

Information Content of Share Buybacks from an Earnings Perspective (Kandungan Maklumat Pembelian Semula Saham dari Perspektif Pendapatan)

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ABSTRACT

This study aims to examine the predictive ability of share buybacks from an earnings perspective. Panel data regression analysis is conducted to determine the impact of share repurchases on future firm performance using Malaysian publicly listed companies data over 2000-2020. This study is significant because of the importance of share buybacks to attract investors, especially during crisis periods. The results show that the share repurchase ratio is positively and significantly related to all the proxies for future firm performance, as represented by return on assets, return on equity, operating income, and funds from operations that are all measured in the following year of share buyback. The validity of the result is confirmed when tested with an alternative explanatory variable, while the sensitivity test shows that the signaling power of share repurchase is more apparent among share-repurchasing firms with small market capitalization. Overall, the findings support the information signaling hypothesis and suggest that share buybacks in Malaysia provide useful information about a company's earnings prospects.

Keywords: Signaling theory; information signaling hypothesis; payout policy; share repurchase; Malaysia

ABSTRAK

Tujuan kajian ini adalah untuk mengkaji keupayaan ramalan pembelian balik saham daripada perspektif pendapatan dalam kalangan syarikat senaraian awam di Malaysia. Analisis regresi data panel telah digunakan untuk menentukan kesan pembelian semula saham ke atas prestasi firma pada masa hadapan dalam tempoh sampel 2000 hingga 2020. Kajian ini sangat signifikan kerana kepentingan pembelian balik saham untuk menarik pelabur, terutamanya semasa tempoh krisis. Dapatan kajian menunjukkan bahawa nisbah belian balik saham adalah secara positif dan signifikan dipengaruhi oleh semua proksi untuk prestasi firma masa hadapan, seperti yang diwakili oleh pulangan ke atas aset, pulangan ke atas ekuiti, pendapatan operasi dan dana daripada operasi yang semuanya diukur pada tahun berikutnya pembelian balik saham. Kesahihan keputusan itu disahkan apabila diuji dengan pemboleh ubah penjelasan alternatif, manakala ujian kepekaan menunjukkan bahawa kuasa isyarat pembelian balik saham lebih jelas dalam kalangan firma pembelian semula saham dengan permodalan pasaran yang kecil. Secara keseluruhan, penemuan kajian menyokong hipotesis isyarat maklumat dan mencadangkan pembelian balik saham memberikan maklumat berguna tentang prospek pendapatan syarikat.

Kata kunci: Teori isyarat; hipotesis isyarat maklumat; dasar pembayaran; pembelian semula saham; Malaysia

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INTRODUCTION

The acquisition of a company's shares from the market is referred to as a share buyback or share repurchase. When repurchasing shares, Malaysians are subject to capital gains tax, but only when selling shares that have appreciated in value. As compared to dividends, share repurchases offer greater flexibility since companies are not obligated to buy back shares even after they announce a buyback program (Graham et al. 2021). Dividends, on the other hand, require a firm commitment over time and are more rigid because any change to the size of the dividend payment can easily cause the market to react negatively (Parrino et al. 2018).

Share repurchase was observed in the United States (U.S.) since the early 1980s and then quickly spread to the United Kingdom and Canada in the 1990s. Subsequently, other countries that had previously forbidden share repurchases began to permit such transactions. For instance, share repurchase was legalized in Hong Kong in 1991, Japan and Korea in 1994 and Finland in 1997. Meanwhile, France, Germany and Singapore authorized share repurchases in 1998. Following that, Norway, India and South Africa allowed share repurchases in 1999, while Taiwan, Denmark and Sweden permitted them in 2000. In Malaysia, it was not legal to buy back shares until September 1, 1997. The Asian Financial Crisis of 1997 impacted asset prices on the Kuala Lumpur Composite Index and caused the Malaysian ringgit to depreciate. In order to help the country recover from the aftermath of the crisis, share repurchases were permitted.

Despite the fact that there are several types of share repurchase, only open market repurchase is allowed in the context of the Malaysian market. Nevertheless, the single method of open market repurchase makes it easy to retrieve data for share repurchases, which encourages the study to focus on the Malaysian market. As compared to other countries, Malaysia's share repurchase regulations are rather stringent since various restrictions are in place, including controls on the timing, volume, price and reporting of transactions. Before initiating a share repurchase, approval from shareholders is required, which can be obtained at an annual general meeting or an extraordinary general meeting. The approval is valid for one year, and if the share repurchase is not completed within the stipulated period, a new approval must be obtained.

