

A Dive into Dividend Portfolios, When and How to They Work

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Abstract

Dividend paying stock offer an additional componenet to otherwise non dividend paying stock. This paper studies the return signalling cue from dividend portfolio. We find that dividend portfolios around the around offer downside protection. However emerging market portfolios have positive return during market turmoil which is considerably above returns from advanced economy portfolios.

1. Introduction

2. Literature Review

2.1. What are dividends

Dividends constitute a form of capital distribution by corporations towards shareholders. They exist in various forms, such as cash, stock, liquidating, scrip, or property dividends ([baker2009understanding?](#)), of which cash dividends and share repurchases being the most commonly used in practice. Within cash dividends, regular dividends are widely used by corporations and payment frequency across jurisdictions. The decision to issue dividends is typically made by the board of directors, and approved by shareholders, however practiced more in Europe and less so in the United States. The payout policy policy of a corporation, which are guiding principles for management and board of directors towards capital distributions considers company investment and is closely watched by investors and analysts. As such, management strives to grow or maintain a certain level of dividend payouts as this signals firm growth and investors share of profitability in the company. Various liertature has covered the effect of dividend announcements before and after ex -dividend dates. Figure 1 shows a clear and direct relation with a decrease in share value to the proportionate to the dividend announcement.

Given the apparent decrease in shareholder value, the logical question has encouraged a long running debate on dividend relevance and irrelevance. In 1961, Miller & Rock ([1985](#)) opined that dividends are irrelevant (MM theory), he argued that shareholders are indifferent to dividend payments, thus implying that there is no optimal dividend policy and that all dividend policies are equally good and

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payments of dividends could easily be reinvested in shares and make no difference to share holder wealth. However, the MM theorem fails to consider real-world market imperfections that may give relevance to dividend payments. The bird in the arguments opposes the MM theory, suggesting that investor would prefer to receive less risky cash flow in the form of dividends instead of potential capital gains at some point in the future (Gordon, 1962). This permeates to the cost of equity, since dividends are less risky, companies that issue more dividends should have higher share prices. However, proponents of the MM theory contend this suggesting the risk of future cash flow is affected by the payment of dividend, leading to negative effects on share prices after the ex-dividend date. The dividend puzzle considers real world constraints and gives an interesting take on its relevance and irrelevance, by suggesting that dividends reduce equity value and make investors worse off; however, are a reward to investors who bear the risk associated with their investments as it provides an additional source of return on investment from a share Black (1996). Various literature has made convincing arguments for corporations to pay dividends which include Tax considerations, dividend signalling and agency costs in issuing dividends .

Tax considerations argue in favor for dividend relevance. Across jurisdiction dividends have different tax treatments to capital gains and often tax at a higher income tax rate, thus investors that have higher tax rates choose stocks with lower dividend payouts and transversely pushes up the stock price, this is called the clientele effect (baker2009understanding?). Proponents of the MM theory suggest that the client effect causes major substitution effect, suggesting that if companies change their dividend policy, investors with preferential tax treatment will simply allocate more capital to that stock and those out of favor will sell their shares. Given the large number of investors versus listed companies the process is instantaneously causing a net zero effect on prices(baker2009understanding?). Second, flotation costs refer to the opportunity costs incurred by a firm when paying dividends. Through distributing dividends, companies forego opportunities to expand their operations using retained earnings. In a world without flotation costs, as suggested by the MM theorem, management would be indifferent between issuing dividends and borrowing from the market thus have no effect on shares prices. However, in reality, external financing comes at a higher cost, leading to trade-offs in dividend policy decisions and ultimately share prices.

