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Stock Repurchases and Long-Term Investor Returns: An Empirical Investigation

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Abstract

Stock repurchases by U.S. firms have been reported by prior studies to cause positive stock price reactions around the announcement dates. However, the question of whether an investable portfolio of repurchasing firms reconstituted at the beginning of each year outperforms a broad market index in the long run has not been addressed. This study finds that investing in the Invesco Buyback Achievers ETF (PKW), which invests in the shares of repurchasing firms, outperformed S&P 500 on a risk-adjusted basis over 5-, 10- and 15-year periods. This finding is consistent with the goal of shareholder wealth maximization, which emphasizes the return of free cash flow to shareholders.

Keywords

Stock repurchases, investor returns

1. Introduction

Finance theory prescribes shareholder wealth maximization as the firm's long-term goal. This is justified on the ground that shareholders are residual owners, who assume enormous risk by providing capital to the venture, which results in production of valuable goods and services for consumers, jobs for employees, business opportunities for vendors, tax collections for the federal, state and local governments, and overall prosperity for the communities. Moreover, while other stakeholders have explicit or implicit contracts with the firm that protect the stakeholders' interests, shareholders' financial reward depends on whether the firm eventually produces and distributes free cash flow to shareholders either as dividends or share buybacks. Shareholder wealth maximization is synonymous with stock price maximization, which is dependent on the firm's production and eventual distribution of free cash flow to shareholders. According to agency theory, which is rooted in the conflict of interest between shareholders and managers, firms may not be successful in producing free cash flow for shareholders because managers are more interested in maximizing their salaries and perks. Even if there is free cash flow available,

managers may sit on it and/or make wealth-reducing investments instead of distributing it to their shareholders. Thus, it is argued that firms that distribute free cash flow via either dividends and/or share buybacks are superior firms that maximize shareholder wealth. It is important to note that share repurchases are deemed to be more tax efficient than dividends because while shareholders in general owe taxes on dividends, they can choose not to sell their shares in a buyback, thus deferring any taxes owed while benefiting from a higher future free cash flow available to a smaller number of shares outstanding. Furthermore, repurchases may signal firm undervaluation and/or value enhancing capital structure changes, in addition to avoiding the inflexibility associated with dividends, since buyback programs can be canceled - unlike dividends - without any negative consequences if firms later find positive net present value (NPV) investments. However, critics of buybacks argue that buybacks may not be in shareholders' best interests. For example, managers may give up positive NPV projects and instead spend the funds on buying back their shares, which results in higher future earnings per share and likely higher compensation for managers because their compensation may be tied to earnings per share. This was cited by some as justification for the one percent excise tax levied on corporate buybacks occurring after 2022. Another argument against buybacks is that managers may use them to reduce the number of shares outstanding to thwart a hostile takeover. Since target firms reap substantial gains in successful takeovers, share buybacks will reduce shareholder wealth when launched to defeat hostile takeover bids. Finally, some argue that corporate buybacks may signal declining growth opportunities for the repurchasing firms. If true, then buybacks will result in lower future free cash flow for the repurchasing firms and lower future stock prices.

Evidence suggests that managers acknowledge the superiority of stock buybacks over dividends as a mechanism for returning free cash flow to shareholders. Recent data indicate that managers are increasingly paying out a greater proportion of free cash flow via repurchases than dividends. The total amount of buybacks has exceeded the cash dividends paid by U.S. firms each year in the 2007-2023 period (See Table 1). Furthermore, the proportion of dividend-paying companies decreased to 43% in 2018 from 78% in 1980, while the proportion of companies with share buybacks increased to 53% from 28% during the same period (Zeng & Luk, 2020). While free cash flow payouts via dividends are important, the increased use of share repurchases appears to be driven by many advantages of the buyback alternative, namely the tax advantage, the cancelation option, the ability to signal undervaluation, and the potential benefits from increased financial leverage.

2. Prior Research

Prior research on whether share buybacks enhance shareholder value has followed three distinct tracks. Early studies primarily focused on the market response to stock buybacks and reported a positive reaction (Dann, 1981). Later studies focused on the various specific hypothesized explanations for the positive market reaction to buybacks. For example, Dittmar and Field (2016) found evidence that firms repurchasing their shares were undervalued. More recent research focuses on building a buy-and-hold

portfolio of repurchasing firms as an investment strategy to see whether such a portfolio outperforms a broad market index. Peyer and Vermaelen (2009) identified 24 stocks deemed undervalued by the firms' managers to see if these firms beat the market indexes over a short period of six months. The authors found that the buyback portfolio beat the three major indexes in all but one month. Zeng and Luk (2020) tested the strategy of investing in the S&P 500 Buyback Index to see whether it outperformed the return on S&P 500. The S&P 500 Buyback Index is comprised of 100 S&P 500 firms with the highest stock buyback ratio in the trailing 12-month period. The buyback ratio is defined as the amount of funds spent on buybacks by a firm divided by the firm's market capitalization at the beginning of the prior one-year period. The S&P 500 Buyback Index is equally weighted and reconstituted every quarter. The authors found that the S&P Buyback Index outperformed both the S&P 500 and S&P 500 equally weighted indexes in 10-, 15- and 20-year periods on a risk-adjusted basis. It is important to note that the S&P 500 Buyback Index is a hypothetical portfolio and is not an investable index.

