Department of Accounting and Finance

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Surname	Britton
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SECTION 1 – Payout Policy

Question 1

Explain what is meant when researchers discuss the 'disappearing dividend phenomenon. Using empirical evidence, critically evaluate the explanations put forward to explain disappearing dividends, and make reference to recent evidence suggesting that dividends are reappearing'.

The 'disappearing dividend phenomenon', also simply decreasing dividends, occurs when a firm ether stops paying dividends or loses the ability to do so. Losing the ability may stem from delisting, mergers etc., and a variety of other factors.

The primary study surrounding this issue is Fama and French's (2001) investigation of the characteristics of firms who pay and firms who do not pay dividends. They state that, in the case of this study, they consider 'non-payers' as firms who simply do not pay dividends and 'payers as': [1] new firms making an entry to dividend payments in their year of listing, [2] firms which are choosing to begin paying a dividend and, [3] firms resuming dividend payments. On the surface, Fama and French (2001) find that there is a decrease of 45.7% in firms paying dividends over the period of 1978-1999. This study takes place over the NYSE, AMEX and NASDAQ.

Further, they outline findings that a firm with high profitability, great size, and weak investment opportunities are likely to be dividend payers. Inferred from this is low profitability, little size, and strong investment opportunity firms are likely non-payers. Table 1.1, below, outlines this in a more efficient manner. It is therefore assumed that these firms are the most evident in the 'disappearing dividend phenomenon'.

Firm Cat.	Profitability	Growth	Investment Opp.
Dividend Payers	↑	↑	↓
Dividend Non-Payers	↓	↓	↑

Table 1.1: Payer & Non-Payer Characteristics

1.1 Evidential Findings

Fama and French (2001) highlight the fact that, aligning with expectations, firms who have never paid a dividend have the greatest investment opportunities. This is due to these firms' focus on research and development and growing their operations. Firms like this tend not to value actual financial growth as much due to the fact that they are frequently run by entrepreneurs who care more for making innovations, developments and breakthroughs in an industry. In this sense, it is important that they purpose cash towards areas, such as R&D, which will allow them to arrive first at a goal. They may not have any established competition in their particular branch of their industry, in their proposed innovations, so that is why being first is important. These firms are therefore frequently financially smaller due to their goals. This is reinforced where Fama and French (2001) find that dividend payers, in their index sample, account for 93.5% of the aggregate book-value-of-assets, between 1973-1977.

Furthermore, Fama and French (2001) find that overall firm inclination to pay dividends, regardless of firm categorization/characteristics, is lower than expected. They find a declining propensity to pay dividends over the period of 1978-1998. They offer reasoning for this relating to the act that post-ate-90s, firms began to consider tax advantages of not paying dividends. However following this research, DeAngelo et al. (2004) found that from 1978-2000 the real number of dividends paid increased by 22.7%. This suggests that the overall number of firms who pay dividends did in fact decrease, in-line with the findings of Fama and French. However, many firms

began to increase dividend payments and, in effect with increased investment, increase number of dividends paid as a firm. More specifically, this increased number of dividends paid in a firm was found, in-line with expectations and general reasoning behind dividends, to increase with increased earnings.

1.2 A Different Perspective

Grullon and Michaely (2002) approach the issue from a slightly different point of view. They explore more into the reasoning behind the number of firms paying dividends decreasing. Its stated that may firms are moving to a repurchase-oriented form of payout policy, as opposed to dividend payments. Evidentially, they showed the decrease in firms paying dividends increased from 1980-2000, from 4.8% to 41.8%. In these cases, firms are found to be replacing once-dividend payouts with repurchases. In-line with a former argument regarding number of firms and number of dividends/value paid per firm, Grullon and Michaely (2002) found that firms were still paying high numbers and values of dividends but, the number of firms favouring dividends was decreasing; in favour of the number of firms favouring repurchases rising. Furthermore, the same study found that firms which are new to listing/payout policy or, haven't paid dividends in the past are becoming more likely to engage in repurchases as part of their policy. This is shown in an estimated 0.0243 probability that the discussed firms would pay dividends and an estimated 0.2962 probability that they would engage in repurchases.

