The Impact of Board Composition on the Stock Returns

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ABSTRACT

The study investigates the relationship between six board compositions and stock returns. The results indicate a significant association between various board compositions and stock returns. Specifically, board size and executive directors have a negative impact on stock returns, whereas independent directors enhance stock returns. Busy directors positively impact the abnormal stock returns for the companies in the non-financial industry, which implies that busy directors who serve on more boards tend to be well connected. More importantly, the results indicate a significant positive relationship between board tenure and stock returns. Board service time is perceived as the board quality of knowledge and experience from the investors' point of view.

1. Introduction

An agency is a relationship between two parties. One is a principal (such as shareholders), and the other is an agent representing the principal in transactions with a third party (such as the company executives). Agency relationships occur when the principals hire the agent to perform a service on the principals' behalf. Principals commonly delegate decision-making authority to the agents. The agency problems arise when the desires or goals of the principal and agent conflict. The management, manager or board of directors as the agent who owns an interest in firms and knows more information about the firms tend to maximize their interest at the expense of shareholders rather than maximize shareholders' wealth.

According to the view of agency theory, the board of directors acts and performs its

responsibilities to protect the interests of shareholders. The board of directors is envisaged to monitor management and protect shareholders' rights on behalf of shareholders. (Jensen and Mecking (1976) and Kumar and Singh (2012)). As the shareholders' representative, the board of directors plays a crucial role in deciding company policy and strategy, reviewing performance, and ensuring that management follows the stated policies and strategies to maximize the benefit to shareholders. However, the boards of directors and management have an incentive to perform the management tasks in their interest, maximizing their income or bonus. For example, suppose their benefits depend on the firm's performance, i.e., revenue or profit. In that case, the management will be concerned only about the revenue or profit in the short run regardless of the effect on future performance. They may tend to manipulate the report or financial statement to reach the goals to get some benefit such as the special bonus and the increase in their salary. Moreover, they may organize incentive schemes for managers to reward themselves. For the investment decision, they might accept the riskier projects to gain more benefits and increase their chance of getting the rewards. However, this is risky for shareholders and the company. In such cases, the agency problem occurs because the agents act for their interest, which conflicts with the principal interest.

In this paper's context of agency theory, if the agency problem caused by the conflict of interest exists, the board of directors considered the agent, focuses on and works for their interest more than the firm's wealth. These will distort shareholders' value or firm value and affect weaker firm performance. Prior studies reinforce that board structure or board characteristics impact corporate governance and company performance. A well-constructed board helps to improve the firm value and enhance firm performance. Board structure or board characteristics are viewed as the positive or negative sign of the firm from the perspective of market participants. The board of directors is a vital issue for good corporate governance and affects the firm performance. Therefore, there have developed principles or regulations related to the board of directors to control, monitor, and ensure the good corporate governance of the firm.

This study investigates the effect of various types of board structures; which are board size, the proportion of executive directors, the proportion of independent directors, the proportion of female directors, multiple directorial positions (busyness of directors), board tenure (average number of days of directorships served in the company) and common stock returns. Specifically, we examine whether board structures affect listed companies' stock returns and abnormal stock returns. Stock returns are calculated by the difference in stock price at the end and beginning of the period and then divided by stock price at the beginning of the period. Abnormal stock returns are calculated using market-adjusted returns, the difference between stock returns and benchmark returns.

The remainder of this study is organized into five sections. Section 2 provides a literature review. Section 3 discusses hypotheses development. Section 4 describes the data description, sample screening procedures and methodology used in the study. Section 5 reports the empirical results and discussion of findings, and Section 6 contains conclusions.

2. Literature review

Prior studies examine the relationship of the board structure, board characteristics and firm performance. Many characteristics of the board have been linked to the firm performance. Another measurement of firm performance is based on the perspective of market participants, particularly investors, which the stock returns can measure. If the market perceived the good firm performance, the company's stock returns should be higher than the firm that has been perceived as the poor performance.

