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Robert Kantmark
Johan Nyman

Do Dividends Pay Dividends?

- A study on the Interrelation between
Investments and Dividends

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Tutors:
Niclas Andrén
Håkan Jankensgård

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AN EULOGY

*Many's the time we've been mistaken
and many times confused
Yes, and we've often felt forsaken
and certainly diffused*

Some four hundred years ago, a man mused 'to be or not to be' and admittedly, this master thesis would probably not be if it weren't for certain beings.

We'd like to express our gratitude to our families (for being born), friends (for getting us drunk, God (for Simkhat Torah and for creating a less perfect world where dividends dwell) and Donaldson (for writing incredibly interesting books). We contemplated writing a list with people's names but decided not to, basically due to three reasons. First, the list would be too long to fit in this paper. Secondly, people would most probably complain why their names weren't heading the list. Thirdly, where was all the support when most needed?

Additionally, we'd like to acknowledge Håkan Jankensgård and Niclas Andén for continuous scorning and questioning of this genially divine paper as only true tutors can do. We do admit, the essay has in fact been greatly enhanced by their assistance. We are also particularly grateful to Niclas for allowing libel during the opponent session.

Last but not least, we'd like to thank Fazzari, Hubbard and Petersen for their interesting research and particularly for not carrying out this survey earlier – it was a brilliant idea.

ABSTRACT

The main intention with this thesis is to investigate the relationship between dividends and investments. We hypothesize that firms may be forced to cut back on investments if dividends are not curtailed in times of poor annual earnings.

According to contemporary theories, we argue that firms may be reluctant to cut back on dividends even when annual earnings decline and the level of investments will consequently be determined by the financial mobility of companies.

The survey is carried out by means of a quantitative analysis, which includes all firms quoted on the exchange of Stockholm from 1980 through 2000.

On the contrary of previous research, we conclude that even firms with high dividends can be forced to curtail investments if payouts to shareholders are maintained or increased when companies are faced with a decline in annual earnings.

SAMMANFATTNING

Denna magisteruppsats ämnar undersöka förhållandet mellan utdelningar och investeringar. Vår hypotes är att företag kan bli tvingade till att skära ner på investeringar om utdelningar till aktieägare inte sänks när företagets resultat minskar.

I likhet med samtida teorier, menar vi att företagsledare kan vara motvilliga till att sänka utdelningar trots att årliga resultat sjunker och således kommer nivån på investeringar att bestämmas av företags finansiella rörlighet.

Undersökningen är av kvantitativ art och inkluderar samtliga företag som är eller har varit noterade på Stockholmsbörsen från år 1980 till 2000.

I motsats till tidigare forskning, konkluderar vi att även företag med hög utdelningsnivå kan vara tvingade att skära ner på investeringar om nivån på utbetalningar till aktieägare är oförändrad eller höjs när årets resultat sjunker.

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Introduction

In the modern world, even smaller, local or regional companies are subjected to macroeconomic shocks and international competition. Firms operate with smaller margins and a good business concept is not sufficient to guarantee success. In order to outperform competitors, a firm has to make the right decisions at the right time. A vital part of a company's prosperity relies on its financial mobility.¹ The term financial mobility was introduced by Gordon Donaldson in 1969 and has become even more relevant in the corporate finance of today. The actual decision making is carried out by managers but a firm's financial mobility decides whether a firm is able to take the right options.

Basically, a firm should have real options that create flexibility as well as funds to maximize operations. A firm without necessary funds is considered to be financially constrained but at what point can a company actually be labeled financially constrained in the real world? There are three alternatives for a firm to raise funds; retained earnings, loans and new equity capital. When is a firm hindered to raise debts or issue new capital? The difficulty in pinpointing when a firm is financially constrained has led to a more general definition. A firm will experience financing constraints if there is a difference in the cost of capital between the three alternatives. Consequently, all firms will be more or less exposed to financing constraints.

Retained earnings are usually mentioned before loans and new equity in the pecking order since they are controlled by the firm and considered to be the cheapest alternative of the three. The opposite of retained earnings are a firm's dividends, together they constitute a firm's earnings.

Dividends have for many years been of major concern for brokers, investors and researchers. Today, dividends are frequently on the captions in the leading news in Sweden since a great many companies on the main exchange are notably increasing the annual payout to their stockholders.² Contemporarily, the old theorem saying that the price of share should decrease by the amount of the dividend, does not seem to hold which should indicate that the shareholder's wealth is even greater than before³. At a first glance, these newscasts appear to be good news to shareholders, leastwise in the short run but how about the long term gains? Are dividends a useful means that may be used to give signals of a company's future development?

Dividend policy first appeared on the academic agenda nearly half a century ago and remains one of the most analyzed puzzle in today's financial world. In 1961,

¹ Donaldson, Gordon (1969), 'Strategy for financial mobility', *Harvard University*. USA

² Dagens Nyheter, November 2, 2004 'Assa Abloy höjer utdelningen', July 28, 2004 '30 miljoner till aktieägarna, December 10, 2004 'höjd utdelning väntar aktieägare'

³ Dagens Industri, April 15, 2005 'Rekordbilliga Utdelningar'

Modigliani and Miller (M&M) declared in their legendary paper that, under certain conditions, a company's dividend policy may be irrelevant to share value since the factor that states a firm's value is the availability of investment opportunities with positive net present values⁴. However, in a world *with* tax rates, information asymmetries, agency conflicts, transaction costs and irrational investor behavior, the declaration of M&M has been extensively developed. Consequently, alternative explanations of dividend policy have arisen, for instance; dividends as residuals, taxation differences, resolution of uncertainty and owner control.