Kirkulak and Kurt (2010) support prior arguments from the perspective of low-earning firms paying no dividends or paying smaller-value dividends. They find evidence of this in the context of financial crises and the subsequent lack of ability in firms to make consistent or increasing earnings. This could also be linked to debt in cases of financial distress, although there is not much evidence.

1.3 Contradictions

Michaely and Moin (2020) investigate the appearance of ‘re-appearing dividends’, where dividend numbers began to increase again. They found that between 2000-2018, dividends increased by ~36%. However, it is probable that this increase is in-line with an decrease in small (low profitability/growth) firms becoming more potent meaning there is a larger population of firms who generally opt not to pay dividends. Many firms who were once payers but opted out (decreasing aggregate dividends) but have been found to delist because of shrinking growth, meaning the listed population becomes more dominant in favour of payers. This supports previous arguments of the relative sort.

1.4 Conclusions

Overall, many studies conclude with evidence similar to Fama and French’s (2001) idea that dividend payers tend to be high profitability, of great size and have weak investment opportunities; with non-payers being of the inverse nature. The ‘disappearing dividend phenomenon’ is primarily present in firm choice, i.e. how they wish to purpose their cash., and; the fact that there is a great enough quantity of alike firms to decrease aggregate dividend value, even though many dividend payers are constantly increasing the number of dividends they pay and their value.

SECTION C – Capital Markets

Question 5

Using empirical evidence, evaluate the influencing factors that determine the balance of cash and cash equivalents held by companies, and put forward explanations as to why the level of cash held by firms has changed over time.

Many firms may wish to retain cash, as opposed to distributing it or investing it, for various reasons. These include time-varying desires for cash, precautionary movements, tax advantages and, self-interest.

[1] If a firm ever instantaneously finds itself needing cash but they have a low/no cash reserve, there are far greater costs in raising the sums they need. For example, they may have to engage in lengthy liquidation processes. This does not satisfy the potential needs for instant access to cash to fund +NPV projects. These opportunities do not always wait for cash to be raised through external methods etc. This creates a trade-off between retaining cash for potential payoff in future projects and, investing/distributing extra cash using currently practices methods.

[2] Of course, many firms practice cash retention as a risk reduction method in the sense that retaining some cash to use in financial distress is easier and safer than, for example, taking on debt to save themselves. This also involves holding a potentially 'useless' pile of cash for a period of time however, and creates another loss of potential earnings.

[3] Firms use cash holding methods to avoid paying excessive amounts of tax. For example, firms operating over-seas are likely to frequently hold cash in foreign

countries where it's earned to avoid paying taxes associated with exchange and domestic accounting/investing etc.

[4] The final reason involves the more self-interest-based idea that managers may wish to utilise cash for personal needs when there are no apparent good investment opportunities. This selfishness is spawned through bias towards self-interest over desires of shareholders, e.g. payout.

1.1 Transaction Motive

Baumol (1952) highlights the key factors in cash holding within a basic model which displays the 'optimal' amount of cash for a firm to hold at a given time. This follows:

$$C^* = \frac{\sqrt{2T(TC)}}{r}$$

Where:

C^* = Optimal Cash Level

T = Total New Cash Required for Period

TC = Fixed Transaction Cost of Selling Securities to Raise Cash

r = Opportunity Cost of Holding Cash (Interest Rate)

This model is basic and simply states that cash will be replenished in similar intervals over time. However, Miller and Orr (1996) build upon the model, adding upper and lower limits which define parameters at which a firm will either sell investments which in need of cash (lower limit L) or, make investments when cash is too high (upper limit U). They will ideally aim to fluctuate with a consistent std.dev around their optimal cash balance C. This model is further extended to 'optimise' daily cash holding and include more realistic parameters. This follows:

$$Z^* = \sqrt{\frac{3(TC)(\sigma^2)}{4r}} + L$$

Where:

