3.1 INTRODUCTION

Literature review on previous chapter has highlighted four possible explanations that motives share buybacks. This chapter explicates the research methodology and the development of hypotheses and research design to identify the association between that hypothesised motivations and the variation of cash distributed to shareholders in term of amount share buyback and dividend payments. This chapter is organised as follows: Section 3.2 summarises the methodology. Section 3.3 focuses on hypotheses development. Section 3.4 discusses research framework and research design. Finally, Section 3.5 concludes with what was achieved in this chapter.

The objective of this study is to find out what is the motive of share buybacks amongst Malaysian companies. To establish more meaningful investigation, this study compares the repurchasing firms with non-repurchasing firms. As an alternative of dividend, share buybacks should be undertaken with objective to reward shareholders which is in line with the shareholders wealth maximization theory. The outcome of this study hopefully will contribute to the empirical study that is useful to all stakeholders of financial market especially the investors in order to assists wise investment decision.

3.2 METHODOLOGY

This study is a cross-sectional study using quantitative approach by studying the relationship between dependent variables and independent variables. Washer (1998) conducted similar study with the objective to determine which repurchase motives play a significant role in determining the extent of a firm's repurchasing activity.

This study investigate four hypotheses that may explains the variation in share repurchasing behaviour by examining the financial characteristics of Malaysian PLCs that engaged in such activity in comparison with those not engaged in such activity. Therefore, the dependent variable is represented by the total amount of cash distributed through repurchase programme. On the other hand, the independent variables are represented by four hypotheses that discussed previously (optimal leverage ratio hypothesis, take-over deterrence hypothesis, free cash flow hypothesis, and information signalling hypothesis,) which are expected will explains the variations in motivation of share buybacks between repurchase and non-repurchase firms. In addition, non-repurchase firms will be the control sample that will allow comparison between the repurchase and non-repurchase firms. Statistical method using secondary data will be employed in this study.

3.3 HYPOTHESES DEVELOPMENT

Share repurchase activity varies widely among firms. In this study, a firm's repurchase activity (RCAP) is measured by the amount of cash distributed to shareholders through repurchases expressed as a percentage of the firm's market capitalization. The total amount of repurchase is gathered from the difference between the amount of treasury shares in particular current year and the amount of treasury shares in previous year. According to the Bloomberg definition, the amount of treasury shares is the book value of treasury stock reported that will reduced the amount of shareholders' equity. Therefore, any addition to the amount of treasury share is the indication of the repurchase program. Thus, the total amount of repurchase is calculated from the different between the amount recorded in the current year and the amount recorded in the previous year. To confirm the figure, a check and balance procedure was done by finding the repurchase amount reported in the annual report of repurchase firms. The result shows that the amount reported in the annual report was exactly as the calculated amount of the different in the treasury shares.

On the other hand, the amount of market capitalization from the Bloomberg is represented by the multiplication of number of shares outstanding and the market price, both quoted at the end of the year. It also represents the monetary value of all outstanding share and measure the size of the corporation at particular point of time. According to Washer (1998) it is more appropriate to consider the dependent variable as the percentage of total amount of repurchase expressed as a percentage of the firm's market capitalization. This will allow more meaningful comparison between repurchase and non-repurchase firms.

This study investigates four hypotheses that may explain share repurchase behaviour: (1) optimal leverage ratio hypothesis, (2) take-over deterrence hypothesis, (3) free cash flow hypothesis, and (4) information signalling hypothesis. Since this study compares repurchasing firms with non-repurchasing firms, such comparison is among their industry peers (non-repurchasing firms). In sum, four hypotheses being develop in this study in order to answer the research questions as mentioned previously in Sub-section 1.2.3.

Hence, the following hypotheses are developed:

H1: Firms that use little financial leverage relative to industry peers are motivated to repurchase in order to move the firm closer to its optimal capital structure.