Fazzari et al (1988) argue that mature value firms pay out high dividends because the cash flow need for new investments is covered. In their framework there is a connection between the difference of cost of capital between firms and the need for internal funds to finance future investments. Younger growth firms that engage in a low dividend payout policy do so because they prefer to finance investments with the relatively cheaper capital of retained earnings. The basic conclusion is that firms with high dividends meet their investment needs while firms with low dividends may experience financial constraints and do not meet the investment needs.

The research of Fazzari's et al is carried out on American firms' liquidity in a general context. In the concluding chapter, he suggests similar studies in an isolated framework where firms are faced with decreasing earnings. This thesis studies the connection between dividends and investments in times of poor earnings and argues differently than Fazzari due to the contemporary role of dividends in business. Dividends are generally considered to be sticky for many reasons. One element that has been vastly scrutinized is the clientele effect, which distinguishes different types of shareholders. According to surveys in this area there are primarily two different types of shareholders: one that favors high dividends and another, which prefers a low payout rate. The clientele theorem engenders a situation where firms need to maintain a stable and consistent dividend policy in order to attract either clientele group.⁵

The clientele effect may rather naturally appear related to information asymmetries and many researchers argue that managers use dividends to signal firms' earnings prospects⁶ (this phenomenon is generally referred to as *signaling theories* in financial literature). The actual amount of payout is not the most important but rather the change in dividend – even a small increase in dividends may be taken as a token of an optimistic view of the firm's future profitability and vice versa.

⁴ Miller, M.H. and Modigliani, F (1961) 'Dividend policy, growth, and the valuation of shares', *Journal of Business*, 34, October, pp. 411-33.

⁵ See, for instance, Elton and Gruber (1970), Pettit (1977), Lewellen, Stanley, Lease and Schlarbaum (1978), Litzenberger and Ramaswamy (1982), Crossland, Dempsey and Moizer (1991)

⁶ See, for instance, Miller and Modigliani, 1961; Bhattacharaya, 1979; Miller and Rock, 1985; John and Williams, 1985

Therefore, managers are reluctant to increase or decrease payouts unless there has been a consistent change in a firm's expected earnings.

Researchers conclude that there is a behavior aspect of a management's decision when it comes to changing dividend levels that may explain more than financing models. A downturn in earnings will give a negative signal to the market, which will be amplified if dividends are curtailed. De Angelo et al (1996) suggest that managers may be overly optimistic about a firm's future prospects since their jobs are dependant on it.

Nevertheless, a dilemma may occur due to a firm's dividend policy if the company, contemporaneously, is facing a decrease in earnings. For instance, if a firm has various appealing venture projects and a policy of high payouts to shareholders, but cannot gain access to external capital – thence, should the company curtail investments or dividends? If dividends are sticky to the extent that investments will be cut and the pecking order holds: high dividend paying firms will in fact be financially constrained, which goes against the grain with previous and contemporary research.

Hypothesis Development

Fazzari et al assume that the pecking order holds and argue that firms prefer to finance investments by means of the relatively cheaper capital of retained earnings. Consequently, firms with large positive cash flows may finance all of their investments and still pay out a great deal of their earnings. In contemporary financial literature, high dividend paying firms are considered to be less financially constrained than companies with low payouts and thereby have an advantage in financial mobility.

We assume that dividend policy and investment decisions are driven by different managerial processes. Dividends can be explained by contemporary theories about dividend policy. Whether a firm's policy can be explained by a single theory or a combination many, is irrelevant in our research. What is essential is the fact that managers are reluctant to cut dividends, which has been confirmed in various empirical studies.⁷

We assume that investments are determined in a financial constraint framework. The character of investments is a corporate decision, which most probably varies depending on size and industry, and all projects with positive net present values should be consummated. The cost of capital determines the demanded rate of return. Managers naturally prefer the cheapest source of capital, which usually is retained earnings.

⁷ See, for instance, De Angelo et al (1996)

In these general assumptions, the role and nature of dividends are neglected. In a situation where earnings decrease, what will happen with investments? May a firm's high dividends be interpreted as a token of prosperity or will the stickiness of dividends alter the conclusions of Fazzari et al? Managers have the option to decrease dividends but are in general reluctant to do so. Will the investment behavior be affected if firms maintain or even increase dividends during periods of poor earnings? Will managers be forced to prioritize one over the other?

As mentioned before, dividends and investments may be driven by independent executive processes; yet they are closely linked via the pecking order. Our hypothesis is that the majority of firms will choose to maintain or increase dividends even in times of poor earnings. We argue that a decline in retained earnings will affect investment behavior since the cheapest kind of capital wane. Depending on a firm's access to the financial markets, investments may be reduced and companies might be financially constrained to a higher extent than before.

Fazzari et al investigate levels of dividends as well as relative changes in payouts and find similar results in both groups. Since our hypothesis is event based, we are interested in firms that may be trapped in their dividend policy. We argue that these firms will either maintain or increase dividends despite poor earnings and rather cut back on investments than payouts to shareholders.

However, the level of dividends is also of interest. We argue that high dividend-paying firms will curtail investments to a greater extent than companies with low payouts because retained earnings will be scarce and external capital will be needed to finance projects.

