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A Panel Data Analysis on the Relationship between Corporate Governance and Bank Efficiency

Muhammad Akhyar Adnan, Hafiz Majdi Ab. Rashid, Ahamed Kameel Mydin Meera and Sheila Nu Nu Htay

Emerging corporate governance issues in the Asian countries due to the 1997-1998 economic crises makes it much more important to discuss those issues within the context of this region. In developing countries such as Malaysia, a good governance of the banks is crucial for the survival of its economy. Many studies have tried to link the effect of corporate governance on banks' efficiency (Jain and Thomson, 2008; Chunxia, Shujie and Zongyi, 2009; Lensink, Meesters and Naaborg, 2008). This study investigates the impact of corporate governance on efficiency of Malaysian listed banks by using a panel data analysis.

Corporate governance variables are represented by board leadership structure, board composition, board size, director ownership, institutional ownership and block ownership. Bank efficiency is used to measure the performance since traditional accounting and market performance measures are doubtful in suitability of capturing the actual performance of the banking industry and efficiency seems to be given more attention recently (e.g. Ihsan and Kabir, 2002)

The findings show that smaller board size and higher percentage of block ownership lead to better efficiency of Malaysian banks. The current prevailing situations in Malaysia are discussed to highlight the reasons behind these research findings.

Keywords: corporate governance; efficiency; GLS; generalized least square; panel data; agency theory; Malaysia

1.0 Introduction

Corporate governance of banks seems to be more important than other industries because the banking sector plays a crucial financial intermediary role in an economy, particularly in developing countries. Poor corporate governance of the banks can drive the market to lose confidence in the ability of a bank to properly manage its assets and liabilities, including deposits, which could in turn trigger a liquidity crisis and then it might lead to economic crisis in a country and pose a systemic risk to the society at large (Cebenyoyan & Strahan, 2001; Basel Committee on banking supervision, 2005; Alexander, 2006; Garcia-Marco & Robles-Fernandez, 2008). Therefore, it is important to examine the effect of corporate governance mechanisms in the banking sector. Research on corporate governance have tried to examine its impact of the financial performance of business entities (Rebeiz and Salameh, 2006; Male and Kusnadi, 2004; Fosberg and Nelson, 1999).

Traditionally, the performance is measured from the accounting and market perspectives but this study examines the performance of the banks from efficiency perspective due to the following reasons. Firstly, according to Kimball (1998), return on assets does not take into consideration the importance of the opportunity cost and return on equity ignores the different required rate of returns expected by the shareholders since their capital has been invested in different risky projects. Denizer (1997) states that return on equity might not be the best measure since banks can divide the capital into debt and equity, making the comparison of equity values across banks difficult. Secondly, nowadays, bank managers, policy makers and bank investors are concerned with how the banks efficiently utilize the inputs to produce the financial products (Federal Reserve Bank of San Francisco, 2006). Thirdly, the objective of a financial liberalization is to increase the efficiency of commercial banks by creating a flexible and competitive financial sector in which banks have more control over their own resource utilization, and by increasing the banks' integration with the rest of the world. In addition, the success of the banks hinges on the ability of the banks to identify the types of financial products demanded by the public and provide the products efficiently and sell them at a competitive price. Therefore, cost management and the efficient use of the input becomes important to be competitive nowadays (United Nations, 2005). Fourthly, many researchers have investigated the efficiency of US and UK banks (United Nations, 2005; Angelidis & Lyrودي, 2006) but in Malaysia, the research on examining the efficiency of Malaysian listed banks seems to be rather limited.

