Corporate Finance Behaviour in Malaysia:
Towards Key Financial Performance Index

Corporate financial performance has been the area of academic research for quite a long time. The immense technological and industrial boom of modern industrial revolution has brought about the leading change in corporate culture, strategies and operation (Jensen, 1993). Alongside, increasing antagonism among corporate decisions has raised the bar of quality, growth and profitability. As a result, corporations are clouted from multidimensional forces, which include their own feeble internal control system, corporate growth intensity in competitive corporate environment (Jensen, 1986; Jensen, 2001). Violations of theoretical relationship among agency relationship, free cash flow, over and underinvestment, capital structure, and dividend policy are reshaping the corporate behaviour since last few decades (see Jensen and Meckling, 1976; Jensen, 1986; Morgado & Pindado, 2003; Harris & Raviv, 1991; Naranjo, Nemalendran & Ryngaert; 1998).

Economical growth largely depends on stable corporate sector. However, corporate financial behavior is multidimensional. During last three decades, the public listed companies have conducted a large portion of the corporate activities in an international basis. These companies are the major sources of employment and production; two significant economic health indicators. Corporations deal with stakeholders. It is, therefore, a prime responsibility to maintain a satisfactory status of performance and update the status to the stakeholders. Thus, there has to be continuous scrutiny of the impact of corporate behavior and its relation to socio-economic status of the country. Consequently, performance of corporations has been the biggest interest of the academicians, policy makers and stakeholders alike.

There are several views to determinants of corporate financial behaviour and corporate performance. Externally, the environment, for example, changing regulations and state of competition have influence on the growth and performance of a firm. Internally, corporate governance, in the form of ownership structure and board structure, also has influence on the growth and performance of a firm. Therefore, firms' own characteristics and market environment are crucial factors to determine the corporate performance. Large corporations have global presence, and so as their culture and crises. As a result, massive corporate

transitions, from developed to emerging countries, there is ongoing interest in driving research on corporate performance, valuation and sustainability.

This study analyzes the performance of Malaysian publicly listed firms with a view to identify the determining factors of corporate performance, which can be used as an index for future estimation and benchmarking. This study introduces an index, namely Key Corporate Financial Performance Index, based on non-survey based secondary data. To form the index, the study relies on important areas; such as investment, dividend policy, corporate governance and capital structure. Performance analysis is especially crucial in Malaysia, as Katz (2007) stressed a complex business operation due to multiracial business environment in Malaysia. Following the need for a better corporate financial environment in a multi-cultural, emerging economy, this study tends to fulfil the preceding objectives:

1. The study primarily intends to identify the factors (Key Corporate Financial Performance Indicators – KCFPI) that determine corporate performance. This includes the construction of a generic but comprehensive model having all the significant determinants of financial performance of corporate Malaysia.

2. Moving forward, the study finds an index (Key Financial Corporate Performance Index - KCFP*i*) of these factors for performance analysis, benchmarking and forecasting.
   2.1. Using the index to conduct a within sample forecast to observe the forecasting accuracy of the model.
   2.2. To show the ranking-consistency of the companies based on the forecasting.

Extant literatures describe a collection of factors including the investment dynamics, capital structure, payout, profitability and corporate governance to explain corporate performance in different countries. The results show a comprehensive index that includes the key financial determinants of corporate performance. As dependent variable to proxy corporate financial performance, Tobin's Q has been used. The significant independent variables are capital structure, dividend per share, CEO duality and board size. Among these four, Dividend per share had the highest standardized beta followed by capital structure, CEO Duality and Board Size. The use of debt and higher dividend per share positively influence the performance, while presence of role duality and higher board size negatively influence the performance.

Robustness of the model was compared with having another model with Shareholders' Return as the dependent variable. The final model with Tobin's Q was used to conduct a within sample forecast and the result indicate a valid model with Tobin's Q as the mean forecasting error was equal to zero. Finally, the model was used to check the consistency of the companies in top 10% of the forecast and the model found a significant number of companies existing in the top 10% list. These indicate the validity of the estimates using the model.

1. KEY CORPORATE FINANCIAL INDICATORS

Does increase in investment act positively with market value of the firms? The tax-correction paper by Modigliani-Miller (MM) in 1963, which is an advanced format of MM's seminal contribution in capital structure theory (1958), strengthened the need for investment opportunities based on additional debt financing, which is unrelated to market value of the firms. Followed by this comes the theory of underinvestment by Myers (1977), which has thematically explored the negative contribution of debt financing in investment decision. Underinvestment hypothesis explores that due to investor related determinants of market value such as the higher dividend payout ratio, managers are rest with lower amount of fund to reinvest in good projects (Bebchuk & Stole, 1993). Thus, investing in lower NPV projects negatively affect the market value.

McConnell and Muscarella (1985) indicate that for industrial firms, the markets response favourably to investment announcements and negatively to divestment announcements. Chung et al. (1998) argue that firm value is influenced by quality of investment instead of quantity of investment. Baker et al. (2003) in the meantime show that the impact of investment on firm performance depends on the method of payment (i.e. debt or equity) for the investment. Titman et al. (2004) show that excess returns pattern exists which is dependent on past investment activity. Specifically, future excess returns are positively (negatively) associated with low (high) investment activity.

Dividend policy and dividend per share have also captured substantive research attraction. The agency costs argument, information asymmetry between managers and shareholders and the separation of ownership and control constitutes the basic explanation as to why dividend

policy matters. Lang and Litzenberger (1989) explain the resultant abnormal return for the firms' dividend announcement, which indicated that these firms were considering investing in a quality project. Distributions to shareholders in the form of dividend can work to reduce such agency costs, thus increases firm value. Modigliani-Millers' (MM) (1958, 1961) contribution in bringing conclusion on relationship between dividend policy with firm value (with or without tax effect) identifies that separation between investment and financing decision. Studies on capital structure and firm value show a clear trend.

