Impact of Stock Repurchase on the Capital Markets

Wanying Mao[1,a,*]

[1]*Simon Fraser University, Burnaby, BC V5A 1S6, Canada*
a. wanyingm@sfu.ca
*corresponding author

Abstract: This study intends to examine, from an economic and accounting standpoint, how the share repurchase procedure affect financial markets by specifically testing their effects on the financial performance of the specific companies. The OLS regression analysis was used on 66 companies that were traded on the American Stock Exchange between 2009 and 2020 as part of the study sample. The results reveal that share repurchases improve financial results, as evidenced by return on equity (ROE) and Added Economic Value (EVA). The results, however, show that share repurchases have little effect on the return on assets (ROA). The study found that the management's justifications for share buybacks affect a company's financial success. The study also found that the management's aim to produce a cash surplus improves the company's financial performance. The management objective of increasing earnings per share, which also improves the firm's financial success, was found to be one of the most significant motivations for the company to repurchase shares, according to the study. The study also showed that share repurchases significantly outperform returns on assets or returns on equity in terms of the Economic Value Added (EVA), one of the most important measures of financial success. The study, however, found little proof that the companies' share repurchases caused by higher financial leverage have an effect on their financial performance. This research, therefore, provided an insight on how share purchases affect the capital markets is dependent on the source of the surplus cash, and relatedly, share purchases through improved earnings per share increases the desirability of the company from their improving their financial standpoint.

Keywords: Stock Repurchases, Economic Value Added (EVA, Return On Equity (ROE and Return On Assets (ROA)

1.   Introduction

According to Gyimah et al., when an acquisition reduces the number of outstanding shares on the market or the price declines in the stock market, the company is said to have repurchased its market shares or directly from stockholders [1]. Since earnings per share (EPS) and share price tend to increase after the announcement of a stock buyback, it's apparent that increasing shareholder value is a driving force behind these buybacks. If shareholder wealth is to increase sustainably, however, the interplay between the economy, the financial system, and society must be considered. Businesses typically repurchase or distribute dividends to shareholders at a premium to the stock's market price in order to increase faith in their initiatives. Thus, share buybacks are now commonplace in economies both developed and emerging. Share buybacks have expanded dramatically in a number of

foreign markets since US loosened regulations (1982), followed by Germany (1984) and Japan (1986). Many American companies have been repurchasing shares as a result of the weak economy caused by the Corona crisis.

American companies continued allocating money to repurchase share. Board members, however, are free to make deals with confident investors and purchase from them. Since a decrease in the number of shares outstanding has no bearing on the realized return if it is fixed after the purchase process, several studies have found no impact of share repurchases on a company's financial success. The challenge, however, has always been the timing as well as the selection of buyback strategy. Whereas most firms have found this approach to be positively impactful to financial performance, poor timing of such buybacks has often caused the firms involved to lose out on critical financing capital. This research study therefore intends to find out the implications of stock repurchase on firm performance in the capital markets.

1.1. Research Hypothesis

The following hypotheses were tested in this research study:

I. Share buybacks from a company positively affect their financial performance.

II. Increasing a company's cash surplus positively impacts the connection between share repurchase and financial performance.

III. The financial performance of the firm is positively correlated with earnings per share.

2. Literature Review

The lack of clarity on the effects of share repurchases on the firm, a debate over the impact ranges on. The typical market response, evaluated 2 days beforehand and after the release, is 3.54%, according to Singh et al. [2]. The market response increases with the proportion of shares offered for repurchase. Al Sharawi shows that for repurchasing corporations with greater upper bounds of their disclosed price ranges, the association between undervaluation and long-term price performance is substantially stronger [3].

Gim and Jang also noted a favorable response in the stock market due to significant U.S. companies' disclosures of share buyback plans from 2001 to 2005, which increased anomalous returns [4]. Additionally, they discovered an improvement for repurchase corporations in the fiscal year following repurchase announcements, but they discovered a negligible change in the following fiscal year. However, Kamaludin and Zakaria demonstrated that companies did not experience anomalous returns due to investors purchasing their shares [5]. Instead, they discovered that the atypical returns are significantly negative over 12, 24, and 36 months. They concluded that the regularity of announcements affects market value.