The financial variable of this first hypothesis is financial leverage ratio. Therefore, the proxies for financial leverage motive are a firm's debt-to-total asset ratio (DTA) and debt-to-equity ratio (DER), measured at the beginning of each firm's fiscal year. Measuring this ratio at the beginning of the year is necessary because buyback have an impact on financial leverage. After repurchase, a firm will not appear to be under-leverage. Therefore, measuring DTA and DER at the beginning of the year eliminates the feedback effect of repurchase on the DTA and DER. Thus, DTA and DER are expected to negatively impact RCAP. The data was extracted from Bloomberg database that defined DER as the percentage of Short-term and Long-term borrowings over Total Asset while DTA is represented by the percentage of Short-term and Long-term borrowings over Total Equity.

The following two hypotheses are related to take-over deterrence hypothesis:-

H2(a): Firms that have greater size but lower growth relative to industry peers are motivated to repurchase in order to avoid hostile takeover.

The financial variable of this second hypothesis are size and sales growth with market value (MV), sales(S) and sales growth (SG) are selected as proxies. Large firms may repurchase shares to satisfy the needs of employee stock option plans, to support share price or other numerous motives. Larger firms are more likely to have employee stock option plan and therefore more likely to engage in share buybacks activity (Guffey & Scheneider, 2004). Thus, both of these proxies are expected to positively impact RCAP. On the other hand, undervalued firms with limited investment prospect are more likely to involve in share buybacks. The rational is that, the managers of firms may choose share repurchase rather than invest in relatively poor investments. Thus the sales growth (SG) is the proxy for growth and expected to negatively impact RCAP). According to Bloomberg definition, MV is comprises of the sum market capitalization, preferred equity, total debt, and minority interest minus the cash and equivalents. S comprises of total operating revenue including revenues from subsidiaries and subsidies from federal and local government minus various adjustments i.e returns, discounts, excise taxes, sales taxes, etc. SG is represented by the 5 years arithmetic of sales growth or also known as 5 years average growth.

H2(b): Firms that have greater liquidity relative to industry peers are motivated to repurchase in order to avoid hostile takeover.

The financial variable of this second hypothesis is liquidity ratio. Thus, quick ratio (QR) is used as proxy for anti-takeover strategy. Firms that are subject to takeover attempts may seek to distribute cash through share buyback rather than through dividends (Medury *et al.* 1992). In addition, increased in liquidity may indicate greater ability for firms to participate in share buyback activity. Thus, QR is expected to positively impact RCAP. The liquid assets in the QR are the sum of cash, near cash items, marketable security and short-term investments, account receivables and notes receivables.

H3: Firms that have high cash flow relative to industry peers are motivated to repurchase in order to distribute cash to shareholders.

The financial variable of this third hypothesis is profitability. The cash flow-to-total asset ratio (CTA) and return on asset (ROA) are used as proxies to measure a firm's excess cash flow. Cash flow is defined as net income plus non-cash expenses (depreciation and amortization). On the other hand, ROA is defined by the division of Net Income to Total Asset. Therefore, CTA and ROA are expected to positively impact RCAP.

H4: Firms that appear undervalued relative to industry peers are motivated to repurchase in open market in order to benefit long-term shareholders.

The financial variable of this fourth hypothesis is market value ratio. Therefore, price-to-book value ratio (PBV) is used as proxy for undervaluation and is measured at the beginning of the year. A repurchase often sends a positive signal to investors, who will in turn respond by increasing the firm's share price and therefore cause the PBV to increase. By doing so, repurchase is expected to reduce or eliminate any undervaluation. In addition, measuring the PBV at the beginning of the year eliminates the positive feedback effect that repurchases have on the PBV. Thus, PBV is expected to negatively impact RCAP. In addition, PBV is the market price over book value per share.