Cash flow, profitability and retained earnings are important determinant of corporate performance. Campello (2006) reports significantly positive impact of profitability on firm product performance. Nonetheless, proponents of pecking order hypothesis (De Jong et al., 2008) argue that profitability has negative relationship with leverage as firms prefer internally generated funds to external funds. The negative relationship between retained earnings and financial distress likelihood (FDL) in Pindado et al.'s (2008) study implies that higher dividend payout is positively related to firm value.

Faulkender et al. (2006) find, "even though there are arguments that higher debt-equity ratio and higher dividend payouts increase investor control, the manager sets the firm's dividend policy and capital structure to optimally trade off the value he attaches to being in control of project choice against the decline in stock price from taking control away from investors". This indicates a combined effect of dividend policy and capital structure on firm performance and value. Jensen, Solberg & Zorn (1992) argue that firm value is largely affected by a correlated affect of dividend policy and corporate debt policy. Corporate dividend and leverage policy give an alternate mechanism for controlling agency cost, therefore boosting up performance.

The choice of debt and equity gave influential results in extant literatures. Myers (1977) find a negative relationship between debt financing in investment decision under underinvestment theory. Even though Fama and French (1997) concluded value-growth dynamics having significant influence on the investment of any firm, in a later study authors (Fama & French, 1999) concluded that firms rely mostly on long-term debt for financing growth and seasonal variations and use equity for mergers and acquisition activity. Lang, Ofek & Stulz (1996) argue that firms with higher indebtedness are affected negatively in terms of their value if the

investment decisions are of low quality. Abor (2007) finds a significant negative relationship between debt ratio and performance (ROA and Tobin's Q). Other studies have looked at the valuation impact of capital structure through the firm performance in product market (Harris & Raviv, 1991; Campello, 2006). Consistent with the capital structure-product market hypothesis, these studies find that issuance of debt is positively associated with quality and reputable firms.

Like Harris and Raviv (1991), prior studies find many determinants of capital structure. The determinants are profitability, firm size, tangibility, growth opportunity, share price performance, market liquidity, and also political linkages (Rajan & Zingales, 1995; Deesomsak et al., 2004; Fraser et al., 2006; De Jong et al., 2008; Chang et al., 2008). Allowing the presence of corporate tax, study finds that in the case where debt impose loose covenants, financing decision does not affect firm value because investors' rational expectation ensure that the tax shield benefits and agency costs are already reflected in firm value (Brennan and Schwartz, 1984). Eventually, the use of debt provides incentives for managers to take appropriate actions in order to make periodic interest payments and avoid bankruptcy, which translate positively into firm valuation (Berger & Di Patti, 2006).

Corporate governance, board structure, CEO duality and related factors also carry weights in affecting corporate performance. Significant portion of the corporate guidelines, ownership composition, code of conducts and responsibilities are now embedded in the legal and regulatory framework of almost all countries. A combination of all these corporate guidelines and responsibility framework can be named as corporate governance (Gillan & Starks, 1998). In Jensen's word, "Without the clarity of mission provided by a single-value objective function, companies embracing stakeholder theory will experience managerial confusion, conflict, inefficiency and perhaps even competitive failure" (Jensen, 2001). Corporate governance mechanism is of further importance for the emerging nations because of the immature capital market, poor corporate reporting system and global openness in business and trade activities that has been shifted towards emerging nations for comparative economic benefits (Chua, Eun & Lai, 2007; Cremers & Ferrell, 2009).

Jensen (2001) argues that failure of internal control system has severe negative impact on product market and on the capital market performance of the firm. Miller (1993) argues that

board leadership and incentive mechanism play important role in corporate overall performance. Board works as the centre of monitor and control for corporate performance (John & Senbet, 1998). Small boards are more effective and large board are found to be more symbolic rather than effective in monitoring the performance (Hermalin & Weisbach, 2000). However, Pearce and Zahra (1992) argue that larger board size may provide with resource economics and may help overcoming environmental uncertainties. Yermack (1996) and Eisenberg et al. (1998) find a significant negative relationship between Tobin's Q, as the performance measures, and the board size; whereas Holthausen and Larcker (1993) find no significant relationship. Haniffa and Hudaib (2006) find significant negative relationship between board size and the Tobin's Q in their Malaysian study.

Boyd (1995) finds significant positive relationship between dual-role of the CEO with the performance. Rhoades et al. (2001) reported reduction in the accounting performance of the companies having CEO duality compared to those without CEO duality. Similar to Brickley et al. (1997), Baliga et al. (1996) find no significant relationship between CEO duality and performance. Haniffa and Hudaib (2006) find insignificant relationship between CEO duality and Tobin's Q among Malaysian corporations. Gompers, Ishii & Metrick (GIM, 2003) study finds a positive relationship between Tobin's Q and the democratic board (presence of independent directors). Millstein and MacAvoy (1998) and Regan (1998) studies argue that corporations with more independent board members perform better than counterparts. Haniffa and Hudaib (2006) show a negative but insignificant coefficient for the board composition with performance. Agrawal and Knoeber (1996) find a negative relationship between Tobin's Q and the board independence.

2. EMPIRICAL DESIGN

This study investigates the indicators of financial performance for non-financial corporations in Malaysia. After a rigorous scrutiny of the literatures on performance indicators, this study has decided to use Tobin's Q and Shareholders' Return as the two proxies for corporate performance. The use of multiple measures, Tobin's Q and Shareholder's Return, is available in various extant literatures on corporate financial indicators primarily to ensure the robustness of the study (Cochran & Wood, 1984; Haniffa & Hudaib, 2006). However, due to its appropriateness, robust results and literature support, this study opted to Tobin's Q as the ultimate measure of corporate performance.

