

**Simultaneous Relationship among Market Performance, Risk and Disclosure Quality:  
Empirical Evidence from Malaysian Listed Banks**

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**ABSTRACT:**

Without doubt, higher performance is the ultimate objective of any business entity while minimizing the risk and informing the investors the transparent information of the business. In this paper we show a new way of thinking that will fulfill the ultimate interests of the banks due to the efforts of management such as being higher market value of the firms, taking less risk and providing higher level of disclosure for the stakeholders in general and the shareholders, in particular. We use simultaneous relationship among market performance, risk and disclosure quality of twelve Malaysian listed banks over a period of ten years from 1996 until 2005. Tobin'Q, standard deviation of monthly stock return and weighted disclosure score are analyzed. Three theories, namely, *signaling theory*, *risk and return theory* and *market discipline theory* are tested and only *market discipline theory* is found to be significant indicating that banks are highly regulated compared to other industries, especially in terms of risk factors and information disclosure.

**Key words:** firm market value; risk; disclosure

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## 1.0 Introduction

It is undeniable that higher performance and transparency of information disclosure with lower risk is one of the essential interests of the investors. Many researchers have done the research on the relationship between market performance and risk, market performance and disclosure as well as risk and disclosure. However, to our knowledge, no study has been done to examine the simultaneous relationship among market performance, risk and disclosure. Therefore, the aim of this study is to examine the simultaneous relationship among performance, risk and disclosure of the banks since theories such as *signaling theory*, *capital asset pricing model* and *market discipline theory* point out the existence of the possible relationship among them.

Accordingly, the question which comes under research is "Is there any simultaneous relationship among market performance, risk and disclosure of Malaysian listed banks?" In this study, listed banks are chosen as a sample because banking sector is riskier than other business sectors due to its nature of business activities and furthermore, banking sector is highly regulated compared to other business sector, especially in information disclosure. In terms of market performance, there is no exception for banking sector to have better market performance. At the same time, risk is also an important factor that banks are required to manage (Basel Committee on banking supervision, 2005; Alexander, 2006; Garcia-Marco & Robles-Fernandez, 2008).

Furthermore, some of the factors that motivate to conduct this research is the unique nature of Malaysian banking sector, compared to most of the developed countries where most of the researchers have conducted their research. This unique nature of Malaysian situations may have positive impact on one aspect of the banks while imposing negative impact on the another aspect. Thus, it is believed that it is essential to examine the simultaneous relationship among crucial expectations, i.e. performance, risk and disclosure quality of listed banks, of the investors in Malaysia.

According to Lia (2004), the agency problem in Malaysia is between the minority and majority shareholders, not between directors and shareholders like in UK. Due to the ownership concentration, performance of the banks might be good however, transparency in disclosing information might not be encouraged since block shareholders might have their own proxies in

the management from which they can get inside information. In addition, family ownership issue is an important issue in Malaysia since it will have the similar effect like block ownership since the decision of the companies will be biased towards the families' interests rather than that of the companies. The implementation of the New Economic Policy or Bumiputra Policy results in a significant shift in the balance of ownership towards the bumiputra ownership and finally, it increases the involvement of governmental and political influence into the business environment in Malaysia by including prominent bumiputras such as ex-bareaucrats or politicians, on their boards, in many Chinese companies and conglomerates (Singam, 2003; Htay, 2012).

This paper is organized in six sections. Section 2 explains literature review. Section 3 focuses on the development of hypotheses and research design. Section 4 elaborates on preliminary finds. Section 5 discusses on findings of simultaneous equation and the last section concludes.

## **2.0 Literature Review**

This study examines the simultaneous relationship among market performance, risk and disclosure quality of the annual reports. Three theories which highlight the existence of potential relationship are explained below.

### **2.1 Risk and Disclosure: Market Discipline Perspective**

The managers are the persons who are actually conducting the business activities and they have more knowledge about the companies compared to the investors. Investor cannot know the real financial position of the companies, i.e. information risk, if management does not disclose all the material aspects of the companies. Due to this separation of ownership and control, the information asymmetry exists. Hence, it could be assumed that higher level of existence of information asymmetry is the more risky of the investments since the investors do not know the actual financial position of the companies. The best way to reduce the information asymmetry or information risk is disclosing all the material aspects of the companies (Healy & Palepu, 2001; Chiang, 2005; Bassen, Kleinschmidt, and Zollner (2006). By doing so, the investors are able to monitor the management, to estimate the current and future financial

position of the companies, and to discipline the management if it does not meet investors' expectation.

Kwan (2004) defines market discipline as “the effects of publicly available market signals from bank-issued securities that lead to less risk taking by the issuing bank” and further explains that market participants and bank regulators could influence a bank's risk profile by monitoring these market signals, consequently it will constrain bank risk taking. Hence, market discipline could be described as a mechanism that allows the market participants to monitor the performance of the companies through the disclosure of information and the investors are able to discipline the companies if they do not meet investors' expectation. In the banking sector, there are three main types of investors who might discipline the banks. They are equity holders, unsecured debt holders and uninsured deposit holders (Nier & Baumann, 2006). If the performance of the banks does not meet the expectation, equity holders may sell their share interest; influence to change the management and to introduce compensation performance. Moreover, unsecured debt holders and uninsured deposit holders may ask for higher return.

Therefore, it can be summarized that due to market discipline, higher disclosure will lead to lower information asymmetry, and consequently lower risk (Baumann & Nier, 2004; Chen, Chen and Wei, 2004; Jensen et al., 2006). This theoretical expectation is supported by the findings of Nier and Baumann (2006), and Baumann and Nier (2004). Furthermore, Gilbert (n.d.) mentions in the article that the results of Beighley, Boyd and Jacobs (1975), Pettway (1976), Beighley (1977), Pettway (1980), Brewer and Lee (1986), Cornell and Shapiro (1986), Shome, Smith, and Heggestad (1986), James (1987), Smirlock and Kaufold (1987), Gorton and Santomero (1988), Hannan and Hanweck (1988), and James (1989) are consistent with the effectiveness of market discipline. This means that their findings show market participants are able to discipline the companies if they do not meet their expectation.

## **2.2 Risk and Performance: Capital Asset Pricing Model (Risk and Return) Perspective**

According to Brigham and Houston (2001: 229), “the concept of return provides investors with a convenient way of expressing the financial performance of an investment”. It is because, if the performance of the companies is good, the return that the investor might receive will be high and if the performance is poor, the return will be low. Thus, it can be summed that

when the investors receive higher return, they may believe that the performance of the companies is good.

As a rational investor, if he has to face higher risk, he will expect higher return or performance in order to compensate the higher risk he bears (Richardson, 1970). This concept is derived from the capital asset pricing model, which is “an equation that equates the expected rate of return on a stock to the risk-free rate plus a risk premium for the stock’s systematic risk” (Keown, Martin, Petty and David, 2003: 274). This model basically shows a positive relationship between the risky assets and their respective returns. Therefore, from this model, it could be derived that the investors expect that higher the risk is, the more return for them and the better performance of the companies. This theoretical expectation is supported by the study of Tang and Shum (2004) and Ghysels, Santa-Clara and Valkanov (2005). Tang and Shum (2004) who study monthly return of stocks from the Pacific Basin Capital Markets Database from April 1986 to December 1998 find that there is a significant positive relation between beta and return. Ghysels et al. (2005) find a significantly positive relation between risk and return in the stock market.

