JOURNAL OF BUSINESS & ECONOMICS
Volume No. 12 (2), pp. 67–81

doi:10.5311/JBE.2020.12.14

RESEARCH ARTICLE

Effect of Earnings Management linked Advertising Expenditures, Board Attributes and Ownership Type on Performance of Food Sector Firms of Pakistan

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Received: July 5, 2020; Accepted: December 14, 2020.

Abstract: The intention behind this paper was to identify the effects of earnings management linked to advertising expenditures, board attributes and ownership type on financial performance of firms. Fourteen firms were selected from the food sector of Pakistan. These firms were selected by considering the availability of data for the time period 2010-2019. Data is analyzed using fixed effects panel data regression. Results indicated a positive connection between earnings management linked advertising expenditures and financial performance. This finding demonstrates that managers manage earnings by means of structuring advertising expenditures. Moreover, financial performance of firms escalates with increase in level of earnings management activities. In respect of board attributes, a positive link is found between CEO duality and performance, which indicate that CEO duality augments firm performance. In respect of ownership type, a positive link is found among managerial ownership and performance, which signifies that corporations having high (low) proportion of managerial ownership perform better (worse). Likewise, a positive link is observed among institutional ownership and performance, which implies that corporations having high (low) proportion of institutional ownership performs better (worse). It is obvious from the results that earnings management are linked to advertising expenditure, CEO duality, institutional ownership and managerial ownership has a favorable impact on the performance of firms. Financial performance is one of the imperative factors considered by investors in decision making. Therefore, the findings of present study are useful for investors as this paper documented the specific effects of various factors on financial performance. This paper investigated the issue for food sectors firms of Pakistan. Thus, this topic can be studied for other firms of Pakistan.

Keywords: Advertising Expenditures, Earnings Management, Board Characteristics, Ownership, Financial Performance, Pakistan
JEL Classification Code: M37, M49, G30,G32, G39

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1 Introduction

Tough economic conditions and the consequent budget limitations obligated managers to probe the efficacy of advertising expenditures of their firms (Parment et al., 2011). The gravity of this matter urged many researchers to examine this issue in past years (Acar & Temiz, 2017; Artikis et al., 2009; Kim et al., 2019; Meyer & Ujah, 2017; Peterson & Jeong, 2010; Sridhar et al., 2014; Tanveer et al., 2020). Effect on firm performance as well as communication effects have been evaluated in past to describe the outcomes of advertising expenditures. However, firm performance remained the prime focus of researchers because of its notability.

Numerous researchers have identified the reasons behind the use of earnings management activities by managers. According to these studies, the extent of use is more when firms: face high economic growth and financial constraints (Wang et al., 2015);it intend to meet forecast of analysts (Beccalli et al., 2015). In such conditions , firms hold ample free cash flows (Astami et al., 2017); have high degree of corporate diversification (Alhadab & Nguyen, 2018); handle high intensity of research and development (Chouaibi et al., 2019);and eventually face fierce industry competition (Lee & Chou, 2020). Additionally, Yamaguchi (2020) specified pressure of firm performance as the cause of earnings management. It was observed that managers set mean profitability of industry as their standard and then manage earnings to meet this standard.Earnings are usually managed by means of accrual based and real activities based methods. In accrual based method, managers exploit discretionary accruals to alter earnings (Kama & Melumad, 2020). In real activities method, managers alter sales, cut down discretionary expenditures and overproduce so as to aggrandize earnings (Yamaguchi, 2020). The focus of present study is on the advertising expenditure as it is a discretionary expense and is often used by managers to alter earnings.

Besides advertising expenditures, many researchers have probed the link among different facets of corporate governance and firm performance. According to these studies, firm performance escalates when: CEO has low power and control (Han et al., 2016; Martín & Herrero, 2018); firms have high proportion of family directors in conjunction with low control and service gaps (Huybrechts et al., 2016); emotions of CEO are negative (Akansu et al., 2017);firms have low board gender diversity (Adusei et al., 2017; Maravelaki et al., 2019; Shehata et al., 2017); positions of CEO and chairmanship of board are held by separate persons (Withers & Fitza, 2017); firms incur high audit cost (A. W. Khan & Subhan, 2019); firms have low level of state ownership and high level of domestic institutional ownership (Chen et al., 2018); firms have high degree of ownership concentration and foreign ownership (Kuo et al., 2020; Wang et al., 2019); firms have high proportion of board independence (M. T. Khan et al., 2019); CEO duality exists in the situation of high uncertainty regarding the economic policy (Chang et al., 2019); firms have low level of ownership discrepancy (Yeh, 2019); firms spend large amount on corporate social responsibility (Malik et al., 2019) ; firms pay more non-executive compensation (Ko et al., 2020).