BOX 1: Empirical Finding on the Size of the Tobin's Q

Country	N	MV Equity ($B)	BV Debt ($B)	BV Assets ($B)	Country Tobin's Q
Australia	892	341.1	157.9	301.5	1.65
China	767	342.8	168	382.8	1.33
Denmark	129	92.6	48	85.2	1.65
France	651	1,044.30	1,041.40	1,494.20	1.4
Germany	650	845	1,176.80	1,588.30	1.27
Hong kong	583	335.9	165.8	383.9	1.31
India	354	141.7	96.1	167.7	1.42
Indonesia	203	31.9	28.4	48.9	1.23
Japan	3,341	2,768.40	3,400.50	5,068.00	1.22
Korea	666	222.5	412.1	656.2	0.97
Malaysia	604	99.4	88.4	167.3	1.12
Singapore	387	104.5	65.2	134.3	1.26
Sweden	280	230.1	126.2	214.4	1.66
Switzerland	186	480.3	208	363.8	1.89
Taiwan	831	344	162.4	337.5	1.5
Thailand	304	50.7	47.7	77.5	1.27
UK	1,413	2,050.30	1,048.90	1,895.70	1.63
US	5,218	11,762.60	6,786.80	10,369.80	1.79
World	21,055	24,548.00	17,751.70	27,984.60	1.51

Source: Chua et al. (2007:41)

Tobin's Q was introduced by Tobin and Brainard (1968) and developed further by Tobin (1969). As noted by Tobin (1969), Q statistic for a firm is calculated as the ratio of the market value of outstanding financial claims on the firm to the current replacement cost of the firm's

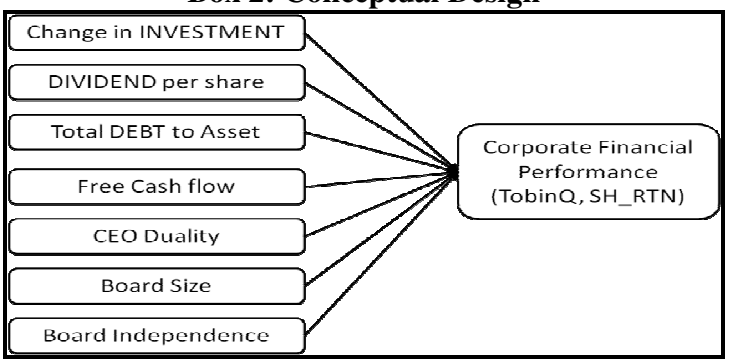
asset. Firms' displaying Q greater than unity are judged as using scarce resources effectively or otherwise (Lewellen & Badrinath, 1997). A country level study done by Chua et al. (2007) reveals that Tobin's Q gets a highest value of 2.11 in Finland, lowest 0.77 in Venezuela and the international average was 1.30 during the period of 1999-2004. Haniffa and Hudaib (2006) find that the average Tobin's Q for Bursa Malaysia main board listed companies during 1996-2000 is 1.13. Tobin's Q captures both market and accounting performance of the firm and is extensively used in extant literatures BOX 1 provides a highlight of the empirical findings on the size of the Tobin's Q for selected countries.

Table 3: Variables and their Operational Definitions

Variables	Acronym	Operational Definition
Dependent Variables		
Tobin's Q	TOBINQ	Ratio of the market value of common shares plus total debt divided by the book value of total assets of the company
Shareholders' Return (%)	SH_RTN	Percentage changes in the share price of company *'i'* at time '*t*' in decimal point
Independent Variables		
Investment and Cash flow		
Investment	INV	Log Natural of the investment, calculated by deducting log natural of investment at year t=0 from the same for year t=1.
Free Cash Flow	FCF	The ratio of the free cash flow to book value of total asset. Free cash flow is calculated by adding EBIT, Depreciation and Interest and by subtracting Tax and Dividend Payment.
Capital Structure		
Leverage	TDTA	The ratio of book value of total debt to book value of total asset.
Dividend Policy		
Dividend Per Share	DPS	The ratio of total dividend payment in year *'t'* in Malaysian Ringgit to total share outstanding.
Corporate Governance		
CEO Duality	DUALITY	'Duality' is a dichotomous variable which takes a value of '1' if the chief executive officer (CEO) is also the Chairman of the BOD and '0', if otherwise.
Board Independence	IND	The ratio of the number of independent directors to total number of directors.
Board Size	BSIZE	Log natural of the total number of board members.

Shareholder's Return was considered as another dependent variable. Behavioural finance raises controversies of using shareholder's return as a performance measure. Since, the shareholders' return will be used to check the robustness of the result, other debates on the use of this measure are kept aside for future research. Extant literature review reveals a set of independent variables. The variables are clustered into four major decision criteria: capital structure, investment and cash flow productivity, dividend policy and corporate governance. Table 3 provides a list of these variables with their operational definitions. Box 2 shows the conceptual design of the study.

Box 2: Conceptual Design



$$TOBINQ_{i,t} = \alpha_{i,t} + \beta_1(INV)_{i,t} + \beta_2(TDTA)_{i,t} + \beta_3(FCF)_{i,t} + \beta_4(DPS)_{i,t} + \beta_5(IND)_{i,t} + \beta_6(DUALITY)_{i,t} + \beta_7(BSIZE)_{i,t} + \varepsilon_{i,t} \quad \ldots (1)$$

$$SH\_RTN_{i,t} = \alpha_{i,t} + \beta_1(INV)_{i,t} + \beta_2(TDTA)_{i,t} + \beta_3(FCF)_{i,t} + \beta_4(DPS)_{i,t} + \beta_5(IND)_{i,t} + \beta_6(DUALITY)_{i,t} + \beta_7(BSIZE)_{i,t} + \varepsilon_{i,t} \quad \ldots (2)$$

Using the two dependent variables and other independent variables, a number of models will be tested. Equation (1) and (2) are the two generic models each using TOBINQ and SH_RTN as the dependent variables. TOBINQ will be used to calculate the index. Standardized data will be used to get the relative weights of the beta Coefficient. Using the TOBINQ model, a within sample test and raking analysis will be conducted.