The importance of bank efficiency has been widely highlighted since the last few decades in the academic literature, especially since 1990s (Hamin Syahrums, Syed Musa & Naziruddin, 2006). The bank efficiency is given attention by the management since it will be able to trace the sources of inefficiency and it will help banks enhance the chance of survival in the competitive markets (Ihsan & M.Kabir, 2002). Furthermore, it is essential for the overall growth of the economy since any lack of growth in efficiency will drag the Malaysia's economy. Historically, although Bank Negara Malaysia encourages banks to merge in order to achieve economies of scale and higher level of efficiency, Malaysian banking system consists of a large number of small institutions (Sufian, 2004). However, Malaysian banks have gone through the major merger process to recover from the 1997-98 economic crisis and to take the advantages of economies of scale (Mahadzir & Hasni, 2009; Allen & V. Boobal, n.d.). Apart from taking the advantages of economies of scale, Malaysian

banks are given pressure to be more efficient because of the several factors such as significant changes in the operating environment and structure due to the rapid growth in information technology in the period of 1990 to 2003 (Public Bank Berhad, 2004), globalization and liberalization (Izah & Sudin, 2008; Izah, Nor Mazlina & Sudin, 2009) and most of the banks are offering Islamic banking products in addition to the conventional products (Mohd. Azmi, Abdul Rahim, Rosylin, M. Shabri & Mohd. Eskandar, 2006).

It could be summed that the governance seems to be a heart of the corporation, especially in the banking sector and looking the bank performance from efficiency aspect becomes an attractive issue. Hence, the aim of this paper is to investigate the impact of corporate governance on bank efficiency.

2.0 Theoretical Framework

The main theoretical assumption of this research relies on the agency framework. The following discussions explain about corporate governance and ownership structure from the agency framework.

Agency Theory and Separate Leadership Structure

Agency theory argues for a clear separation of the responsibilities of the CEO and the chairman of the board and seems to prefer to have separate leadership structure (Jensen & Meckling, 1976; Fama & Jensen, 1983; Jensen, 1993). The reason is that since the day-to-day management of the company is led by the CEO, the chairman of the board, as a leader of a board, needs to monitor the decisions made by the CEO which will be implemented by the management and to oversee the process of hiring, firing, evaluating and compensating the CEO (Brickley et. Al, 1997; Weir, 1997). If the CEO and the chairman of the board is the same person, there would be no other individual to monitor his or her actions and CEO will be very powerful and may maximize his or her own interests at the expense of the shareholders. The combined leadership structure promotes CEO entrenchment by reducing board monitoring effectiveness (Finkelstein & D' Aveni, 1994; Florackis & Ozkan, 2004). Thus, a separate leadership structure is recommended in order to monitor the CEO objectively and effectively.

Agency Theory and Board Composition

According to Choe and Lee (2003), board composition is very important to effectively monitor the managers and reduce the agency cost. Although the executive directors have specialized skills, expertise and valuable knowledge of the firms' operating policies and day-to-day activities, there is a need for the independent directors to contribute the fresh ideas, independence, objectivity and expertise gained from their own fields (Weir, 1997; Firth et al., 2002). Hence, the agency theory recommends the involvement of independent non-executive directors to monitor any self-interested actions by managers and to minimize agency costs (Kiel & Nicholson, 2003; Le et al. 2006; Florackis & Ozkan, 2004; Williams et al. 2006).

Agency Theory and Board Size

Jensen (1983) and Florackis and Ozkan (2004) mention that boards with more than seven or eight members are unlikely to be effective. They further elaborate that large boards result in less effective coordination, communication, and decision making, and are more likely controlled by the CEO. Yoshikawa and Phan (2003) also highlight that larger boards tend to be less cohesive and more difficult to coordinate because there might be a large number of potential interactions and conflicts among the group members. In addition, they further state that large boards are often created by CEOs because the large board makes the board members disperse the power in the boardroom and reduce the potential for coordinated action by directors, leaving the CEO as the predominant figure. In sum, smaller boards seem to be more conducive to board member participation and thus would result in a positive impact on the monitoring function and the strategic decision-making capability of the board, and independence from the management (Huther, 1997).

Agency Theory and Ownership

Agency theory stresses the importance of ownership structure in enhancing corporate governance. It could be viewed from three different perspectives; (a) managerial ownership, (b) block ownership, and (c) institutional ownership. If directors own shares, the directors as the owners themselves are directly instructing and monitoring the management of the companies (Jensen & Meckling, 1976). Hence, there are likely to be fewer agency problems as compared to the situation where the directors, who are not the owners, supervise the management of the company. It is also supported by Seifert et al. (2005) who discuss agency conflicts.