### **2.3 Performance and Disclosure: Signaling Theory Perspective**

As mentioned before, there is a potential existence of information asymmetry due to the separation of the ownership and control because managers as the insiders of the companies know the actual performance of the companies, whereas investors basically know what is revealed by the managers. Based on the information disclosure, the investors make their economic decisions. Hence, the disclosed information should be comprehensive enough in presenting all the material aspects of the companies in order to ensure that the investors can make the right decisions.

As investors are rational decision makers, they would like to choose the investment that will give them the maximum return. In the decision making process, the investors will rely on the information available to them that is supplied by the management of the companies. The managers definitely prefer the investors to invest in their companies. Hence, the management might disclose the positive information in order to persuade the investors that the investment in their company security is better than others. This concept is derived from the signaling theory, i.e. if the companies are performing well; they prefer to disclose more in order to have positive

impression on their companies (Spence, 1973). Bird and Smith (2005) assert in their paper based on the idea of the signaling theory that the signalers communicate the observers by symbolic communication which shows the hidden attributes of the firms and consequently it will provide the benefits to both signaler and observers. Hence, it could be expected that there should be a positive association between firm performance and disclosure (Jensen et al. 2006) since it could be predicted that healthy firms are most likely to disclose more information than the distressed firms (Norita & Shamsul Nahar, 2004). The theoretical expectation is supported by the findings of Mitton (2002) and Chiang (2005).

### **3.0 Development of Hypotheses and Research Design**

#### **3.1 Development of Hypotheses**

Since the theories such as market discipline, capital asset pricing model and signaling theory have highlighted the possible relationship among the dependent variables, i.e. performance, risk and disclosure, the hypotheses are developed based on the above mentioned theories.

##### **3.1.1 Development of Hypothesis on the Simultaneous Relationship among Risk, Performance and Disclosure**

Capital asset pricing asset model shows a positive relationship between the risky assets and their respective returns. Therefore, from this model, it could be derived that the investors expect that the higher the risk is, the more the returns for them and the better performance of the companies. This theoretical expectation is supported by the study of Tang and Shum (2004) and Ghysels et al. (2005).

In addition, according to the signaling theory, if the companies are performing well; they prefer to disclose more in order to have positive impression on their companies (Spence, 1973). Hence, the management might disclose the positive information in order to persuade the investors that the investment in their company security is better than others. The theoretical

expectation is supported by the findings of Mitton (2002) and Chiang (2005). Based on the above mentioned two theories, the following null hypothesis is developed.

H<sub>d1</sub>: There is no indirect effect of risk on disclosure through performance.

### **3.1.2 Development of Hypothesis on the Simultaneous Relationship among Performance, Disclosure and Risk**

The signaling theory highlights that there is a tendency for the company to disclose more information if the performance of the companies is good in order to gain positive impression from the investors (Spence, 1973). Hence, the management might disclose the positive information in order to persuade the investors that the investment in their company security is better than others. The theoretical expectation is supported by the findings of Mitton (2002) and Chiang (2005).

Market discipline could be described as a mechanism that allows the market participants to monitor the performance of the companies through the disclosure of information and the investors are able to discipline the companies if they do not meet investors' expectation. Therefore, it can be summarized that due to market discipline, higher disclosure will lead to lower information asymmetry, and consequently lower risk (Baumann & Nier, 2004; Chen et al., 2004; Jensen et al. 2006). This theoretical expectation is supported by the findings of Nier and Baumann (2006) and Baumann and Nier (2004). Based on the above mentioned two theories, the following null hypothesis is developed.

H<sub>d2</sub>: There is no indirect effect of performance on risk through disclosure.

### **3.1.3 Development of Hypothesis on the Simultaneous Relationship among Disclosure, Risk and Performance**

Based on the Market discipline theory, it can be inferred that higher disclosure will lead to lower information asymmetry, and consequently lower risk (Baumann & Nier, 2004; Chen et al., 2004; Jensen et al. 2006). This theoretical expectation is supported by the findings of Nier and Baumann (2006), and Baumann and Nier (2004).

Capital asset pricing asset model highlights a positive relationship between the risky assets and their respective returns. This theoretical expectation is supported by the study of Tang and Shum (2004) and Ghysels et al. (2005). Based on the above mentioned two theories, the following null hypothesis is developed.

H<sub>d3</sub>: There is no indirect effect of disclosure on performance through risk.

### 3.1.4 Development of Simultaneous Equations to Examine the Relationship among Risk, Performance and Disclosure

Three models will be developed to examine the simultaneous relationship among risk, performance and disclosure. The first simultaneous equation based on capital asset pricing model and signaling theory is as follows:

$$Y_1 = (\beta_0 + \beta_1 Y_2 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \beta_{10} x_9 + \beta_{11} x_{10} + \mu_{it}) \text{ vs } Y_3 = (\beta_0 + \beta_1 Y_1 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \mu)$$

The second simultaneous equation based on signaling theory and market discipline is as follows:

$$Y_3 = (\beta_0 + \beta_1 Y_1 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \mu) \text{ vs } Y_2 = (\beta_0 + \beta_1 Y_3 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \beta_{10} x_9 + \beta_{11} x_{10} + \mu)$$

The third simultaneous equation based on market discipline and capital asset pricing model is as follows:

$$Y_2 = (\beta_0 + \beta_1 Y_3 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \beta_{10} x_9 + \beta_{11} x_{10} + \mu) \text{ vs } Y_1 = (\beta_0 + \beta_1 Y_2 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + \beta_5 x_4 + \beta_6 x_5 + \beta_7 x_6 + \beta_8 x_7 + \beta_9 x_8 + \beta_{10} x_9 + \beta_{11} x_{10} + \mu)$$

Where, Y<sub>1</sub> = Performance; Y<sub>2</sub> = Risk; Y<sub>3</sub> = Disclosure; x<sub>1</sub> = Board leadership structure; x<sub>2</sub> = Proportion of independent non-executive directors on the board; x<sub>3</sub> = Board size; x<sub>4</sub> = Proportion of director ownership; x<sub>5</sub> = Proportion of institutional ownership; x<sub>6</sub> = Proportion of block ownership; x<sub>7</sub> = Log of total assets; x<sub>8</sub> = Leverage; x<sub>9</sub> = Gross domestic product growth rate; x<sub>10</sub> = Economic crisis variable and μ = Error term



### 3.2 Research Design

The sample includes twelve companies whose main business activity is banking and which are listed on Bursa Malaysia. Period of study is from 1996 until 2005. Variables used in this study are Tobin's Q, standard deviation of monthly stock return and weighted disclosure score. Some of researchers who use Tobin's Q as a market performance measure are Khaled and Mohamed (2007), Garg (2007), Nazrul Hisyam et al. (2007), Dahya et al. (2008) and Raja and Kumar (2008). Standard deviation of monthly stock return is an important measure for market risk and among the researchers who use standard deviation of monthly stock return includes Nier and Baumann (2006), Stever (2007) and Cheng (2008). Weighted disclosure score is measured by the *disclosure index* developed based on the rules and regulations governing the banks, by regulating institutions like Bank Negara Malaysia, Basel Committee on banking supervision, statement on internal control issued by the institute of internal auditors Malaysia for public listed companies and prior researchers such as Sang (2005), Wong (2005) and Perrini (2006). The disclosure check list includes two hundred and twelve items which are mixture of both voluntary and mandatory items. In order to provide weight on each disclosure item, depending on the level of importance, a set of questionnaire is constructed and distributed to the accountants and financial analysts to seek their opinion on the level of importance of disclosure items from the index.