3. DATA AND METHODOLOGY

Due to structural, listing and other regulatory differences this study concentrates only on the non-financial companies (both manufacturing and service sector) listed on only Main board of the BM. Since, 3rd August, 2009, main board has been merged with second board and combined as Main Market. The other market is Ace Market, which was earlier called MESDAQ Market (prior to 3rd August, 2009). The time range of the data, which is from year 2002 to 2007, is purposively chosen based on data availability on different indicators, especially on the corporate governance variables such as board independence, CEO duality and board size. Including a time and cross section component, the data and research methodology for this study have been designed around a panel data regression analysis.

The reason for using the panel data is that researcher can control for individual fixed effects which is common to any cross section across time, but which may vary across cross section at one time period. Panel data have also become increasingly popular in developing countries, where cross section data are more available than data with long history (Gujarati, 2003). A fixed effect panel data model would have constant slopes but different intercepts for cross sectional units. The viability of using fixed affect or random affect can be decided using Hausman test having the null hypothesis as, *Ho*: Random affects are consistent and efficient. The Hausman statistics may be viewed as a distance measure between random and fixed affects and it follows a Chi Squared distribution with k degree of freedom, where k is the number of independent regressors (Ahn & Moon, 2001). If the null hypothesis is rejected by the result, it means that it is appropriate to run fixed affect model for this data set. Fixed affect models are appropriate when we are considering specific set of N firms and our inference is restricted to the behaviour of these firms (Baltagi, 2005:12). On the other hand, random affects are chosen when some firms are randomly selected form a large pool of companies.

The data primarily came from DataStream database provided by The Thomson Reuters. At the starting, 367 companies were selected to collect data since the other companies were not having the complete information. After a critical review of the data, another six companies were delisted due to mainly extreme outliers in some years. Since, our plan is to develop a balance panel of companies for six years, attrition problem (Baltagi, 2005:8) was a normal

case where some companies were delisted from the BM at the end of the selected time period. To reduce the missing data from DataStream, we checked the data with annual reports of the companies. Finally, a balanced panel of 361 companies having six years data from 2002 to 2007 was finalized. Our test results using 367 companies and later with 361 companies did not reveal significance difference, therefore, leaving no problem regarding survivorship bias.

Table 2: Industry concentration of the selected companies

Sector	Sample Firms	
	Number	Percentage
Construction	26	7.20
Consumer Products	50	13.85
Hotels	6	1.66
Industrial Products	96	26.59
Infrastructure Project Companies	5	1.39
Plantation	31	8.59
Property	60	16.62
Technology	12	3.32
Trading/Services	75	20.78
TOTAL	**361**	

Table 2 provides the industry cluster of the selected companies. The highest 27 percent of the companies were selling industrial products. 21 percent of the companies were engaged with trading/ services related business, 17 percent of the sample was in property related business and 14 percent of them were in consumer product business. The lowest 5 companies (1.39 percent) were from infrastructure project business. At the end of year 2002, the selected 361 companies were 64 percent of the total companies (561 companies) listed with Bursa Malaysia Main board.

Beside key performance indicators, the other major objective of this study was to produce an index using the significant indicators. Furthermore, based on the actual Tobin's Q in different years for six years, there has been a consistency test conducted. The objective of the consistency test is to rank the companies based on their position on the top or bottom 10 percent list. If they satisfy these criteria, we can assume that index will perform better. Out of total six years data range, a company will be consistent if they are either in top or in bottom ten percent for three years or more. Finally, a within sample forecasting for 2007 is conducted to observe the estimation power of the model. We have run the comprehensive model for 2002 to 2006 and by using the coefficients we have estimated the Tobin's Q for

2007. The forecasting error was tested with *t*-test to check whether the mean forecasting error becomes equal to zero or not.

4. DISCUSSION OF THE FINDINGS

Table 4 and 5 provide the descriptive statistics and correlation matrix. Figure 2 and 3 show the trend of the variables in graphical formats. Table 4 shows that average Tobin's Q for the total dataset is 0.97, which is lower than the earlier findings by Chua et al. (2007) and Haniffa and Hudaib (2006). Average 0.97 value of Q represents slightly unfavourable valuation of the Malaysian companies by the market compared to their replacement value. Average growth of investment was around 5%. A low investment growth ratio can be also explained in relation to unfavourable Tobin's Q. An average Q of below 1 can be taken as a situation whether the firms are losing opportunistic investment (Morgado & Pindado, 2003), which is represented by their low investment growth rate. Average leverage ratio is 23 percent is similar in findings with Krishnan and Moyer (1997) and Deesomsak et al. (2004). It is worth mentioning here that above 80 percent of the listed companies in Malaysia are *Shariah* compliant, therefore, they are obliged to keep the leverage level below one third of their asset value (Securities Commission of Malaysia, 2007).

Average free cash flow to total asset ratio of 3.07 percent is yet another reason resulting in low investment growth rate and below standard Q. Average shareholders' return is 15 percent during 2002 to 2007. Companies provided on an average of 0.06 Malaysian Ringgit (MYR) as Dividend per share (DPS). DPS is slightly increasing over the time-period having the lowest of 0.48 MYR in 2002 and the highest of 0.075 MYR in 2007. On an average, there are 3 independent directors in the board and log natural of the board size is around 2 and reducing over the years. Our findings on average board size of 8 directors and around one third of the board members as independent directors follow the earlier results by Lipton and Lorsch (1992) and suggestion by MCCG (2001). Around 27 percent of the companies are having CEO as the Chairman of the board. These corporate governance findings are similar to Haniffa and Hudaibs' (2006) Malaysian study, where the average board size in their study was 7.94 and role duality was present with around 25 percent of the companies studied.