Building on the notion of asymmetric information, Bhattacharya (1979), Vermaelen (1981) and Miller and Rock (1985) theorized that managers purposefully deliver explicit signals about the future earnings of a firm through payout decisions at the cost of the management level, which led to the information signaling hypothesis (Miller & Modigliani 1961). Since then, numerous studies have investigated the association between share repurchases and future earnings (Evans & Evans 2001; Huang et

al. 2010; Jagannathan & Stephens 2003; Lie 2005), especially in the developed market, yet no consistent conclusion has been derived regarding this issue.

The 1997 Asian Financial Crisis caused the Kuala Lumpur Stock Exchange Composite Index to plunge 58% from its high that year. A volatile environment during the peak of the financial crisis called for share buybacks in Malaysia to stabilize the market. Moreover, the uncertainties brought about by a historic change in government as well as trade tensions between the U.S. and China had led to a sharp decline in the Malaysian stock market in 2018 (Toh 2019). Subsequently, RM1.56 billion was spent on share buybacks in 2018, which was nearly six times the amount spent in 2017 of RM264 million. However, it was claimed that companies tend to use share buybacks to manipulate stock prices, especially when managers are seemingly under heavy pressure to boost stock prices, they might have announced a repurchase only to convey a false signal. In the views of Malaysia's Minority Shareholders Watch Group (2020): If a company buys back its shares for the sole purpose of stabilizing its share price regardless of the intrinsic value, such action could be tantamount to creating a false market, an offence under the securities laws.

Based on the argument of false signals, we wish to evaluate whether share repurchases are potentially used by managers to mislead investors or to indicate real earnings growth in the future. As it is not specifically mentioned under the information signaling hypothesis which performance metric the managers wish to communicate to the investors, it is, therefore, significant to test the predictive ability of share repurchases towards firm prospects with different earnings indicators measured from multiple perspectives. Hence, the current study intends to fill the research gap by examining the impact of share repurchases on various proxies of future firm performance among Malaysian publicly listed companies.

From a theoretical perspective, findings from the current study could contribute to the literature by confirming the signaling theory and adding to the existing literature on the information signaling of share repurchases, especially in the developing market context of Malaysia. Besides, share buybacks are not only a regular source of income for investors but also an important input into the valuation of a firm. Hence, from a practitioner's viewpoint, the findings from the current study shall serve as a reference for investors in strategizing their investment plan through clarification between the probability of a false signal and real intrinsic value as conveyed by share buybacks.

The remaining sections of the article are structured as follows. Section 2 summarizes prior research. Section 3 describes the data, methodology and empirical model of the research. Section 4 discusses the empirical findings, while Section 5 wraps up the paper.

LITERATURE REVIEW

Information asymmetry occurs when not all parties have equal access to information at the same time. Insiders often possess better private information than outsiders. Based on this assumption, signaling theory claims that corporate payout policies are often used to inform investors of such asymmetry (Bhattacharya 1979; Vermaelen 1981). In the absence of perfect markets, Miller and Modigliani (1961) suggested that firms change their payout policies to communicate information about upcoming cash flows. In fact, Miller and Rock (1985) demonstrated that by identifying the components and application of the funding, the net payout option can provide market participants with information about future earnings. In accordance with Bhattacharya (1979), Vermaelen (1981) and Miller and Rock (1985), managers deliberately transmit information regarding future earnings via payout decisions at the expense of the management.

According to the information signaling hypothesis, Dann (1981) and Vermaelen (1984) proposed that companies buy back shares to show their optimism regarding the firm's future operating and cash flow performance. This hypothesis is a variation of the dividend signaling argument initially proposed by Lintner (1956) and Miller and Modigliani (1961). Since then, numerous studies have been carried out to examine whether share repurchases signal improvements in firm prospects, yet the results have been mixed.

Primarily, previous research has applied univariate analysis to examine how share repurchase announcements affect operating performance. One of the foremost studies was by Vermaelen (1981) which focused on tender offer repurchases in the U.S. Anomalous increases in earnings per share following tender offer repurchases illustrated the positive, unexpected earnings, which were taken as proof that future earnings were strongly influenced by share buybacks. Meanwhile, Lie (2005) observed variations in operating performance following announcements of open market repurchases in the U.S. with quarterly data. Results from the univariate analysis revealed that operating income increased following share repurchases, specifically for companies that repurchased shares during the announcement quarter, suggesting that the implementation of actual share repurchases enhanced operating performance in the subsequent period.

Wu (2012) evaluated the effects of agency problems on the information content of open market repurchase announcements, buyback behaviour and the subsequent operating performance of repurchasing firms in Taiwan, with the operating performance measured by return on assets. Results from the multivariate analysis showed that companies with a less severe agency issue repurchased fewer shares and performed better in the following period after the repurchase programs were implemented. Hence, more insights were revealed through announcements of

share repurchases. Moreover, the study by Al-Sharawi (2022) that employed regression analysis also showed a positive effect of share buybacks on economic value added and return on equity, but an insignificant effect on the return on assets among Egyptian firms.