Advertising is extensively used by food sector firms, in order to inform customers about their products (Feng & Park, 2018). Food sector firms often spend a significant portion of their revenues on advertising. The average advertising expenditure of food firms of Pakistan is 4 percent of revenues along with the average deviation of 5 percent during the time period 2010 to 2019 (Table I). Moreover, a maximum of 28 percent of revenues have been spent in this regard. Pressure on managers to report good firm performance as well as the discretionary nature of advertising expenditures persuades to investigate whether

advertising expenditures are structured by managers for manipulating firm performance. Furthermore, findings of prior studies induce to test the link of board attributes and ownership type with firm performance specifically for the food sector of Pakistan.

Present study is noteworthy in various ways. Primarily, it is an addition to the literature of marketing-finance interface as it examined the relationship of earnings management linked to advertising expenditures with firm performance. Furthermore, it discloses the truth about the use of earnings management activities by managers. Finally, it offers investors' an insight about the effect of earnings management linked advertising expenditures, board attributes and ownership type on performance of food sector firms of Pakistan.

2 Literature Review

2.1 Advertising expenditures and firm performance

The question about the impact of marketing expenditures encouraged researchers to investigate the consequences of these expenditures. Candemir & Zalluhoglu (2011) reported that large marketing expenditures results in higher sales. Chouliaras et al. (2015) examined the contribution of marketing expenses towards firm performance. They observed that the contribution of marketing expenses towards firm performance is positive and strong. Jaisinghani & Kanjilal (2019) reported that the impact of marketing investment on firm performance differs with firm size. In case of large size firms, large investment results in low performance. On the other hand, large investment results in high performance in case of small size firms. Markovitch et al. (2020) noted the positive association between marketing expenditures and firm performance.

Firms spend huge sums of amount on advertising to communicate about their products and services (Parment et al., 2011). Therefore, various researchers examined the effect of advertising spending on firm performance. Artikis et al. (2009) noted the positive effects of advertising expenses on corporate profitability. They documented that large expenditures on advertising creates demand of firms' market offerings, which leads to higher sales and profits. Similarly, Peterson & Jeong (2010) documented that firm performance can be improved by means of large advertising expenditures. Brand value increases as a result of these expenditures, which subsequently boosts firm performance. Sridhar et al. (2014) examined the effect of advertising expenses on performance and the subsequent influence of performance on future advertising expenses. They noted that firms decrease advertising expenditures once they achieve high performance via large advertising expenditures.

Acar & Temiz (2017) investigated the effect of advertising outlays on various financial measures of banks such as income from interest, income from operations and assets return.They observed the positive association of these financial indicators with advertising expenses. Additionally, Kim et al. (2019) examined the impact of advertising outlays on firm performance in the periods of recession. They noticed that large expenditures improve firm performance in current as well as subsequent periods. Conversely, Tanveer et al. (2020) documented the adverse impact of advertising outlays on firm performance. They observed that the profitability of firms reduces because of large advertising expenditures.

Meyer & Ujah (2017) probed the link among discretionary advertising expenditures and firm performance. They reported a negative relationship among earnings management linked to advertising expenditures and firm performance. Moreover, researchers documented that the level of earnings management activities varies among firms. This extent

is greater for firms with low performance and smaller for firms with high performance.On the basis of this literature, following hypothesis is articulated:
H_1: Earnings management linked advertising expenditures significantly influences firm performance.