3. Research Question

Invesco, a publicly traded investment management firm with $1.59 trillion in assets under management in 2023, launched a diversified exchange traded fund (ETF), with the ticker symbol PKW, in December 2006 to mimic NASDAQ's US Buyback Achievers Index, which tracks the performance of companies that have reduced their shares outstanding by 5% or more in the trailing 12-month period. The ETF and the Index are reconstituted annually in January and rebalanced quarterly in January, April, July and October. This study addresses the question of whether investing in PKW beats the alternative strategy of investing in S&P 500 over the long term.

4. Data and Methodology

Beginning from January 1, 2007, the study tracks two portfolios, the PKW portfolio and the S&P 500 Index and computes compounded annual returns for various time periods in the 2007-2024 period. The study then compares the risk-adjusted performances of the two portfolios to conclude whether investing in a portfolio of repurchasing firms beats the alternative strategy of investing the S&P 500 index.

Data are gathered from multiple sources, including Bloomberg. Data integrity is verified by cross-checking with other publicly available sources, such as Yahoo Finance and the historical data provided by Damodaran (2024).

5. Findings

Table 2 contains historical, calendar year rates of return for PKW investors for the 2007-2024 period. PKW earned a 10.02% annualized compounded rate of return over the 18-year period as compared to 7.58% for S&P 500. However, PKW outperformed the S&P index in only ten of the eighteen years, with the S&P Index beating PKW in the other eight years. Table 3 lists the risk (as measured by the investment's standard deviation) and return measures over the past 5, 10 and 18 years. As the table shows,

PKW outperformed the benchmark in the 5-, 10- and 18-year periods. PKW produced a compounded annualized return of 12.17% in the 5-year period (2020-2024), 10.48% in the 10-year period (2015-2024), and 10.05% in the 18-year period. The Index, on the other hand provided returns of 9.79%, 9.70%, and 7.58%, respectively, for the three holding periods. To determine whether PKW's higher return was realized at the cost of higher risk, both investments' standard deviation of return was calculated for different periods. Surprisingly, PKW's standard deviation of return was found to be lower than that of the Index for the 10-year and 18-year periods. Table 3 also displays the coefficient of variation or CV (standard deviation/return), which is a measure of risk per unit of return. PKW's CV is lower than that of the Index for each period. This shows that PKW produced a higher risk-adjusted return in all three periods.

Since standard deviation of return captures both the systematic (beta) and unsystematic risk and a diversified portfolio is exposed to just the systematic risk over the long term, PKW's beta was calculated using monthly returns over the past five years. Unsurprisingly, PKW's beta is 1.01, which is almost the same as S&P 500's assumed beta of 1. PKW is highly diversified with 203 holdings reported for the fourth quarter of 2024. Using beta values in the CV measure leaves our previous conclusion of PKW's outperformance of the S&P 500 index in all periods unchanged.

6. Summary and Conclusion

Since finance theory prescribes return of free cash flow to shareholders and since share repurchases are deemed superior to dividend payouts for free cash flow distribution, this study uses PKW's return and risk measures to determine if investing in the shares of repurchasing companies is a market beating strategy. PKW is an Invesco ETF, which invests in the shares of repurchasing companies. Our findings reveal that PKW outperformed the S&P 500 index on a risk-adjusted basis in the 5-, 10- and 18- year investment periods. This finding is consistent with the hypothesis that the return of free cash flow to shareholders leads to long-term gains for shareholders. It is important to note, however, that repurchasing firms, while returning free cash flow to shareholders, may also be signaling firm undervaluation and future benefits from capital structure changes to the market.

Table 1. S&P 1500 Composite 1500 firms' Dividend Payments and Share Repurchases

Calendar Year	Total Dividends Paid (In Billions)	Total Buybacks (in Billions)
2023	$588	$795
2022	$565	$923
2021	$511	$882
2020	$483	$520
2019	$485	$729
2018	$456	$806

2017	$299	$673
2016	$467	$600
2015	$457	$633
2014	411	$608
2013	$365	$522
2012	$330	$446
2011	$279	$525
2010	$249	$337
2009	$255	$300
2008	$286	$395
2007	$299	$673

Source: Zeng and Luk (2020).

Table 2. Annual Returns on PKW and S&P 500 for the 2007-2024 Period

Calendar Year	PKW Return (%)	S&P 500 return (%)
2007	-2.23%	1.35
2008	-33.38	-36.61
2009	31.23	22.60
2010	17.90	13.13
2011	10.04	-0.84
2012	13.75	13.91
2013	45.57	30.19
2014	12.74	12.67
2015	-4.34	0.64
2016	12.88	9.50
2017	17.75	19.09
2018	-10.52	-6.02
2019	34.09	28.28
2020	8.45	16.44
2021	32.62	20.02
2022	-10.21	-23.01
2023	17.23	21.97
2024	17.32	21.54
Annually compounded return (18-year period)	10.05	7.58

Table 3. Risk and Return Characteristics of PKW and S&P 500 for Different Holding Periods

Holding period	PKW Annual Return (%) (Standard deviation)	PKW Coefficient of Variation	S&P 500 Annual Return (%) (Standard deviation)	S&P 500 Coefficient of Variation
18 years (2007-2024)	10.05 (15.92)	1.58	7.58 (17.52)	2.31
10 years (2015-2024)	10.48 (15.92)	1.52	9.70 (15.85)	1.63
5 years (2020-2024)	12.17 (15.66)	1.29	9.79 (19.35)	1.98

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