Other control variables are total assets as a proxy for firm size and ratio of total debt to total equity to measure leverage. In addition, gross domestic product rate and economic crisis period are used to control the general macroeconomic situations in the country because the sample period includes the economic crisis periods, i.e. 1997 and 1998. The purpose of controlling these two variables is to avoid any influence of economic crisis on the findings.

Simultaneous equation method is adopted to find the relationship among performance, risk and disclosure quality in this study.

## **4.0 Preliminary Findings**

### **4.1 Profile of Respondents and the Reliability Test**

Weighted disclosure score is computed after seeking the opinions of accountants and financial analysts and so Table 1 shows the background information about the respondents. The information includes gender, educational background, employment category, age and working experience of the respondents. Overall, both male and female respondents are equally distributed (49 percent of the respondents are male and 51 percent are female). Regarding educational background, the majority of the respondents are bachelor degree holders, and the balance is professional certificate holders. Since 57 percent of the respondents are from audit firms and 43 percent are from non-audit firms, the opinion is not influenced by a particular group. In terms of group age, the majority is between 20 and 29 years, followed by 30 and 39 years. In terms of working experience, majority of the respondents i.e. 43 percent are below 30 years in their current profession and 23 percent have working experience between three to seven years.

**[Insert Table 1 about here]**

Table 2 presents the results of the reliability test. The results show that the minimum Alpha value is 0.87 from the overall results and so it could be concluded that the respondents' answers are reliable.

**[Insert Table 2 about here]**

Table 3 shows the descriptive statistics results of the variables used in this study.

**[Insert Table 3 about here]**

In case of BLS, its mean value (0.81) shows that majority of the companies have separate leadership structure although the minimum value (zero) shows that there are companies which have combined leadership structure. The MCCG (2001) recommends the companies to have separate leadership structure. Hence, it could be summed that the majority of the sample

companies follow the recommendation provided by the MCCG (2001). In addition, the graphical presentation of the means of BLS over the period from 1996 to 2005 can be referred to Graph 1. Based on the graph, the means of BLS increases until 2002 and later on, it remains constant. It seems that in terms of BLS, the sample companies seem to adopt separate leadership structure especially after the introduction of the MCCG (2001).

**[Insert Graph 1 about here]**

Regarding board composition, the MCCG (2001) recommends that at least one third of the board members should be INE\_BZ. The mean value (0.36) of shows that, on the average, INE\_BZ of sample companies is more than one third of the total number of the directors on the board. Thus, it could be summed that the board composition of the majority sample companies is in line with the recommendation provided by the MCCG (2001). Moreover, the graphical presentation of the means of INE\_BZ over the period from 1996 to 2005 can be referred to Graph 2. Based on the graph, the means of INE\_BZ keep on increasing until 2005 and hence, it could be inferred that the sample companies have more INE\_BZ after the introduction of the MCCG (2001).

**[Insert Graph 2 about here]**

With regard to BZ, the MCCG (2001) does not provide the exact number of BZ although the importance of the independence of the board from the management is highlighted. According to the survey conducted by KLSE/Pricewaterhouse Coopers survey indicated that the average board size is 8 for the companies listed on Bursa Malaysia (Malaysian Code on Corporate Governance, 2007). Mak and Li (2001) by referring to Jensen (1983) and Florackis and Ozkan (2004), mention that boards with more than about seven to eight members are unlikely to be effective. They further elaborate that large board results in less effective coordination, communication, and decision making, and are more likely controlled by the CEO. Hence, the mean value (8.23) of BZ shows on average, the sample companies have relatively larger BZ. The graphical presentation of the means of BZ over the periods of 1996 to 2005 can be referred to Graph 3. Based on this graph, started from 2002, the board sizes slightly decrease until 2004 and in 2005, BZ slightly increases. Hence, in general, it could be concluded that

board size slightly decreases after the introduction of the MCCG (2001) because the mean BZ of 2005 is smaller than that of 2001.

**[Insert Graph 3 about here]**

For ownership, the mean values of DOWN and IOWN are 0.02 and 0.17. Thus, on average, no significant number of shares is owned by directors and institutions. In the case of BOWN, its mean value (0.53) shows that the significant portions of the shares are owned by large shareholders. The graphical presentations for the DOWN, IOWN and BOWN can be referred to Graph 4, 5 and 6. From the graphs over the periods of 1996 until 2005, it can be found that not significant number of shares belong to DOWN and IOWN except for BOWN. Regarding ownership issue, the MCCG (2001) does not provide any guidelines. Hence, it cannot be concluded that whether ownership by directors, institutions and block holders becomes larger after the introduction of the MCCG (2001). However, based on the corporate governance literature, specifically based on the agency theory, higher director ownership, institutional ownership, and block ownership have the potential to have better performance and lower risk. In the case of better disclosure, smaller director ownership, larger institutional ownership and larger block ownership are preferred.

**[Insert Graph 4, 5 & 6 about here]**

The means values of Tobin's Q (0.18), standard deviation of monthly stock returns, STD (0.67) and weighted disclosure score (321.91) are presented in Table 3. Their graphical presentations of the yearly means can be referred Graph 7, 8 and 9.

**[Insert Graph 7, 8 & 9 about here]**

Based on the literature, performance, risk and disclosure could be affected by size and ratio of debt to equity of the company (i.e. leverage condition) and economic condition of the country. Hence, these variables are controlled in this study. Their descriptive statistics results can be referred to Table 3. On average, the sample companies have the means values of RM45992.19 millions for total assets (TA), 344.727 for ratio of total debts to total equity

(TD\_TE) and 0.084517 for gross domestic product (GDP) rate. Their graphical presentations can be referred to Graph 10, 11 and 12. TA keeps on increasing over the years from 1996 until 2005. In the case of the mean values of TD\_TE, they significantly decrease in 2001 but for the rest of the years, the mean values are above 300 and seems to be high. It might be due to the fact that the main activity of the sample companies is banking activity which heavily involves borrowing and lending activities, compared to trading businesses.

**[Insert Graph 10, 11 & 12 about here]**

## **4.2 Correlation Results**

Table 4 shows the correlation among the variables. Based on the correlation table, there is no variable which is highly correlated with the others. None of the correlation coefficients is above 0.50. This result provides an early indication that the problem of multicollinearity might not severely influence the regression results.

**[Insert Table 4 about here]**

The correlation value between the BLS and BZ (-.39) indicates that companies with larger BZ tend to have combined BLS. Thus, it seems that the CEO might have higher tendency of strong influential power on the board since the board size is larger and there is no separate individual body to oversee CEO. The correlation value (-0.20) between BZ and INE\_BZ shows that they are inversely related. Hence, it can be inferred that when BZ is larger, the number of independent non-executive directors is smaller and consequently, lesser independence for the board from the management.

The correlation between INE\_BZ and DOWN is -0.12 and it means that higher the proportion of the director ownership, lower the ratio of independent directors. Based on this correlation result, it seems that when the directors have interest in the companies, the board seems to have fewer number of independent directors and hence the independence of the board from the management will be lower.

In the case of IOWN, its correlation value with BLS is (-0.05) and with INE\_BZ is (-0.26). These correlation values mean that even at the existence of the higher IOWN, the

possibility of having combined BLS is higher and having the smaller number of independent directors is higher. Hence, it could be inferred that the role of the institutional shareholders in Malaysia is weak. It also might be due to the fact that institutions do not have significant ownership interest since the mean value of institutional ownership is only seventeen percent.

## **5.0 Simultaneous Equation Results**

Three sets of simultaneous equations are run based on three theories. The first set of simultaneous equation is based on capital asset pricing model and signaling theory and results are presented in Table 5 (Panel A). The second set of simultaneous equation is based on signaling theory and market discipline and results are presented in Table 5 (Panel B). The third set of simultaneous equation is based on market discipline and capital asset pricing model and results are presented in Table 5 (Panel C).