Board Size

Yermack (1996) examines the relationship between board size and firm performance using various measurements. He reports the evidence that the significant changes in board size affect stock returns and shows that investors react positively when boards shrink and negatively when board size increases. He also identifies that some firms realize positive abnormal stock returns around the announcement date of significant reductions in board size. In contrast, a parallel sample announcing large expansions in board size realizes negative abnormal returns. The results imply that the companies with small boards are more highly valued in the capital markets. Cheng (2008) examines the impact of board size using the sample data on corporate directors and monthly stock returns. The study concludes that board size is negatively associated with the variability of monthly stock returns. The results are consistent with the view that it takes more compromises for a larger board to reach consensus and the decisions of larger boards are less extreme, leading to less variability of corporate performance. Guest (2009) finds strong evidence of a negative relation between board size, firm performance, and share returns. He finds that companies with large boards appear to have lower Tobin's Q and lower share returns. The results suggest that UK boards play a weak monitoring role. Therefore, any adverse effect of large board size is likely to reflect the malfunction of the board's advisory rather than monitoring role. Overall, the evidence supports the argument that problems of poor communication and decision-making undermine the effectiveness of large boards.

On the other hand, Larmou and Vafeas (2010) use a sample of smaller firms with a history of poor operating performance. They show that an increase in board size is associated with better share price performance. Board size is positively correlated with firm value, and changes in board size are positively associated with annual stock returns. Their event study results suggest that the market responds favorably to board size increases and unfavorably to large board size decreases for firms that faced financial difficulties.

Independent Director

It is generally presumed that boards with greater independence are more effective in performing the monitoring roles. Rosenstein and Wyatt (1990) suggest that a higher proportion of independent directors are positively associated with excess stock returns. They perform event studies and find that stock prices increase when companies appoint additional independent directors. Nevertheless, Rosenstein and Wyatt (1997) find that stock prices neither increase nor decrease when an insider is added to the board. Bhagat and Black (2002) show the positive impact of board composition on firm performance measured by the stock price. They argue and raise the concern that using stock returns as a performance-

based measure must be used with caution because of the investor anticipation. If investors fully anticipate the effects of board composition on performance, stock returns will be insignificant, even if a significant correlation between firm performance and board independence exists.

Board Gender Diversity
In recent years, there is a significant growth in the numbers of female directors, which results in more gender diversity in the boardroom. The gender composition of the board is believed to contribute positively to board effectiveness. Prior research reports the relationship between gender diversity and firm performance. Adams and Ferreira (2009) study the fraction of female directors and firm performance. They report the evidence that female directors have a significant impact on board inputs and firm outcomes. They suggest that female directors have better attendance records than male directors. Thus, female directors could add value by bringing new ideas and different perspectives to the boardroom. These results suggest that gender-diverse boards allocate more effort in monitoring and improve firm performance.

Multiple Directorship Positions (Busy Directors)
Ferris, Jagannathan and Pritchard (2003) find positive stock returns when a firm adds a multiple director or busy director for the first time. The findings imply that such directors' enhanced experience or reputation benefits shareholders and other market participants. Their event study results suggest that market participants do not view the appointment of multiple directors or busy directors as an adverse event for the firm. Sirisophonphong (2020) states that generally, female directors in the boardroom negatively impact firm performance. Nevertheless, female directors help improve performance in busy firms that typically negatively impact firm performance. This suggests that having female directors in the boardroom brings some benefits and helps to improve firm performance. Female directors help to monitor those busy directors, which is a plus to the firm. The definitions of a busy firm explained in her study are the firms in which 50 percent of firm directors are busy (sit in the boardroom of more than three firms simultaneously) and the firm with at least one busy CEO and chairman. This result agrees with the previous studies in other countries. Consequently, it may confirm that a gender-diverse board allocates more effort to monitoring and helps to improve firm performance.

Fich and Shivdasani (2006) find that busy directors are associated with weak corporate governance and weaker performance. They find that the departures of busy outside directors generate positive abnormal returns (ARs). These returns are significantly higher than the ARs for departures of non-busy outside directors. The results also indicate that departures of busy outside directors are viewed as favorable to the board. Moreover, they also find the decrease in stock price, which tends to be greater for firms that appoint busy directors.

3. Hypothesis Development
Based on the review of previous studies, we set up six main hypotheses on board structure and stock returns.

Board Size

Larger board size is likely to reflect the malfunction of the board's advisory rather than the monitoring role. Therefore, the smaller board is better for a higher firm operating performance and stock returns.