With regard to block ownership, if an individual has a substantial amount of interest in a particular company (usually measured at 5%), he or she will be more interested in the performance of the company, compared to the shareholders who own a smaller number of shares because dispersed ownership may have less incentives to monitor management (Kang & Sorensen, 1999; Maher & Andersson, 1999). Lastly, regarding institutional investors, Hussain and Mallin (2002), Kim and Nofsinger (2004), Leng (2004), Soloman and Solomon (2004), Seifert et al. (2005), Le et al. (2006), Langnan, Steven and Weibin (2007) and Ramzi (2008) collectively agree on the important role of institutional shareholders in the monitoring of firms because of the following reasons; (a) institutional shareholders normally own substantial number of shares, (b) the potential benefits from their activism is large enough to be worth their effort, (c) they have less ability than individual shareholders to liquidate the shares without affecting the share price, (d) substantial influence on the management, (e) they seem to have a fiduciary responsibility towards the ultimate owners, and (f) they have ability to monitor executives since they are professionals.

3.0 Research Methodology

Hypotheses development

Recent literature on corporate governance has tried to study its impact on the financial performance of banks, for example, on banks' efficiency. Jain and Thomson

banks are given pressure to be more efficient because of the several factors such as significant changes in the operating environment and structure due to the rapid growth in information technology in the period of 1990 to 2003 (Public Bank Berhad, 2004), globalization and liberalization (Izah & Sudin, 2008; Izah, Nor Mazlina & Sudin, 2009) and most of the banks are offering Islamic banking products in addition to the conventional products (Mohd. Azmi, Abdul Rahim, Rosylin, M. Shabri & Mohd. Eskandar, 2006).

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3.0 Research Methodology

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Recent literature on corporate governance has tried to study its impact on the financial performance of banks, for example, on banks' efficiency. Jain and Thomson

(2008), in a case study of the National Bank of Australia, found that poor governance lead to poor financial performance. The following hypotheses will relate corporate governance and ownership variables with the financial performance of banks, in term of its efficiency.

Board leadership structure

Agency theory and the corporate governance guidelines have emphasized the importance of board independence from management through a separate leadership structure. The findings of Fosberg and Nelson (1999), Abdul Rahman and Mohd. Haniffa (2005), Chen et al. (2005), Kula (2005), and Rebeiz and Salameh (2006) are in line with theoretical expectation, i.e. a positive relationship between separate leadership structure and performance. Therefore, the first hypothesis (stated in its alternative format) is stated as follows:

H_{1.1}: Bank efficiency is positively related to separate leadership structure.

Board composition

The involvement of independent non-executive directors is encourage by most of the codes. The studies conducted by Liang and Li (1999), Dehaene et al. (2001), Prevost et al. (2002), Bozec and Dia (2005), Krivogorsky (2006), and Rebeiz and Salameh (2006) highlight the importance of independent directors. Based on the theoretical expectation, this study hypothesized a positive relationship between banks' efficiency and proportion of independent non-executive directors. The hypothesis, stated in its alternative form, is as follows:

H_{1.2}: Bank efficiency is positively related to higher proportion of independent non-executive directors.

Board size

Several researchers have proposed an optimal board size that might reduce the influence of the management on board's decisions. For instance, Jensen (1983) (in Mak and Li (2001)) proposes a board size of about seven to eight in order to have effective monitoring. In addition, Yoshikawa and Phan (2003) highlight that a CEO will purposely create a larger board size to make sure that he or she alone is the most powerful person and the board will be difficult to coordinate effectively due to the larger size. Thus, smaller board size seems to be better. The findings of Yermack (1996), Eisenberg et al. (1998), Mak and Kusnadi (2004), and Andres et al. (2005) support that there is a negative relationship between board size and firm's performance. Based on the theoretical framework and previous literature, the hypothesis, stated in its alternative form, is as follows:

H_{1.3}: Bank efficiency is negatively related to board size.

Ownership structure

The agency theory stresses on the importance of ownership in enhancing corporate governance within a firm, and subsequently leads toward better firm's performance. For example, through ownership, managers' interests could be aligned with the shareholders' interest as managers have now become part of the owners. With regard to relationship between managerial ownership and firm's performance,

Sanders (1999), Fuerst and Kang (2004), and Shen et al. (2006) show that there is positive relationship between director ownership and performance.