According to Gim and Jang, there is a negative correlation between the incidence of share repurchase announcements and earnings management, which has an adverse impact on operational performance [4]. Van Dalsem discovered that a company's long-term performance suffers after using the low-cost repurchase approach [6]. They also demonstrated that share repurchases by companies with a track record of declining earnings have poor long-term outcomes. He demonstrated that share repurchases could not replace dividends. Share buybacks are more frequently funded by internal debt issuance than external debt, lowering capital expenditure and R&D costs. Although the firm's share prices had increased and its internal ownership had decreased, he concluded that share repurchase policies had long-term negative effects on profitability, the firm's value, growth, and innovation.

3. Methods

Businesses from various sectors featured on American stock markets make up the study's sample. It had at least one share repurchased event detected at some point throughout the study period, with the exception of the banking and insurance industries due to their unique nature, conditions, and features. The developed hypotheses were examined, and the study's study variables were verified using SPSS software. Financial performance is the dependent variable in this study and is assessed using three indicators: market value added, ROA, and return on equity. Share buybacks, earnings per share, excess cash flow, and financial average are among the explanatory variables (shares repurchase and their motives). The study also employed several control variables that could influence dependent variables. This study's control variables are firm growth and size.

4. Empirical Analysis Results

4.1. Share Repurchase

Share repurchases pertain to share purchases that have a net income effect for a company, which includes shares bought back from current shareholders by holding companies and shares bought back by a holding company's subsidiaries. Like the approach, share buybacks are calculated as a percentage of the total assets past due for the one-year buyback term. This represents the absolute value of the yearly repurchase [4].

4.2. Interactive Variables

Academics and researchers alike have employed a variety of methods to determine a firm's excess cash flow, including the net profit after taxes, interest, and depreciation (EBITDA) divided by the firm's asset 4.2.1. Net cash flow value for the prior year, as done by Guo et al. and Dogru and Sirakaya-Turk [7,8]. Some are based on the company's overall cash flow ratio to its total assets. Almeida et al. state that this analysis relies on the first measurement of cash flows [9]:

$$Cashflow = (netincome + depreciation)laggedassetsCFO$$
$$= (netincome + depreciation)/lagged\,assets$$

Financial leverage. The leverage ratio determines the borrowing and spending by a corporation. The debt-to-equity ratio computes the amount of debt that a company has in relation to its available capital. Numerous studies have calculated the rate of leverage, either by dividing a firm's total debt by its total assets or by dividing its total debt by its entire equity [4]. According to Jena et al., this study came up with the formula as shown below [10].

$$Firmleverageratio = totaldebttotalequity$$

Earnings per share. If the price of shares drops, no one will want to buy them. If the firm treats the shares as treasury shares, the owner will be able to sell them at a later date, but the shares will not be eligible for dividends or shareholder votes. Because the formula to find the earnings per share is computed by dividing net income shareholders' equity, it increases when more shares are removed from circulation. Like the study by Pratiwi et al., other studies have found that the average variance in Earnings per share (EPS) is a significant factor in the decision to repurchase shares [11].

$$EPS = Averagechange \in earningpershare$$
$$\in lastthreeyearsimmediatelybeforesharerepurchase.$$

4.3.   Dependent Variable

Performance metrics are crucial for generating value for businesses. The management finds it challenging to choose a suitable performance metric that accurately assesses its performance over a given time frame. Additionally, some like Behera, criticize traditional accounting practices for failing to consider the overall cost of capital [12]. EVA is distinctive in the market since it considers the cost of capital. Therefore, value-based economic metrics like value added (EVA) are considered to solve these issues.