    H1: Smaller board size is associated with a higher firm performance which is measured by stock returns.

Executive Directors

A higher proportion of executive directors to the numbers of non-executive directors can somewhat cause conflicts of interest that lead to weaker firm performance.

    H2: A higher proportion of executive directors in the boardroom is associated with a weaker firm performance measured by stock returns.

Independent Director

Independent directors' roles are viewed as monitoring and help to improve the corporate governance in the companies. Prior studies report that a higher proportion of independent directors or outside boards has improved the firm performance and overall profitability. Thus, the higher proportion of independent directors is associated with a better firm operating performance and excess stock returns.

    H3: A higher proportion of independent directors in the boardroom is associated with a higher firm performance measured by stock returns.

Board Gender Diversity

Gender diversity in the boardroom also generates more opinions, new ideas, and perspectives and creates critical questions that improve discussion, decision-making, and firm performance. Consistent with the market participants' perceptions, a gender-diverse board improves the quality of public disclosure through better monitoring. Gender-diverse boards could act as a substitute mechanism for weak corporate governance. Therefore, board gender diversity is viewed as a positive for a good corporate governance firm. That is, accounting earnings generated from these firms are highly valuable to the investor perception.

    H4: Gender diversity in the boardroom is associated with a higher firm performance measured by stock returns.

Multiple Directorship Positions (Busy Directors)

Busy directors are associated with weaker corporate governance. They have a negative relationship with the firm operating performance. The firm with a higher proportion of busy directors is experienced lower market-to-book ratios, lower operating ROA, and weaker profitability. In addition, the departures of busy outside directors generate positive abnormal returns (ARs). The decrease in stock price tends to be greater for firms that appoint busy directors. These indicate that busy directors are viewed as unfavorable to the company's performance.

    H5: A higher proportion of busy directors in the boardroom is associated with a weaker firm performance measured by stock returns.

Length of directorship or Board tenure

Outside directors with over 20 years tenure were viewed and often performed more like inside directors. These tenured directors have negatively affected board independence and corporate performance. In summary, longer board tenure may affect either better or weaker firm performance.

H6: Longer directorship in the boardroom may be associated with higher or lower firm performance measured by stock returns.

The hypotheses developments are summarized below;

Board structure and Stock Returns

Board Structure		Stock returns/ Abnormal stock returns
Earnings		
Board size	**H1**	-
Proportion of executive directors	**H2**	-
Proportion of independent directors	**H3**	+
Proportion of female directors	**H4**	+
Proportion of busy directors	**H5**	-
Board tenure	**H6**	+/-

4. Data and Methodology

4.1 Data

The data used in this study is obtained from SETSMART. SETSMART includes the information of listed companies on the Stock Exchange of Thailand covering 23 years from January 1997 – December 2020. SETSMART database provides the information of the board of directors: board's titles, board name and surname, type of board (independent director or executive director), the period of board service time, and board position. In addition, we obtain the details of the quarterly company's financial statement from SETSMART. The information includes the total asset, total liability, shareholder's equity, revenue, expense, net profit, number of shares outstanding, PAR value and the stock price at the end of each quarter. SETSMART database also provides the company's specific information such as the name of the company, the name of security, and types of industry or sectors. Lastly, stock returns are calculated from the close stock price after adjustment (a stock price that adjusts for changing PAR and XR) at the end of each quarter. SET index quarterly returns are obtained from SETSMART.

Financial performances, i.e., Tobin's Q, ROA and ROE of the firms, are calculated from each company's quarterly financial statement and year-end financial statement. The firm's stock returns are calculated by the stock price difference between the end and the beginning of the period and then divided by stock price. SET returns are calculated by the difference of the SET index between the end and the beginning of the period and then

divided by the SET index at the beginning of the period. These returns and the data of board characteristics or board structure are calculated quarterly.

To maintain the integrity of the dataset, we only include the sample of listed companies on the Stock Exchange of Thailand, which covers 23 years from 1997 to 2020. The data are cleaned up and arranged for calculation and investigation. First, we integrate all the directors' information with the companies' details and exclude all incomplete and missing data. Second, we define the board structures: the board size, executive directors, independent directors, female directors, busy directors, and board tenure. Third, we calculate the board structure variables not directly provided in SETSMART, i.e., number of boards (board size), busy boards, board tenure, and proportion of each type of board. All board characteristics are calculated based on the companies that boards served during each quarterly period.