2.2 Board attributes, ownership type, and firm performance

Existing literature shows various studies in respect of the link concerning firm performance and facets of corporate governance. Han et al. (2016) noticed that higher CEO power leads to low firm performance in the time of economic crisis. Huybrechts et al. (2016) examined the connection among proportion of family directors and firm performance. They observed that control gap and service gap positively affects this relationship. When both gaps are low, firm performance improves as a result of high proportion of family directors. Akansu et al. (2017) investigated the influence of CEO emotional state on firm performance. They reported that negative emotions are good for firms as such emotions induce CEO to perform hard tasks, which results in good firm performance. Martín & Herrero (2018) examined the effects of level of CEO control on firm performance and found that lower level of control leads to better firm performance. Chen et al. (2018) scrutinized the effects of state ownership and institutional holdings on firm performance. They reported negative link among state ownership and firm performance. Moreover, authors also reported positive connection among domestic institutional holding and firm performance. Yeh (2019) noted the negative effects of ownership discrepancy on firm performance.

Malik et al. (2019) observed the positive link among spending on corporate social responsibility (CSR) and firm performance. According to these researchers, current and future profitability of firm increases when large amount is spent on CSR. Wang et al. (2019) observed the positive influence of ownership concentration and foreign ownership on firm performance. Moreover, Kuo et al. (2020) noted the different effects of foreign and government ownership on firm performance. They recognized positive effects in respect of foreign ownership and negative effects in respect of government ownership. Ko et al. (2020) highlighted the direct link of firm performance with non-executive compensation. Moreover, authors also reported the negative association of firm performance with the fixed portion of compensation and the positive association of performance with the variable portion of compensation.

Various researchers tested the link of board size with performance in past. However, these studies reported contrary evidences regarding the link among these variables. Some studies described insignificant relationship (Allam, 2018; Assenga et al., 2018; Borlea et al., 2017). Instead, few other researchers observed a significant positive relationship (Brahma et al., 2020; Gaur et al., 2015; Martín & Herrero, 2018; Merendino & Melville, 2019). Contrarily, some studies documented a significant negative relationship (Augusto et al., 2020; M. T. Khan et al., 2019; Ko et al., 2020; Shehata et al., 2017). Considering these contradictory evidences, following hypothesis is articulated:
H_2: Board size significantly influences firm performance.

A number of studies examined the link of board independence with performance in recent years. However, these studies presented inconsistent findings in respect to this link. Some studies observed an insignificant relationship (Allam, 2018; Assenga et al., 2018; Mayur & Saravanan, 2017; Sohail et al., 2017). Few other studies found a significant positive relationship (M. T. Khan et al., 2019; Merendino & Melville, 2019; Wu et al., 2020). Alter-

natively, certain other studies described a significant negative relationship (Dang A et al., 2018; Duppati et al., 2020; Gaur et al., 2015; Ko et al., 2020).Considering these inconsistent evidences, following hypothesis is articulated:

H_3: Board independence significantly influences firm performance.

Several previous studies investigated the link of CEO duality with performance. Though, these studies documented diverse findings in respect of this link. Few studies found insignificant relationship (Allam, 2018; Merendino & Melville, 2019). Some other studies reported a significant positive relationship (Duppati et al., 2020; Maravelaki et al., 2019). Contrarily, few other studies documented a significant negative relationship (Assenga et al., 2018; Brahma et al., 2020; Dang A et al., 2018; Gaur et al., 2015; Martín & Herrero, 2018; Rizwan, 2019; Withers & Fitza, 2017). In view of these conflicting findings, following hypothesis is articulated:

H_4: CEO duality significantly influences firm performance.

Some earlier studies tested the link of managerial ownership with performance. Nonetheless, these studies reported mixed findings regarding the link. Some studies found an insignificant relationship (Gaur et al., 2015; Sohail et al., 2017). On the other hand, Hoang et al. (2017) reported that the nature of link concerning managerial ownership and firm performance is not the same. It changes with change in the level of managerial ownership. However, Joe et al. (2019) revealed a positive connection among managerial ownership and firm performance. Considering these inconsistent findings, following hypothesis is articulated:

H_5: Managerial ownership significantly influences firm performance.

Several prior studies tested the link of institutional ownership with performance. But, these studies documented different results in respect of the link among these variables. Some studies reported insignificant relationship (Allam, 2018; Shahwan, 2015; Sohail et al., 2017). Whereas, few other studies described a significant positive relationship (Ko et al., 2020; Rizwan et al., 2018; Wu et al., 2020; Yeh, 2019). Conversely, Tsouknidis (2019) found a significant negative relationship between institutional ownership and firm performance.Considering these contradictory evidences, following hypothesis is articulated:

H_6: Institutional ownership significantly influences firm performance.