Nine variables are hypothesized to reflect the five broad dimensions of financial ratios which indirectly reflect the financial characteristics of the repurchasing firms in comparison with non-repurchasing firm. The conceptual variables or characteristics, the measures used as the proxy for these variables and the expected results are summarized in Table 3.1

Table 3.1: Financial Characteristics, Proxies and Expectation on RCAP

Financial Characteristics	Proxies	Expectation on RCAP
Financial Leverage	Debt-to-total asset (DTA) Debt-to-equity (DER)	Indebtedness firms will repurchase more than industry peers. Therefore, DTA and DER will negatively impact RCAP
Size and Growth	Market Value(MV) Sales(S) Sales Growth(SG)	Large firms will repurchase more than industry peers. Therefore, MV and S will positively impact RCAP. However, firms with limited sales growth will repurchase more than industry peers. Thus SG will negatively impact RCAP.
Liquidity	Quick Ratio(QR)	Firms with more liquidity position will repurchase more than industry peers. Therefore, QR will negatively impact RCAP.
Profitability	Cash Flow- to-Total Asset(CTA) Return on Asset(ROA)	Firms with excess cash will repurchase more than industry peers. Therefore, CTA and ROA are positively impact RCAP.
Market Value	Price-to-Book Value(PBV)	Firms that undervalued relative to peer industry will repurchase

	more. Therefore, PBV is negatively impact RCAP.

3.4 RESEARCH FRAMEWORK AND RESEARCH DESIGN

Based on the above hypotheses, five variables that represent financial characteristics are hypothesized to reflect the motivations of share buyback. Thus, the following framework is shown in the following Figure 3.1:

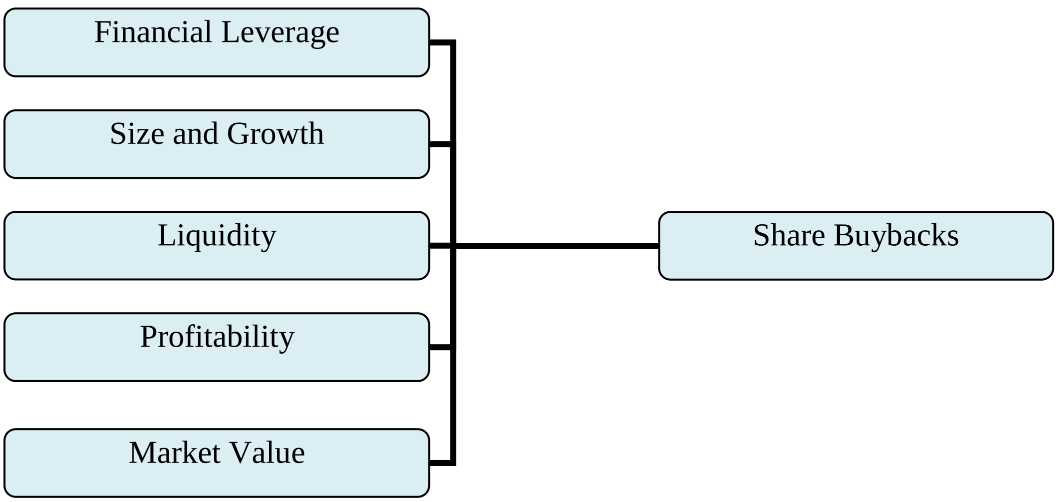

Figure 3.1: Research Framework

3.4.1 Research Design

This study is a quantitative design whereby the impact of independent variables on the dependent variables is determined based on previously developed hypotheses. Therefore, in this study, the nature of investigation is considered as hypothesis testing. In fact, hypothesis testing study is able to demonstrate the cause and effect relationship between dependent and independent variables. The main objective of this research is to identify the motivations of share buybacks among Malaysian firms. In addition is study also aims to ascertain whether there is any different between repurchase and non-repurchase firms. In view of data collection, this study will employ secondary data collection where all related data will be extracted from Bloomberg as well as Bursa Malaysia website. The result from this study is expected to support all four developed hypotheses and would be able to meet the research objectives by answering the research questions.

