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Cash flow permanence and payout policy in the Norwegian market
MSc in Business, Major in Finance
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Preliminary thesis report

Abstract

Is the permanence of cash flow linked to payout policy of companies in the Norwegian market? A study by Guay, W. and J. Harford (2000) provides insights in relation to this question for the US stock market. The authors argue that post-shock cash flows of dividend increasing firms exhibit less reversion to pre-shock levels compared with firms who conduct open market repurchases. (Guay & Harford, 2000) Thus, indicating that firms choosing dividend increases as a payout policy experience more stable cash flows than firms choosing open market share repurchases. Our thesis will focus on this aspect regarding choice of payout policy. The study by Guay, W. and J. Harford (2000) is based on relatively old US data, and open market repurchases were first allowed in 1999 in Norway (Skjeltorp, 2004). In addition, there is high quality data on share repurchases and dividends in Norway due to strict regulations which makes it suitable for research. Therefore, the motivation behind this study led us to explore whether the cash flow permanence component could help explain choice of payout policy in Norway. We also want to explore whether investors observe this choice and subsequently update their expectation regarding cash flow shock permanence. We will examine data from the Oslo stock exchange between 1995-2015 (from 1995 to capture pre-shock averages) in our study.

Introduction

Dividend payments and share repurchases are the two main methods corporations use to return cash to investors. According to Miller and Modigliani (1961), investors should be indifferent between the choice of payout policy given perfect financial markets (Skjeltorp, 2004) (Miller & Modigliani, 1961). However, findings suggests that stock repurchase have been increasingly favored over dividends (Goedhart, Koller, & Wessels, 2015), indicating that there is factors driving the choice between dividends and share repurchases. Even though share

repurchases have increased, existing theory does not give an unambiguous answer to why firms choose a payout policy over the other (Brav, Graham, Harvey, & Michaely, 2005). There are several hypotheses regarding the choice of payout method ranging from market undervaluation to prevention of dilution due to employee stock options, but in this thesis we will explore whether the permanence of cash flow shocks is related to which payout policy firms choose. A study by Guay, W. and J. Harford (2000) "The cash-flow permanence and information content of dividend increases versus repurchases" suggests and finds evidence for their *permanence hypothesis* in the US market. The persistence of cash flow shocks has different implications for the choice of distribution through dividends and share repurchases. The authors find evidence of a connection between more permanent cash flows and dividends, while more transient cash flows shocks relate to share repurchases. (Guay & Harford, 2000) Thus, indicating that managers choose payout policy by assessing the financial outlook of their firm.

Few studies have researched motives behind the choice of payout policy in Norway, as share repurchases were first allowed in 1999.(Skjeltorp, 2004) Therefore, in this thesis we will test whether the cash flow permanence hypothesis suggested by (Guay & Harford, 2000) holds for the companies listed on the Norwegian stock exchange using data from 1999-2015, and what information investors infer from managerial choice of payout policy.

Motivation for study

Payout policy is an important aspect of corporate finance - mainly because it is the tool companies use to distribute wealth to investors. A lot of publicly listed firms choose to pay out dividends and/or do share repurchases. While the two payout methods have been comprehensively studied on their own, existing theory delivers unsatisfactory answers regarding why firms choose one payout policy over the other. A study by Brav et al (2005) emphasizes this – the choice of payout policy is not really understood (Brav et al., 2005). Thus, our motivation behind this thesis is to contribute to this research area. As mentioned, according to MM-theory, investors should be indifferent between payout policies, (Miller & Modigliani, 1961) but more recent findings suggests that there are motives behind

the choice of dividend vs. Share repurchases. As Goedhart, Koller & Wessels (2005) found in their study, share repurchases have been increasingly popular relative to dividends. In fact, the researchers found that dividends were the preferred method among large US-firms until the early 1980s, but share repurchases have gradually become more popular – about 50-60% of total distributions have been share repurchases since 1998 (Goedhart et al., 2015). This trend is also backed by Grullo and Michaely in their 2002 study on the topic (Grullon & Michaely, 2002). This finding puzzled us because Goedhart et al. underlines that share repurchases is not value creating on its own which further motivates this study. (Goedhart et al., 2015; Penman, 2013)