The company financial statement data set is merged with the board of directors' information and adjusted for incomplete or missing data. For example, we delete the firms with zero stock prices to calculate stock returns and those with zero or negative book value of equity to measure return on equity. Then we calculate the firm financial performances, which are Tobin's Q, ROA, and ROE. Moreover, we calculate the stock returns and firm characteristics (firm size and leverage) based on companies' financial statements. It should be noted that the data of quarterly company financial statements obtained from SETSMART are presented in the thousand Baht unit. Thus, we adjust the unit for the calculation to present as in the same unit.

SET index returns are obtained from SETSMART. We inquire about the SET index from the year 1996-2020 to calculate quarterly SET returns. Then we merge this information with stock returns to calculate abnormal returns. Finally, the total number of samples used for examination is 16,191 samples.

4.2 Methodology
This section illustrates the variables and the models used to test the relationship between various board structures and stock returns.

4.2.1 Variables and Measurements
Stock returns variables, or dependent variables are as follows.
1. Stock returns (Ret) are the quarterly stock returns calculated by the difference in stock price at the end and beginning of the period and then divided by stock price at the beginning of the period.
2. Stock abnormal returns (Ret_ab) are the quarterly abnormal stock returns calculated using market-adjusted returns.
3. Market-adjusted return is the difference between stock returns and benchmark returns. Our benchmark returns are the SET index returns calculated by the difference of the SET index between the end and the beginning of the period, then divided by the SET index at the beginning of the period.

The calculation of stock returns and abnormal stock returns are as follow;
We use market-adjusted returns to compute the abnormal returns. Our benchmark

returns are the SET index returns calculated by the difference of the SET index between the end and the beginning of the period, then divided by the SET index at the beginning of the period.

$$AR_{it}=R_{it}- R_{mt} \qquad where \qquad R_{it} = \frac{(P_{it+1} - P_{it})}{P_{it}} \qquad and \qquad R_{mt} = \frac{(P_{mt+1} - P_{mt})}{P_{mt}}$$

- $R_{it}=$ percentage change of the adjusted close price of stock i on quarter $t+1$ relative to the close price on quarter t
- $R_{mt}=$ percentage change of the close price of the SET index on quarter $t+1$ relative to the close price on quarter t

AR_{it} is the abnormal stock returns or Ret_ab, and R_{it} is the stock returns or Ret

Board structure variables or independent variables are as follows.

Board size (C_BOD_SIZE) is the firm's board size, calculated by the company's number of board of directors during the quarterly period.
Percentage of executive directors (P_BOD_E) is the proportion of executive directors over the total numbers of directors in the boards during the quarterly period.
Percentage of independent directors (P_BOD_I) is the proportion of independent directors over the total numbers of directors of firm directors in the boards during the quarterly period.
Percentage of female directors (P_BOD_F) is the proportion of female directors over the total numbers of directors of firm directors in the boardroom during the quarterly period.
Percentage of multi-directorships directors or busy directors (P_BOD_BSY) is the proportion of busy directors over the total numbers of directors in the board of firm during the quarterly period. The busy director is defined as the director who simultaneously holds at least three or more directorships in the listed companies.
Length of directorships (C_AVG_TENUR) is the average number of days of directorships in the boards.
Earnings (EARN) is income before tax deflated by the market value of equity at the beginning of the period.

Control Variables are as follows.
Firm Leverage (V_LEVERAGE) is the firm leverage ratio calculated as total liabilities divided by the firm's total assets.
Firm Size (V_FIRM_SIZE) is calculated by the natural logarithm of total assets.