### **5.1 Simultaneous Equation Results among Risk, Performance and Disclosure**

Based on the concept of capital asset pricing model, as a rational investor, if he has to face higher risk, he will expect higher return or performance in order to compensate the higher risk he bears (Richardson, 1970; Keown et al., 2003). Therefore, from this model, it could be derived that the investors expect that the higher the risk is, the more the returns for them and the better performance of the companies.

As investors are rational decision makers, they would like to choose the investment that will give them the maximum return. In the decision making process, the investors will rely on the information available to them that is supplied by the management of the companies. As managers of the companies, they definitely prefer the investors to invest in their companies. Hence, the management might disclose the positive information in order to persuade the investors that the investment in their company security is better than others. This concept is derived from the signaling theory, i.e. if the companies are performing well; they prefer to disclose more in order to have positive impression of their companies (Spence, 1973). Hence, in theory, it could be expected that there should be a positive association between firm performance and disclosure (Jensen et al. 2006).

Based on the results in Panel A of Table 5, it could firstly be concluded that risk is not an important determinant of performance. In the first half of Panel A (Table 5), it is found that BLS, IOWN, BOWN and LNTA and CRISIS are important determinants of performance. However, majority of the significant relationships contradict the theoretical expectations. For example, it is expected that separate BLS would lead to better performance, however, the results shown otherwise. Similar results can also be observed on IOWN and BOWN. It might be due to the use of Tobin's Q as the measure of performance. Tobin's Q is used as a proxy for market performance since the formula to calculate Tobin's Q includes the market value of common stock which captures the extent to which the stock market values the firms' shares. Most of the researchers such as Hermalin and Weisbach (1991), Yermack (1996) and Raja and Kumar (2008) use Tobin's Q as a proxy for market performance in the corporate governance research area.

With regard to the control variables, it is expected that larger firms should have better performance. However, the results show otherwise. One possible reason might be that larger banks are already matured with lesser business opportunities. As performance indicator used for the simultaneous equation is Tobin's Q, it is possible that the relationship is negative. With regard to crisis, it confirms the theoretical expectation where during the period of economic crisis, performance of banks becomes poorer.

In the second half of Panel A (Table 5), the second estimation results in better fitness of the first equation. It could be observed that the  $\text{Chi}^2$  of the second estimation (i.e.429.69) is much better than the first estimation (i.e. 150.62). In addition, it could also be observed that the effect of performance and disclosure becomes much better, with z-value of 1.78, compared to the direct effect of performance on disclosure (i.e. z-value of 1.28, refer to the first half of Panel B results). Therefore, it could be concluded that simultaneous equations results in better estimation of the effect of performance on disclosure. Although risk is not a significant determinant of performance, it helps in improving the effect of performance on disclosure under the simultaneous framework.

## **5.2 Simultaneous Equation Results among Performance, Disclosure and Risk**

Based on the signaling theory, if the companies are performing well; they prefer to disclose more in order to have positive impression on their companies (Spence, 1973). Hence, in

theory, it could be expected that there should be a positive association between firm performance and disclosure (Jensen et al. 2006).

In the modern business environment, corporations face a lot of market uncertainties, such as market risk, credit risk and operational risk. One of the main factors leading to all these risks is the problem of information asymmetry. Thus, it could be assumed that higher level of existence of information asymmetry is the more risky of the investments since the investors do not know the actual financial position of the companies. The best way to reduce the information asymmetry or information risk is to disclose all the material aspects of the companies (Healy & Palepu, 2001; Chiang, 2005; Bassen et al., 2006). By doing so, the investors are able to monitor the management, to estimate the current and future financial position of the companies, and to discipline the management if it does not meet investors' expectations. Therefore, based on the market discipline, investors will be able to monitor the performance of the companies through the disclosure of information and discipline the companies if they do not meet investors' expectations. In theory, it can be summarized that due to market discipline, higher disclosure will lead to lower information asymmetry, and consequently lower risk (Baumann & Nier, 2004; Chen et al., 2004; Jensen et al. 2006).

Based on the results in Panel B of Table 5, it could firstly be concluded that performance is not an important determinant of disclosure. In the first half of Panel B (Table 5), it is found that INE\_BZ, BZ, DOWN, BOWN and LNTA are important determinants of performance. However, two of the significant relationships contradict the theoretical expectations. For example, it is expected that smaller BZ would lead to better disclosure, however, the results show otherwise. Similar results can also be observed on BOWN.

With regard to the control variables, it is expected that larger firms should have higher disclosure and the finding from LNTA is in line with the expectation. However, the result from leverage, i.e. TD\_TE, shows otherwise. One possible reason might be that banks with more debts are less likely to disclose more information so as not to reveal their actual financial position.

In the second half of Panel B (Table 5), the second estimation results do not improve the fitness of the first equation since the  $\text{Chi}^2$  of the second estimation (i.e.883.95) is much lower than the first estimation (i.e. 5820.64). However, p-value of both estimations is still highly significant. In addition, it could also be observed that the direct effect of disclosure on risk is



very much lower, with z-value of -0.17 (refer to the second half of Panel B results), compared to the direct effect of disclosure on risk (i.e. z- value of -3.09, refer to the first half of Panel C results). Therefore, it could be generally concluded that performance is not a significant determinant of disclosure and it does not really help in improving the effect of disclosure on risk under the simultaneous framework.

### **5.3 Simultaneous equation results among disclosure, risk and performance**

Based on the market discipline, investors will be able to monitor the performance of the companies through the disclosure of information and discipline the companies if they do not meet investors' expectation. In theory, it can be summarized that due to market discipline, higher disclosure will lead to lower information asymmetry, and consequently lower risk (Baumann & Nier, 2004; Chen et al., 2004; Jensen et al. 2006). According to the concept of capital asset pricing model if the risk is high, the investors expects more returns and better performance of the firms.

Based on the results in Panel C of Table 5, it could firstly be concluded that disclosure is an important determinant of risk at z-value of -3.09. In the first half of Panel C (Table 5), it is also found that BLS, GDP rate and economic crisis are important determinants of performance. However, the significant relationship of BLS with risk is contrary to the theoretical expectations. In the second half of Panel C (Table 5), the second estimation results in better fitness of the first equation. It could be observed that the  $\text{Chi}^2$  of the second estimation (i.e.1254.72) is much better than the first estimation (i.e. 946.19). Therefore, it could be concluded that simultaneous equations results in better estimation of the effect of risk on performance. Disclosure is a significant determinant of risk and it helps to improve the effect of risk on performance under the simultaneous framework.

### **6.0 Conclusion and Area for Future Research**

This paper examines the relationship among market performance, risk and disclosure quality of the twelve Malaysian listed banks using simultaneous equation. In Malaysian context, the applicability of the concept of *market discipline theory* seems to be significant. It might be

due to the following reasons. First, Malaysian banking industry is closely regulated by Bank Negara Malaysia. Secondly, banks are also required to follow the specific guidelines issued by Bank Negara Malaysia in addition to the existing accounting standards in disclosing the accounting information. Finally, Malaysian banks are required to observe the Pillar Three: Market Discipline issued by Basel Committee on Bank Supervision. Hence, it seems to improve the market's ability to assess a bank's risk and value.

