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Multivariate Regression Analysis of the Impact of Open Market Share Repurchase Activity on the Malaysian Market

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Abstract: This research thesis revolves around the need to understand the relationship between share repurchases and the share price behavior of companies listed on Bursa Malaysia on a more recent basis given the economic stability in Malaysia and throughout the world from 2017 to 2021. It started in the West and reached maturity in the 1980s in the United States, but it only began in Malaysia in the 1990s. The studies of share repurchase are still considered an infant in Malaysia as in other countries throughout the world, companies pursue share repurchases for several reasons mainly to signal undervaluation, reward shareholders, defend against the takeover, utilize financial resources efficiently, and many more motives that are interesting for researchers to look at. Unlike other studies that look at announcement dates, since an announcement does not mean the companies will implement the transactions, this research is important since it looks at and analyzes the actual effective repurchase day done by established firms which is are most crucial aspect in analyzing the consequences and the results are that it shows positive abnormal mean returns for most of the companies. Event study methodology was used since this is the bestempirical research method and as empirical evidence to analyze abnormal returns from all the other studies. The days observed are 120 days before and after the announcement. Returns for the estimation window, event window (repurchase day), and post-event window were analyzed to see the effects of price movementon repurchase activities at Bursa Malaysia (BSKL).

Keywords: *Share Repurchase, Signaling Theory, Dividend, Tax, Market Capitalization.*

1. Introduction and Background

Since limited studies have been done on share buybacks in Bursa Malaysia, this study intends to provide additional inside information on this practice. This study was undertaken because of eagerness to know more about the true financial and economic significance of share buybacks. The objectives of this study were: To investigate the effects of share buybacks on share prices and the related risks in the short run before, at, and after share buybacks. Financial theorists subscribe to several hypotheses and theories to explain the motivations for share buyback programs. Investigating the determinant and relationship of the share buyback volume with other financial variables from the financial reports and the financial characteristics of firms reveals the motivation for undertaking the share buyback program. The study investigates which testable hypothesis, out of all mentioned in the literature review, significantly contributes to share repurchases within the Malaysian context. The two objectives are generalization out of all the data collected. In generalization, individual effects on firms are ignored or averaged out. Therefore, using event studies and Multivariate Regression Analysis output produced from the regression analysis, this study intends to forecast future share prices. In short, the research objectives can be summarized as follows:

- To examine and test the explanations of share repurchases within Bursa Malaysia
- To investigate the effect of share buybacks on share prices (t-Test)
- To identify the change in risk in the short run before, at, and after share buybacks
- To predict the share price of a firm undertaking share repurchase programmed.

2. Literature Review

Analyses of market reactions are made based on the company listed in Bursa Malaysia which is the main market. At BSKL, the main board and second board have been combined since 2009 and it will create a milestone in the development of the market for fund-raising firms in Malaysia. The new framework as wellas the new board structure will enhance the attractiveness of Bursa Malaysia as a listing destination, providing efficient access to capital and investments." Under the new framework, rules, and processes forequity fund-raising have been streamlined to provide greater certainty, shorter time to market, and lower regulatory costs.

Often, these mean certain flexibilities have been introduced. For example, only certain substantive corporate proposals will require the SC's approval under Section 212 of the Capital Markets and Services Act. There are known to be numerous reasons why firms deploy capital. For this research, firms have two alternatives for deploying capital. The first is by reinvesting in the business via mergers and acquisitions, capital expenditures, and working capital, or the second is by returning capital to shareholders through dividends and share repurchases. As suggested by Asquith and Mullins (1986), returning capital to shareholders with differing cash payout policies presents one of the most puzzling and disturbing issuesin corporate finance, especially when share Repurchase programs have now become increasingly more popular this day than the traditional dividend payout as a form of cash distribution to shareholders.