Dividend streams lies at the core of investors understanding of intrinsic value of a company. The dividend discount model and the idea of intrinsic value was first suggested by John Burr Williams in his 1937 Ph.D. thesis. *“The investment value of a stock is the present worth of all future dividends to be paid upon it . . . discounted at the pure [risk less] interest rate demanded by the investor”* (Williams, 1938). This may contribute to explaining why companies trading in the financial market would want to smooth dividends by a minimal amount, or increase them, as dividend reductions are punished severely in the market (Lintner, 1956). Consequently, there should be trade-offs by choosing dividends opposed to share repurchases as a payout policy. Bartov, E., et al. (1998) argues that companies are more likely to distribute cash to investors through open market repurchases rather than dividend increases when management believes its stock is undervalued, management compensation packages include stock options, and the company's stockholder base is dominated by institutional investors. (Bartov, Krinsky, & Lee, 1998). Stephens, C. P. and M. S. Weisbach (1998) conducted a study on 450 firms from 1981 to 1990 where they found that firms on average acquire 74 to 82 percent of the shares announced as repurchase targets within three years of the repurchase announcement. Furthermore, they found that share repurchases are negatively related to prior stock price performance, suggesting that firms increase their purchasing depending on its degree of perceived undervaluation. In addition, repurchases are positively related to levels of cash flow (Stephens & Weisbach, 1998). The findings from Bartov, E., et al. (1998) and P. and M. S. Weisbach (1998) suggests that firms are not indifferent between

payout policy. The fact that firms choose to, on average, acquire 74-82 percent of the shares announced as repurchase targets, implies that managers utilize the flexibility share repurchases inhibits. The latter study also suggests that there is a relationship between payout policy and cash flows. The relationship between payout policy and cash flows are also confirmed by the findings of Jagannathan, M., et al. (2000). The authors found that firms experiencing permanent cash flows will tend to use dividends as a payout policy, while firms experiencing more transitory cash flows tend to use share repurchase as a payout policy. (Jagannathan, Stephens, & Weisbach, 2000). This finding could be argued to be line with Lintner, (1956). Firms who experience transitory cash flows would not want to commit to a dividend program. If they had to reduce, or hold the dividend constant in the future, it could result in a negative reaction from the market. Thus, indicating that share repurchases is the preferred choice of payout policy if the firm has volatile cash flows, due to its flexibility. This led us to Guay and Harfords article and consequently our research question.

Theory

Miller Modigliani (1961)

According to MM-Theory, investors should view dividends and share repurchases as perfect substitutes given perfect financial markets. Given an investment policy, arbitrage arguments render the choice of payout policy irrelevant to firm value, therefore shareholders should not have any payout preferences. Furthermore, shareholders should be indifferent between a payout and no payout given perfect financial markets as defined by MM

1. Equal and costless access to all information
- 2.No fees, taxes and other transactions costs
- 3.No differential between distributed and undistributed profits and dividends and capital gains
4. Rational behavior
- 5.Perfect certainty, complete assurance of future investment and profits

There is high probability that the financial market are in violation of the above definitions. However, the purpose of this paper is not to prove these violations but rather explore what determines choice of payout policy.

Extensive research has been done on studying the implications of each payout method in isolation. Pettit (1972) and Aharony & Swary (1980) document positive stock price reactions to dividend increase announcements (Aharony & Swary, 1980; Pettit, 1972). It has also been shown that reactions to share repurchases are positive as a result of information signaling (Dann, 1981). However, as this paper seeks to contribute to explaining *choice* of payout policy we present theories that can help explain why companies increasingly are using share repurchases in their payout policy.

Possible reasons for using share-repurchases

Goedhart, Koller and Wessel summarize share repurchase and dividend increase announcement as follows in their book; The action could be interpreted by investors as managers showing confidence that future cash flows are healthy enough to cover future investments and debt obligations. Second, that the company will not invest in value destroying projects. Third, a share repurchase announcement signals that management believes that shares are undervalued. Which is reinforced if management also purchases shares. (Goedhart et al., 2015)

Hence, the first reason for undertaking share repurchases is when the company management believe the market value is below the intrinsic value of the company. (Bartov et al., 1998) (Penman, 2013) Timing the repurchase has however been found to be more difficult than possibly anticipated by initiating companies After controlling for smaller companies making one-time repurchases, there is little evidence that companies are able to correctly execute on average when the market value is below intrinsic value, leading to possible value destruction. (Jiang & Koller, 2011). On the other hand several studies have found abnormal returns

following share repurchases suggesting that firms are indeed able to execute on undervalued stock. (Vermaelen, 2005). Undervaluation has been referenced extensively as reason for share repurchases (Ikenberry, Lakonishok, & Vermaelen, 1995) (Dittmar, 2000) In a management survey from 2005 - 86.4% of respondents say they repurchase when considering the stock underpriced (Brav et al., 2005)

The second reason could be a wish to increase earnings per share. This is a completely cosmetic result of share repurchase, however EPS can be a driver of firm valuation in some cases which could possibly lead to bubble like tendencies. (Penman, 2013) In the same management survey as mentioned above, 76% of respondents said that increasing EPS was a factor when deciding on using share repurchases. (Brav et al., 2005)