Table 5 reveals even more important information through a correlation matrix among the dependent and independent variables. The first important finding is that Tobin Q is significantly related to most of the independent variables except for Leverage and Independent Directors. However, Shareholders' return is correlated with only Investment,

Leverage and Free cash flow. None of the correlation coefficients violate the assumption for multicollinearity (coefficient of greater than 0.80) as suggested Gujarati (1995). The developing country stock market investors are more prone towards real benefits instead of growth propensity, which has been shown by negative relationship of Tobin's Q with Investment and Free cash flow, and through a comparatively significantly positive relationship between Tobin's Q and dividend per share. As expected, board independence, duality and board size are negatively related to Tobin's Q. However, the coefficient of independent directors was statistically insignificant. None of these corporate governance factors is significantly related to shareholders' return.

Leverage is negatively related to both Tobin's Q and Shareholder's return. FCF is positively related to shareholders' return and negatively related to Tobin's Q. Jensen (1986) argue that managers try to misuse the free cash flows by investing them in negative NPV projects. Here, one way of explaining the negative relationship between Tobin's Q and FCF is through the book value of debt, while the debt is negatively related to Tobin's Q. Therefore, market negatively charges the companies due to having debt in the capital structure. Another way to look into FCF is through the correlation coefficient of investment and capital structure, which is negatively related. The cumulative explanation of these things is that investment with leverage will reduce the value of the company, however, up to the level of return (price return and dividend per share) to the investors.

Table 4: Descriptive Statistics

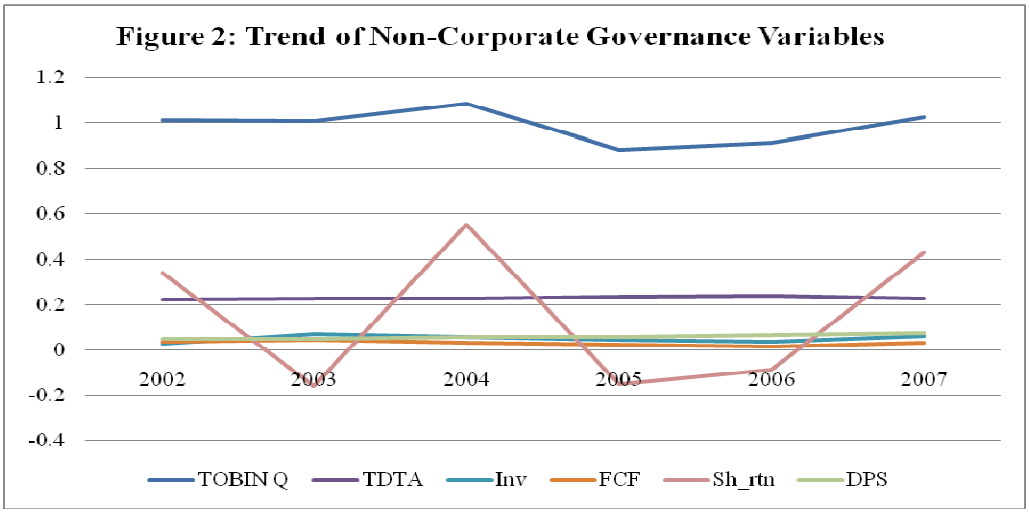
Variables	*All*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
	Mean	*Mean*	*Mean*	*Mean*	*Mean*	*Mean*	*Mean*
	St. Dev	*St. Dev*	*St. Dev*	*St. Dev*	*St. Dev*	*St. Dev*	*St. Dev*
	Skew	*Skew*	*Skew*	*Skew*	*Skew*	*Skew*	*Skew*
	Kurt	*Kurt*	*Kurt*	*Kurt*	*Kurt*	*Kurt*	*Kurt*
	n = 2166	*n = 361*	*n = 361*	*n = 361*	*n = 361*	*n = 361*	*n = 361*
TOBINQ	0.975320	1.009641	1.007743	1.065732	0.876568	0.891674	1.000616
	1.118721	1.343283	1.118822	1.165430	0.921275	0.984911	1.124960
	6.707853	6.673451	6.701447	5.327179	5.085913	7.976396	7.501156
	63.91535	57.70632	61.79544	38.62608	36.19071	91.67397	82.12227
INV	0.049937	0.030973	0.064433	0.060102	0.048672	0.035071	0.060370
	0.312652	0.360132	0.383852	0.323503	0.341441	0.202615	0.218017
	-0.610000	1.752842	-1.594563	-2.760098	0.026117	1.547641	-2.495144
	43.51211	39.20690	43.91890	33.32871	33.23666	24.81266	22.63771
TDTA	0.230218	0.220749	0.226216	0.228839	0.236903	0.240767	0.227833
	0.209590	0.196611	0.195748	0.187856	0.223481	0.249900	0.198121
	2.379186	0.860792	0.937841	0.677314	3.128844	4.283790	1.420684
	22.79562	3.426579	4.192668	2.804656	29.34389	41.40863	8.012589
FCF	0.030767	0.037896	0.043276	0.031177	0.023834	0.015685	0.032736
	0.134592	0.115166	0.127124	0.142818	0.179869	0.108932	0.120054
	-4.230000	1.231856	0.436294	-1.392530	-7.920118	-4.775904	-4.778651
	100.5236	35.58499	43.70426	41.39636	136.8792	52.91774	55.32358
IND	3.116343	2.963989	3.119114	3.119114	3.058172	3.199446	3.238227
	0.993903	0.978281	1.021815	1.077392	0.985701	0.912323	0.962509
	0.911993	0.998978	0.933588	1.283524	0.510856	0.871279	0.838411
	5.063182	5.932674	4.962891	6.384733	3.797421	4.359146	4.112595
DUALITY	0.277008	0.332410	0.282548	0.290859	0.315789	0.235457	0.204986
	0.447624	0.471731	0.450864	0.454789	0.465475	0.424873	0.404252
	0.996565	0.711519	0.965939	0.921006	0.792594	1.247008	1.461581
	1.993142	1.506259	1.933038	1.848251	1.628205	2.555030	3.136218
BSIZE	2.010129	2.052629	2.037074	2.041587	2.039487	1.960150	1.929848
	0.307937	0.280371	0.287418	0.273243	0.267030	0.337703	0.368345
	-0.860000	-0.226152	-0.177082	-0.160868	-0.136916	-1.337439	-1.304338
	5.147416	3.539098	3.485017	3.573866	2.852242	5.423412	4.893098
DPS	0.060416	0.048280	0.050681	0.060604	0.058737	0.069000	0.075195
	0.167331	0.145202	0.143484	0.176304	0.159097	0.178295	0.194919
	10.10510	10.54966	12.69081	9.862206	11.60727	8.580466	8.753034
	131.6066	139.2304	201.4719	120.7285	175.7685	103.2467	96.12729
SH_RTN	0.153621	0.332368	-0.152741	0.553087	-0.149956	-0.084882	0.423851
	0.606849	0.529389	0.289210	0.643520	0.339739	0.346265	0.832176
	4.328812	3.998369	2.095137	2.118200	3.877715	2.638925	5.889621
	50.07481	33.67499	14.08029	10.66741	36.45709	21.27646	62.47249