In this research, the companies I analyzed have an annual turnover excess of RM100 million and above. The pre-announcement price is lower as compared to effective repurchase dates. This shows that after repurchasing, the stocks are overvalued. It also shows the signaling effect that the companies have excess cash to be distributed. Hence it motivates outsiders to buy stocks in the companies which will further strengthen the price of the shares. Therefore, this study supports the signaling hypothesis. However, this signaling hypothesis is controversial because open market repurchases are not costly signals as they do not commit the firm to buy back their shares. Moreover, there is a distinction between signaling management's expectation of future increases in the firm's cash flow and earnings and signaling disagreement with the current market valuation of the firm's performance. This is the reason why this study investigates the actual effective repurchase days. It is that while these twoviews are consistent with undervaluation, the former suggests that the firm is unable to communicate to the market about its prospects, meanwhile, later they imply that the market is inefficient because the current prices do not reflect publicly available enough information. This latter view is also supported bythe findings that the market is under-reaction. For example, Ikenberry et al (1995) analyzed a large sample of US open market repurchase programs that were announced in the 1980s that reported significant positive abnormal returns of 12% in the four years following stock repurchases. This suggests that the markets fail to impound information in stock prices quickly. The basis of the signaling explanations is that a firm's management has better information about the company's true value than outside investors.

In Malaysia, Section 365 of the Companies Act 1965, stipulates that no dividend shall be payable to the shareholders of any company except out of profits. The term "profits" however is not defined in the Act. Nevertheless, The Malaysian Accounting Standard Board (MASB)'s framework for the preparation and presentation of financial statements defines profit as the residual amount that remains after expenses (including capital maintenance adjustments where appropriate) have been deducted from income. Any amount over and above that is required to maintain the capital at the beginning of the period is profit. In summary, the accounting term "profit" is not just limited to profit that has been realized. It also includes profit that has not been realized. Corporate finance theories dictate that managers' (agents) decisions should lead to value maximization for the firms' shareholders' principles. When a firm has excess cash flow, managers must choose among several alternatives to deploy the cash to add value to the firm. In the absence of profitable investment or debt reduction, they must choose the best method to pay out the excess cash flow to the shareholders to avoid agency conflict. The principal mechanism used by the firm's payout methods to shareholders may include share repurchases and dividends.

In Malaysia in 2015, 36 repurchasing firms implemented share repurchase programs and this grew to 149 firms in 2018. In addition, in 2015, the share repurchase volume was 119.913 million shares, and this grewto approximately 6.258 billion shares in 2018. Malaysia practices the overnight market rates as stipulated by Bursa Malaysia's Chapter 12 Share Buy-backs Listing Requirements, which allows only the OMR option where repurchases must only be affected on the market of the exchange. "On the market" refers to transactions that are to be made through the Automated Trading System of Bursa Malaysia and excludes any formsof direct business transactions. In Malaysia, dividend income received is chargeable under the Income Tax.

Act and it falls under two separate computations that is Imputation System and under Single tier System. Dividends are received under the imputation system; taxes paid by companies are not final taxes. Taxes paid by companies are passed on to shareholders as tax credits where shareholders received dividends have been tax deducted as source (e.g.25%) and received a net dividend (e.g. 75%). Here, taxpayers are required to declare gross dividend income (100%) in the income tax return. If the taxpayer is in the lower tax bracket (e.g.19%), then the taxpayer is entitled to a refund of 6%. On the other hand, if the taxpayer is in the tax bracket of 27%, the taxpayer is required to pay a 2% additional tax on the gross dividend received. The announcement by a publicly owned firm to buy back some of its shares in the open market is generally perceived as a strong positive signal. Furthermore, the information of the signaling hypothesis will predict that the firms use their share buybacks as a vehicle to signal new and positive information about their future earnings prospects. Studies have observed that the common stock of such firms tends to experience an immediate 3.5% average abnormal return as well as a 12% average abnormal return during the longer-term period of 4 years following the announcement. Studies have also observed that both short and long-term returns have wide variations upon the close investigation through the empirical research. The requirement of publicly owned firms in Malaysia to report basic EPS and diluted EPS to follow federal regulations and generally accepted accounting principles (GAAP) contributed to firms paying close attention to earnings when measured as basic earnings per share (EPS), as well as diluted EPS. Several studies observed that diluted EPS was more highly associated with stock prices than basic EPS because it suggests that diluted EPS had more credibility with investors as a measure of financial performance. Since firms have flexibility on when to repurchase shares and the expected effectof repurchase is to increase diluted EPS, the study focused on whether the firms repurchased shares to manage diluted EPS with the dilutive effect of ESO plans. Their findings came from a sample of S&P 500 Industrial firms from 1996 through 1999. They observed that the stock repurchase decisions, when they announced, are affected by managers' intentions to manage diluted EPS and that firms increased their repurchases when earnings, it is measured as diluted EPS fell short of the level required to maintain the previous growth rate of diluted EPS.

