Literature Review

Gabriel Rambanapasi[a]

[a]*Stellenbosch University, Cape Town, South Africa*

1. Literature Review

Dividends are cash payouts that companies use to distribute capital to their shareholders. They can take various forms, such as cash, stock, liquidating, scrip, or property Baker & Powell (2009). However, cash dividends are the most common type. The decision to issue dividends is typically made by the board of directors, taking into account the company's operating needs for a given financial year. When a dividend is announced, it has an impact on the financial statements of a company. Resultantly, dividend announcements create a liability which impacts the balance sheet by increasing the current liabilities and decreases shareholder equity, specifically retained earnings, on the balance Baker & Powell (2009: 374). In other words, the company incurs an obligation to pay out the dividend, and the value of the company retained by shareholders decreases accordingly. From this when can conclude that dividends are catergorized as a capital budgeting decision and indirectly implies that investors could infer about management quality overtime by studying dividend yield. Management quality here refers to cash flow management and management skill in identifying and monetizing investment opportunities. Therefore,considering the dividend yield equation below and assuming that the dividend payout ratio (DPR) is constant we notice that dividend yield (DY) becomes a function of

*Corresponding author: Gabriel Rambanapasi
Email address: gabriel.rams44@gmail.com (Gabriel Rambanapasi)

the earnings yield(EPS/Price). Figure 1, shows the 12 month net trailing dividend yield of Standard Bank relative to the log of theprice since 2010. It shows the clear and expected negative correlation between DY and price over time (during a period where the dividend per share payment increased at best uniformly and moderately. Since value investing is concerned with identifying stocks that are priced below their market value, studies that confirm the existence of dividend signalling predicting power of returns validate that the existence of a value signal and dividends can be used as a proxy.

$$DY = EPS/Price * DPR$$

Cash dividends, although widely used, are not as tax-efficient as other types of capital distributions, such as share buybacks or stock repurchases. 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 Baker & Powell (2009: 429). 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 sharebuybacks. It is thus no surprise that this form of earnings redistribution has gained traction in some advanced economies such as the US (with the Financial Times recently reporting that announced stock buybacks in the US reached an all time high of $437 billion in 2018). 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.

The logical question then is why do firms pay dividends? Miller & Rock (1985) opines that dividends are irrelevant (MM theory), he argues that shareholders are indifferent to dividend payments, implying that there is no optimal dividend policy. Following this school of thought implies that all dividend policies are equally good and thus 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. Considering these constraints the dividend puzzle gives an interesting take on its relevance and irrelevance, suggesting that dividends reduce equity value and make investors worse off Black (1996). However, dividends can be seen as a reward to investors who bear the risk associated with their investments. Also, dividends can be considered a return on investment rather than relying solely on capital gains Black (1996). Various literature has emerged trying to solve the puzzel, either supporting irrelevance or relevance in dividend payments.

Global assets market face multiple constraints or imperfections namely transaction costs (e.g., taxes and flotation costs), information asymmetry, and principal-agent problems Baker & Powell (2009). Taxes play a role in the argument for dividend relevance. Different investors may be attracted to different stocks based on their tax treatments, thus investors choose stocks based on their individual investment needs Van Deventer, Imai & Mesler (2013) Baker & Powell (2009). However, supporters of the MM theorem argue that changes in dividend policy should not significantly impact stock prices due to the substitution effect. According to this effect, allocation decisions of firms occur almost simultaneously, resulting in a net zero effect on prices [baker2009understanding]. Flotation costs refer to the opportunity costs incurred by a firm when paying dividends. By 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. However, in reality, external financing comes at a higher cost, leading to trade-offs in dividend policy decisions.

Information asymmetry between shareholders and managers is another factor that gives relevance to dividend payments. Managers of businesses typically 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. Extending the argument on information asymmetry leads to the principal-agent problem, where management and shareholders may have differing goals for the use of retained earnings, leading to conflict Baker & Powell (2009). 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 Baker & Powell (2009).

Dividend payments and growth in dividends provides a return cue and over the years studies on dividend signaling can be categorized into academic return signaling studies and practitioner-oriented long-term return 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 (**robertson2006dividends?**).

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. The most common methodology used in The portfolio is held for 12 months, and the process is repeated annually. 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.

Global Dividend Portfolio Signalling Results

Year	Author	Geography	Signal	Result
1997	Filbeck	United Kingdom	High Dividend Yield	Outperformed market index
2001	Da Silva	Brazil	High Dividend Yield	Outperformed market index
2003	Visscher and Filbeck	Canada	Dividend Growth	Outperformed market index
2007	Brzeszczyński	Poland	Dividend Growth	Outperformed market index
2007	Fama and Eugene	US	High Dividend Yield	Outperformed market index
2011	Wang et al	China	High Dividend Yield	Outperformed market index
2011	Rennie	Optimiization	High Dividend Yield	Outperformed market index
2015	Lemmon	Hong Kong	High Dividend Yield	Outperformed market index
2017	Filbeck	US	High Dividend Yield	Outperformed market index
2017	You	Taiwan	High Dividend Yield	Outperformed market index

2. Data

3. Methodology

3.1. 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 received^{See Deloitte's tax guides and country highlights: https://dits.deloitte.com/#TaxGuides}.

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 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

3.2. Portfolio Construction

First, we rebalance at the end of March and September and construct fully invested, long only portfolios. On each re balancing 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 optimizations 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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