Kurt = Kurtosis, Skew = Skewness, St. Dev = Standard Deviation.

Table 5: Correlation Matrix

	TOBINQ	INV	TDTA	FCF	IND	DUALITY	LN_BSIZE	DPS	SH_RTN
TOBINQ	1								
INV	-0.037*	1							
TDTA	-0.006	-0.046**	1						
FCF	-0.076***	0.245***	-0.195***	1					
IND	-0.010	0.026	0.033	0.069***	1				
DUALITY	-0.074***	0.017	0.071***	-0.030	-0.099***	1			
BSIZE	-0.045**	0.043**	-0.021	0.108***	0.481***	-0.145***	1		
DPS	0.382***	-0.031	-0.078***	0.050**	0.057***	-0.069***	0.059***	1	
SH_RTN	0.065***	0.084***	-0.053**	0.110***	0.020	0.015	-0.013	0.017	1

** = Significant at 10%, ** = Significant at 5%, *** = Significant at 1%*



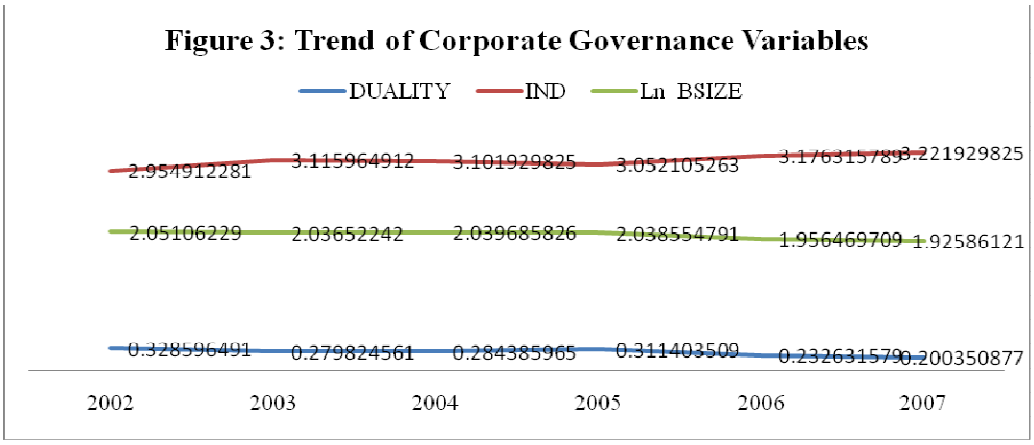


Table 6: Hausman Test: Testing for Fixed or Random Affect

Dependent Variable: ***Tobin's Q***			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	37.907045	9	0.0000

Dependent Variable: ***Shareholder Return***			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.055675	9	0.0004

Table 04 shows the results for Hausman test. The null hypothesis is that the random affects are efficient choice for this dataset. However, for both TOBINQ and SH_RTN models, the null hypotheses are rejected. This means that we will choose fixed affect for our estimation.

4.1 General Models

General models (also interchangeably used as *Comprehensive models*) are given in equation 1 and 2 respectively. The objective of these two models is to see the reaction of different indicators to Tobin's Q and Shareholders' Return. Table 7 shows the results of the general models. There is a significant difference between the TOBINQ model and the SH_RTN model in terms of the R squared. The R Squared is higher for the TOBINQ model (around 90%). Higher R Squared is noticeably a good indication of the overall model fit given that it does not violate other necessary assumptions such as normality, heteroskedasticity and autocorrelation etc. Panel data itself caters to the need of some of the assumption since it captures more variance in the data. It is also true that violation of these assumptions are natural in panel data models (Rama, 2001).

TOBINQ is significantly explained by leverage, dividend per share, CEO duality and board size. The variables are slightly different for SH_RTN. Leverage, free cash flow, dividend per share and independent directors are the significant factors explaining the changes in SH_RTN. The sign of TDATA (leverage) is not robust. However, dividend per share gives a robust result for two dependent variables. Finally, the adjusted R Square of the TOBINQ model is comparatively

better than that of the SH_RTN model. Since the theory of Adjusted R Squared is that it penalizes for the increase in independent variables, therefore, a comparatively higher Adjusted R Squared is a good measure of fit.