Conclusively, we intend to investigate how firms with high dividends, that find themselves locked up in their dividend policy, react in times of poor earnings. Contemporary literature labels these firms as financially strong due to their high dividends. On the contrary, we argue that these firms will prioritize dividends and therefore decrease investments to a larger extent. Implicitly, we assume that if executives decrease investments with positive net present values, firm value and consequently shareholder wealth will be negatively affected.

Statement of Purpose

In this paper, we analyze the relation between dividend policy and investments. We argue that the investment decision is linked to dividend policy in a situation where the firm is facing a decline in annual earnings. On the contrary of earlier research, we hypothesize that even large companies with high dividends, which would not be classified as financially constrained may be forced to cut back on investments in a situation where annual earnings decrease.

We doubt that contemporary academic research and theories provide an adequate explication since none of the previous surveys (that we are aware of) in the literature of financial constraints, succeeds to capture this survey question in an adequate manner. Consequently, our main purpose is to supply the academic gap with further explanations of how investments are affected by dividend policy.

Delimitations of Survey

This survey is based on firms that are quoted on the Swedish exchange which supply sufficient official data that is needed in the survey. The time horizon is set to 22 years (1979 and 2000) in order to engender statistically confirmed results. This delimitation is mainly due the inaccessibility of databases covering older data along with our conviction that the chosen time horizon is representative for today's firms. As a matter of fact, we make further demarcations during the sampling process but chose to present these favorably in the methodology chapter since they are a byproduct of the survey model.

Disposition

After this brief introduction, the next chapter will contemplate theoretical approaches to the enigma of why firms are financially constrained and the correlation with dividend policy. The methodology chapter illuminates our data, sampling procedure and methods in detail. In the following chapter, we will analyze our sample statistically and empirical results will be regarded from a theoretical point of view. Our conclusions of the survey are subsequently presented in the final chapter.

Theory

A short note on theories used in this thesis

This thesis focuses mainly on dividends and investments and the interdependence therein. Based on our discussion one may find numerous theories that can be linked to the subject. Our challenge is rather to find the relevant ones that can be used in the analysis and integrated in our model.

One may basically illuminate the process of dividends in a simple model with two dimensions. The first one regards how much dividends a firm should pay out to shareholders and is often referred to as dividend policy. The second one regards the ratio of retained earnings withheld within the firm, which we would address as financial mobility - a term renowned by Gordon Donaldson.

Why firms pay or do not pay dividends may be argued to be irrelevant in a statistical study. However, to derive a meaningful analysis, these theories are essential as reference points from which firms act upon. Investments in a financing perspective are closely related to the cost of capital used to finance them and comprise of financial constraints.

Dividend Policy in Perfect Worlds⁸

The irrelevancy proposition, devised by Modigliani and Miller in 1961, is one of the most influential proposals in dividend theory. The irrelevancy proposition declares that dividends are irrelevant when valuing shares because the value of stocks is only determined by the accessibility of investment projects with positive net present values. However, the irrelevancy proposition is only supposed to hold in a hypothetical world where the following presumptions can be made:

- Absence of taxes and transaction costs
- All investors are able to borrow and lend at the same interest rate
- Investors have access to all relevant information.

Under these circumstances, firms that paid out previous years' profits as dividends but need funds for investment projects, may acquire new capital by issuing new shares on the market. Investors would purchase these shares since they have access to all relevant information and neither transaction costs nor taxes would reduce shareholder wealth.

⁸ Miller, M.H. and Modigliani, F (1961) 'Dividend policy, growth, and the valuation of shares', *Journal of Business*, 34, October, pp. 411-33.

Even though firms decide to withdraw all payouts, shareholder wealth may still remain unaffected because investors can create their own dividends by selling a number of their shares since brokerage costs and taxes will not alter the profit. Consequently, even in extreme cases, for instance if managers decide to have abominably high dividends or to withdraw all payouts – share value will remain unaltered in either case.

However, shareholder value may only be enhanced when companies invest in projects with net present values exceeding the cost of equity capital (that is, the expected rate of return demanded by investors) in order to cover the opportunity cost.

Dividend Policy in a less perfect World⁹

In a less perfect world, including taxes, transaction costs and information asymmetries, another dividend policy may be adapted. If the cost of raising external capital is prohibitive [for a firm], the only remaining source of capital for investments is retained earnings. In this case, the firm is confronting only two options: either to withdraw a certain amount of dividends or abandon a number of investment projects.

Due to this situation firms have to target investments in order to yield future cash flow and dividends may only be paid out when all positive net present value projects are financed. Investors should be paid with the residuals because otherwise, the money would remain in the firm and marginal returns would be expected to decrease.

Under these circumstances, dividend payouts should only be raised when firms cannot invest retained earnings in projects with net present values exceeding shareholders' expected rate of return. Otherwise, shareholder wealth may be shattered if retained earnings are invested in projects with net present values less than shareholders' expected rate of return. Consequently, firms should lower dividends if retained earnings are insufficient to finance investment projects with positive net present values.

Concerning Stickiness

According to our hypothesis, we expect that firms will either maintain or increase dividend payouts even in times when earnings begin to fall. At a first glance, these assumptions may appear obtuse and how can one be so certain that dividends will not go hand in hand with earnings when poor times are drawing near?