Malaysia provides an excellent setting to investigate the relationship between dividend payment and repurchase as the corporate ownership structure is characterized as concentrated in nature Dividends can also minimize agency conflicts by subjecting companies to the scrutiny of capital market monitoring. Based on the free cash flow hypothesis, Jensen (1986) suggests that high payment of dividends could limit the cash available for managers. Therefore, managers' investment in uneconomic projects or wastage of perquisites can be minimized. Evidence shows that companies pay lower dividends when managerial shareholding in companies is relatively high. Dividends and share repurchases also play a significant role in controlling possible agency conflicts for firms in Malaysia the trend of the dividend payout ratio in Malaysiahas been increasing during the period under review from 2010 - 2017. The dividend payout ratio increasedfrom 21.71 percent in 2010 to 27 percent in 2017. The average dividend payout slightly decreased in 2015 and 2016 but increased substantially in 2018. However, according to the results of this research, empirically after repurchasing, the level of dividend payment had decreased tremendously. I conclude probably the directors and management had probably used all the capital to repurchase shares and this reductionin dividend payment will be compensated with higher share prices 60 days after repurchases, where shareholders are willing to sell their shares for capital gains.

3. Methodology

In this research, I will employ the event study method and Multiple Linear Regression. In multiple linear regression, I will use eight (8) variables that have a strong impact on share buyback. The variables are earnings, cash flow, book value, net income, price-to-book ratio, dividend, effective tax rate, and cash flow toequity. The reasons that I use Event Studies, their advantages, and their significant effects are that they measure the effects of an economic event on the value of firms. Using financial market data, an event study measures theimpact of a specific event on the value of a firm. The usefulness of such a study comes from the fact that, given rationality in the marketplace The effects of an event will be reflected immediately in security prices. Thus, a measure of the event's economic impact can be constructed using security prices observed over a relatively short period. In most applications, the focus is the effect of an event on the price of a particular class of securities of the firm, most often common stock. The event study method has become popular.

Because it obviates the need to analyze accounting-based measures of profit, which have been criticized because they are often not very good indicators of the true performance of firms. For example, managers can manipulate accounting profits because they can select accounting procedures. Stock prices, on the other hand, are not subject to manipulation by insiders. Stock prices are supposed to reflect the true value of the firms.

This study investigates eight variables being analyzed, that is Earnings, Book Value, Price to Book Ratio, Dividend, Effective Tax Rate, Cash Flow, Net Income, and Cash Flow to Equity. These ratios are taken since they play a significant role in the decisions to Repurchase by Management and Directors. Anychanges in the variable will have a great impact on the changes in the companies' stock price and decision-making by management. It also does have an impact on the agency cost respectively in the Malaysian context being analyzed. This study investigates two analyses. The first will be the Event Studies being done. Myresults in this study are consistent with the signaling hypothesis and with most of the previous studies such as Chan et.al (2004). The market will interpret a firm's decision to repurchase its shares as a positive signal. It can also be interpreted from the results that the management deliberately timed their repurchase after a period of declining prices. My results show that, if correctly used, share repurchase may become an effective tool for stock price stabilization of the particular companies doing the repurchases. But for this to be effective, management must constantly be aware of the stock price movement and must be in line with the directors'instinct and intuition of when is the right time to make repurchases. The second part of the study looks at the impact of the eight variables on share repurchases.