Regarding block ownership, the discussion of the agency theory has mentioned that a substantial amount of ownership interest make the owner more interested in monitoring the management for the better performance of the company, compared to a person who has less ownership interest (Kang & Sorensen, 1999). Lehmann and Weigand (2000), Xu and Wang (1999), Hamadi (2002), Milton (2000), and Krivogorsky (2006) find that there is a positive relationship between block ownership and performance.

Based on the agency theory, it could be derived that since the institutional owners have a higher percentage of ownership interest in the firms, they might be more concerned with the performance of the firms, compared with individual shareholders. Hence, in theory, it is expected that higher percentage of institutional ownership will lead to better performance of the firms. The findings of Xu and Wang (1999), Dwivedi and Jain (2003), Patibandla (2006), Leng (2004), Shen et al. (2006), Krivogorsky (2006), and Cornett et al. (2007) are in line with theoretical expectation. This means that higher institutional ownership will lead to better performance. Based on the agency theory, the following hypothesis on the relationship between ownership and firm's performance has been developed.

H_{1.4}: Bank efficiency is positively related to higher proportion of director ownership, higher proportion of block ownership and higher proportion of institutional ownership.

Empirical Model and Sample selection

In this section, the empirical model of the study will be presented. The dependent variable is the efficiency of the banks, which are measured using two proxies; the ratio of non-performing loans to total loans (NPL_TL) and the ratio of operating expenses to total assets (OPEXP_TA). There are six independent variables which comprise of three conventional measures of corporate governance (i.e. board leadership structure, board composition and board size) and three measures of ownership structure (i.e. director ownership, institutional ownership, and block ownership). Finally, the empirical model of the study also includes four control variables; two control variables related to firm-specific characteristics (i.e. firm size and leverage), and two control variables related to economic environment (i.e. gross domestic product rate and economic crisis). The complete empirical model is as follow.

$$\text{EFFICIENCY} = \beta_0 + \beta_1 \text{BLS} + \beta_2 \text{INE_BZ} + \beta_3 \text{BZ} + \beta_4 \text{DOWN} + \beta_5 \text{IOWN} + \beta_6 \text{BOWN} + \beta_7 \text{LNTA} + \beta_8 \text{TD_TE} + \beta_9 \text{GDP_RATE}_{it} + \beta_{10} \text{DUM_CRISIS} + \varepsilon_{it}$$

Where,

EFFICIENCY = Performance is measured using two proxies; namely, ratio of non-performing loans to total loans and ratio of operating expenses to total assets

BLS = Board leadership structure where 1 = separate leadership structure, and 0 = combined leadership structure

INE_BZ = Proportion of independent non-executive directors on the board

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H_{1.1}: Bank efficiency is positively related to separate leadership structure.

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H_{1.3}: Bank efficiency is negatively related to board size.

Ownership structure

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INE_BZ = Proportion of independent non-executive directors on the board

BZ = Board size

DOWN = Proportion of director ownership
 IOWN = Proportion of institutional ownership
 BOWN = Proportion of block ownership
 LNTA = Firm size, measured by Log of total assets
 TD_TE = Leverage, measured by total assets over total equity
 GDP_RATE = Gross domestic product growth rate
 DUM_CRISIS = Dummy variable for economic crisis years, where 1 = crisis year, and 0 = non-crisis year

Samples includes the twelve listed companies whose main activity is banking from 1996 until 2005. The total number of observations is 120 observations. However, some of the observations need to be dropped due to unavailability of data and some companies were not classified as banks in all the ten years' period. It left the final observations to 108 observations. Data were collected either from the annual reports of the companies or from Bloomberg. The statistical method used in this study is panel data analysis (generalized least square method). Generalized least square method is used because the sample data are not normally distributed and the data have either heteroskedasticity problem, autocorrelation problem or both. According to Gujarati (2003), using generalized least square method will overcome all these problems.