U^* = Optimal Upper Cash Balance = $3Z^* - 2L$

U = Upper Cash Limit

L = Lower Cash Limit

σ^2 = Variance of CFs

$r = \left(\sqrt[365]{EAR + 1}\right) - 1$ = Interest Rate

$$\therefore Average\ Cash = \frac{4Z - L}{3}$$

1.2 Further Transaction Motive & Precaution

Opler et al. (1999) however, argues that many upper limits defined by firms are too high and that they are simply using these levels to look wealthier to perhaps naïve investors. Thus, they ask the questions: is there actually an optimal level of cash on the balance sheet? And, is a large cash holding actually justified? They argue that greater amounts of cash should always lead to higher investment, even when firms are younger, have less cash and lower-quality investment opportunities. It is gathered that generally, cash decreases with larger firm sizes due to their ease of access to cheaper debt financing etc. and better investment opportunities. It also decreases with higher-liquidity firms as more liquidity can generally take on the role cash holding plays in certain circumstances. Higher-leverage firms hold less cash also in-thought of their interest payments to lenders. Payouts are generally found to replace cash holding. And, the more regulation a firm is restricted under, the less cash it holds; likely due to fees, taxes, restricted opportunities etc.

Furthermore, cash tends to be higher in growth-oriented, even just investment-oriented, firms as even though they make many investments (R&D etc.), they require a suitable reserve to be able to fund innovations and expansions at any time, for example. Additionally, firms with higher cash volatility generally tend to hold more cash, simply to account for large impulse decreases etc. A similar rule applies for industry volatility in that, firms in risky industries tend to hold more cash to escape any more 'macro' issues.

1.3 Tax Motive

Many firms prefer to hold large sums of cash in foreign countries or make additional foreign investments to avoid the tax cost of exchanging with domestic currency. Fritz et al. (2007) find that generally, a one std.dev increase in tax cost results in a ~7.9% increase in cash. The same study finds that firms defined as having a 'high' tax burden hold ~47% of their cash in foreign locations; firms defined as having a 'lower' tax burden only hold ~26% in foreign countries. They also find that firms with higher domestic leverage are less likely to delay taxes of returning foreign cash to domestic holdings.

1.4 General Findings

Bates et al. (2009) found that cash levels generally have increased since the 1980's (to 2006); at a rough rate of 0.46%yr^{-1}. Furthermore, cash ratios of firm have generally increased by ~10.5% yr^{-1} over the same period. This is arguably related to the idea of 'disappearing dividends' where; in-and-around the 1980's, dividends payers and non-payers were found to have a roughly equivalent average cash ratio. However in 2006, non-payers' cash ratio had significantly increased, where that of payers had seen little to no trend. Primarily, it is evident that increasing cash ratios

are influenced by exiting-investors, higher CF risk, lower capital expenditure and higher impulsive/innovative/expansive investment/R&D.

Duchin (2010) extends research to precautionary diversification; stating that firms which operate in more than one industry generally look to hold lower sums of cash, primarily due to a safer spread of operations, investments and assets. They suggest ~11.9% of a 'diversified' firm's assets are cash where; firms operating in one industry hold ~20.9% in cash. These firms tend to take more 'precautionary' measures as they hold more condensed risk. This linearly translates to 'diversified' firms having 'more diverse' CFs and 'non-diverse' firms having 'less diverse' CFs.

Finally, Acharya at al. (2007) suggests that firms may use higher cash holdings as an attractive balance sheet factor. For example, a firm with a cash value greater than its debt value is considered to have 'negative debt', which can be attractive to naïve investors or extremely debt-averse investors.

1.5 Conclusions

It's summarised therefore that, throughout different requirements for time-varying desires for cash, precautionary movements, tax advantages and, self-interest; many firms adopt precise measures in order to ensure optimisation of cash levels for given periods in their lifetimes.

Optimally, firms should seek a method under which they can maximise investment using leftover cash and reserve the minimum but essential amount for any form of calculated financial distress, to avoid debt issues. Smaller, younger firms ideally should invest if they wish to develop at a competitive rate; "getting there first". Larger firms tend to prefer debt for investment as it's cheaper with scale; sometimes

targeting larger sums of retained cash only at distress. Generally, higher-taxed firms hold a greater amount of cash and, aim to reduce tax burden using foreign accounts.

Financially constrained firms with high-hedging desires tend to allocate cash to cash holdings and, constrained firms with low-hedging desires tend to allocate more cash to debt and interest payments. But, unconstrained firms frequently use excess cash to reduce and 'hold-down' debt.

Increasing cash levels, since the 1980's and throughout the 'disappearing dividend phenomenon', are evident in cases of exiting-investors, higher CF risk, lower capital expenditure and higher innovation and intellectual expansion.