4.2.2 Model Specification
Market-based firm performance: Quarterly stock returns
Ret = α0 + α1 C_BOD_SIZE + α2 P_BOD_E + α3 P_BOD_I + α4 P_BOD_F + α5 P_BOD_BSY +α6 C_AVG_TENUR + α7 V_LEVERAGE + α8 V_FIRM_SIZE +ε   (Model 1)
Quarterly abnormal stock returns
Ret_ab = α0 + α1 C_BOD_SIZE + α2 P_BOD_E + α3 P_BOD_I + α4 P_BOD_F + α5

P_BOD_BSY +α6 C_AVG_TENUR + α7 V_LEVERAGE + α8 V_FIRM_SIZE +ε
(Model 2)

We apply two methods of data analysis. The results are divided into two categories. The first type of analysis is the descriptive statistical analysis, which provides the total numbers of samples, average median, average mean, or comparison of means through t-test. The second method of analysis is the ordinary least square regression analysis. We analyze data using fixed effects regression to control firm and year-specific fixed effects. In addition, we use the regression with the robust standard error to adjust the standard deviations, which helps to increase the reliability of the results from regression.

5. Results

Table 1 shows the descriptive statistics of each variable in the analysis of board structure, stock returns and informativeness of earnings. The total samples of listed companies are 14,370 companies.

Table 1
Descriptive Statistics of board structure and stock returns

Table 1 reports the descriptive statistics of each variable of samples used in the analysis of board structure, stock returns, and earnings. This table is divided into three panels. Panel A represents the whole sample data in the Stock Exchange of Thailand. Panel B represents the sample data in the Stock Exchange of Thailand for non-financial institutions, and Panel C represents the sample data in the Stock Exchange of Thailand for financial institutions.

All variables are separated into three groups. The first group has two dependent variables: abnormal stock returns (ret_ab) and stock returns (ret). Ret_ab is quarterly abnormal stock returns of firms calculated by quarterly returns of stock minus the benchmark returns (SET quarterly returns). Stock returns (Ret) is the quarterly stock returns of firms. Second, seven independent variables which are earnings (EARN) (earnings is income before tax deflated by the market value of equity at the beginning of the period), number of board or board size (C_BOD_SIZE), proportion of executive directors (P_BOD_E), proportion of independent directors (P_BOD_I), proportion of female directors (P_BOD_F), proportion of busy directors (P_BOD_BSY) and average board tenure (C_AVG_TENUR). The last group is two control variables which are firm leverage and firm size. Firm leverage (V_LEVERAGE) is the firm leverage ratio calculated as total liabilities divided by the firm's total assets. Firm size (V_FIRM_SIZE) is calculated by the logarithm of total assets.

Variable	N	Mean	Median	Minimum	Maximum
Abnormal returns (Percentage)	14370	0.8568	-1.4306	-53.4658	114.6067
Returns (Percentage)	14370	3.6667	1.0899	-52.6899	104.4248
Earnings (Percentage)	14370	0.0657	0.0302	-2.0746	2.2156
Board size	14370	11.6433	11.0000	6.0000	22.0000
Proportion of executive directors	14370	0.1279	0.1111	0.0000	0.3333
Proportion of independent directors	14370	0.2909	0.3000	0.0000	0.6250
Proportion of female directors	14370	0.1434	0.1176	0.0000	0.5455
Proportion of busy directors	14370	0.2620	0.2222	0.0667	0.7692

Average board tenure (Day)	14370	1924.1300	1803.5000	318.5385	4569.4200
Firm leverage	14370	0.4809	0.4831	0.0346	0.9629
Firm size	14370	15.4342	15.1880	12.8042	20.6697

We use two stock returns measurements: raw stock returns and abnormal stock returns to measure firm market performance. The average abnormal returns and raw stock returns are 0.85 percent and 3.67 percent, respectively. Earnings (EARN), the net profit before tax deflated by the market value of equity at the beginning of the period, is 0.06 in a percentage point.

Table 2 presents Pearson correlation coefficients among the variables of board structure, stock returns and earnings. Earnings (EARN) are positively correlated with raw and abnormal stock returns at a 1% level. This represents and interprets the informativeness of earnings because the earnings move in the same direction with stock returns. Market participants perceive those earnings generated by the listed firms in Thailand are qualified and useful. The firms with positive or higher earnings have positive or higher stocks returns and abnormal returns.

Table 3 presents the regression analysis results (Model 1 and 2), explaining the linkage between board structure and raw returns of stock and abnormal stock returns. The results indicate a less significant association between stock returns and board structure variables. The only significant variable is average board tenure. Board tenure has a significant positive association with raw returns of stock at the level of 1%, which agrees with our hypothesis (H6), which implies that board service time is perceived as the board quality of knowledge and experience from the investors point of view. It enhances the firm performance and is attractive for investors, then generates positive returns of a stock.