Subsequently, Oyon et al. (1994) extended their study from Vermaelen (1981) to evaluate whether tender offer repurchases gave insight into future earnings levels by comparing real post-offer earnings with pre-offer earnings. However, they discovered that tender offer repurchases do not lead to earnings growth in the following years after the repurchase but do generate earnings growth during the year of the tender offer. Evans and Evans (2001) compared the level of accounting performance of U.S. companies that engage in open market repurchases and tender offer repurchases to those that do not conduct share repurchases. During the post-announcement period, the earnings per share, the return on sales, the return on assets, the return on equity and the sustainable growth rate of repurchasing firms did not increase substantially.

Giambona et al. (2006) found that the size of a repurchase program is positively related to the future funds from operations among real estate investment trust firms in the U.S. In the study by Huang et al. (2010), operating performance was represented by funds from operations, return on equity and return on assets. It was found, however, that the relationship between the size of the share repurchase program among real estate investment trust firms and future changes in operating performance in the U.S. was negative four years after the share repurchase, contrary to what was expected based on the information signaling hypothesis.

Grullon and Michaely (2004), who examined the association between share repurchase and future operating performance and profitability changes in the U.S., discovered that announcements of open market repurchase programs do not improve operating income, while there is only a little evidence that earnings per share improved during the year of the announcement. Results from the multivariate analysis by Wang et al. (2020) also showed that the operating performance of repurchasing firms in Vietnam improved only during the concurrent fiscal year and that there were no significant differences in the following fiscal year. A higher completion rate of share repurchases was found to be associated with a greater positive relationship between abnormal returns after the repurchase and subsequent operating performance. This indicated that the intensity of the actual share repurchases sent a credible signal to the market.

Jagannathan and Stephens (2003) investigated the subsequent operating performance of share-repurchasing companies in the U.S. according to the frequency of share buybacks. A minor improvement in operating performance was observed after the open market repurchase announcement among the occasional and

regular buyback groups, while infrequent repurchasers, on the other hand, showed significantly lower operating performance compared to their peers. Even though the occasional and frequent repurchase groups outperformed their counterparts in terms of operating performance, their raw operating performance fell. Meanwhile, Kim and Park (2021) analyzed whether different repurchase methods affect the long-term performance of Korean firms. Results from the univariate analysis showed that firms that acquire shares directly in the open market portray both positive excess stock returns and positive excess operating performance, whereas those that acquire shares indirectly show insignificant long-term performance following a repurchase.

Since the proposal of the information signaling hypothesis, numerous studies have been conducted in the developed market, yet no consistent conclusion has been derived. Based on the review of extant literature, most of the prior research on the information signaling of share repurchases concentrated on observing the variation in operating performance subsequent to the announcement of share repurchases with univariate analysis, while there is no known research regarding the influence of share repurchases on future firm performance in the context of the Malaysian market. Therefore, the current study will fill the research gap by utilizing the multivariate analysis to examine the predictive ability of share repurchases on future firm earnings measured from various perspectives among Malaysian publicly listed companies.

METHODOLOGY

The sample data for the current study shall comprise public listed companies on the main market of Bursa Malaysia that repurchased shares and were active within the sample period of 2000 to 2020. After excluding firms from the financial sector, the final sample consists of 153 share-repurchasing firms. The actual observations shall comprise a period of 20 years, as the empirical model is tested by lag 1. Hence, the observations for the independent variables employ the data from 2000 to 2019, while the observations for the dependent variables utilize the data from 2001 to 2020.

Based on the adoption of the model from Huang et al. (2010), the following empirical model (equation 1) is developed to examine the linear relationship between share repurchase and future firm performance in the context of the Malaysian market. A firm’s future performance is represented by a variety of proxy variables measured from the earnings perspective of the firm, including financial performance via return on assets and return on equity, and operational performance via operating income and funds from operations, which are all measured in the year following a share buyback. The share repurchase ratio serves as the independent variable, while firm size, cash flow, debt level, growth opportunity and liquidity are employed as control variables to limit the influence of financial characteristics on future firm performance. Following Lie (2005), Lee and Suh (2011) and Jena et al. (2020), the definitions for all the variables of the empirical model are presented in Table 1.

$$FFP_{i(t+1)} = \alpha_0 + \alpha_1 REPR_{it} + \alpha_2 TA_{it} + \alpha_3 CASH_{it} + \alpha_4 LEVER_{it} + \alpha_5 MTB_{it} + \alpha_6 CUR_{it} + \epsilon_{it} \tag{1}$$