In the case of signaling, the findings are in line with the theoretical expectation although it is not significant (refer to the second half of Panel A & the first half of Panel B, Table 5). Therefore, the applicability of the concept of *signaling theory* is not significant. It might be due to the following reasons. First, the motive of information disclosure of the banks is based on the regulatory requirements by the Bank Negara, rather than the choices of the individual companies. It has been supported by the findings of Berglof and Pajuste (2005). Secondly, weakness of local media in Malaysia might hinder the flow of information. Some of the situations that make local media weak in Malaysia are as follows (Singam, 2003).

Regarding the *risk and return theory*, the findings are not in line with the theoretical expectations and it is also not significant. It might be due to the nature of banking business activities. This research applies the theories which are developed based on the social and economic situations in developed countries. Therefore, among the theories used in this study, only market discipline theory is significant and the main reason for it is highly regulated nature of banking industry. Therefore, in future, the theory which is based on local culture, religion and market situation should be considered.

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**Table 1: Profile of Respondents**

	Accountants		Financial Analysts		Overall	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<b>Gender</b>						
Male	52	39.69	37.00	72.55	89.00	48.90
Female	79	60.31	14.00	27.45	93.00	51.10
Total	131	100.00	51.00	100.00	182.00	100.00
<b>Educational background</b>						
Bachelor degree	74	56.92	25.00	50.00	99.00	55.00
Master	6	4.62	19.00	38.00	25.00	13.89
Ph.D			1.00	2.00	1.00	0.56
Professional qualification (ACCA, CIMA, CFA, etc)	50	38.46	5.00	10.00	55.00	30.56
Total	130	100.00	50.00	100.00	180.00	100.00
<b>Employment category</b>						
Audit firm	103	78.63	1.00	1.96	104.00	57.14
Non-audit firm	28	21.37	50.00	98.04	78.00	42.86
Total	131	100.00	51.00	100.00	182.00	100.00
<b>Age range</b>						
Below 20						
20 – 29	63	48.09	11.00	21.57	74.00	40.66
30-39	35	26.72	22.00	43.14	57.00	31.32
40-49	27	20.61	14.00	27.45	41.00	22.53
50-59	4	3.05	4.00	7.84	8.00	4.40
60 and above	2	1.53			2.00	1.10
Total	131	100.00	51.00	100.00	182.00	100.00
<b>Working experience with current profession</b>						
Below 3 years	63.00	48.09	15.00	29.41	78.00	42.86
3 – 7	29.00	22.14	13.00	25.49	42.00	23.08
8 – 12	16.00	12.21	10.00	19.61	26.00	14.29
13 – 17	15.00	11.45	7.00	13.73	22.00	12.09
18 – 22	2.00	1.53	3.00	5.88	5.00	2.75
23 – 27	2.00	1.53	3.00	5.88	5.00	2.75
Above 27	4.00	3.05			4.00	2.20
Total	131.00	100.00	51.00	100.00	182.00	100.00
<b>Additional information</b>						
Masters			1.00	1.96	1.00	0.55
Professional qualifications (ACCA, CIMA, CFA, etc)	15.00	11.45	7.00	13.73	22.00	12.09

**Table 2: Reliability Test Results: Actual Respondents**

	Alpha		
	Financial		
	Accountants	analysts	Overall
Disclosure on Strategic Information	0.92	0.86	0.90
Disclosure on risk management	0.96	0.97	0.96
Disclosure on Financial Information	0.92	0.93	0.93
Disclosure in the notes to the accounts	0.95	0.96	0.96
Disclosure on segmental information	0.92	0.91	0.92
Disclosure on market share, contingent liabilities and assets, and other information	0.88	0.85	0.87
Disclosure on Social, Environmental and Value Added Information	0.88	0.90	0.89
Additional Disclosure on Operations of Islamic Banking	0.92	0.93	0.93

**Table 3: Descriptive Statistics of Independent, Dependent and Control Variables**

	Mean	Std. Dev.	Min	Median	Max
<i>(a) CG variables</i>					
BLS	0.81	0.40	0.00	1.00	1.00
INE_BZ	0.36	0.18	0.10	0.33	0.83
BZ	8.23	2.34	4.00	8.00	14.00
<i>(b) Ownership variables</i>					
DOWN	0.02	0.05	0.00	0.00	0.25
IOWN	0.17	0.18	0.00	0.09	0.64
BOWN	0.53	0.21	0.00	0.58	1.00
<i>(c) Market performance</i>					
TOBIN'S Q	0.18	0.09	0.03	0.16	0.46
<i>(d) Risk</i>					
STD	0.67	1.00	0.06	0.42	7.03
<i>(d) Disclosure score</i>					
WDS	321.91	108.24	119.84	316.95	574.68
<i>(e) Other variables</i>					
TA	45,992.19	40,245.92	1,120.36	33,326.95	191,895.30
TD_TE	344.73	331.14	14.03	223.80	1,442.26
GDP RATE	0.08	-0.05	0.02	0.09	0.14

Note: WDS refers to weighted financial information disclosure score.

**Table 4: Correlation Results**

	BLS	INE_BZ	BZ	DOWN	IOWN	BOWN	TA	TD_TE	GDP RATE	DUM_CRISIS <sup>3</sup>
BLS	1.00									
INE_BZ	0.12	1.00								
BZ	-0.39	-0.20	1.00							
DOWN	-0.42	-0.12	0.41	1.00						
IOWN	-0.05	-0.26	-0.03	-0.10	1.00					
BOWN	-0.08	-0.36	-0.02	0.12	0.34	1.00				
TA	-0.04	0.11	0.43	-0.08	-0.03	-0.05	1.00			
TD_TE	-0.37	-0.26	0.02	-0.02	0.15	0.14	0.32	1.00		
GDP RATE	-0.01	0.12	-0.10	-0.08	-0.01	-0.06	0.04	0.01	1.00	
DUM_CRISIS	-0.07	-0.18	-0.07	0.14	-0.14	0.17	-0.15	-0.03	-0.24	1.00

Note: The figures provided above are the correlation coefficients and none are significant at 5% level.

<sup>3</sup> DUM\_CRISIS refers to economic crisis dummy.