The third reason could be to counter the dilution effect of employee stock options. There is however risk of value destruction as the current market price of shares is higher than for exercised options, as they would not have been exercised if this was not the case. Sometimes this is done when a firm is flush with cash; which increase the chance of being overpriced, this can then result in a bubble, for EPS driven stocks as mentioned above. If the company is currently overvalued there is an increased value destroying effect. (Penman, 2013) Even so, in the same survey, 68% of respondents say they repurchase stock to prevent dilution from employee stock option. (Brav et al., 2005)

The fourth reason to initiate repurchase programs could stem from tax advantages for investors when there is a difference between taxation of capital gains and dividend payments. In Norway this would only affect foreign investors as there is no difference for Norwegian taxed investors. (Skjeltorp, 2004)

The fifth reason could be financial arbitrage. Taking advantage of a low interest environment, in combination with undervaluation by borrowing “cheap” to invest in own stock could be considered as a financial arbitrage by investors. This could be a reason if the firm is under leveraged and expect to be able to utilize its tax shield fully going forward. (Vermaelen, 2005) (Penman, 2013)

The sixth reason could be the flexibility a share repurchase program allows the company, comparing to increasing dividend payments, as companies are not obliged to repurchase all shares initially proposed to market. Companies would want to smooth dividends by a minimal amount, or increase them, because dividend reductions are punished severely in the market (Lintner, 1956). E.g. if a company is using dividends to distribute cash on a regular basis, a reduction in the dividends due to lower operating cash flow in one period would usually result in a lower share price. Hence, if the company is experiencing volatile cash flow shocks, it could be preferable to use share repurchases as payout policy. This is in accordance with Jagannathan et al article “Financial flexibility and the choice between dividends and stock repurchases” where they find that share repurchases are treated as more flexible than dividend payments by management. They also find that share repurchases are pro cyclical while dividend payments increase steadily over time. Dividends are paid by firms with more permanent operating cash flow, while share repurchases are favored by companies with more volatile operating cash flow. In general they find dividends paid following good stock market performance, and share repurchase following poor stock market performance (Jagannathan et al., 2000)

As we observe contradictory evidence whether stock undervaluation is correctly assessed by management, we would like to investigate further whether expected cash flow permanence is a significant contributor to choice of payout method. This lead us to the permanence hypothesis formulated by Guay and Harford who found similar results as Jagannathan et al. That the choice between share repurchases vs dividend payment is connected to permanence of cash flow shocks and in addition allows investors to adjust their estimate of cash flow shock

permanence and hence also their perception of intrinsic value after observing the choice of payout method.

“... the two predictions of the permanence hypothesis are: (1) the cash-flow shock preceding a dividend increase will have a larger permanent component than a cash-flow shock preceding a repurchase, and (2) the market will use management's choice of payout method to update its belief about the permanent component of the cash-flow shock” (Guay & Harford, 2000, p. 391)

Methods

As we are focusing on the Norwegian market, we will use data from the Oslo stock exchange and identify a sample of firms that exhibits one or more of the following characteristics during the sample period; they pay regular dividends, they increase or initiate regular dividend payments and /or they announce open-market repurchase authorizations. We then plan to divide the sample into firms announcing repurchases and firms that either increase or initiate regular dividend payments. Similar to (Guay & Harford, 2000) we work from the announcement date of dividend increase or repurchase authorization during a fiscal year t and then extract baseline cash flows over years $t-4$ through $t-2$. We then proceed to calculate the cash flow shock in years $t-1$ and t and the future cash flows from years $t+1$ through $t+3$. Cash flow from operations are calculated as follows in consistency with (Guay & Harford, 2000) and (Dechow, 1994):

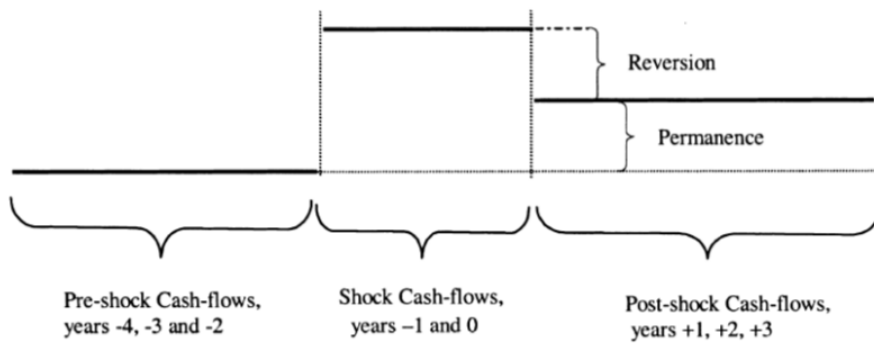
$$CFO_t = \text{Operating income before depreciation}_t - \text{Interest}_t - \text{Taxes}_t - \Delta \text{Working Capital}_t$$