Table 7: Regression Results for General Models

	EQ 1		EQ 2	
Dependent Variable	TOBINQ		SH_RTN	
R^2	0.898		0.214	
Adj R^2	0.877		0.053	
Std. Error	0.687		0.613	
F Value	43.012		1.336	
P-Value	0.000		0.000	
Intercept	0.8640	(40.7460)***	0.0879	(1.3331)
INV	0.0028	(0.2297)	0.0197	(0.9422)
TDTA	0.4451	(15.0185)***	-0.2143	(-3.6563)***
FCF	0.0215	(0.4569)	0.2433	(3.1083)***
DPS	1.1934	(12.7100)***	0.3406	(3.1765)***
IND	0.0018	(0.5036)	0.0179	(1.7538)*
DUALITY	-0.0311	(-4.4944)***	0.0226	(0.9865)
BSIZE	-0.0304	(-3.5377)***	0.0119	(0.3467)

** = Significant at 10%, ** = Significant at 5%, *** = Significant at 1%*
t – Statistics are in parentheses.

4.2 Key Corporate Financial Performance Index (KCFP*i*)

This study proposes the KFP*i*, which is formed using significant factors affecting the corporate performance in Malaysia. To measure corporate performance in the index, the study has used TOBINQ. Table 8 shows that corporate performance, which is measured by TOBINQ, as a function of Leverage, CEO Duality, Board Size and Dividend per Share. The beta coefficients are standardized, so that a relative importance of the significant factor can be shown. Two important things are worth noticing: firstly, out of three, two corporate governance variables, CEO Duality and Board Size are significantly important in deciding the performance of the corporate Malaysia and secondly, Dividend per Share has the highest weight of 18% in the changes of corporate performance. We have checked the same model having Shareholders' Return as the dependent variable, and found that the same factors are appearing, but with much lower R-Squared.

Table 8: Key Corporate Financial Performance Index (KCFP*i*)

Dependent Variable: TOBINQ
Included observations: 6
Cross-sections included: 361
Total pool (balanced) observations: 2166

Variable	Stand. Coefficient	Std. Error	t-Statistic	Prob.
TDTA	0.094833	0.004999	18.97137	0.0000
DUALITY	-0.013979	0.002808	-4.977851	0.0000
BSIZE	-0.008166	0.002176	-3.752326	0.0002
DPS	0.180303	0.013825	13.04209	0.0000

Weighted Statistics

R-squared	0.897823	Mean dependent var	-1.496436
Adjusted R-squared	0.877172	S.D. dependent var	2.775728
S.E. of regression	0.640976	Sum squared resid	739.9411
F-statistic	43.47592	Durbin-Watson stat	1.654026
Prob(F-statistic)	0.000000		

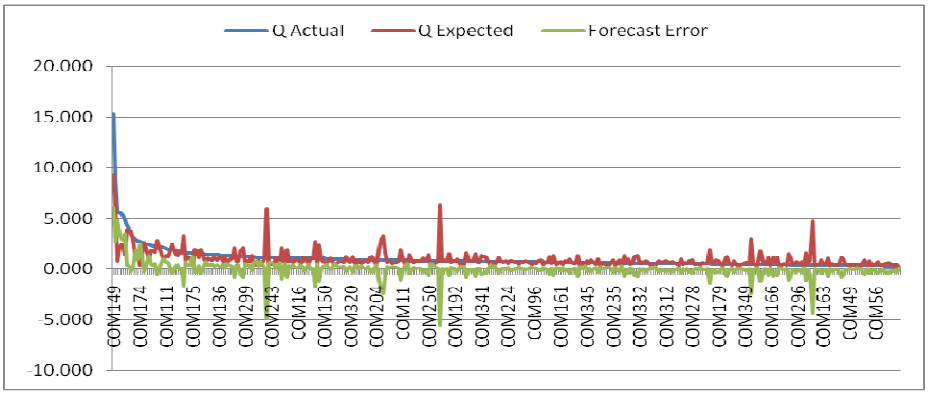
Note: Only significant indicators are taken for forming the index.

Second influential factor is leverage, which has a beta coefficient of around 9%. Both TDTA and DPS are showing positive signs, meaning a higher use of debt and more disbursement in dividend per share would escalate the corporate performance. The other two variables are CEO Duality and Board Size. Both are showing negative signs, which is normal. If the CEO are playing dual role, both as CEO and Chairman of the Board, this may create problem in organizational power-play. This is supported by agency theory (Jensen, 1986). Therefore, a negative sign is expected to uplift the corporate performance, which will ensure effective check and balance in corporate operation. Board Size is another issue that has been found negatively related to performance in various extant literatures. As the theories say that large number of board of directors' result in more conflict and delay in decision making. Therefore, the rule is about quality not the quantity of the board of directors. Hence, a negative sign is expected here as well. Duality explains 1.4% of the changes in performance, where as board size explains 0.8% of the changes in performance.