- Where, FFP = Future firm performance
- REPR = Share repurchase ratio
- TA = Total assets
- CASH = Cash holdings
- LEVER = Leverage ratio
- MTB = Market-to-book ratio
- CUR = Current ratio

The null hypothesis examines whether the size of the current share buyback is related to future firm performance. Rejection of the null hypothesis shall prove that share repurchases are used to signal future firm

performance. Giambona et al. (2006) asserted that the information signaling hypothesis is valid when payout size is positively related to future firm performance. In order to validate the information signaling hypothesis and prove that share repurchases can predict improvements in future firm earnings, a positive relationship is expected between the share repurchase ratio and various proxies of future firm performance. Therefore, the ratio of share repurchases should be positively and significantly correlated with future return on assets, future return on equity, future operating income or future funds from operations, which act as the respective alternative hypotheses for Hypothesis 1, Hypothesis 2, Hypothesis 3 and Hypothesis 4.

TABLE 1. Variables definition

Variables	Definition
Return on Assets (ROA)	$\frac{\text{Net Income}}{\text{Total Assets}}$
Return on Equity (ROE)	$\frac{\text{Net Income}}{\text{Book Value of Equity}}$
Operating Income (OI)	$\frac{\text{Operating Income}}{\text{Total Assets}}$
Funds from Operations (FFO)	$\frac{\text{Net Cash Flow from Operating Activities}}{\text{Total Assets}}$
Share Repurchase Ratio (REPR)	$\frac{\text{Consideration Paid for Share Repurchases}}{\text{Total Assets}}$
Total Assets (TA)	Natural log of total assets
Cash Holdings (CASH)	$\frac{\text{Cash and Equivalents}}{\text{Total Assets}}$
Leverage Ratio (LEVER)	$\frac{\text{Total Liabilities}}{\text{Total Equity}}$
Market-to-Book Ratio (MTB)	$\frac{\text{Market Capitalization}}{\text{Book Value of Equity}}$
Current Ratio (CUR)	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Panel data regression analysis is employed to examine how share repurchase affects subsequent firm performance. The Breusch-Pagan Lagrangian Multiplier test is used to determine whether pooled ordinary least squares (OLS) or random effect models are more appropriate (Hsiao 2014). The rejection of the null hypothesis under the Breusch-Pagan LM test demonstrates that the random effect model is preferable to the pooled OLS model. In applied panel data analysis, the Hausman test is frequently used to decide whether to adopt a fixed effect model or a random effect model. Rejecting the null hypothesis for the Hausman test proves that the fixed effect model is more suitable than the random effect model (Hsiao 2014).

Diagnostic tests are conducted to detect multicollinearity, heteroskedasticity and serial correlation as robustness checks for the equation model. Multicollinearity is detected using the mean variance inflation factor (VIF). As indicated by O'Brien (2007), a value of VIF below 10 rejects the existence of multicollinearity. The Modified Wald Test is used in a fixed effect regression model to test for groupwise heteroskedasticity, where rejection of the null hypothesis indicates that heteroskedasticity exists. The heteroskedasticity problem will be addressed by generating robust standard errors for the model (Daniel 2007). Panel data are tested for autocorrelation using the Woolridge test, where rejecting the null hypothesis reveals serial

correlation. The serial correlation and heteroskedasticity problems can be corrected by computing cluster standard errors for the model (Wooldridge 2013; Daniel 2007).

Sensitivity test is conducted to test the output and stability of the results. The market capitalization that captures the company's actual market value indirectly links to firm growth (Hoffmann 2018). Therefore, the sample data is segmented by market capitalization according to the FTSE market indices to check whether the market capitalization of firms affects the corporate payout. As a result, 137 share-repurchasing firms featured in the FTSE Bursa Malaysia Small Cap Index and 23 share-repurchasing firms under the FTSE Bursa Malaysia Top 100 Index were included in the subsamples. After dividing the sample into small capitalization and large capitalization companies, the equation model will be rerun to see if it produces different results from the primary analysis.

As part of the sensitivity tests, the buyback ratio is used as a substitute for the share repurchase ratio. A buyback ratio measures a company's ability to return value to shareholders and is defined as the amount of money paid to buy back its common stock divided by the market capitalization of the company at the start of the buyback (Dittmar 2000). Using an alternative independent variable, panel data analysis is repeated for robustness checking to ensure the validity of the results obtained from the main analysis.