⁹ Arnold G. (2002) 'Corporate Financial Management', pp. 849-850

Many surveys, which are in fact carried out in a less perfect world, state that dividends tend to be sticky. The reason why dividends are labeled sticky simply derives from the phenomenon that payouts to shareholders have a tendency to remain unchanged independently of additional factors. In times of poor earnings, dividends still tend to remain unchanged and sometimes even increase. As if a dividend payout were an sovereign entity. Obviously, that is not the case since executives in fact determine the actual level of dividends on account of various factors. The reasons why executives may be reluctant to curtail dividends are many and some of the most influential theories concerning stickiness are presented below.

The Bird-in-the-Hand Fallacy¹⁰

Another theory, which was early introduced in dividend policy, was that shareholders may be subjects to uncertainty. Myron Gordon (1963) argues that when companies are retaining earnings to finance investment projects they may in effect subject the shareholders to uncertainty since today's certain dividend payout is supposed to be enhanced by tomorrow's expected returns. Since investors' profit is anticipated to be realized in the far future they are facing a higher risk and will consequently employ an increased discount rate. Therefore, investors fancy shares offering high dividends since the dilemma of uncertainty will be diminished. This argumentation shed some light on what later became the dividend valuation model:

$$P_0 = \frac{d_1}{(1+k_{E1})} + \frac{d_2}{(1+k_{E2})^2} + \dots + \frac{d_n}{(1+k_{En})^n} + \dots$$

The essential factor here is not the actual risk but rather how shareholders perceive risk. For instance, a stock may be overvalued if shareholders misjudge the benefits of a high instant dividend and vice versa. Nonetheless, whether the risk is real or merely perceived, the basic assumption of the model sustains. Shareholders prefer stocks with high payouts and shareholder wealth may be enhanced by altering the dividend policy according to market demands.

Taxation

One of the initial explanations to the dividend puzzle is based on a tax-preference argument. Taxation of dividends is likely to have some bearing on shareholders' preferences for realizing their profits in form of dividends or by selling shares. For instance, shareholders may be inclined to cherish stocks with low dividend payouts if dividends are taxed at a noticeably higher rate than capital gains.¹¹

¹⁰ Gordon M.J. (1963) 'Optimal investment and financing policy', *Journal of Finance*, May.

¹¹ Baker K.H., Powell G.E. & Veit E.T. (2002) 'Revisiting the dividend puzzle – Do all of the pieces now fit?' *Review of Financial Economics*, 11, pp. 241-261

Despite this rather straightforward theory, the puzzle of how taxation affects shareholders' investment decisions has repeatedly been called into question. Elton and Gruber (1970) argue that there is a statistical relationship between dividend policy of firms and taxation of their shareholders. Shareholders with higher income tax rates preferred shares with low dividends and vice versa. However, these empirical findings of Elton and Gruber are renounced by Michaely (1991).

Brennan (1970) states that shareholders require increased risk-adjusted returns, before tax, on stocks with higher dividends to counterbalance for the tax drawback of these returns. Black and Scholes (1974) refute that such a tax effect exists due to inadequate empirical evidence whereas Litzenberger and Ramaswamy (1979) do proclaim its magnitude. By extension, Miller (1986) posits that tax-adjusted models contradict with rational behavior since individuals may refrain from purchase dividend-paying shares.

The Clientele Effect¹²

Most shareholders have different preferences regarding dividends, which is all due to their investment perspective. People living on their private funds may prefer shares with high dividends since they yield a relentless and stable income. This required income could obviously be realized by selling a proportion of stocks but this procedure would also bring about transaction costs in form of brokerage fees for instance.

On the contrary, some people may not fancy high imminent profits because of various reasons. One may invest in firms with high growth potential that are undertaking development projects. These companies may pay out low current dividends but contemporaneously be characterized by a higher rate of growth and thus, shareholders will obtain their returns in form of rising share prices.

On account of these contradictory attributes of people, it may appear reasonably that different clienteles favor certain stocks to match their investment features. The clientele effect may also compel managers to strive for a steady and enduring dividend policy since shareholders ought to know if a certain investment will suit their preferences or not. The share price might eventually plunge if a firm's dividend policy collide with the requirements of investors, and consequently, directors somewhat target certain clienteles.

¹² See, for instance, Elton and Gruber (1970), Pettit (1977), Lewellen, Stanley, Lease and Schlarbaum (1978), Litzenberger and Ramaswamy (1982), Crossland, Dempsey and Moizer (1991)

Agency Theory

The classic agency theory is mainly founded on the assumption that managers do not always act in the interest of owners. If this scenario holds, shareholders may be forced to demand high dividend payouts because that is the only feasible action of regaining power over the usage of their invested capital.¹³

Adam Smith adjudicated corporate executives to be neglectful in their managerial behavior and attempts to scrutinize them were rather futile due to monitoring costs and inefficiencies. Carlos (1992) argued that these finding were rather vague since corporate control devices were not perfected. By extension, managerial success was confirmed by the prolonged success of these incorporations and corporate interests generally corresponded to shareholder demands.

Contemporary research of the agency theory is rather focused on the attempts to minimize agency costs. Firms may pay out dividends to reduce agency costs since managers in effect will need to raise external capital more frequently, which will subject them to intensive control by investment professionals. To provide increased monitoring of managerial actions would also alleviate shareholders' reluctance of prospective transaction costs associated with raising external capital.¹⁴

Firms may also pay dividends to decrease the company's free cash flow with the intention of restraining managers' investment flexibility. This mode of procedure would eliminate the risk that managers invest in projects with negative net present values, which may be beneficial to themselves but disadvantageous to shareholder wealth.¹⁵ Empirical surveys assert that agency costs are lower when directors' profits depend on the development of share price, which may verify before-mentioned phenomena¹⁶.