4.4.   Economic Value Added

The EVA idea states that a company only adds value for its shareholders if its returns exceed its capital cost. EVA stands for increased returns over capital expenditure. The notion of residual revenue that was previously present is embodied in this idea. EVA is the performance indicator that most closely approximates an organization's economic profitability. It also has a clear correlation to the long-term growth of shareholder wealth. The financial assessment tool known as EVA may estimate and record economic profit for a company. Following are the three inputs that EVA needs to calculate:

$$EVA = NetOperatingProfitafterTax – (WeightedAverageCostofCapital * InvestedCapital)$$

$$NetOperatingProfitafterTax(NOPAT) = the \in -comeavailableshareholders + interestexpenses(aftertax)$$

$$WeightedAverageCostofCapital(WACC) = WeightofEquity * CostofEquity + WeightofDebt * CostofDebt$$

$$InvestedCapital = TotalEquity + Long - TermBorrowings + Reserves$$

$$Where;$$

$$CostofEquityCapital =$$

And $CostofDebt = Capital$

4.5.   Return on Assets

The ROA indicates a company's financial performance proportion to its total assets. To calculate return on assets, divide net income after taxes for a given year by the total value of the company's assets (ROA).

4.6.   Return on Equity

One of the most effective performance measurement measures in the eyes of investors is ROE. To determine the return on equity (ROE), the Net income after offsetting the taxes for a particular year is divided by the equity book value at the start of the year.

4.7.   Control Variables

Mahrani and Soewarno's studies drew on several factors specific to a company and may have an impact on its financial performance [13]. In this research, we used the company's total assets as of the beginning of the year as a control variable, alongside company size and sales growth rate. The percentage change in the company's revenues is how growth was evaluated. The study relied on a

sample size of 81 American firms, randomly selected from a sampling frame of listed firms in the American Stock Exchange market.

4.8. Specification of the Model

The three financial performance measurement models used in this study comprised Economic Value Added (EVA), Return on Assets (ROA), and Return on Equity (ROE). The economic value added describes the true economic profit of an enterprise, which it generates from the investment of funds into ventures. ROA, on the other hand, refers to the gains made as a result of the efficient deployment of the firm's resources. The last dependent variable, ROE, describes the profits made using the equity stokehold of the firm.

4.9. Empirical Analysis

The model used in this research study is the ordinary least squares (OLS) method. The study used the adjusted R squared, the t-statistic with accompanying p-values, and the F-statistic with its corresponding p-value to test the hypotheses [14]. Version 26 of the Statistical package for social sciences (SPSS) statistical analysis program was utilized for this investigation.

5. Results

5.1. Multiple Regression Models

The multiple regression analysis models were conducted with respect to three dependent variables, namely the Return On Assets (ROA), Return On Equity (ROE), and the Economic Value Added (EVA). These variables were performance metrics used to gauge the implication of the main predictor variable, stock repurchase. The goal here is to establish the relationship between the scale of stock repurchases and the performance of the capital finance market, as well as the extent to which it influences this performance. The statistical indicator includes the R-squared statistics, F statistics, and regression coefficients.

Model 1.

Table 1: Regression summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.0.943[a]	.893	.851	3.845809

From Table 1 above, it can be observed that the R-squared statistics and the adjusted R-squared statistics are 0.893 and 0.851, respectively.

Table 2: Analysis of variance for model significance.

Model		Sum of Squares	df	Mean Square	F	Sig.	Model	
	Regression	93.912	6	15.652	1.058	.000b		Regression
1	Residual	961.366	65	14.790			1	Residual
	Total	1055.278	71					Total

The Analysis of variance for model significance, as displayed in Table 2, was conducted at a 95% confidence level. The F statistics of this test is; $F_{(6,65)}= 1.058$, p value=0.000.