RESULTS AND DISCUSSION

SUMMARY STATISTICS

Table 2 shows the total number of shares purchased and the total consideration paid by sample firms from 2000 to 2020. From 2000 to 2007, share-repurchasing firms were generally fewer than non-repurchasing firms. Share repurchase activities in Malaysia have increased significantly since 2008, with more companies repurchasing their shares than non-repurchasing firms between 2008 and 2013. Since share buybacks were only

legalized by Malaysian authorities in 1997, the quantity of publicly traded firms that engaged in share repurchases was reliably low in 2000. In 2000, only 11 companies engaged in share repurchases, with a total consideration of about RM526 million paid for about 115 million shares. There was the largest number of share-repurchasing firms in 2008 when 93 firms paid the highest consideration of approximately RM2.8 billion to purchase approximately 841 million units of shares on the market. It was in 2020, though, that the highest number of purchased shares was recorded. Around 1.3 billion units were bought from the market for approximately RM852 million.

TABLE 2. Number of shares purchased and consideration paid for share repurchase

Year	Share-repurchasing Firms	Non-Repurchasing Firms	Total number of shares purchased (unit)	Total consideration paid (RM)
2000	11	142	114,784,000	525,990,351.36
2001	17	136	131,298,000	316,197,198.31
2002	21	132	79,536,000	215,253,660.03
2003	30	123	146,349,200	241,931,352.86
2004	33	120	300,526,600	1,052,298,707.90
2005	54	99	474,119,900	1,251,151,303.81
2006	64	89	342,692,266	704,454,665.02
2007	74	79	593,674,800	2,056,992,799.52
2008	93	60	840,932,507	2,825,981,234.50
2009	88	65	247,982,557	412,390,793.28
2010	88	65	263,240,100	515,710,243.50
2011	80	73	384,577,010	806,718,278.39
2012	80	73	732,454,940	1,179,393,675.33
2013	82	71	1,189,820,386	2,186,901,821.14
2014	76	77	598,456,486	1,455,228,990.59
2015	84	69	397,951,131	708,730,264.42
2016	87	66	264,479,768	262,457,078.82
2017	60	93	254,180,659	215,736,223.24
2018	64	89	782,114,548	988,244,503.61
2019	52	101	398,693,600	435,326,707.19
2020	55	98	1,250,350,702	851,913,503.42

Source: Bursa Malaysia

Table 3 describes the statistical properties among all the variables for the share repurchase sample, with a total of 3060 observations. REPR shows a minimum value of 0 and a maximum value of 0.14, indicating that

share buybacks are not conducted consistently. The mean values for ROE, OI and FFO are similar at about 0.05, while the spread for the data on OI is relatively wider, with a standard deviation recorded at 0.21.

TABLE 3. Descriptive statistics

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
ROA	3060	0.0363	0.1670	-1.4580	8.1044
ROE	3060	0.0578	0.1646	-2.1531	1.0166
OI	3060	0.0495	0.2139	-1.0555	11.1066
FFO	3060	0.0541	0.0820	-0.6380	-0.5629
REPR	3060	0.0021	0.0070	0.0000	0.1361
TA	3060	19.9189	3.0617	0.0000	25.3595
CASH	3060	0.1267	0.1241	-0.1201	1.4057
LEVER	3060	1.2364	5.7795	-65.7348	176.7343
MTB	3060	1.7095	34.1470	-3.1741	1888.7270
CUR	3060	2.5592	4.8947	0.0000	218.4500

Table 4 shows the correlation matrix for the share repurchase sample to indicate the strength of the linear relationship between the independent variables and the control variables. A correlation coefficient of less than 1 indicates the absence of a strong correlation between

all the independent variables. The highest correlation coefficient of 0.36 is found between cash holdings and liquidity of firms, but it still indicates a weak, positive relationship.

TABLE 4. Correlation matrix

	REPR	TA	CASH	LEVER	MTB	CUR
REPR	1.0000					
TA	0.0525	1.0000				
CASH	0.1099	0.1406	1.0000			
LEVER	-0.0242	0.0631	-0.0484	1.0000		
MTB	0.0023	-0.0306	-0.0102	0.0544	1.0000	
CUR	0.0259	0.0195	0.3644	-0.0519	-0.0061	1.0000

SHARE REPURCHASE AND FUTURE FIRM PERFORMANCE

Table 5 shows the results of the panel data analysis between share repurchases and various proxies of future firm performance for a sample of 3060 observations. Considering the Hausman test is rejected at a 1% significance level, the most appropriate model is a fixed effect model. In the meantime, the mean-variance inflation factor of 1.07 which is less than 10 indicates that there is no multicollinearity in the data. However, a heteroskedasticity problem is found. Hence, the final model is rectified with robust standard error. Meanwhile, the F-statistics prove the overall significance of all the models, and the goodness-of-fit depicted at 5.22% by the R-squared shows that the variation of future ROE is best explained by REPR.