Additionally, a dividend policy of high payouts may attract large financial institutions as owners because the tax burden of these corporations is less than for personal investors. As a rule, institutional investors are deemed to accomplish better analyses of firm performance and may use their abilities to monitor agency dilemmas.¹⁷ Empirical findings may corroborate this theory because agency costs are lower in incorporations owned by large block shareholders¹⁸.

¹³ Arnold G. (2002). *Corporate Financial Management*, pp. 855-856

¹⁴ Easterbrook, F.H. (1984). Two agency-cost explanations of dividends. *American Economic Review*, 74, 650-659

¹⁵ Jensen, M.C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76, 323-329

¹⁶ Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360

¹⁷ Allen, F., Bernardo, A.E., and Welch, I. (2000). The theory of dividends based on tax clienteles. *Journal of Finance*, 55, 2499-2536.

¹⁸ Shleifer, A., & Vishney, R.W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94, 461-488

The Signaling Theory

It is frequently argued that managers use dividend policy in order to send signals to shareholders. Unexpected alterations in dividend payouts are presumed to convey information associated with the managerial view of firms' prospects. An unexpected increase in dividend payout implies that managers believe in a promising future and an unpredicted decrease that they are anxious of imminent deteriorations in profitability. This phenomenon derives from information asymmetries which means that managers have better insight in firm prospects than shareholders and, consequently, investors need to pursue managerial tokens of corporate prosperity.¹⁹ Managers seem to aim at dividend payouts founded on long-term profitability since they may put their career at stake if signals of prosperity are deceptive. Consequently, dividend policy is considered a sign of firms' sustainable earnings.²⁰

Albeit many theorists have declared the essence of dividends as conveyors, empirical findings are rather dubious. Some surveys show that stock prices are positively correlated to changes in payouts during the days after dividend announcements²¹. Additional studies of dividend policy confirm that increased levels of payouts correlate with long-term profitability of firms²². On the contrary, many scrutinies reject the idea that alterations in dividend policy affect future prosperity of firms²³.

Behavioral Models

Many surveys have concluded that dividends tend to be *sticky*, which means that firms are reluctant to cut back on payouts. According to behavioural models, managers prefer a stable or increasing dividend policy.

Managers believe that dividends are necessary to maintain or increase share price and to attract new investors. Managers also believe that stable dividends will lessen negative investor relations because investors want to receive dividends due to their expectations of continued dividend growth.²⁴ Managers may even decide to pay out increasing dividends since they are aware that investors need to receive dividends as an indication of continued firm value.²⁵

¹⁹ Bhattacharya (1979, 1980), John & Williams (1985) and Miller & Rock (1985) are some of the many theorists that assert the signaling phenomenon as an important element in dividend policy.

²⁰ Lintner, J. (1956). Distribution of income of corporations among dividends, retained earnings and taxes. *American Economic Review*, 46, May, 97-113

²¹ See, for instance, Aquith & Mullins (1983) and Kalay & Lowenstein (1986)

²² See, for instance, Brook, Charlton, & Hendershott (1998), Bernheim & Wantz (1995) and Nissim & Ziv (2001)

²³ See, for instance, Bernartzi, Michaely, & Thaler (1997) and DeAngelo, DeAngelo & Skinner (1996)

²⁴ Lintner (1956)

²⁵ Frankfurter & Lane (1984)

Lintner (1956) concludes that managers are reluctant to cut payouts even in times of declining earnings. A possible explication for this behaviour may be that managers pay dividends since corporate culture often makes them overly optimistic about continued growth.²⁶

The Link between Dividends and Investments

After the rather detailed description of stickiness, we will once more return to our hypothesis. We argue that firms tend to maintain or increase dividends even when earnings decline. Furthermore, we claim that this stickiness may affect investment decisions negatively since the amount of earnings is declining, which is the cheapest source of capital. However, is there any reason why dividends and investments should be kindred to one and another, can they not vary independently? To warrant our hypothesis, some of the theories that can explain the link between dividends and investments are presented in further detail below.

A Strategy of Financial Mobility

As regards the question why firms should not pay dividends, we turn our attention to financial mobility. *Financial mobility is defined as the capacity to redirect the use of financial resources in a manner consistent with the evolving goals of management as it responds to new information about the company and its environment*.²⁷ A firm that is able to redirect funds flows as new information requires it to, has succeeded with a strategy for financial mobility. Otherwise the firm may be financially constrained to some extent.

According to Donaldson (1969), financial mobility consists of flexibility and liquidity. A company's liquidity is its funds and marketable securities but also other short-term investments. Funds are an efficient proxy for liquidity although short term investments are not included since a certain amount of funds is always trapped in various transactions within the business.²⁸ Flexibility refers to a firm's number of *real* options in any unexpected situation.