Table 2
Pearson correlation coefficients of board structure and stock returns

Table 2 reports the Pearson correlation coefficients among all variables for board structure and stock.

	Abnormal returns	Returns	Earnings	Board size	Proportion of executive directors	Proportion of independent directors	Proportion of female directors	Proportion of busy directors	Average board tenure	Firm leverage	Firm size
Pearson Correlation Coefficients, N = 14370											
Prob > |r| under H0: Rho=0											
Abnormal returns	1.0000	0.7681 <.0001	0.1370 <.0001	0.0118 0.1580	-0.0116 0.1648	-0.0091 0.2758	-0.0048 0.5621	0.0110 0.1887	-0.0029 0.7274	0.0149 0.0740	0.0024 0.7777
Returns	0.7681 <.0001	1.0000	0.1037 <.0001	-0.0031 0.7115	0.0046 0.5857	0.0160 0.0551	0.0052 0.5311	0.0058 0.4904	0.0387 <.0001	0.0054 0.5172	0.0163 0.0505
Earnings	0.1370 <.0001	0.1037 <.0001	1.0000	0.0404 <.0001	-0.0690 <.0001	-0.0325 <.0001	0.0566 <.0001	0.0136 0.1031	0.0199 0.0170	-0.1126 <.0001	-0.0522 <.0001
Board size	0.0118 0.1580	-0.0031 0.7115	0.0404 <.0001	1.0000	-0.3470 <.0001	-0.3473 <.0001	-0.1100 <.0001	0.1150 <.0001	-0.0221 0.0081	0.0133 0.1110	0.2008 <.0001
Proportion of executive directors	-0.0116 0.1648	0.0046 0.5857	-0.0690 <.0001	-0.3470 <.0001	1.0000	0.2084 <.0001	0.0938 <.0001	-0.0525 <.0001	-0.0050 0.5465	0.0937 <.0001	0.0141 0.0915
Proportion of independent directors	-0.0091 0.2758	0.0160 0.0551	-0.0325 <.0001	-0.3473 <.0001	0.2084 <.0001	1.0000	0.0905 <.0001	-0.0430 <.0001	0.1363 <.0001	0.0329 <.0001	0.1148 <.0001
Proportion of female directors	-0.0048 0.5621	0.0052 0.5311	0.0566 <.0001	-0.1100 <.0001	0.0938 <.0001	0.0905 <.0001	1.0000	-0.1049 <.0001	0.1169 <.0001	-0.0745 <.0001	-0.1596 <.0001
Proportion of busy directors	0.0110 0.1887	0.0058 0.4904	0.0136 0.1031	0.1150 <.0001	-0.0525 <.0001	-0.0430 <.0001	-0.1049 <.0001	1.0000	-0.0844 <.0001	0.0075 0.3663	0.2646 <.0001
Average board tenure	-0.0029 0.7274	0.0387 <.0001	0.0199 0.0170	-0.0221 0.0081	-0.0050 0.5465	0.1363 <.0001	0.1169 <.0001	-0.0844 <.0001	1.0000	-0.1180 <.0001	-0.0686 <.0001
Firm leverage	0.0149 0.0740	0.0054 0.5172	-0.1126 <.0001	0.0133 0.1110	0.0937 <.0001	0.0329 <.0001	-0.0745 <.0001	0.0075 0.3663	-0.1180 <.0001	1.0000	0.4362 <.0001
Firm size	0.0024 0.7777	0.0163 0.0505	-0.0522 <.0001	0.2008 <.0001	0.0141 0.0915	0.1148 <.0001	-0.1596 <.0001	0.2646 <.0001	-0.0686 <.0001	0.4362 <.0001	1.0000

Table 3
Results from the regression analysis of board structure, stock returns and abnormal returns

This table reports the regression analysis results (Model 1 and Model 2) as the regression models below.