Table 3: Multiple regression model coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-6.402	1.814		-3.529	.001	-10.026	-2.779
	Scale of Re-purchase	6.598	8.943	.091	.738	.463	-11.264	24.459
	Earnings Per Share	-.121	.076	-.201	-1.586	.118	-.273	.031
	Cash flow	.038	.025	.182	1.502	.138	-.013	.089
	Revenue Growth	-.136	.199	-.087	-.685	.496	-.534	.261
	Share price	.001	.001	.151	1.237	.220	-.001	.003

a. Dependent Variable: Economic Value Added (EVA)

All factors held constant; the Economic Value Added (EVA) for the sampled firms was observed to be -6.402 according to the regression coefficients in Table 3. Considering the extent of stock re-purchases, the Economic Value Added increased by 6.598 for every unit increase in the value of stock bought back. There was, therefore, a positive relationship between Economic Value Added and the stock value repurchased.

Model 2. The second model consists of the return on Assets as the performance metric. It indicates the level of efficiency with which the firms deploy and utilize their resources to raise revenue.

Table 4: Multiple regression model coefficients.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.723[a]	.223	0.208	15.823458

The R-squared statistics for the second model is 0.223 as indicated in table 4. When the degrees of freedom are accounted for, the adjusted R square reduces to 0.208.

Table 5: Multiple regression model coefficients.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	852.958	6	142.160	.568	.000b
	Residual	16274.819	65	250.382		
	Total	17127.778	71			

Table 5 shows the one-way ANOVA conducted with a 95% level of certainty. The F statistics for this test of model significance is; $F_{(6,65)}=0.568$, p value=0.000. The regression coefficients for the model are summarized in table 4.8 below. The relationship between return on assets and the stock repurchases is also positive, indicating a direct increasing effect on the latter. All factors are taken to be constant, and the return on assets was 16.9%. Nonetheless, repurchasing stocks by firms increased this asset efficiency by 8.1 percentage points.

Table 6: Multiple regression model coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	16.931	7.465		2.268	.027	2.022	31.840
	Scale of Repurchase	8.140	36.797	-.062	-.493	.624	-91.630	55.349
	Earnings Per Share	-.175	.314	-.072	-.557	.580	-.801	.452
	Cash flow	.043	.104	.051	.413	.681	-.165	.252
	Revenue Growth	.742	.819	.118	.907	.368	-.893	2.377
	Share price	.003	.004	.100	.802	.426	-.005	.011

a. Dependent Variable: Return on Assets (ROA)

Model 3. The final model in this study focuses on the return on equity as the principal measure of the economic performance of the capital market.

Table 7: Multiple regression model coefficients.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.879[a]	.772	0.743	22.712836

The R-squared statistics, as shown in the regression summary table 7 for this model, was 0.772. At 95% confidence level, the F statistics for Model 3 is; $F_{(6,65)}=0.846$, p value=0.001. Since the p-value is less than the 5% significance level, this model is statistically significant, just like the previous two.

Table 8: Analysis of Variance for Model significance.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2617.247	6	436.208	.846	.001[b]
	Residual	33531.739	65	515.873		
	Total	36148.986	71			

All factors were assumed to be the same; the return on equity was 1.219. Stock repurchase increased the Return on Equity by 23.24, a positive relationship.

Table 9: Multiple regression model coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	16.931	7.465		2.268	.027	2.022	31.840
	Scale of Repurchase	8.140	36.797	-.062	-.493	.624	-91.630	55.349
	Earnings Per Share	-.175	.314	-.072	-.557	.580	-.801	.452
	Cash flow	.043	.104	.051	.413	.681	-.165	.252
	Revenue Growth	.742	.819	.118	.907	.368	-.893	2.377
	Share price	.003	.004	.100	.802	.426	-.005	.011

a. *Dependent Variable: Return on Equity (ROE)*

6.   Discussion

The R-squared statistics used on all three regression models are indications of the magnitude of influence the independent variables have on the dependent variable. This regression analysis for model 1, model 2, and model 3 showed that 89.3%, 22.3%, and 77.2% of the changes in the performance metric for financial markets could be explained by stock repurchases, respectively. Comparatively, the effect of stock repurchases on return on assets (ROA) was relatively diminished compared to that of return on equity (ROE) and Economic Value Added (EVA). The metrics touching the financial market, shares, financial instruments, and leverage greatly influence the proportion of stocks a firm chooses to reacquire. The variance analysis supports the model's feasibility as statistically significant. All three models have their probability values below the 0.05 alpha significance level. Therefore, from this analogy, the hypothesis that states that the stock rep[purchases of a firm positively affects the financial market's performance is accepted because there is statistically significant evidence from the empirical Analysis that this is so.