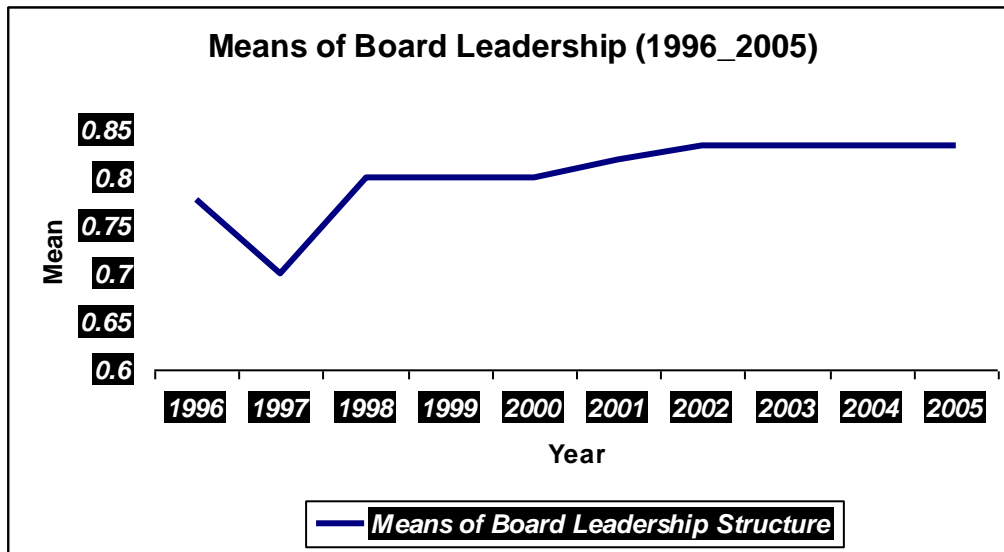
**Table 5**

**Simultaneous equation results**

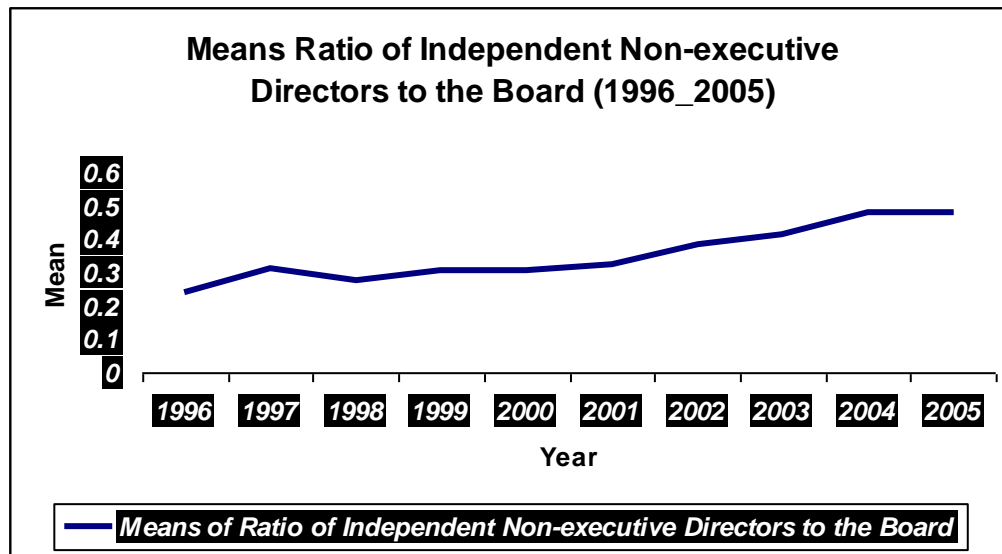
<b>PANEL A</b>				<b>PANEL B</b>				<b>PANEL C</b>			
(PERFORMANCE &. RISK) vs. (DISCLOSURE & PERFORMANCE)				(DISCLOSURE & PERFORMANCE) vs. (RISK & DISCLOSURE)				(RISK & DISCLOSURE) vs. (PERFORMANCE & RISK)			
TOBIN'Q	Coefficient	Z_value	P value	WDISCLSORE	Coefficient	Z_value	P value	STD	Coefficient	Z_value	P value
STD	-0.10	-1.07	0.29	TOBIN'Q	95.17	1.28	0.20	WDISCLOSURE	<b>0.00</b>	<b>-3.09*</b>	<b>0.00</b>
LNTA	<b>-0.08</b>	<b>-5.65*</b>	<b>0.00</b>	LNTA	<b>65.77</b>	<b>4.72*</b>	<b>0.00</b>	LNTA	0.01	0.60	0.55
TD_TE	0.00	1.79	0.07	TD_TE	-0.01	-0.21	0.84	TD_TE	0.00	0.38	0.70
GDP RATE	0.16	1.37	0.17	Chi <sup>2</sup>				GDP RATE	<b>-0.57</b>	<b>-5.5*</b>	<b>0.00</b>
DUM_CRISIS	<b>-0.04</b>	<b>-2.27**</b>	<b>0.02</b>	P value				DUM_CRISIS	<b>0.10</b>	<b>6.24*</b>	<b>0.00</b>
Chi <sup>2</sup>								Chi <sup>2</sup>			
P value								P value			
			<b>150.62*</b>								<b>946.19</b>
			<b>0.00</b>								<b>0.00</b>
WDISCLSORE	Coefficient	Z_value	P value	STD	Coefficient	Z_value	P value	TOBIN'Q	Coefficient	Z_value	P value
TOBIN'Q	357.16	1.78	0.08	WDISCLOSURE	0.00	-0.17	0.87	STD	-0.22	-0.60	0.55
LNTA	<b>88.35</b>	<b>4.07*</b>	<b>0.00</b>	LNTA	0.01	0.07	0.94	LNTA	<b>-0.09</b>	<b>-5.45*</b>	<b>0.00</b>
TD_TE	-0.03	-0.74	0.46	TD_TE	0.00	0.35	0.73	TD_TE	0.00	1.78	0.08
Chi <sup>2</sup>				GDP RATE	<b>-0.57</b>	<b>-5.18*</b>	<b>0.00</b>	GDP RATE	0.12	0.53	0.60
P value				DUM_CRISIS	0.09	1.81	0.07	DUM_CRISIS	-0.03	-0.66	0.51
			<b>429.69*</b>	Chi <sup>2</sup>				Chi <sup>2</sup>			
			<b>0.00</b>	P value				P value			
											<b>1254.72*</b>
											<b>0.00</b>

\* Significant at 1%  
\*\* Significant at 5%

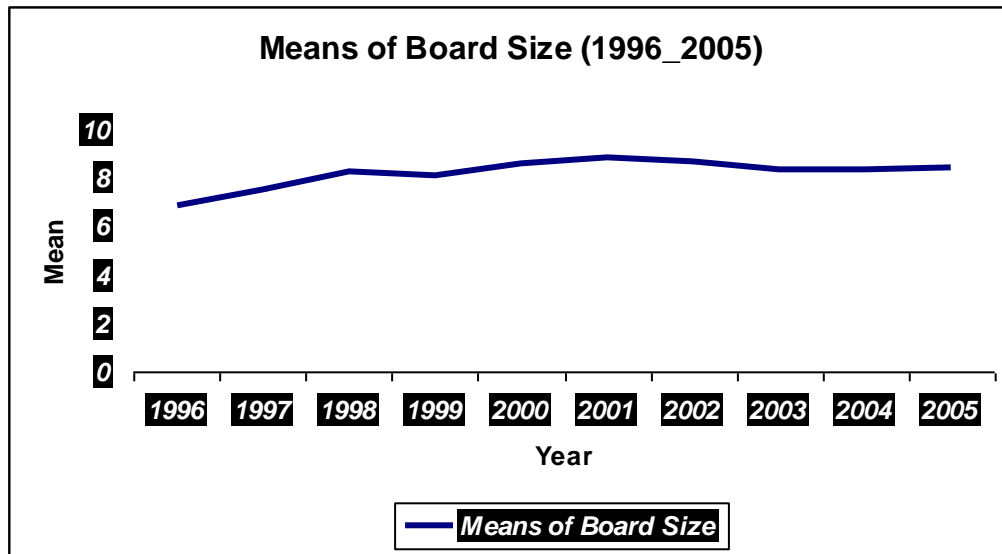
**Graph 1**  
**Means of board leadership structure from 1996 to 2005**