3.4.2 Population and Sampling Procedures

The population of this study consists of all public listed companies (PLCs) of Bursa Malaysia that has made share repurchase and dividend payment. All announced share repurchases and dividend announcement from January 2006 to December 2008 were obtained from the Bloomberg data base. The samples are divided into two groups that represent repurchasing and non-repurchasing firms (dividend paying firms). For repurchasing firms, the samples are drawn from the companies that make first share buybacks announcement from January 2006 to December 2008. While non-repurchasing represent those companies that pay dividends between the time-frame periods of study.

For repurchase firms, all first announced share buyback i.e proposed share buybacks up to 10 per cent of the company's issued and paid-up share capital were obtained from the Bloomberg form January 2006 until December 2008. The final sample of repurchasing firms includes 55 firms that undertake the first repurchase activity. Since this study aims to find motivations for share buybacks, taking first time announcement is more accurate to determine such motivations. The sample was screened to eliminate banking and financial services firms. Guffrey & Schneider (1998) and Washer (2004) also excluded firms in industries that subject to significant regulation such as banking, financial services companies, insurance and utilities. Based on a news reported by The Star newspaper on 11 November 2006, AMMB Holdings Berhad's (AmBank) proposed share buybacks programme was cancelled because the Bank Negara Malaysia (BNM) disagree with the proposal even though the bank already have the green light from the shareholders. The rejection was due to the conflicting issues in The Banking and Financial Institutions Act (Bafia) and Malaysian Code of Take-over, Merger and Acquisitions.

On the other hand, a set of sample for non-repurchasing firms are drawn from the population of listed companies from year 2006 until 2008. These non-repurchasing firms are represented by dividend paying companies for those particular years. The sample was screen to eliminate multiple dividend announcements and firms that making repurchase simultaneously. In addition, banking and financial services firms are also eliminated from the sample. Finally, a total of 243 companies are selected as the sample. This sample also represented as control sample for the means of comparison between repurchasing firm and non-repurchasing firms in order to ascertain the differences between them.

Prior to the final sample of repurchasing and non-repurchasing firms, the list of both groups are combined in order to eliminate firms with dual announcements. All firms that announced dividend and repurchase simultaneously are eliminated from the sample. This is to ensure that those multiple announcement does not violate unique assumption of developed hypotheses. On the other words, such elimination allows meaningful comparison between the two groups. In addition, a few of firms being eliminated due to missing of data and negative ratios value. Table 3.1 and table 3.2 summarized the sampling procedures.

Table 3.1: Sample of repurchase firms

	Year of announcement		
	2006	**2007**	**2008**
All share announcement from Bloomberg Terminal	5464	4162	7688
Elimination of more than one announcement per company	(5319)	(4012)	(7485)
Total buy backs companies	**145**	**150**	**203**
Elimination of more finance sector companies	(7)	(5)	(12)
Elimination of companies with both repurchase and dividend announcements	(102)	(118)	(168)
Subtotal	36	27	23
Companies with missing data	(12)	(6)	(13)
Total companies used in tests	**24**	**21**	**10**

Table 3.2: Sample of non-repurchase firms

	Year of announcement		
	2006	**2007**	**2008**
Net dividend paying companies	**454**	**194**	**206**
Elimination of companies with both repurchase and dividend announcements	(102)	(118)	(168)
Subtotal	352	76	38
Companies with missing data	(164)	(39)	(20)

Total companies used in tests	**188**	**37**	**18**

3.4.3 Reliability of the Instrument

As discussed in literature review section, all developed hypotheses in this study are applied in previous empirical study. Therefore all of the variables used are replicate in current study to examine the motivations of share buybacks in Malaysia environment.

3.5 CONCLUSION

Research design was discussed in detail and hypotheses to be tested were highlighted accordingly. A total sample size of 55 repurchasing firms and 243 non-repurchasing firms will be examined in this study. This is a cross-sectional study that concerning period of analysis from January 2006 until December 2008.