance* 50(4): 1029-1057.
- Denis, D. J., D. K. Denis and A. Sarin, 1997, Ownership Structure and Top Executive Turnover, *Journal of Financial Economics* 45: 193-221.
- Desai, H., C. E. Hogan, and M. S. Wilkins, 2006, The Reputational Penalty for Aggressive Accounting: Earnings Restatements and Management Turnover, *The Accounting Review* 81(1): 83-112.
- Ettredge, M., C. Li and L. Sun, 2006, The Impact of SOX Section 404 Internal Control Quality Assessment on Audit Delay in the SOX Era, *Auditing: A Journal of Practice & Theory* 25(2): 1-23.
- Francis, J., D. Hanna and L. Vincent, 1996, Causes and Effects of Discretionary Asset Write-Offs, *Journal of Accounting Research* 34(Supplement): 117-134.
- Friedman, S. D., and H. Singh, 1989, CEO Succession and Stockholder Reaction: The Influence of Organizational Context and Event Content, *Academy of Management Journal* 32(4): 718-744.
- Jaggi, B., and J. Tsui, 1999, Determinants of Audit Report Lag: Further Evidence from Hong Kong, *Accounting and Business Research* 30(1): 17-28.
- Knechel, W. R., and J. L. Payne, 2001, Additional Evidence on Audit Report Lag, *Auditing: A Journal of Practice & Theory* 20(1): 137-146.
- Lausten, M., 2002, CEO Turnover, Firm Performance and Corporate Governance: Empirical Evidence on Danish Firms, *International Journal of Industrial Organization* 20: 391-414.
- Lee, H. and G. Jahng, 2008, Determinants of Audit Report Lag: Evidence from Korea - An Examination of Auditor-Related Factors, *Journal of Applied Business Research* 24(2): 27-44.
- Lee, H., V. Mande and M. Son, 2008, A Comparison of Reporting Lags of Multinational and Domestic Firms, *Journal of International Financial Management and*

Accounting 19(1): 28-56.

- Leventis, S. and P. Weetman, 2004, Timeliness of Financial Reporting: Applicability of Disclosure Theories in an Emerging Capital Market, *Accounting and Business Research* 34(1): 43-56.
- Moore, M. L., 1973, Management Changes and Discretionary Accounting Decisions, *Journal of Accounting Research* 11: 100-107.
- Sohn, S. K., Y. S. Oh, M. J. Kang and C. H. Bae, 2014, The Effect of CEO Change on Information Asymmetry, *Journal of Applied Business Research* 30(2): 527-540.
- Strong, J. S., and J. R. Meyer, 1987, Asset Writedowns: Managerial Incentives and Security Returns, *The Journal of Finance* 42(3): 643-661.
- Suchard, J., M. Singh, and R. Barr, 2001, The Market Effects of CEO Turnover in Australian Firms, *Pacific-Basin Finance Journal* 9: 1-27.
- Warner, J. B., R. L. Watts, and K. H. Wruck, 1988, Stock Prices and Top Management Changes, *Journal of Financial Economics* 20: 461-492.
- Weisbach, M. S., 1988, Outside Directors and CEO Turnover, *Journal of Financial Economics* 20: 431-460.
- Whittred, G. P., 1980, Audit Qualification and the Timeliness of Corporate Annual Reports, *The Accounting Review* 55(4): 563-577.
- Whittred, G. P., and I. Zimmer, 1984, Timeliness of Financial Reporting and Financial Distress, *The Accounting Review* 59(2): 287-295.

**<Table 1> Descriptive Statistics**

Variables	Mean	St. Div.	Min	Median	Max
ARL	46.757	14.613	18	46	76
CEO	0.295	0.456	0	0	1
SIZE	19.739	1.563	16.769	19.498	23.915
LEV	0.462	0.193	0.063	0.469	0.895
ROA	0.026	0.091	-0.466	0.036	0.206
LOSS	0.187	0.390	0	0	1
SQSUB	3.553	3.841	0	3.000	18.466
CR	1.770	1.743	0.192	1.298	12.443
GP	0.278	0.448	0	0	1
OWN	0.412	0.168	0.066	0.405	0.814
FOR	0.114	0.152	0	0.042	0.652
BIG	0.701	0.458	0	1	1
LNNAF	3.998	5.187	0	0	13.741
SWITCH	0.189	0.392	0	0	1

\*) See Model(1) for definitions of the variables used.

**<Table 2> Regression Results**

	ARL			TRL		
	Coef.	t-stat		Coef.	t-stat	
Intercept	41.752	8.13	***	83.917	25.23	***
CEO	1.789	3.25	***	0.511	1.43	
SIZE	-0.107	-0.39		-1.086	-6.12	***
LEV	3.494	2.01	**	5.469	4.87	***
ROA	-19.055	-4.70	***	-7.523	-2.87	***
LOSS	0.857	0.95		1.539	2.64	***
SQSUB	0.585	6.93	***	0.340	6.22	***
CR	0.261	1.48		-0.086	-0.75	
GP	-3.955	-5.47	***	-1.014	-2.16	**
OWN	1.388	0.87		0.368	0.36	
FOR	-12.592	-6.19	***	-6.334	-4.81	***
BIG	6.856	11.42	***	1.715	4.41	***
LNNAF	0.047	0.90		0.089	2.63	***
SWITCH	1.139	1.79	*	1.373	3.33	***
IND	Included			Included		
YEAR	Included			Included		
N	3,147			3,147		
AdjR <sup>2</sup>	0.096			0.108		
F-value	14.43***			16.17***		

\*\*\*,\*\* and \* denote significance at the 1%, 5%, and 10% percent levels, respectively, based on a two-tailed test. See Model(1) for definitions of the variables used.

**<Table 3> Additional Regression Results - Frequency of CEO Turnover**

	ARL			TRL		
	Coef.	t-stat		Coef.	t-stat	
Intercept	41.799	8.14	***	83.956	25.25	***
CEON	1.448	3.53	***	0.540	2.03	**
SIZE	-0.110	-0.40		-1.091	-6.15	***
LEV	3.478	2.01		5.471	4.87	***
ROA	-18.484	-4.55	***	-7.228	-2.75	***
LOSS	0.872	0.97		1.540	2.64	***
SQSUB	0.584	6.93	***	0.339	6.21	***
CR	0.260	1.47		-0.087	-0.76	
GP	-3.933	-5.44	***	-1.009	-2.15	**
OWN	1.439	0.90		0.377	0.36	
FOR	-12.597	-6.20	***	-6.326	-4.81	***
BIG	6.854	11.42	***	1.717	4.42	***
LNNAF	0.044	0.85		0.088	2.60	***
SWITCH	1.135	1.79	*	1.364	3.31	***
IND	Included			Included		
YEAR	Included			Included		
N	3,147			3,147		
Adj R <sup>2</sup>	0.097			0.108		
F-value	14.51***			16.26***		

\*\*\*,\*\* and \* denote significance at the 1%, 5%, and 10% percent levels, respectively, based on a two-tailed test. See Model(1) for definitions of the variables used.