The variables taken are after thorough and careful research of the impact the variables have on share repurchase. This study has a significant advantage sinceit examines share price reactions surrounding the actual share repurchases of companies listed on the Malaysian Stock Market for the period 2017 – 2021. This study takes 109 companies that are listed atBursa Malaysia Kuala Lumpur (BSKL) which previously was known as the Kuala Lumpur Stock Exchange (KLSE). The companies are taken on a random basis, and they are a mixture of different sectors of the economy. The different sectors of stock taken is to ensure there exists no bias of results from one particular sector only. The stocks taken for analysis are stable matured companies with a market capitalization above RM300,000 million annually. Analysis of the market reactions is also made based onthe board of listings. The study is different from Lim and Bacha (2002) in two respects. First, my period ofstudy starts from where their study ends. Hence, I utilize a more recent set of data. Second, this study focuses on the actual effective repurchase date executed by the firm as opposed to the announcement of approval for repurchase. This is very important as it shows effectively the actual results as compared to. Also, in Malaysia and throughout the world, a proposed repurchase doesn't mean that an actual repurchase will be undertaken. The directors don't need to implement their proposal in Malaysia. Therefore, this study's results are significant based on actual events.

My data runs from January 2017 through December 2021. Although share repurchases have been allowed since September 1997, the date is chosen to see the impact of repurchases during Malaysia experiencing tremendous economic growth of above 5% annually of its Gross Domestic Product (Bank Negara Report 2016). Also, there happens to be no crisis during this period allowing the researcher to examine the market during normal situations. During a crisis, share repurchase may not be effective because the whole market would be declining fast due to a general lack of market confidence, and the 10 percent annual repurchase limit set by the local regulation i.e. Securities Commissions would not be able to absorb the selling pressure. The samples include a large figure totaling 10,519,573,574 events with several repurchase days at 28,277 events with 378 (100%) firms that do share repurchase announcements across all sectors from the year 2017 until 2021 from audited finally for 109 companies that are actively doing repurchases and actively listed on Bursa Malaysia. This size and event are important being big enough to have an acceptable representation of the whole population discussed that a bigger portfolio size gives a more accurate reflection of abnormal return characteristics based on previous literature, but his research findings suggested that portfolio size does not greatly affect the measurementof information content.

I employ the event study methodology to investigate the behavior of share price movement about the announcement of the buyback. As such, setting up the appropriate analysis time frame is critical to obtaining useful data. However, this task is not easy as acknowledged by a few authors. An event study is composed of three time frames: the estimation window, also sometimes referred to as the control period, the event window, and the post-event window. An estimate window is used to determine the normal behavior of share price returns relative to the market index. Data from this period will form the basis of normal price performance and is used as the benchmark for subsequent periods. In the event window, market reaction to the announcement is expected. It is the time frame of study within which the impacts of the event are analyzed. Post post-event window allows measurement of the longer horizon influence of the event. The length of the event window is centered on the announcement and is normally three, five, or ten days and may vary greatly between researches. The event date shall be the effective date of the share buyback for the respective companies, designated as t=0. The 1 day average effective repurchase days period during post-event is like the longest post-event window in previous work. We will be able to compare the return for each of the windows relative to the others. Each of these periods is an adaptation from research methodology that presented similar timelines.

4. Results

Table 1: Summary statistics of share repurchase activities in the Malaysia Market, 2017-2021

Number of firms	378	100%
Number of repurchase days	28,277	
Total number of shares repurchased	10,519,537,574	
Number of firms with 1 repurchase day	47	124%
Number of firms with 2-10 repurchase days	79	20.9%
Number of firms with 11-20 repurchase days	42	11.1%
Number of firms with 21-40 repurchase days	49	13.0%
Number of firms with over 40 repurchase days	161	42.6%
Average number of repurchase days per firm	74.81	

Source: Bursa Malaysia (www.bursamalaysia.com)

The table above provides an overview of the repurchase activities during the sample period. During the sample period, 378 firms had a total of 28,277 repurchase days which is by far larger than any studies being done in Malaysia with a total purchase of 10,519,537,574 shares. In the process of collecting the data, I observed that firms exhibit varied forms of repurchase behavior. Some firms aggressively pursue repurchases, making purchases very frequently within a short period while others make their purchases less frequently but consistently than spread over a longer period. It is not uncommon for a firm to make just a single repurchase and then go through the process of renewing the approval the following year.