Information asymmetry between shareholders and managers is another factor that gives relevance to dividend payments. Managers of businesses have greater knowledge of operations thus value of a business at any given point more than shareholders. As such, investors rely on dividend announcements to assess a company's valuation. Dividend signaling conveys information about the company's quality Al-Najjar & Kilincarslan (2018) and Baker & Powell (1999). Investors compare dividend announcements to historical levels while considering company fundamentals. However, there is a risk of manipulation by management, making the dividend signal imperfect for determining share prices. Principal agency issues may give another reason for issuance of dividends. The free cash flow hypothesis suggests that dividend payments force management to raise capital from external sources, which increases borrowing costs and scrutiny from capital markets. This, in turn, reduces management's ability to make sub optimal investments and aligning management and shareholder objectives (baker2009understanding?). Supporters of this theory ascertain that dividends payments by the mechanism encourage good business practices.

2.2. Empirical review

The various methods of capital distributions have varying impact on financial statements which is summarized in Table of the appendix. From the perspective of an investor or analyst the dividend yield metric helps show the additional return dividends paying securities could add to a portfolio. Consider 2.2 that describes the fundamentals that influence the dividend yield. Assuming a constant payout ratio, dividend yield is a function of earnings yield. shows the correlation between DY and Price overtime for various securities. Various studies have identified a predictive power of dividend yield thus confirm the existence of a value signal. Also, another signal for dividends is dividend growth per share for corporations, and unlike the dividend yield, it is not affected by price but maintain properties that allow for inference into management quality. As management is aware of the signalling effect of dividends, this may induce the value trap, that forces management to continually increase dividends to maintain a certain valuation. However such companies are more vulnerable to facing financial distress.

$$\text{DividendYield} = \text{EarningsPerShare} / \text{Price} * \text{DividendPayoutRatio}$$

Cash dividends, although widely used, are not as tax-efficient as share buybacks. In this form of capital redistribution, a firm exchanges assets for outstanding shares, which shrinks the company's assets by the amount of cash paid out. This action too reduces both its borrowing base and the shareholders' aggregate equity ([baker2009understanding?](#)). A clear benefit to the company is that it is more flexible when compared to the rigid dividend payout structures. To most higher net worth investors, tax benefits in the form of lower capital gains taxes result in greater preference for share buybacks. Surprisingly, their adoption has been relatively slow in some emerging economies. According to a study by Wesson, Muller & Ward (2014), there were only 195 open market share repurchases announced in South Africa from 1999 to 2009. In comparison, Manconi, Peyer & Vermaelen (2014) estimated that share repurchases constituted approximately 58% of total announcements in the United States, 15% in Canada, and 11% in Japan over the same period, indicative of a significant disparity in the adoption of share buybacks across the world, despite their popularity in the United States.

Dividend payments and growth in dividends per share provides a return cue and over the years studies on dividend signaling studies can be categorized into academic and practitioner-oriented studies. Academic studies, such as Fama & French (1988), found a positive correlation between increasing predictive power and longer forecast horizons. However, subsequent studies like Ang & Bekaert (2007) found no evidence of long-term predictability in stock returns when considering finite sample influence. This suggests that dividend yield may not be a reliable predictor of subsequent returns. One possible reason for this declining predictive power is the increasing use of share buybacks as an alternative means for capital distribution, which reduces the contribution of dividend yield to total return ([Robertson & Wright, 2006](#)).

On the other hand, practitioner-oriented literature focuses on the long-term returns of systematic dividend portfolios. One popular strategy is the "Dogs of the Dow (DOD)," which involves constructing a portfolio of the top 10 highest-paying dividend stocks on the Dow Jones Industrial Index at the beginning of the year based on the dividends paid in the previous 12 months, therefore this entail deploying a high yield strategy ([McQueen, Shields & Thorley, 1997](#)). Various studies have examined the DOD strategy or similar high-yield dividend strategies in different time periods and regions, consistently showing superior risk-adjusted returns compared to the market index. Examples of such studies include Lemmon & Nguyen (2015) in Hong Kong Brzeszczyński & Gajdka (2007) in Poland,

Visscher & Filbeck (2003) in Canada, Filbeck & Visscher (1997) in Britian, and Wang, Larsen, Ainina, Akhbari & Gressis (2011) in China. More recently, Filbeck, Holzhauer & Zhao (2017) investigated the performance of DOD against a high-yield portfolio of Fortune Most Desired Companies (MAC) compared to the Dow Jones Industrial Average and the S&P 500. The study found significantly higher risk-adjusted returns for the DOD strategy.