4.0 Empirical Results

Under this section, the descriptive statistics will be explained first. It will be followed by the discussions on the GLS multivariate regression results on the relationship between bank efficiency and corporate governance variables.

Descriptive Statistics

Table 1 shows the descriptive statistics of the variables used in the study. In case of board leadership structure, its mean value (0.81) shows that a majority of the companies have separate leadership structure although the minimum value (zero) shows that there are companies which have combined leadership structure. Similar to the recommendation of the MCCG (2001), the sample mean value (0.36) shows that ratio of independent directors is slightly more than one third of the total number of the directors. The mean value (8.23) of board size shows existence of a quite a reasonable board size, e.g. Jensen and Ruback (1983) suggest that a board size of not more than 7 or 8 members is considered reasonable in ensuring effectiveness. For ownership, the mean values of director ownership and institutional ownership are 0.02 and 0.17 respectively. The ownership of shares by directors can be considered very low where, on average, only 2 percent of shares owned by the directors. On the other hand, institutional investors, on average, owned 17 percent of shares which could still be considered low although it is significantly higher than the ownership by the directors. In the case of block ownership, its mean value (0.53) shows that the significant portion of the shares is owned by large shareholders.

The means values of dependent variables are: for ratio of non-performing loans to total loans (11.19) and ratio of operating expenses to total assets (0.02). As for the

firm-specific characteristics, the sample companies have the means values of RM45992.19 millions for total assets and 344.73 for the ratio of total debt to total equity. Finally, the average GDP rate is 8 percent per annum.

[Insert Table 1]

GLS Results

Efficiency is measured by two proxies, namely, ratio of non-performing loans to total loans and ratio of operating expenses to total assets. The findings for each will be explained in the following paragraphs.

Ratio of Non-performing Loans to Total Loans as a Proxy of Efficiency

Table 2 shows the GLS results for the ratio of non-performing loans to total loans (i.e. NPL_TL). With regard to the corporate governance variables, only board size has a significant effect on banks' efficiency (at $p < 0.01$). The higher the ratio of non-performing loans to total loans, the lower will be banks' efficiency. Therefore, a significant positive relationship between board size and ratio of non-performing loans to total loans means that a smaller board size influence better banks' efficiency. As for the ownership variables, higher ownership by the directors (i.e. DOWNS) and more concentrated ownership (i.e. BOWNS) lead to better banks' efficiency. The results could suggest that as directors own more shares of the company, the interests of shareholders are better aligned to the firms' interests. The significance of concentrated ownership could suggest better monitoring by the blockholders. Finally, with regard to the control variables, bigger banks, better economic environment and financial crisis period lead to better banks' efficiency.

[Insert Table 2]

Ratio of Operating Expenses to Total Assets as a Proxy of Efficiency

Table 3 shows the GLS results for the ratio operating expenses to total assets (i.e. OPEXP_TA) which is the second proxy for efficiency. Overall, the GLS results of the second proxy of efficiency (i.e. OPEXP_TA) are much weaker as the Chi^2 value is much lower (i.e. 29.58) than the GLS results of NPL_TL (Chi^2 of 71.17). Consistent with the results in Table 2, board size is still found to be significant (at $p < 0.10$). Institutional ownership (i.e. IOWN) is also found to be significant; however, the sign of relationship contradicts theoretical expectation. As for the control variables, only firm size is found to be significant.

[Insert Table 3]

Based on the GLS results of the two proxies of banks' efficiency, many conventional corporate governance and ownership structure variables, based on the agency framework, were found to be insignificant. Although agency theory represents an attractive platform for structuring corporate governance systems, generalizability of such theory is seems rather restrictive. This theory seems to be Anglo-American centric, grounded in capitalistic theory (McCarthy & Puffer, 2008) and insensitive to

DOWN = Proportion of director ownership
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Under this section, the descriptive statistics will be explained first. It will be followed by the discussions on the GLS multivariate regression results on the relationship between bank efficiency and corporate governance variables.