4.3 Within Sample Forecast

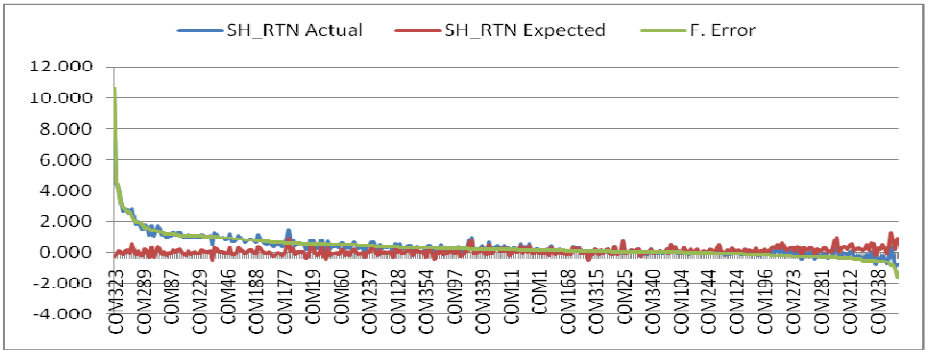
Using the coefficients of the data range from 2002 to 2006, we have forecasted the TOBINQ and SH_RTN for 2007, compared these to actual TOBINQ and SH_RTN of 2007, to see the forecasting power of the model. The values of the t-statistics were 0.4371 and 7.51 for TOBINQ and SH_RTN models respectively. We can accept the null for TOBINQ model and can conclude that our forecasting error is statistically equal to zero. However, the forecasting under SH_RTN models did not yield the expected result. Figure 4 and 5 highlight the forecasting error for both TOBINQ and SH_RTN models for 2007 for all the companies.

Figure 4: Forecast Error of the TOBINQ Model for 2007 (all companies)



Notes: Companies are represented by COMP
Data were sorted from highest to lowest for Foecasted Error

Figure 5: Forecast Error of the SH_RTN Model for 2007 (all companies)



Notes: Companies are represented by COMP
Data were sorted from highest to lowest for Foecasted Error

4.4 Ranking of the Companies

To critically analyze the robustness of the index, the indicators and the TOBINQ comprehensive model, we tried to also rank the companies from 2002 to 2007 based on their actual Tobin's Q. Table 9 shows the sectoral dominance in the top ten percent gainers and losers. Significant differences were found with industrial products and trading/ services as the gainers' side, whereas, property sector devastatingly performed as the losers' side. Tobin's Q was more or less indifferent for other sectors. In relation to property sector, construction sector was also showing a trend towards more losers than gainers in the top ten percent performance. The economic crisis of 2007-2008 can explain the loosing condition of these sectors.

Table 9: Sectoral Concentration of the Top Gainers and Losers (by Actual Tobin's Q)

Sector	Gainers #	Losers #
Construction	1	2
Consumer Products	6	6
Industrial Products	***9***	***3***
Infrastructure Project Companies	2	2
Plantation	4	2
Property	***2***	***13***
Technology	1	3
Trading/Services	***11***	***5***
Total	36	36

Note: 10% of 361 (rounded to be 36)

Table 10: Descriptive Statistics of the Top Gainers and Losers

	TOBIN Q	TDTA	DUALITY	BSIZE	DPS
			Top 10% Gainers		
Average	2.74	0.19	0.19	2.01	0.22
Max	10.25	1.12	1.00	2.59	2.42
Min	1.48	0.00	0.00	1.50	0.00
			Top 10% Losers		
Average	0.41	0.15	0.30	2.00	0.04
Max	0.98	0.42	1.00	2.49	0.70
Min	0.22	0.00	0.00	1.42	0.00

Note: Only major factors found significant in the KFPi are shown for descriptive statistics
BSIZE is in Log Natural

Table 10 illustrates the major factors for 10% gainers and losers. In all the variables, gainers outperformed the losers. It is important to note that DUALITY is a negative variable to performance; therefore, high performers should have lower average than that of the low performers. However, as far as the average performance is concern, the big difference was made by Dividend per Share (DPS). For the wining parties average DPS was 22 cent, which was only 4 cent for the losers. The coefficient for DPS in Table 8 was positive, which represents a positive change for top gainers of TOBINQ. Leverage was another important factor resulting in 4 percent difference between average leverage of the gainers and losers, where the gainers are using more debt.

4. POLICY IMPLICATIONS

4.1 Policy Implications

Apart from corporate value addition, this study would significantly add value to policy implication from regulators point of view. Corporations can be critical in their capital structure policy, the amount of their dividend disbursement, especially in cash. Their corporate governance and by-laws are also to be structurally set according to lower CEO duality and less number of board members criteria. Very recently, corporate governance issues are on the top of the discussion list everywhere. Corporations can take CEO duality and board size issues as influential since market determines the value base on these.

The impact on the regulatory structure would be enormous. First of all, greater importance to leverage and dividend per share would raise importance for banking and debt based industry. A proper balance between bank and non-banking industry must be maintained for the betterment of the economic health of the country, and it is a policy level decision. Another important issue is the effective compliance towards corporate governance rules. Prime responsibility of the regulators is to ensure safety and security of the investors and depositors respectively in stock market and in banking industry. Securities Commission of Malaysian should escalate their initiative on corporate governance compliance framework to ensure proper valuation of the corporate equity, as such the information on corporate governance framework should be formally complied rather than simple tick marks. Finally the information disclosure framework should be strengthened so that all the companies can be compared under a similar pattern of information resources and analysis.

4.2 Limitation of the Study

To the best of our knowledge, this study has been designed having considered the recent and best literature survey, collection of data and methodology. However, two special issues came into our mind as limitations. Firstly, the range of data time horizon was 2002 to 2007. Due to

incompleteness of the annual reports and financial risk globally, we had to sacrifice larger range of data and no of companies. The year 2008 and onward till 2010 are outliers, as such these represent a significant portion of financial crisis-affected corporate performance. Therefore, inclusion of year 2008 and 2009 would have been risky. Moreover, at the time of collection of the data, the data for 2008 and 2009 was not available for many companies. Another limitation was about using updated panel data regression methodology. As it is very common that updated panel data models and techniques are still at the growing stage. Therefore, risking collected data with a new model would have been risky. Instead of using updated models, we tried check the robustness of the data and analysis using variety of measures that resulted in some robust results. Besides, all other errors are our own.

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