Year	Author	Signal	Methodology
1997	Filbeck	High Dividend Yield	NA
2001	Da Silva	High Dividend Yield	NA
2003	Visscher and Filbeck	Dividend Growth	NA
2007	Brzeszczyński	Dividend Growth	NA
2007	Fama and Eugene	High Dividend Yield	NA
2011	Wang et al	High Dividend Yield	NA
2011	Rennie	High Dividend Yield	NA
2015	Lemmon	High Dividend Yield	Grouped high yield stock and tests for yield effect at portfolio
2017	Filbeck	High Dividend Yield	NA
2017	You	High Dividend Yield	NA

3. Methodology

3.1. Research Design

3.2. Data collection

3.3. Variables

3.4. Methodolgy

3.5. Hypothetical hypothesis

4. Results

4.1. Descriptive Statistics

4.2. Optimization Results

5. Discussion

5.1. Limitations of the study

6. Conclusion

6.1. Tax considerations

Portfolio theory was developed in a perfect world without friction. In practice, frictions need to be considered and in portfolio construction this often entails considering the effect of taxes on income and capital gains as they can erode returns and significantly alter risks and return characteristics of shares. The contribution of dividends and capital gains to total return can lead to varying tax efficiencies for shares as most jurisdictions imposed higher taxes than on capital gains. Therefore shares with higher contribution of dividends will be less tax efficient than those with a higher capital gains component and with timing most jurisdictions tax dividends in the year that they are receive¹.

Jurisdictional laws can also affect the distribution of taxable returns amongst shares depending on their class namely ordinary shares or preferred shares. Preferred shares are viewed as a substitute for bonds and income from preferred shares are often given tax at a lower rate than those from dividends from ordinary shares.

We will not survey global tax regimes or incorporate all potential tax complexities into the portfolio construction but assume a high level commonalities exists amongst all jurisdictions this study uses. This is a resonable assumption considering the summary of taxes on dividends and capital gains from

¹See Deloitte's tax guides and country highlights: <https://dits.deloitte.com/#TaxGuides>

major economies. For simplicity, we will assume a basic tax regime includes the key elements of investment-related taxes that are representative of what a typical taxable asset owner of a global portfolio will contend with. The proposed methodology to employ on the dividend portfolios use the following methodology.

$$r_{at} = p_d r_{pt} (1 - t_d) + p_a r_{pt} (1 - t_{cg})$$

where r_{at} the after tax return, p_d = the proportion of r_{pt} attributed to dividend income, p_a = the proportion of r_{pt} attributed to price appreciation, t_d = the dividend tax rate and t_{cg} = the capital gains tax rate

6.2. Portfolio Construction

First, we rebalance at the end of March and September and construct fully invested, long only portfolios. On each rebalancing date, we first take the top 100 stocks by market capitalization (MC), and then select the top quintile (20 stocks) based on the relevant signal scores. We then apply 25bps trading costs to both buying and selling of stocks, and (where applicable) replace delisted stocks with cash.

We will then use total return values, adjust for stock splits and other distorting effects on prices to calculate portfolio returns. We also carefully apply back-dated adjustments to dividends paid to accurately arrive at on-the-day dividends and actual closing prices when calculating our Dividend Yield and Dividend Per Share Growth measures.

We also apply at each rebalancing several portfolio optimization routines (minimum variance, equal risk contribution (ERC), mean-variance and max diversification measures). The optimization are constrained to have minimum and maximum weight exposure of 0.5 and 1.5 times the equal weighted alternative. With our quintile portfolios, this implies weights ranging between 2.5% and 7.5%.

Following this we will construct back-tests on the subset of local data for the choose dividend signal portfolios. The factor portfolios considered are as follows

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