Descriptive Statistics

Table 1 shows the descriptive statistics of the variables used in the study. In case of board leadership structure, its mean value (0.81) shows that a majority of the companies have separate leadership structure although the minimum value (zero) shows that there are companies which have combined leadership structure. Similar to the recommendation of the MCCG (2001), the sample mean value (0.36) shows that ratio of independent directors is slightly more than one third of the total number of the directors. The mean value (8.23) of board size shows existence of a quite a reasonable board size, e.g. Jensen and Ruback (1983) suggest that a board size of not more than 7 or 8 members is considered reasonable in ensuring effectiveness. For ownership, the mean values of director ownership and institutional ownership are 0.02 and 0.17 respectively. The ownership of shares by directors can be considered very low where, on average, only 2 percent of shares owned by the directors. On the other hand, institutional investors, on average, owned 17 percent of shares which could still be considered low although it is significantly higher than the ownership by the directors. In the case of block ownership, its mean value (0.53) shows that the significant portion of the shares is owned by large shareholders.

The means values of dependent variables are: for ratio of non-performing loans to total loans (11.19) and ratio of operating expenses to total assets (0.02). As for the

firm-specific characteristics, the sample companies have the means values of RM45992.19 millions for total assets and 344.73 for the ratio of total debt to total equity. Finally, the average GDP rate is 8 percent per annum.

[Insert Table 1]

GLS Results

Efficiency is measured by two proxies, namely, ratio of non-performing loans to total loans and ratio of operating expenses to total assets. The findings for each will be explained in the following paragraphs.

Ratio of Non-performing Loans to Total Loans as a Proxy of Efficiency

Table 2 shows the GLS results for the ratio of non-performing loans to total loans (i.e. NPL_TL). With regard to the corporate governance variables, only board size has a significant effect on banks' efficiency (at $p < 0.01$). The higher the ratio of non-performing loans to total loans, the lower will be banks' efficiency. Therefore, a significant positive relationship between board size and ratio of non-performing loans to total loans means that a smaller board size influence better banks' efficiency. As for the ownership variables, higher ownership by the directors (i.e. DOWNS) and more concentrated ownership (i.e. BOWNS) lead to better banks' efficiency. The results could suggest that as directors own more shares of the company, the interests of shareholders are better aligned to the firms' interests. The significance of concentrated ownership could suggest better monitoring by the blockholders. Finally, with regard to the control variables, bigger banks, better economic environment and financial crisis period lead to better banks' efficiency.

[Insert Table 2]

Ratio of Operating Expenses to Total Assets as a Proxy of Efficiency

Table 3 shows the GLS results for the ratio operating expenses to total assets (i.e. OPEXP_TA) which is the second proxy for efficiency. Overall, the GLS results of the second proxy of efficiency (i.e. OPEXP_TA) are much weaker as the Chi^2 value is much lower (i.e. 29.58) than the GLS results of NPL_TL (Chi^2 of 71.17). Consistent with the results in Table 2, board size is still found to be significant (at $p < 0.10$). Institutional ownership (i.e. IOWN) is also found to be significant; however, the sign of relationship contradicts theoretical expectation. As for the control variables, only firm size is found to be significant.

[Insert Table 3]

Based on the GLS results of the two proxies of banks' efficiency, many conventional corporate governance and ownership structure variables, based on the agency framework, were found to be insignificant. Although agency theory represents an attractive platform for structuring corporate governance systems, generalizability of such theory is seems rather restrictive. This theory seems to be Anglo-American centric, grounded in capitalistic theory (McCarthy & Puffer, 2008) and insensitive to

non-economic forces that drive managerial choices in mixed (socialist/ capitalist) economies. Hence, it could be concluded that corporate governance systems are not converging and (Yoshikawa & Phan, 2003) so local laws and local business environment might influence the governance system in its own country (Seifert et al., 2005). Furthermore, the agency theory focuses on the conflict between directors and owners but not between the majority and minority shareholders. In Malaysia, the later conflict is the major problem and hence the applicability of agency theory in Malaysian context is rather limited.