A firm that is valued by its dividends instead of earnings may decrease in market value if dividends are cut. Financial mobility is not focused on the value of a company at any given moment but on the continuity in funds over time so that the business can proceed forwards.²⁹

Dividends are incorporated in financial mobility by the effect they have on a company's liquidity as well as flexibility. The total amount of payouts in form of

²⁶ Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360

²⁷ Donaldson, G (1969), Strategy for financial mobility, p. 8

²⁸ Donaldson, G (1969), Strategy for financial mobility, p. 6

²⁹ Donaldson, G (1969), Strategy for financial mobility, pp. 10 and 33

dividends will decrease the liquidity of the firm. The dividend policy of any given firm will also affect its flexibility. Firms that are more locked in a certain policy will suffer in flexibility. A high level of financial mobility is critical with the aim of obtaining a desired level of investments in a dynamic environment. Depending on the character of a given company, the unexpected changes in its environment and needs for investments will differ. A company with a higher level of financial mobility will have a competitive advantage compared to competitors with similar conditions.

Financing Constraints

By definition, firms confront financing constraints if the cost of internal and external capital differs. If this definition withstands, all firms are most likely facing financing constraints since a small transaction cost of raising external funds would be adequate for categorization. Albeit extensive, the definition furnishes a means to distinguish to what extent firms are financially constrained. Accordingly, the impact of financing constraints is contemplated to escalate as the divergence between internal and external costs of capital increases.³⁰

There are various reasons why the cost of internal and external capital may differ. The price tag of a new share issues may for instance vary considerably due to numerous transaction costs such as; underwriting discounts, registration fees, taxes and administrative expenses. New share issues can also be associated with cost disadvantages because of asymmetric information. Vendors with inside information may distinguish that the real value of an asset is superior to the market price and may be reluctant to sell if less-informed buyers only offer mediocre terms of trade. This information asymmetry may cause a lower sales price than if all market actors had full information. In a new share issue situation, external investors cannot distinguish the true value of a firm and will consequently demand a premium. Due to this premium, the cost of a new share issue may rise above the opportunity cost of internal finance.

The marginal cost of an escalating leverage may be pricey because of financial distress and agency costs. Costs of financial distress arise when firms have difficulties in preserving principal and interest obligations. Agency costs can arise if the liabilities in debt contracts are limited and may produce incentives for firm managers to counteract the interests of creditors. As a rule, the gap between managers' and creditors' interest is growing as the debt-equity ratio increase. Managers may forsake profitable projects and even undertake others with negative net present value. Furthermore, managers tend to issue more debt in such situations, which increases the riskiness. Since creditors comprehend the conflicts of interest, they often require

³⁰ Kaplan, S.N., & Zingales, L. (1997). Do investment-Cash Flow Sensitivities Provide Useful Measures of Financing. *The Quarterly Journal of Economics*, 112, 169-215

special covenants that limit the behavior of managers. Covenants typically target a special pre-determined debt-equity ratio and function as restrictions to new issues of debt. This contracting dilemma is obviously not costless and furthermore restricts the financial flexibility of firms as well as the ability to finance investments when internal funds are scarce. Hence, the marginal cost may rise if firms are constrained by covenants in times when external finance is most required.

The Pecking Order

The pecking order simply illuminates that firms prefer internal to external capital in order to finance investment projects. Firms also adjust their dividend payouts to alterations in investment prospects, albeit gradually since dividend policies tend to be adhesive. Due to adhesive dividend policy and fluctuations in profitability, internal funds may be more or less than the capital need for investment. Firms will use redundant funds either to invest in market securities or to pay off debts. Firms may only alter their dividend policy if this redundancy of internal funds sustains. If there is a deficit in internal funds, firms need to seek additional resources from capital markets. In this case, firms prefer debt financing to new issues of equity.³¹

The pecking order theory may be explained by various reasons and one of them focuses on costs. Managers prefer to finance investments by retained earnings since transaction costs may be evaded and new issues of shares are more expensive than debt raising.³² Managers also prefer debt to equity because investors may perceive a new issue of shares as a bad sign. Investors tend to believe that new issues of shares will only occur when the stocks are overvalued.³³

³¹ Myers, S.C. (1984). The Capital Structure Puzzle. *Journal of Finance*, 39, 575-595

³² Myers, S.C. (1984). The Capital Structure Puzzle. *Journal of Finance*, 39, 575-595

³³ Myers, S. & Majluf, N. (1984) Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics*, June, 187-221

Methodology and Data

As stated in the introduction, this paper intends to study whether firms cut back on investments to maintain dividends in periods when cash flow commences to decrease. The survey is of deductive character, which indicates that we commence with a pre-determined hypothesis and subsequently attempt to find empirical evidence in support for our thesis. We find it suitable to perform the study by means of quantitative methods due to the nature of this research question, which means that collected data will be analyzed by means of statistical methods. A quantitative procedure will also allow for generalization of empirical findings.

Mode of Procedure

A specific model was required and developed to carry out our survey. The model is constructed to identify firms in a specific situation, as described in our hypothesis. Although our model may be controversial in financing constraints literature, we argue that it is suitable in a study like ours that combines financing constraints and dividend policy. The model is mainly inspired by De Angelo et al (1996) and further modified by the authors to suite this survey.