Additionally, various studies reported the effect of leverage on firm performance (Assenga et al., 2018; Merendino & Melville, 2019; Shahwan, 2015; Wu et al., 2020). Moreover, some studies also reported the influence of firm size on performance (Assenga et al., 2018; Augusto et al., 2020). Therefore, leverage and firm size are included in this study as control variables.

3 Methods

3.1 Data collection

The sample consists of 14 firms that belong to the food sector of Pakistan and are listed in Pakistan stock exchange. These firms are included in the sample by bearing in mind the availability of data for the time period 2010-2019. Annual reports of firms were obtained from their websites and relevant data was collected from these reports. As measurement of one variable required lag data, therefore, final data set used for data analysis contains 9 years data over the time period 2011-2019.

3.2 Methodology

3.2.1 Research model

The research model of this study is given below:

$$ROA_{i,t} = \alpha_0 + \alpha_1 EMLAE_{i,t} + \alpha_2 BS_{i,t} + \alpha_3 BI_{i,t} + \alpha_4 CD_{i,t} + \alpha_5 MO_{i,t} + \alpha_6 IO_{i,t} + \alpha_7 LEV_{i,t} + \alpha_8 SIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

In above equation, ROA represents return on asset and is the dependent variable of this study. This measure is the indicator of firm's financial performance. Explanatory variables of this study include earnings management linked advertising expenditures (EMLAE), board size (BS), board independence (BI), CEO duality (CD), managerial ownership (MO) and institutional ownership (IO). Control variables of this study include leverage (LEV) and firm size (SIZE). ROA is measured by dividing net income with total assets. EMLAE is measured by using the following equation:

$$AdvExp_{i,t}/TotalAssets_{i,t-1} = K_1 1/TotalAssets_{i,t-1} + K_2 Sales_{i,t-1}/TotalAssets_{i,t-1} + K_3 Debt_{i,t}/TotalAssets_{i,t} + \varepsilon_{i,t} \quad (2)$$

Above equation was also used by Meyer & Ujah (2017). At first, predicted values of advertising expenditures are obtained using the equation 2. Then, the difference between actual and predicted advertising expenditures is calculated to obtain the values of EMLAE.

Board size is determined on the basis of total count of directors on firm's board. Board independence is measured by dividing the count of independent directors with the total count of directors on the firm's board. CEO Duality represents a dummy variable.Value of one is assigned to this variable if the board's chairman also keeps the position of CEO, and zero if not.Managerial ownership stands for the portion of shares held by firm's directors and officers. Institutional ownership represents the portion of firm's shares held by the institutions. Leverage is ascertained by dividing total debt with total assets. Finally, firm size is ascertained via the natural log of the total assets.

3.2.2 Estimation approach

Correlations between explanatory variables and variance inflation factors (VIF) are determined first to ascertain whether the issue of multicollinearity exists or not. Unit root test is performed afterwards to check the stationarity of data.Before analyzing data using panel data regression technique, two tests are performed for selection of the appropriate model. These tests include redundant fixed effects test and Hausman test. The aim of redundant fixed effects test is to choose one from common and fixed effects model. In the event of fixed effects model selection, Hausman test is performed with the aim of selecting one from random and fixed effects model.After obtaining results using panel data regression technique, various values related with residuals are obtained and tests are performed to make sure that regression assumptions regarding residuals are fulfilled. At first, mean value of residuals is checked to confirm that it is equal to zero. Then, p-value of Jarque Bera statistic is examined to confirm that residuals are normally distributed. Next, Durbin-Watson statistic is checked to make sure that residuals are independent. Finally, cross section dependence test is conducted to ensure that residuals have constant variance.

4 Results

4.1 Descriptive statistics

Descriptive statistics of the advertising expenditures, predicted and predictor variables are presented in table 1.

Table 1: Descriptive statistics of variables

	ROA	EMLAE	BS	BI	CD	MO	IO	LEV	SIZE	ADV. EXP.
Mean	0.09	0	8.29	0.15	0.06	0.26	0.06	0.51	15.19	0.04
Median	0.08	-0.01	8	0.13	0	0.22	0.03	0.56	15.05	0.03
MAX.	0.46	0.37	12	0.4	1	0.79	0.4	1.3	21.51	0.28
MIN.	-0.48	-0.13	6	0	0	0	0	0.01	11.53	0
S.D.	0.13	0.07	1.56	0.28	0.24	0.28	0.07	0.26	1.54	0.05

4.2 Correlation analysis

The values of correlation between regressors and their VIFs are presented in table 2. Correlations coefficients reported in table 2 indicate weak correlations between explanatory variables. Furthermore, VIF values are less than 5. Therefore, these values point toward the absence of problematic multicollinearity.