The results from the final model show significant results between share repurchases and all the proxies for future firm performance. REPR is significantly and positively related to future ROA, future ROE, future OI and future FFO, all at 1% significance levels. For a one-unit change in REPR, future ROA and future ROE tend to increase by 0.8715 units and 1.4410 units, respectively. Meanwhile, a one-unit change in REPR will increase respective future OI and future FFO by 1.0034 units and 0.8951 units. When comparing the magnitudes of the

coefficients, it shows that REPR has a stronger effect on ROE and OI measured in the following year of share buyback, in comparison to other proxies of future firm performance. The positive and significant relationship thus supports Hypothesis 1, Hypothesis 2, Hypothesis 3 and Hypothesis 4.

Generally, the control variable of CASH is positively related to all the proxies for future firm performance. Meanwhile, the control variable of MTB is only positively related to future ROE. On the other hand, the control variable of CUR is negatively related to future ROE, future OI and future FFO. Therefore, cash holdings, growth opportunities and liquidity of firms are considered significant factors influencing future firm performance among share-repurchasing firms apart from the share repurchase itself. Despite the higher cash holdings, the liquidity is still lower for the share-repurchasing firms, indicating that the current liabilities that need to be met exceed the current assets of the firms.

Overall, the information signaling hypothesis is validated by the significant and positive relationship obtained between share repurchases and all proxies of future firm performance. In other words, Malaysian firms tend to use share repurchases to signal optimistic information about their firm's earnings prospects from the perspective of financial and operating performance.

This result is consistent with the studies by Evans and Evans (2001) and Huang et al. (2010), who found significant improvement among U.S. firms in accounting and operating performance, respectively, immediately after the initiation of a share repurchase program. However, the result from the current study is inconsistent with the study by Grullon and Michaely (2004). As compared to the U.S., the share buyback announcement in Bursa Malaysia indicates the actual share repurchase,

whereas U.S. firms are given three years to complete an announced repurchase. Therefore, the examination of share repurchase announcements instead of actual repurchases by Grullon and Michaely (2004) may be the possible factor that causes such inconsistency. This rationale is further justified by Lie (2005), who revealed that the operating performance improvement following the share repurchase is limited to firms that actually repurchase shares during the same fiscal quarter.

TABLE 5. Results of panel data analysis between share repurchase and future firm performance

	ROA (t+1)	ROE (t+1)	OI (t+1)	FFO (t+1)
Constant	0.1214 (0.391)	0.0109 (0.410)	0.2280 (0.225)	0.0392*** (0.000)
REPR	0.8715*** (0.000)	1.4410*** (0.000)	1.0034*** (0.000)	0.8951*** (0.000)
TA	-0.0050 (0.490)	0.0012 (0.111)	-0.0094 (0.327)	0.0011** (0.040)
CASH	0.1016*** (0.006)	0.1699*** (0.001)	0.0812** (0.042)	-0.0510** (0.029)
LEVER	0.0001 (0.692)	0.0010 (0.708)	0.0003 (0.228)	0.0009 (0.144)
MTB	0.0001 (0.706)	0.0001*** (0.006)	-0.0001 (0.615)	-0.0001 (0.442)
CUR	-0.0004 (0.267)	-0.0014** (0.012)	-0.0017*** (0.000)	-0.0013*** (0.000)
Observations	3060	3060	3060	3060
R-squared	0.0122	0.0522	0.0136	0.0021
F-statistics	6.37*** (0.000)	10.09*** (0.000)	7.80*** (0.000)	13.68*** (0.000)
Breusch-Pagan LM Test	66.39*** (0.000)	668.08*** (0.000)	53.81*** (0.000)	1583.02*** (0.000)
Hausman Test	19.97*** (0.003)	45.89*** (0.000)	21.56*** (0.002)	73.57*** (0.000)
Multicollinearity (Mean VIF)	1.07	1.07	1.07	1.07
Heteroskedasticity (Modified Wald Test)	3.6e+06*** (0.000)	1.5e+05*** (0.000)	6.8e+06*** (0.000)	22138.03*** (0.000)
Serial Correlation (Woolridge Test)	1.97 (0.162)	2.97* (0.087)	1.63 (0.203)	0.97 (0.326)

Note: Figures in the parentheses represent p-values while *, ** and *** indicate the respective 10%, 5% and 1% significance levels.

FTSE BURSA MALAYSIA MARKET INDEX

Table 6 shows the regression results between share repurchases and various proxies of future firm performance among share-repurchasing firms featured on the FTSE Bursa Malaysia Small Cap Index for a sample of 2620 observations. The F-statistics prove the overall significance of all the models. Meanwhile, the R-squared value of 4.10% for future ROE reveals a relatively stronger goodness-of-fit than other proxies of future firm performance.