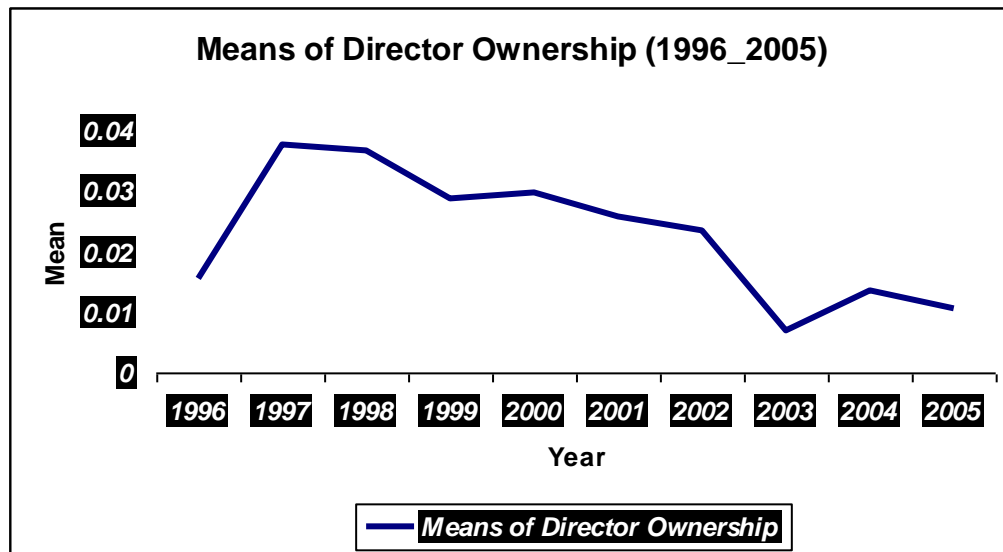
**Graph 2**  
**Means of ratio of independent non-executive directors to the board from 1996 to 2005**



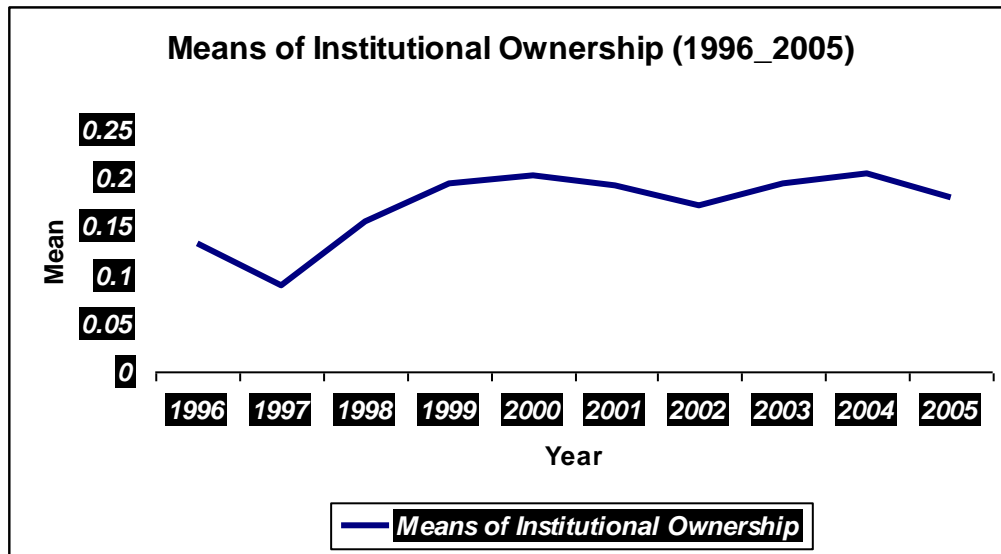
**Graph 3**  
**Means of board size from 1996 to 2005**



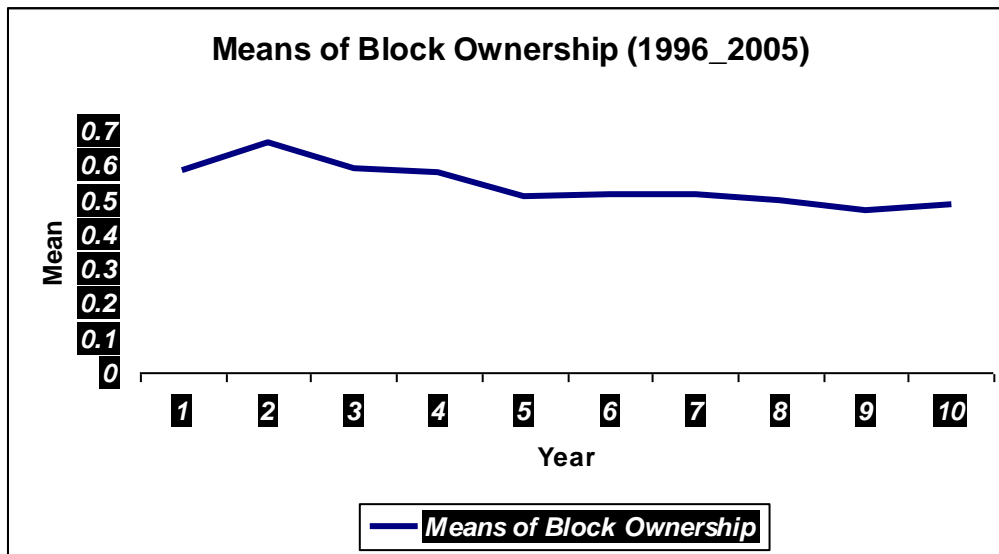
**Graph 4**  
**Means of director ownership from 1996 to 2005**



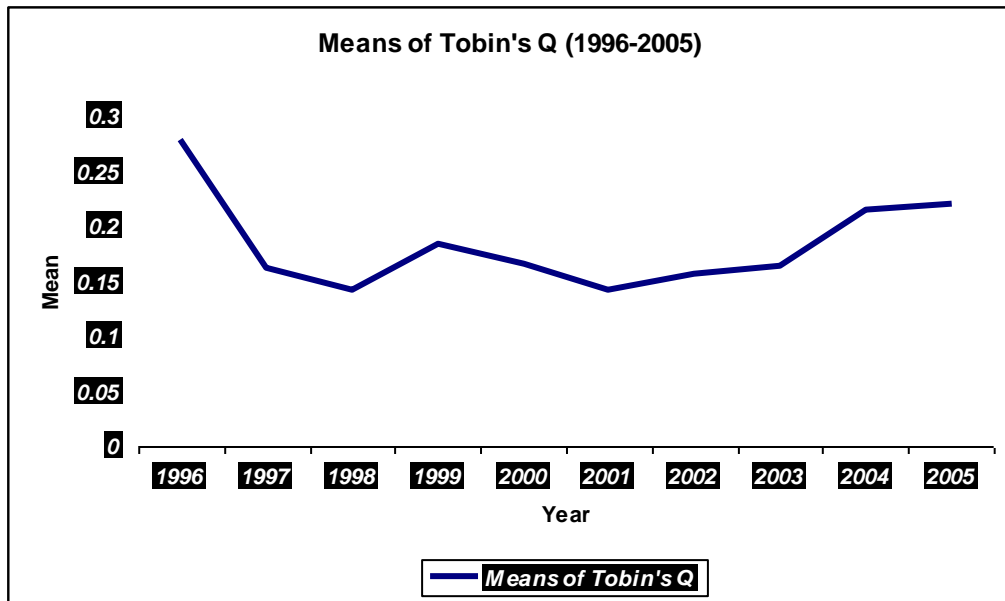
**Graph 5**  
**Means of institutional ownership from 1996 to 2005**