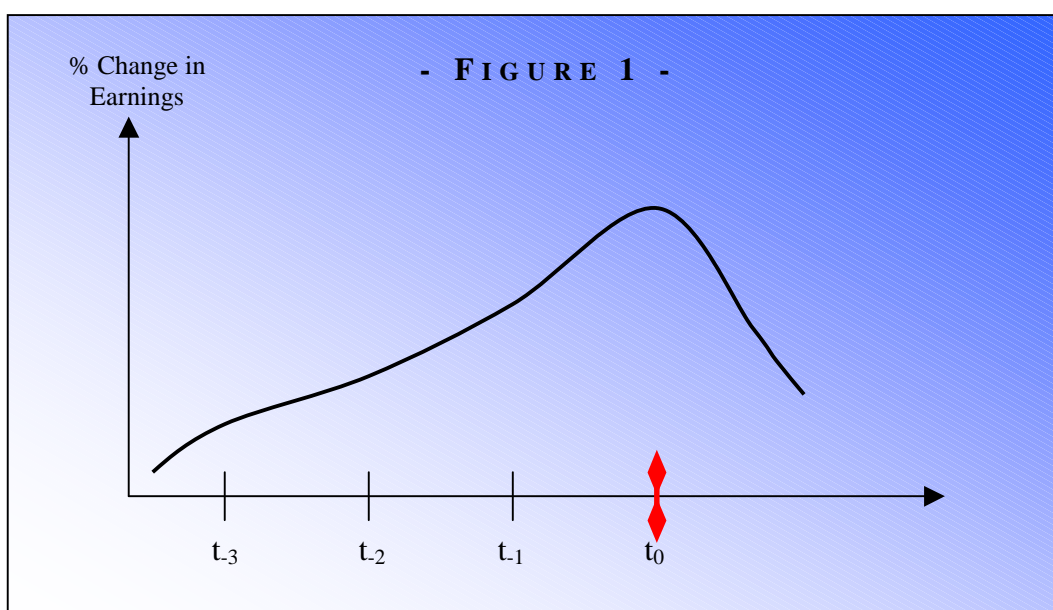
Model

According to our hypothesis, we are interested in firms that possibly curtail investments because they are financially constrained due to their dividend policy. Firms that are entangled in dividend policy while experiencing a decrease in earnings may consequently be forced to cut back on investments. From a financing constraints perspective, we are interested in firms that have a decrease in earnings and thereby cash flow. In most surveys, other variables are frequently used as a proxy for cash flow. We use earnings as a proxy for cash flow throughout this thesis since dividends are primarily set in response to annual earnings.

From a dividend policy perspective, we are also interested in what has happened before the decrease in earnings. If dividends can generally be considered sticky, are there periods in time when they are more or less sticky? We argue that a firm with a decrease in earnings after several years of continued growth is facing a critical decision in its signals to the owners. If owners demand high dividends, managers will be inclined to uphold them. Even so, it might be enough for managers to perceive their owners and the market to demand high dividends as a token of prosperity. If managers predict future growth they might raise or at least maintain dividends in order to signal these perceptions to the market. Naturally, there is also a behavioral

aspect in this case since managers may be overly optimistic in regards to their own capabilities and the firm's prospects.

How many years of past growth are needed to find firms in this situation? Generally, the more past years of growth, the stickier dividends you will find. One year of growth is not a pattern and two years is not significant enough. In order to have enough firms for our statistical analysis we have chosen three years as a minimum of continued growth, followed by a decrease in earnings. This pattern of earnings engender a situation where investors naturally would be concerned of future profits – is the decline merely temporary or permanent? Our basic model is illustrated in figure 1. The years of earnings growth are denominated t_3 to t_1 and t_0 is the event year when earnings commence to decrease.



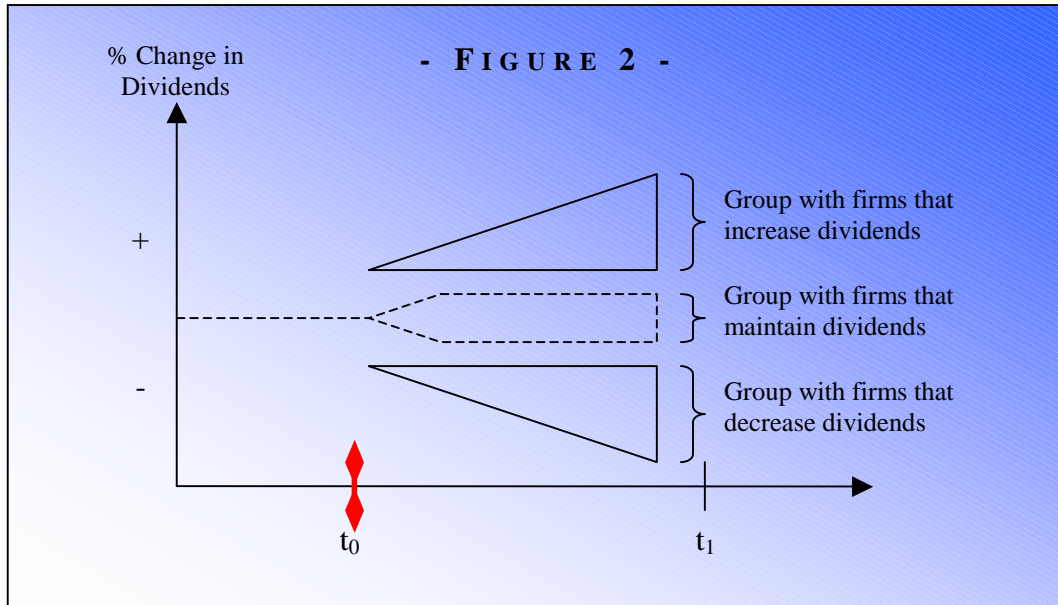
Due to the nature of our model, there is a possibility that a single firm can appear several times in our sample data since a company may experience the pattern of increasing earnings followed by a decline repeatedly during the relevant time period.