According to the results, the explanatory variable of REPR is positively related to all the dependent variables

of future firm performance at their respective significance levels. REPR is positively related to the future ROA, future ROE and future FFO, all at 1% significance levels, while REPR shows a positive association with future OI at a 5% significance level. For a one-unit change in REPR, future ROA and future ROE tend to increase by 1.0542 units and 1.4025 units, respectively. Meanwhile, a one-unit change in REPR will increase the respective future OI and future FFO by 0.8566 units and 0.8040 units. When comparing the magnitudes of the coefficients, it shows that REPR has a stronger relative effect on future ROA and future ROE in comparison to other proxies of future firm performance. For the control variables, share-

repurchasing firms with higher cash holdings but low liquidity tend to have higher ROE and OI following a share buyback.

Table 7 presents the regression results between share repurchases and various proxies of future firm performance among share-repurchasing firms listed under the FTSE Bursa Malaysia Top 100 Index for a sample of 440 observations. The overall significance of all the models is proven by the F-statistics. Meanwhile, the R-squared values of 42.21%, 56.87% and 50.74% for the respective future ROA, future ROE and future OI reveal relatively stronger goodness-of-fit than the proxies of future FFO.

According to the results, REPR is only positively related to future OI at a significance level of 1%. For a one-unit change in REPR, future OI will increase by

0.6897 units. However, no significant association with other proxies of future firm performance is found, which include ROA, ROE or FFO measured in the first year after a share buyback. As for the control variables, share-repurchasing firms with higher leverage, greater growth opportunity and higher liquidity tend to generate higher ROA and FFO in the future.

Overall, it is found that the predictive power of share repurchases towards future firm performance is more apparent among share-repurchasing firms with small market capitalization. This indicates that a higher degree of information asymmetry appears among low cap share-repurchasing firms, which leads to active engagement in share buyback activities to reveal private information about firm prospects.

TABLE 6. Regression results between share repurchase and future firm performance under FTSE Bursa Malaysia small cap index

	ROA (t+1)	ROE (t+1)	OI (t+1)	FFO (t+1)
Constant	0.1036 (0.462)	0.0005 (0.973)	0.2096 (0.257)	0.0321*** (0.004)
REPR	1.0542*** (0.000)	1.4025*** (0.000)	0.8566** (0.016)	0.8040*** (0.002)
TA	-0.0045 (0.520)	0.0013 (0.120)	-0.0090 (0.326)	0.0012** (0.031)
CASH	0.1269*** (0.005)	0.1600*** (0.002)	0.1167*** (0.009)	-0.0575** (0.017)
LEVER	-0.0003 (0.160)	0.0001 (0.982)	0.0001 (0.715)	0.0005 (0.268)
MTB	0.0001 (0.388)	0.0001*** (0.003)	0.0001 (0.954)	-0.0001 (0.324)
CUR	-0.0006 (0.216)	-0.0013*** (0.009)	-0.0021*** (0.000)	-0.0014*** (0.000)
Observations	2620	2620	2620	2620
R-squared	0.0143	0.0410	0.0172	0.0002
F-statistics	52.56*** (0.000)	16.66*** (0.000)	30.31*** (0.000)	12.59*** (0.000)

Note: Figures in the parentheses represent p-values while *, ** and *** indicate the respective 10%, 5% and 1% significance levels.

TABLE 7. Regression results between share repurchase and future firm performance under FTSE bursa Malaysia Top 100 Index

	ROA (t+1)	ROE (t+1)	OI (t+1)	FFO (t+1)
Constant	0.0695*** (0.007)	0.0958* (0.096)	0.1007*** (0.000)	0.0983*** (0.004)
REPR	0.2050 (0.483)	0.3315 (0.530)	0.6897*** (0.000)	0.5663 (0.193)
TA	-0.0024** (0.048)	-0.0027 (0.343)	-0.0034*** (0.007)	-0.0023 (0.144)
CASH	0.0081 (0.886)	0.0727 (0.530)	-0.0456 (0.359)	-0.1475* (0.094)
LEVER	0.0010*** (0.000)	0.0066*** (0.000)	-0.0001 (0.700)	0.0039*** (0.000)

continue ...

... continued

MTB	0.0118*** (0.000)	0.0348*** (0.002)	0.0183*** (0.000)	0.0144*** (0.000)
CUR	0.0109*** (0.006)	0.0031 (0.675)	0.0129*** (0.007)	0.0146** (0.023)
Observations	440	440	440	440
R-squared	0.4221	0.5687	0.5074	0.2127
F-statistics	10.50*** (0.000)	464.47*** (0.000)	144.68*** (0.000)	2433.62*** (0.000)

Note: Figures in the parentheses represent p-values while *, ** and *** indicate the respective 10%, 5% and 1% significance levels.