5.0 Discussion on Findings, Limitation and Area for Future Research

The findings of this study have important implication for banks in Malaysia since it is found that among the corporate governance variables, smaller board size and higher ratio of block ownership consistently seem to have better efficiency. However, the rest of the corporate governance variables do not seem to have significant and consistent impact on efficiency. There are few factors which could explain weak system of corporate governance in Malaysia. For example, Liew (2006) suggests that in order to implement the corporate governance system effectively in Malaysia, it is necessary to have the policies that strictly limit or eliminate the power and influence of bureaucrats and dominant owner-managers or top management in businesses as well as the policies that ensure the independence of regulators. Malaysian culture also influences the effectiveness of corporate governance system. Mohammad Rizal (2006), in his study of corporate governance policies in Malaysia, suggests that there is no real market for takeovers and a negligible risk of being sued by shareholders to discipline directors and senior managers. The effectiveness of independent director provisions would be severely compromised in an environment where companies are run by autocratic leaders and in a culture where confrontations are generally avoided. Hence, a Western-style board may not work well within a Malaysian culture.

One limitation of this paper is concerned with the financial crisis periods. Since the sample period of study includes the financial crisis periods, i.e. 1997 and 1998, the dummy variables are used to control the crisis period. However, the effects of the financial crisis might still exist after 1998. Another limitation is regarding the unavailability of the data. Inclusion of foreign and local unlisted banks would be more desirable. However, due to the unavailability of the data, foreign and locally unlisted banks are not included in the sample of study. Since this study focuses on the end products of the corporate governance, i.e. efficiency performance, hence, future research should extend to the examination of the process of the corporate governance decision and the environmental factors that make current corporate governance systems and laws less effective.

Table 1
Descriptive Statistics Results

	Mean	Std. Dev.	Min	Median
<i>(a) CG variables</i>				
BLS	0.81	0.40	0.00	1.00
INE_BZ	0.36	0.18	0.10	0.33
BZ	8.23	2.34	4.00	8.00
<i>(b) Ownership variables</i>				
DOWN	0.02	0.05	0.00	0.00
IOWN	0.17	0.18	0.00	0.09
BOWN	0.53	0.21	0.00	0.58
<i>(c) Efficiency variables</i>				
NPL_TL	11.19	12.09	0.00	9.18
OPEXP_TA	0.02	0.01	0.00	0.02
<i>(d) Control variables</i>				
TA	45992.19	40245.92	1120.36	33326.95
TD_TE	344.73	331.14	14.03	223.80
GDP RATE	0.08	-0.05	0.02	0.09

Table 2
GLS results of ratio of non-performing loans to total loans

	Coefficient	Z Statistics	P value
<i>Independent variables</i>			
BLS	0.17	0.12	0.90
INE_BZ	5.16	1.25	0.21
BZ	0.81	2.6*	0.01
DOWN	-39.89	-4.13*	0.00
IOWN	-5.05	-1.62	0.11
BOWN	-7.23	-2.41**	0.02
<i>Control variables</i>			
LNTA	-2.16	-2.41**	0.02
TD_TE	0.00	-0.19	0.85
GDP RATE	-32.09	-4.6*	0.00
DUM_CRISIS	-2.96	-2.6*	0.01
CONS	32.24	4.33*	0.00
Chi2			71.17*
P value			0
Heteroskedastic (LR Test)	LR Chi2		158.31*
	P value		0
Autocorrelation (Wooldridge Test)	F statistics		2361.29*
	P value		0
* Significant at 1%			
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Table 3
GLS results of ratio of operating expenses to total assets

	Coefficient	Z Statistics	P value
<i>Independent variables</i>			
BLS	0.00	0.02	0.99
INE_BZ	0.00	0.17	0.86
BZ	0.00	1.66	0.10
DOWN	0.00	-0.09	0.93
IOWN	0.01	3.41*	0.00
BOWN	0.00	-1.45	0.15
<i>Control variables</i>			
LNTA	0.00	-2.50*	0.01
TD_TE	-0.00	-0.16	0.87
GDP RATE	0.00	-0.45	0.65
DUM_CRISIS	0.00	0.59	0.56
CONS	0.03	6.35*	0.00
Chi2			29.58*
P value			0.00
Heteroskedastic (LR Test)	LR Chi2		80.30*
	P value		0
Autocorrelation (Wooldridge Test)	F statistics		25.41*
	P value		0.00
* Significant at 1%			
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