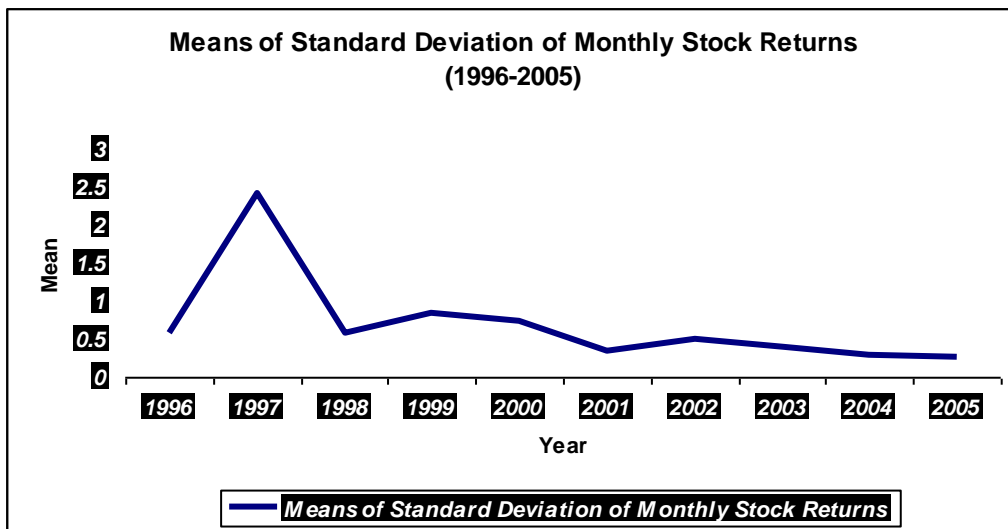
**Graph 6**  
**Means of block ownership from 1996 to 2005**



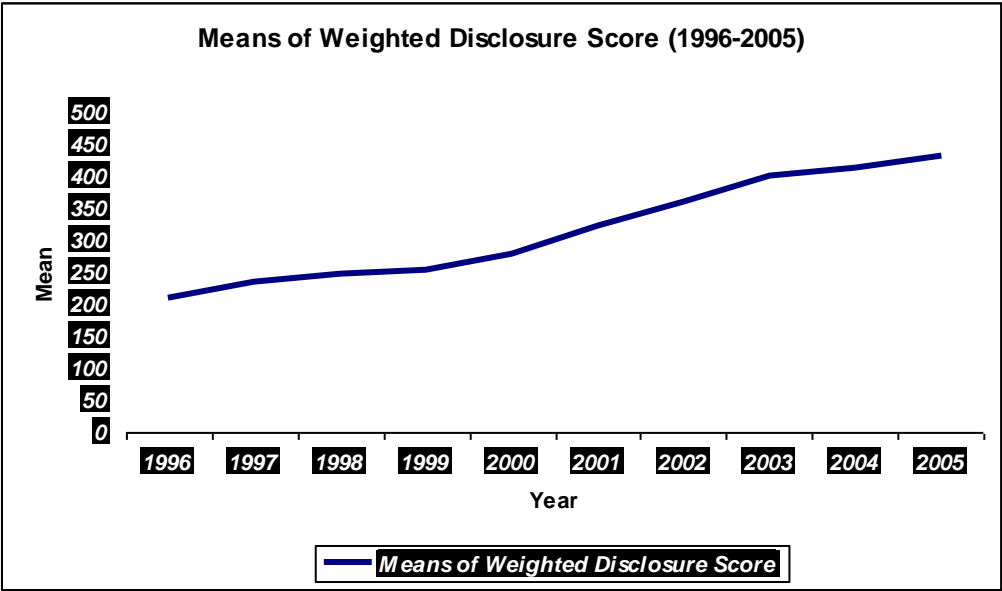
**Graph 7**  
**Means of Tobin's Q from 1996 to 2005**



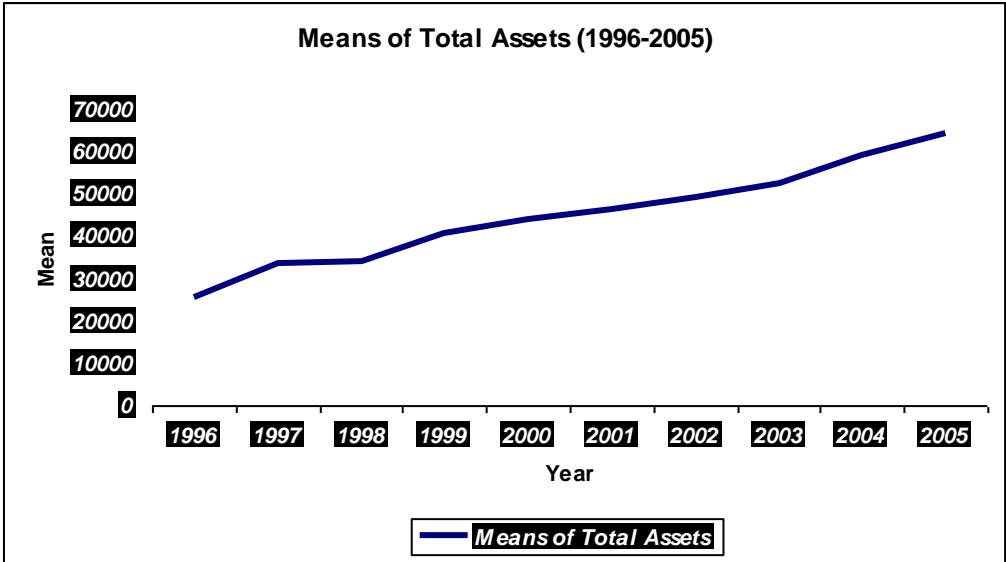
**Graph 8**  
**Means of standard deviation of monthly stock returns from 1996 to 2005**



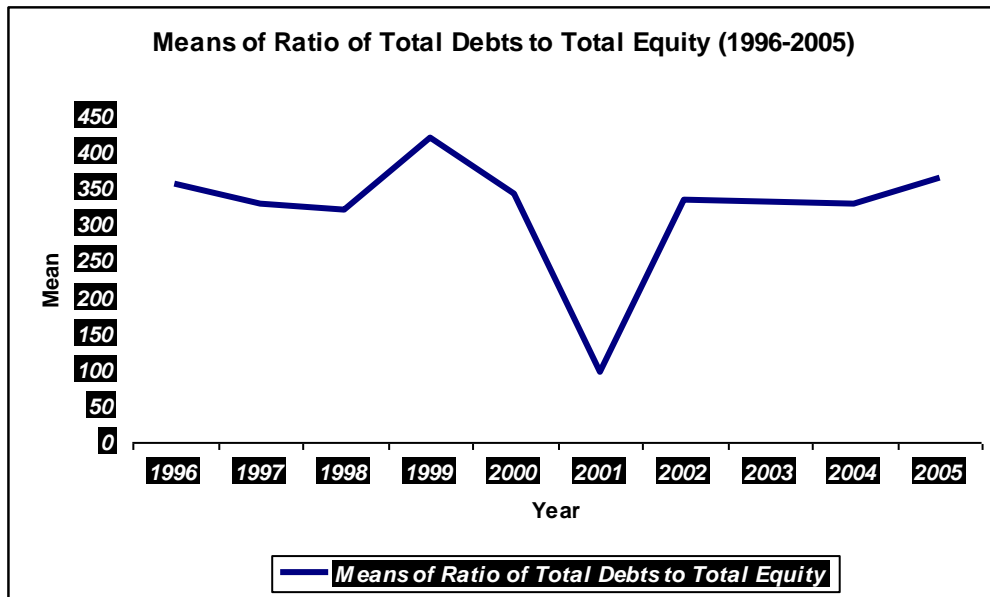
**Graph 9**  
**Means of weighted disclosure score from 1996 to 2005**



**Graph 10**  
**Means of total assets from 1996 to 2005**



**Graph 11**  
**Means of ratio of total debts to total equity from 1996 to 2005**



**Graph 12**  
**Means of gross domestic product rate from 1996 to 2005**