ALTERNATIVE EXPLANATORY VARIABLE

Table 8 displays the regression results between share repurchases and various proxies of future firm performance, with the buyback ratio utilized as an alternative proxy for the explanatory variable for a total of 3060 observations. While the F-statistics prove the overall significance of all the models, an R-squared value of 3.86% reflects stronger goodness-of-fit for future ROE, as compared to other proxies of future firm performance.

The results indicate that the buyback ratio has a positive relationship with future ROA, future ROE and future FFO, all at 1% significance levels, while positively related to future OI at a 5% significance level. A one-unit change in the buyback ratio leads to increases of 0.1741

units and 0.4136 units for the respective future ROA and future ROE. For a one-unit change in the buyback ratio, future OI and future FFO tend to increase by 0.1829 units and 0.1919 units, respectively. When comparing the magnitudes of the coefficients, it appears that the proxy of the buyback ratio exerts a stronger effect on future ROE as compared to the rest of the proxies for future firm performance. In terms of the control variables, repurchasing firms that hold higher cash holdings but have lower liquidity tend to produce higher ROE and OI in the subsequent year of share buyback. By substituting the buyback ratio for the initially used share repurchase ratio, the results shown are still similar to the main analysis, which supports the information signaling hypothesis and hence enhances the accuracy of the result.

TABLE 8. Regression results between share repurchase and future firm performance with alternative proxy of buyback ratio

	ROA (t+1)	ROE (t+1)	OI (t+1)	FFO (t+1)
Constant	0.1215 (0.391)	0.0112 (0.398)	0.2281 (0.225)	0.0393*** (0.000)
Buyback ratio	0.1741*** (0.009)	0.4136*** (0.000)	0.1829** (0.034)	0.1919*** (0.002)
TA	-0.0049 (0.492)	0.0012 (0.111)	-0.0094 (0.328)	0.0011** (0.037)
CASH	0.1063*** (0.005)	0.1750*** (0.001)	0.0870** (0.034)	-0.0464** (0.046)
LEVER	0.0001 (0.701)	0.0010 (0.709)	0.0003 (0.234)	0.0009 (0.145)
MTB	0.0001 (0.691)	0.0001*** (0.006)	-0.0001 (0.629)	-0.0001 (0.490)
CUR	-0.0004 (0.258)	-0.0014** (0.011)	-0.0017*** (0.000)	-0.0013*** (0.000)
Observations	3060	3060	3060	3060
R-squared	0.0096	0.0386	0.0116	0.0001
F-statistics	4.06*** (0.001)	14.83*** (0.000)	5.72*** (0.000)	10.18*** (0.000)

Note: Figures in the parentheses represent p-values while *, ** and *** indicate the respective 10%, 5% and 1% significance levels.

CONCLUSION

The objective of the study is to investigate the relationship between share repurchases and future firm performance. As a result, a significant relationship is found. Share repurchase is positively related to all the proxies for future firm performance as represented by return on assets, return on equity, operating income and operating cash flow measured in the first year right after share buyback. The robustness of this result is further enhanced when the employment of an alternative proxy for the independent variable yields a similar result to the main analysis. In addition, the impact of share repurchases on future firm performance is particularly pronounced among small-cap share-repurchasing firms listed on the FTSE Bursa Malaysia Small Cap Index. All these findings verify the information signaling hypothesis and prove that Malaysian firms portray signals on firm prospects through share repurchase. Such findings also reflect the practice of corporate payout policies among publicly listed companies in Malaysia, whereby the expectation of future earnings has always been taken into account when deciding on the action of share buyback. In other words, firms' managers could control the firms' earnings through alteration of the corporate payout policy. This is because the flexibility of managers to invest in projects is also affected by the amount of payout to shareholders, as a higher proportion of payout may result in fewer funds available for investing, which may affect the earnings of firms.

The positive impact found between share repurchases and future firm performance verifies the information signaling role of share buybacks in Malaysia and indicates actual improvement in the firm's intrinsic value as portrayed through the action of share buyback. From a practical perspective, the current study shall enhance investor sentiment as the results show that share repurchases contain useful information for market participants. With respect to the view of Malaysia's Minority Shareholders Watch Group mentioned earlier, the significant findings from the current study shall resolve the research issue as real improvement of future firm performance is shown in the post-buyback period. Therefore, the significant impact of share buybacks on future firm performance among Malaysian firms shall provide insight to the government, particularly when contemplating legislation to revisit buyback rules.

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