We plan to scale cash flow from operations by beginning of period assets to reduce heteroscedasticity and spurious correlation stemming from firm size. Like (Guay & Harford, 2000) we plan to measure the cash flow shock by comparing average cash flow in years $t-4$ through $t-2$, with the average cash flow in years $t-1$ and t . The raw cash flow shock, reversion and permanence will be reported as follows

$$\text{Cash flow shock} = \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t \text{ and } t-1} \right) - \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t-4 \text{ through } t-2} \right)$$

$$\text{Reversion} = \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t+1 \text{ through } t+3} \right) - \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t-1 \text{ and } t} \right)$$

$$\text{Permanence} = \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t+1 \text{ through } t+3} \right) - \left(\text{Avg} \left(\frac{\text{Cash flow}}{\text{Total assets}} \right)_{t-4 \text{ through } t-2} \right)$$



The first part of the hypothesis we plan to test can be formulated as follows

$$H_{0,a}:$$

$$\text{Permanence}_{\text{Repurchasing}} = \text{Permanence}_{\text{Dividend increase}}$$

$$\text{Reversion}_{\text{Repurchasing}} = \text{Reversion}_{\text{Dividend increase}}$$

$$H_{A,a}:$$

$$\text{Permanence}_{\text{Repurchasing}} < \text{Permanence}_{\text{Dividend increase}}$$

$$\text{Reversion}_{\text{Repurchasing}} > \text{Reversion}_{\text{Dividend increase}}$$

To test the second part of the permanence hypothesis, we continue using the same method as (Guay & Harford, 2000) to test the market's reaction to the inherent signal in payout method of the permanence of cash flows. To illustrate the idea of

the investor reaction, conditional on the markets assessment of permanence we may use Guay and Harfords example.

We assume that a company cash flow shock either dissipate or is completely permanent. Furthermore, if we assume that companies distribute all of the positive cash flow shock. (I.E Nothing is retained in the company). Then, if a company receives a positive cash flow shock in period 1 the CF in period 1 will be $CF=CF+shock$. In next period the $CF=CF+P*Shock$, where P is the permanence parameter - a dummy variable taking value 0 or 1. The price of the stock will be contingent on the markets expectation of the permanence of the cash flow shock. The price of the firm in period 1 when the shock is observed will be P_1 , where $P_1 = (CF + Shock) + [CF + Pr(p = 1|\gamma)Shock]$. The managers observe the permanence parameter, p, but the market does not. Therefore, the market must assess the probability that the permanence parameter equals one based on its information at the time of the shock, represented by γ . The managers then make a distribution announcement. If the shock is permanent, they choose a dividend; if the shock is temporary, they choose a repurchase. The market observes the choice of distribution method and updates its belief about the permanence of the shock.

Given that we find evidence of cash flow shock permanence guiding choice of payout method in our research, we plan to test whether the market uses payout type to adjust its prediction of permanence of cash flows.

To test for the information content in the choice of payout method we apply a similar method as Guay and Harford for their study of the US market. They hypothesize that the market uses the payout method announcement to adjust the expectation of permanence of cash flows. To investigate we need an estimate analogous to γ in the previous section for each firm. We plan to find this estimate for each company by regressing the market adjusted buy and hold return on the eight preceding quarters to the payout announcement on its cash flows for the same period. We then deduce whether the adjusted return as high or low by

H_{AB} :

Returns following a payout announcement is dependent on choice of payout policy?

Data collection

We will extract the necessary data from DataStream. More specifically, we will acquire end-of-year cash flow from operations, total assets and cash dividends from all the companies listed on Oslo Børs (OSEAX) between 1995 and 2015. Furthermore, we need the announcement dates for all share repurchases within the period 1999-2015. As this data is often found in annual general meeting reports, obtaining it could be quite time consuming. However, we contacted Johannes Skjeltorp from NBIM who have studied share repurchases in Norway comprehensively. Johannes gave us high quality data regarding announcements of share repurchases, but we must sort out the most relevant and add data from later years, following the method used by Johannes.

Time plan for completing the thesis

End of January – Extract and normalize data set including descriptives.

End Feb – Have finished structuring all cash flows from announcing firms and ran the necessary calculations for the first part of the hypothesis testing

End March – First draft of analysis of first part done. Completed regression of two year holding period return on cash flows for announcing companies and control companies. First part (theory, hypothesis, method) updated and finalized.

End April – Analysis of first part updated for second review. Analysis of second part first draft done.

End May – Analysis part finalized. Concluding discussion draft finished.

End June – Final version ready for review.

End July – Final version

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