Table 2: Correlation and VIFs

	Correlations								VIF
	EMLAE	BS	BI	CD	MO	IO	LEV	SIZE	
EMLAE	1								1.18
BS	0.09	1							1.33
BI	-0.01	0.17	1						1.12
DUAL	-0.14	-0.22	-0.11	1					1.21
MO	-0.33	-0.07	-0.14	0.22	1				1.32
IO	-0.17	-0.19	-0.08	-0.05	0.1	1			1.16
LEV	0	0.28	0.11	0.15	0.28	-0.1	1		1.31
SIZE	0.09	0.41	0.27	-0.21	0	-0.29	0.25	1	1.42

4.3 Data stationarity test

Result of data stationarity test is presented in table 3.

4.4 Regression results

Redundant fixed effects testis conducted initially to make selection between common and fixed effects model. Table 4 contains the result of this test. Table 4 shows that the p-value of test statistic is less than 0.05. Therefore, fixed effects model is preferred. Subsequently,

Table 3: Results of data stationarity test

Variable	ROA	EMLAE	BS	BI	CD	MO	IO	LEV	SIZE
Levin, Lin \ -6.82	Chu t	-6.56	-6.31	-2.38	-2.43	-2.53	-160.79	-6.29	-3.56
p-value	0	0	0.009	0.008	0.006	0	0	0	0

Table 4: Result of redundant fixed effects test

Effects Test	t-stat.	p-value
Cross-section F	24.85	0

Hausman test is conducted to make selection among random and fixed effects model. Table 5 contains the result of this test.

Table 5: Hausman test result

Test Summary	t-stat.	p-value
Cross-section random	20.7	0.01

Table 5 shows that the p-value of test statistic is less than 0.05. Hence, fixed effects model is selected for analyzing data. Result of fixed effects panel data regression is presented in table 6. Results reported in table 6 shows a significant positive relationship between earnings management linked advertising expenditures and firm performance. This result serves as a base to accept H1. Positive relationship implies that good financial performance is the outcome of large earnings management linked advertising expenditures. Moreover, low financial performance is the consequence of small earnings management linked advertising expenditures. This finding serves as evidence that managers manage earnings by means of structuring advertising expenditures. Moreover, there is positive impact of earnings management activities on firm performance. Succinctly, firm performance improves with increase in earnings management activities. The observed result contradicts with the previous finding of Meyer & Ujah (2017).

Further results indicate an insignificant link among board size and firm performance, which serves as a base for rejecting H2. Moreover, an insignificant link is noticed among board independence and firm performance. For that reason, H3 is also rejected.On the other hand, a significant positive link is found among CEO duality and firm performance. In view of this finding, H4 is accepted. This result designates that firms having CEO duality exhibit high financial performance. Contrarily, firms that lack this characteristic exhibit low financial performance.The attained result is in agreement with the prior findings of Maravelaki et al. (2019) and Duppati et al. (2020).

Further results demonstrate a significant positive link among managerial ownership and firm performance. H5 is accepted on the grounds of this finding. This result postulates that managerial ownership is beneficial for firms. High proportion of managerial ownership enhances the financial performance of firms, whereas, low proportion of managerial ownership undermines the financial performance of firms.The observed result is

Table 6: Results of fixed effects panel data regression

Dependent variable: ROA				
Variable	**Coefficient**	**S.E**	**t-Stat.**	**p-value**
Intercept	0.16	0.09	1.92	0.06
EMLAE	0.31	0.09	3.59	0
BS	0	0.01	0.46	0.65
BI	0	0.02	-0.29	0.77
CD	0.06	0.02	2.78	0.01
MO	0.09	0.04	2.1	0.04
IO	0.16	0.06	2.72	0.01
LEV	-0.06	0.05	-1.3	0.2
SIZE	-0.01	0	-1.45	0.15
R2	0.86	F-stat.		31.42
Adjusted R2	0.84	p-value (F-stat.)		0
S.E.	0.06	D-W stat.		1.62

in agreement with the former finding of Joe et al. (2019). Similarly, a significant positive link is found among institutional ownership and firm performance. H6 is accepted on the grounds of this finding. This result shows that institutional ownership is lucrative for firms.High fraction of institutional ownership ameliorates the financial performance of firms, while, low fraction of institutional ownership curtails the financial performance of firms.The observed evidence is coherent with the earlier findings of Yeh (2019), Ko et al. (2020) and Wu et al. (2020). Results of various tests of residuals are reported in table 7. According to table 7, mean value of residuals is zero. Moreover, p-value of Jarque-