The table above shows that 47(124%) firms make a single-day repurchase, between 2 and 10 days 21%and more than half of the firms spread their repurchase activities above 40 days 42.6%.On average ascompared to firms have shortened their repurchase days indicating higher activities onrepurchasing with a total number of shares repurchased at a staggering above RM 10 Billion total shares.

Discussion

Results in this study are consistent with the signaling hypothesis and with most of the previous studies.The market will interpret a firm's decision to repurchase its shares as a positive signal. It can alsobe interpreted from the results that the management deliberately timed their repurchase after a period ofdeclining prices. My results show that, if correctly used, share repurchase may become an effective tool forstock price stabilization of the particular companies doing the repurchases. But for this to be effective, management must constantly be aware of the stock price movement and must be in line with the directors' instinct and intuition of when is the right time to make repurchases. The results also complement other studies in this area. There is a continuation of price increase even after 60 days from repurchase day 0. This is consistent with the efficient market hypothesis which is quickly reflected in the adjustment of the shareprice to adjust to its market price.

From Table 1 there is a consistency in the price movement. In this respect, my results complement the previous studies such as Vermaelen (1981), Asquith and Mullins (1986). For Malaysia and most Asian regions, the period from 2017 to 2021 is considered bullish. Malaysia consistently has a growth rate of 5.5% yearly (Bank Negara Report, 2018) market reactions were strongly positive and significant. During these bullish years, firms do not time their repurchases. As shown from Table 5 repurchases and CAR are constantly providing positive results. Here I reason out that firms even under bullish situations keep on repurchasing may be to achieve a higher gain in market price or to achieve certain company objectives that may not be achieved internally. The table above shows the Average Return (AR) and Cumulative Abnormal Return (CAR) around the PE ratio of firms for a total sample of n=329. The P/E ratio shows a tremendous rise after repurchasing days zero (0). It went up aggressively by day 31 to end up at 3.8821 by day 60. The resulting reduction in shares on the market led to an increase in the P/E ratio. This benefited the company since the P/E ratio shows the performance and growth of the company. Investors can be confident of the prospects of the company from repurchase activities. The market interprets a firm's decision to repurchase its shares as a positive signal. These results are consistent with the signaling hypothesis and with most of the precious studies such as even though this study does not look at the size effect, since the firms selected are stable, mature, and come from a variety of industries, and since BSKL had combined the main board and the second board, therefore it does not reflect the information asymmetry theory. However, we can conclude, to a certain level, that the firms in this study are subject to lower information asymmetry because these firms are invested in by large institutional traders, hence there is a wide coverage by media and analysts. Other studies provide evidence of the signaling size effect.

In Malaysia in this context, the study analyzes the main board (large firms) versus the Second Board (small firm) samples and finds that there is no significantdifference between the two boards in their announcement returns. Based on results, Cumulative Abnormal return and equity dividend yield shows strongly that share repurchase is a substitute for dividend payments. After repurchase day from day zero (0) till day +60, it is seen that the dividend had reduced tremendously. Share repurchase can be proven over here as a substitute for cash dividends. Take note that these findings are recent findings of firms across the board from 2017 – 2021. In situations where capital gains tax is lower than dividend tax rates, share repurchase would constitute a better alternative to distributing cash to shareholders. Share repurchasing results in price appreciation that will give capital gain to shareholders that if realized, will be taxed at the capital gain tax rate, which is lower than the personal income tax rate that will be imposed on dividends. Hence when repurchases are used instead of cash dividends, share value ought to increase. Also, reasons to adjust the capital structure of the firm whereby increasing the debt component and reducing the equity component can increase the value of the firm. A repurchase can be used to restructure the company's capital structure without increasing the company's debt load.