$$Ret = \alpha 0 + \alpha 1\ C\_BOD\_SIZE + \alpha 2\ P\_BOD\_E + \alpha 3\ P\_BOD\_I + \alpha 4\ P\_BOD\_F + \alpha 5\ P\_BOD\_BSY + \alpha 6\ C\_AVG\_TENUR + \alpha 7\ V\_LEVERAGE + \alpha 8\ V\_FIRM\_SIZE + \varepsilon$$

$$Ret\_ab = \alpha 0 + \alpha 1\ C\_BOD\_SIZE + \alpha 2\ P\_BOD\_E + \alpha 3\ P\_BOD\_I + \alpha 4\ P\_BOD\_F + \alpha 5\ P\_BOD\_BSY + \alpha 6\ C\_AVG\_TENUR + \alpha 7\ V\_LEVERAGE + \alpha 8\ V\_FIRM\_SIZE + \varepsilon$$

Ret is the quarterly stock returns calculated by the difference in stock price at the end and beginning of the period and then divided by stock price at the beginning of the period.

Ret_ab is the quarterly abnormal stock returns which are calculated by using market-adjusted returns. Market-adjusted returns are the difference between stock returns and benchmark returns. Our benchmark returns are the SET index returns calculated by the difference of the SET index between the end and the beginning of the period, then divided by the SET index at the beginning of the period.

Six independent variables, which are the number of board or board size (C_BOD_SIZE), proportion of executive directors (P_BOD_E), proportion of independent directors (P_BOD_I), proportion of female directors (P_BOD_F), proportion of busy directors (P_BOD_BSY) and average board tenure (C_AVG_TENUR).

Firm leverage (V_LEVERAGE) is the firm leverage ratio calculated as total liabilities divided by the firm's total assets. Firm size (V_FIRM_SIZE) is calculated by the logarithm of total assets.

Board Variables		*Ret*		*Ret_ab*	
		Coefficient	T-value	Coefficient	T-value
	Expect				
Intercept		-2.8250	-1.11	1.7530	0.85
Board size	-	-0.0220	-0.25	0.0561	0.76
Proportion of executive directors	-	0.6696	0.17	-2.9791	-0.92
Proportion of independent directors	+	1.4173	0.73	-0.5551	-0.36
Proportion of female directors	+	0.5721	0.32	-0.3216	-0.20
Proportion of busy directors	-	0.8565	0.60	1.6034	1.30
Average board tenure (Day)	+/-	0.0010	4.33 ***	0.0000	0.06
Firm leverage	-	0.2726	0.25	1.8737	2.03 **
Firm size	+	0.2511	1.48	-0.1494	-1.08
R-Square		**0.20%**		**0.06%**	
F-Value		3.13		1.02	

'*, **, *** indicate coefficients significantly at 10%, 5% and 1% levels, respectively based on t-statistics.

As shown in this model, in investors' point of view, board structures are not considered the significant factors for investing to generate higher returns. The only concern for the investors is the average board service time which represents the knowledge and expertise of directors in managing the business. Moreover, we further investigate board structure and abnormal stock returns in Model 1 to examine the returns of stock compared with the market returns (SET index returns). The analysis is performed in the same criterion as in the stock

returns analysis. The results show a less and insignificant association between board structure variables and abnormal stock returns.

Nevertheless, the results indicate that busy directors positively impact the abnormal stock returns for the companies in the non-financial industry, which implies that busy directors who serve on more boards tend to be well connected. Therefore, they are viewed by investors as more effective in signaling success in firms' business. Consequently, it leads to positive abnormal stock returns.

6. Conclusion

This study uses six board structure types, and various stock returns measurements to examine the effects of board structure or board characteristics on stock returns. The empirical results show the significant relationship between board structure and firm performance. The board structure and board characteristics influence and stock returns. The results show a significant association between board compositions and stock returns. Board size and executive directors have a negative impact on stock returns, whereas independent directors enhance stock returns. Busy directors positively impact the abnormal stock returns for the companies in the non-financial industry, which implies that busy directors who serve on more boards tend to be well connected. More importantly, the results indicate a significant positive relationship between board tenure and stock returns. Board service time is perceived as the board quality of knowledge and experience from the investors' point of view. These results contribute to policymakers' concern when establishing the rules or regulations related to the board of directors in listed firms and investors' and market participants' consideration of board structure to invest in the companies.

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