Table 7: Tests of residuals

Values related to residuals		**Cross section dependence test**	**Statistic**	**Prob.**
Mean	0	Bias-corrected scaled LM	1.17	0.24
JarqueBera	1.11	Pesaran CD	-0.12	0.9
p-value	0.57			

Bera statistic point towards the normal distribution of residuals. Furthermore, p-value of test statistic of cross section dependence tests indicate the existence of homoscedasticity in residuals. Moreover, Durbin-Watson statistic reported in table 6 is too far from 0 and near to 2, which indicates the absence of serial correlation.

5 Discussion and Conclusion

5.1 Conclusion

The intention behind this study was to recognize the individual effects of earnings management linked advertising expenditures, board attributes and ownership type on financial performance of firms. Results show a significant positive connection among earnings management linked advertising expenditures and financial performance. This finding in-

dicates that the management of earnings through structuring advertising expenditures has a propitious influence on financial performance of firms. Moreover, financial performance escalates with increase in level of earnings management activities. In respect of board attributes, a significant positive link is found among CEO duality and performance, which indicate that financial performance gets better with CEO duality. Contrariwise, an insignificant relationship is observed among board size and financial performance. Similarly, an insignificant relationship is found among board independence and financial performance.

In respect of ownership type, a significant positive link is found among managerial ownership and financial performance, which indicate that managerial ownership is favorable for firms. Precisely, firms comprising high proportion of managerial ownership perform better than the firms encompassing low proportion of managerial ownership. Likewise, a significant positive link is observed among institutional ownership and financial performance. This finding indicates that firms encompassing high proportion of institutional ownership perform better than the firms containing low proportion of institutional ownership. In essence, it is obvious from the results that earnings management linked advertising expenditure, CEO duality, managerial ownership and institutional ownership have propitious influence on the financial performance of firms.

5.2 Discussion

The results of the study supported the notion that managers use real activities method to manage earnings of their firms. Regression results revealed a positive connection among earnings management linked advertising expenditures and firm performance. This substantiates that managers cunningly use their discretion regarding the advertising expenditures in order to attain desired firm performance. Moreover, the extensive use of this activity results in better firm performance. Additionally, the observed positive association of CEO duality with firm performance indicates that the possession of designations of CEO and board chairmanship by the same person results in better firm performance. Furthermore, the detected positive association of managerial ownership with firm performance point towards the favorable effects of high level of managerial ownership. Similarly, the observed positive association of institutional ownership with firm performance indicates that high level of institutional ownership results in better firm performance.

5.3 Implications

Financial performance is one of the imperative factors considered by investors in selection of firms. This study documented the specific effects of earnings management linked advertising expenditures, board attributes and ownership type on financial performance. Therefore, the findings reported in this paper are useful for investors.

5.4 Limitations and future research direction

The first limitation of this study is that it focused on only one aspect of real activities method of earnings management. Moreover, this study focused on food sector firms of Pakistan. Thus, this topic can be studied for other sectors of Pakistan in future.

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Appendix-A

Table A: Description of variables

Variable	Description
Return on Asset (ROA)	ROA is a measure of firm's performance.
Earnings management linked advertising expenditures (EMLAE)	EMLAE represents discretionary advertising expenditures of a firm.
Board Size (BS)	BS represents total strength of directors in a firm.
Board Independence (BI)	BI represents fraction of independent directors in a firm.
CEO duality (DUAL)	DUAL represents a situation in which board's chairman also keeps the position of CEO.
Managerial ownership (MO)	MO represents proportion of shares owned by managers.
Institutional ownership (IO)	IO represents proportion of shares owned by institutions.
Leverage (LEV)	LEV represents debt ratio of a firm.
Firm size (SIZE)	SIZE represents size of a firm.