5. Conclusion

This research looks at a very large level and in-depth analysis of repurchase days which come to a total of 39807 days of repurchases. The data are taken from Bloomberg data updated daily from BSKL. The raw data is cleaned and the final firms that can be calculated are 109. From these 109 companies, the total sample of events is derived from 329 events. Some companies have a minimum of 1 event and some companies have a maximum of 4 events of repurchases. The mean at - 60 days is 1.2109 which meansthe average mean for the 109 companies on that particular -60 days is 1.2109. One (1) event is taken as 121 days which also means 60 days before and 60 days after where the repurchase day is considered as day 0. The average return (AR) shows the daily average return for 109 companies. The Cumulative Abnormal Return (CAR) is calculated by the sum of the Average Daily Return for each day multiplied (*) by the sum of the total Average Return. For % of CAR = Total of Daily CAR * Sum of Total CAR * 100, This research has contributed specifically to the Malaysian context and covered certain aspects based on the variables being analyzed that have an impact on the Malaysian economy. Based on the results, Sales and Earnings of companies are to be on the growing side. Hence companies use the profits for the purchasing of shares which will increase the return for shareholders. The analysis shows that an increase in the variablecash flows will increase the amount of money available for shareholders to repurchase shares. Further, the analysis shows the variable book value plays an important role in the level of share repurchases. This research also shows that higher net income will result in higher repurchases done by companies. Price Book ratio variables show significant effects on the amount of repurchases. Surprisingly, this study shows that the increase in share repurchase activity does not reduce the amount of dividends paid by Malaysiancompanies. Also, the decision on share repurchases is not affected by the tax rates levied by the government. The low-level ratio of cash flow to equity does not have any effect on the share repurchase decision made by companies.

The study's findings imply, therefore, that a firm with excellent growth and profitability potential should clearly articulate its reasons for share repurchases because, arguably, the capital committed to the repurchase could be better employed elsewhere. Therefore, without a clearly expressed rationale, the company's decision to conduct a repurchase program could be misinterpreted by investors as a negative signal. But the converse is also true buyback programs by companies that are doing poorly are seen as a positive sign. That's because investors interpret the repurchases as a welcome return of capital and an indication that management is turning the business around. The implications for chief financial officers are also profound. The decision to implement a share repurchase program has major implications for the remaining components of shareholder value creation-in fact, a ripple effect. For example, financial executives must start their decision-making by evaluating the demand for investment funds, as determined by the availability of investment opportunities. They also need to look at the supply ofinvested funds, which is determined primarily by the company's profitability. While the study makes an important contribution to the repurchase signaling and governance research, there are limitations in this study.

The findings of this study are limited to the very specific context of the research, namely, repurchase and the periods and variables employed. Factors such as types of ownership, types of offers, presence of venture capitalists, growth opportunities, incentive contracts, and other institutional differences (i.e., share allocations to specific investors) are likely to be related to asymmetric information problems and, thus, may affect the extent of underpricing. These factors present potential issues for future research on the repurchase phenomenon in Malaysia. Corporate governance mechanisms and organizational structures are also likely to evolve as firms mature, and these changes may affect the aftermarket performance of repurchases. As such, longitudinal studies of the board evolution of post-repurchase can potentially provide insights into how firms adjust their governance and control structures to accommodate regulatory changes and strategic challenges. Regarding policy implications, the findings of this study point to a paradox for advocates of good corporate governance practices. Recent regulatory initiatives related to principles and practices of good corporate governance may be in danger of becoming over-prescriptive of formal "box-ticking". Although good corporate governance structures are regarded as important prerequisites (but certainly not as sufficient conditions) for investment in repurchase, major drivers of good corporate governance, such as the board of directors, information, and disclosure, are less valued by investors in the Malaysian markets. Share prices and returns are more affected by factors such as a firm's competitive environment and future strategies rather than the firm's governance structures. Much corporate governance, this study included, examines the relationships between easily observable organizational structures and measurable performance outcomes of repurchase but often provides little evidence or explanation about how the two are linked. By scrutinizing behavioral processes, future research may incorporate a more qualitative understanding of how corporate governance elements interact and influence investors and managers in repurchase processes. A behavioral approach would help to understand issues of investing in repurchasing shares in developing markets and would help to explain how potential investors use corporate governance variables to repurchase in these markets.

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