7.   Conclusion and Recommendations

This study looked at the interaction between share repurchase incentives and the link between share buybacks and company financial performance. It also looked at the effect of the share repurchase process on financial performance. The study discovered that share buybacks have an impact on financial results. Nevertheless, this effect varies depending on the instrument employed to assess financial performance. Share buybacks considerably influenced return on equity and economic value added but had little effect on return on assets (ROA). The study concluded that there were a variety of share buyback motivations, each of which had an impact on financial performance. The motivation to raise earnings per share (EPS) was identified as having the greatest financial performance impact. This study suggests expanding the requirements for share repurchase disclosure.

References

[1] Gyimah, D., Siganos, A., & Veld, C. (2021). *Effects of financial constraints and product market competition on share repurchases. Journal of International Financial Markets, Institutions and Money, 74, 101392.*

[2] Singh, B., Dhall, R., Narang, S., & Rawat, S. (2020). *The outbreak of COVID-19 and stock market responses: An event study and panel data analysis for G-20 countries. Global Business Review, 0972150920957274.*

[3] Al Sharawi, H. H. M. (2022). *The impact of the share buyback process on financial performance: An economic and accounting perspective. Evidence from Egypt.*

[4] Gim, J., & Jang, S. S. (2020). *Share repurchases and stock market reactions: Messages from the restaurant industry. International Journal of Hospitality Management, 86, 102457.*

[5] Kamaludin, K., & Zakaria, N. (2019). *The short and long-run performance of Sharia-compliant initial public offerings (IPOs) in the emerging market: Evidence from the Saudi Arabia Share Market. Journal of Reviews on Global Economics, 8, 706-716.*

[6] Van Dalsem, S. A. (2019). *Does founding family involvement affect share repurchase activity? Evidence from U.S. firms from 2006 through 2015. Managerial Finance.*

[7] Guo, H., Legesse, T. S., Tang, J., & Wu, Z. (2021). *Financial leverage and firm efficiency: the mediating role of cash holding. Applied Economics, 53(18), 2108-2124.*

[8] Dogru, T., & Sirakaya-Turk, E. (2018). *Cash holdings and corporate governance: theory and contrary evidence from hotel firms. International Journal of Contemporary Hospitality Management.*

[9] Almeida et al. (2021). *The cash flow sensitivity of cash: Replication, extension, and robustness. Fisher College of Business Working Paper, (2021-03), 002.*

[10] Jena, S. K. (2021). *Share Buyback in India: Issues and Evidence (Doctoral dissertation, IIT Kharagpur).*

[11] Pratiwi, N. B. I., Saputro, D. R. S., & Widyaningsih, P. (2021, February). *Fuzzy c-shells for clustering of data's LQ45 in Indonesia based on earnings per share and price earning ratio. In Journal of Physics: Conference Series (Vol. 1776, No. 1, p. 012054). IOP Publishing.*

[12] Behera, S. (2021). *Does EVA valuation model outperform earnings valuation model in explaining market value of equity?. International Journal of Finance & Economics, 26(4), 6312-6337.*

[13] Mahrani, M., & Soewarno, N. (2018). *The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable. Asian Journal of Accounting Research.*

[14] Padder, A. H., & Mathavan, B. (2021). *The Relationship between Unemployment and Economic Growth in India: Granger Causality Approach. NVEO-Natural Volatiles & Essential Oils Journal| NVEO, 1265-1271.*