We intend to study the relation between investment and dividends and firms that do not pay out dividends are consequently excluded from the sample. Furthermore, the tails are cut off at the 1% level to omit abnormal outliers, which may be considered a standard procedure in quantitative analyses. The firms that qualify for these features constitute the sample that will be used in our analyses.

Grouping by Change in Dividends at Year t_0

When the sample is determined, the second phase is to trace firms that either maintain, decrease or increase dividend payouts, when facing a decline in annual earnings. As presented in Figure 2, the sample firms are divided into three groups at

the event year (t_0): One consisting of firms that *decrease* dividends, one with firms that *maintain* dividends (that is, the level of dividends does *not* change within one percent) and another with firms that *increase* dividend payouts. These groups will be referred to as *Dividend Groups*.



By grouping our sample in this manner, we identify firms that increase or maintain payouts to shareholders. Firms are generally reluctant to cut dividends although earnings decrease. Only companies that experience a material decline in earnings are inclined to reduce payouts.³⁴ The actual reason why firms are locked into their dividend payouts becomes subordinate. In either case, they will still increase or maintain dividends and are thereby categorized as trapped in sticky dividend policy.

The reason for this grouping is mainly due to our hypothesis. We argue that firms with sticky high dividends will curtail investments due to the scarcity of funds. On the contrary, companies that cut payouts to shareholders may use the redundant means to further investments. However, firms that have unchanged dividends in year t_0 are difficult to classify in respect to our hypothesis. They might curtail investments since the relative payout increases (earnings decrease but dividends are unchanged). On the other hand, a planned raise of dividends may be cut due to the decrease in earnings. In this case, firms with unchanged dividends would be decreasing planned dividends to have internal finance and stable investments. One may argue that these companies adjust dividends to earnings and keep internal finance available for investments.

³⁴ Donaldson, G (1969), Strategy for financial mobility, p. 289

Another grouping procedure that we had in mind was to divide the sample by payout-ratio at year t_0 . To group the sample by payout ratio would indeed be an interesting mode of procedure to analyze the importance of relative dividends. However, we will not use the payout ratio neither for grouping the sample nor in the later analysis due to the following reasons. First, we base our model on a situation where firms face declining profits and consequently there are various companies with negative annual earnings included in the sample. If we compute the payout ratio with negative values of earnings, the results would be deceptive since we cannot compare a negative ratio with a positive. A way to circumvent this dilemma would be to exclude firms with negative earnings from the sample but that procedure would also engender a situation where we would establish a survival bias in the analysis. Secondly, we do not believe that payout ratio is an essential means for grouping the sample since the theories of stickiness are founded on the actual change in dividends. For instance, if a firm's annual earnings decline but dividends remain unchanged due to stickiness – the payout ratio will increase. If executives decide to curtail dividends by an amount equal to the decline in earnings – the payout ratio will remain unchanged. These results contradict the theory of stickiness and would be hard to interpret in an analysis. Consequently, we focus on the actual level of dividends.

Grouping by Actual Degree of Dividends at Year t_0

Our second grouping procedure is also due to our hypothesis. We argue that firms with high dividends may be forced to decrease investments in a period of poor annual earnings. To examine if the investment decision differ for firms with low and high dividend we divide each *dividend group* into two new groups, based on the actual level of payouts. The first consists of the firms with high dividends and the second of companies with low payouts. The borderline between high and low will be determined by the median value and consequently, each group will contain the same number of firms when possible. These groups will be referred to as *Size Groups*.

Model Summary

Our sample will consist of firms with a decrease in earnings after a minimum of three consecutive years of growth. These firms will be divided into dividend groups at year t_0 in order to categorize firms with sticky dividends. The three groups will be named after their dividend decision in t_0 , increasing, constant or decreasing. Each dividend group will be divided into two size groups with high and low dividends. Firms with high payouts that have increased or maintained dividends in periods of decreasing earnings will be identified which is required by the hypothesis. These firms will be

analyzed and compared to previous research in the area of financing constraints as well as compared with the remaining firms in our sample.

Control Variables

Rather obviously, a firm's investments are depending on further factors than dividends, for example, annual earnings could easily be argued to be of utmost importance. An increase in a firm's annual earnings also raises the available funds or cash flow within the company, which may be used either to invest in further projects or to pay out dividends to shareholders.

A number of variables affect the investment decision of a firm and must be filtered in our survey in order to investigate the relation between investments and dividends. The cash flow in each company is considered vital to the investments and will be included as a control variable. The amount of funds at the end of each firm year in relation to total capital is of interest. If firms were restrictive with cash, a sizable reserve would build up during a few years. A decrease in earnings may then not affect investments since the firm may use the oversized amount of cash to withhold investments and thereby conflicts with our hypothesis.

Firms on the stock exchange will have access to financial markets that can be utilized to raise capital. One can argue that a company could finance investments by new issues of debt, which would have the same effect on our results as funds. Consequently, we include funds and debts as control variables in our analyses.

Tobin's Q (later referred to as Q) is a ratio frequently used to measure a firm's ability to invest and will naturally be included as an additional control variable in the analyses. We compute Tobin's Q as is illustrated below. Firms with Q values exceeding one should have access to a superior investment set and have a higher propensity to invest, compared to companies with Q values less than one.³⁵

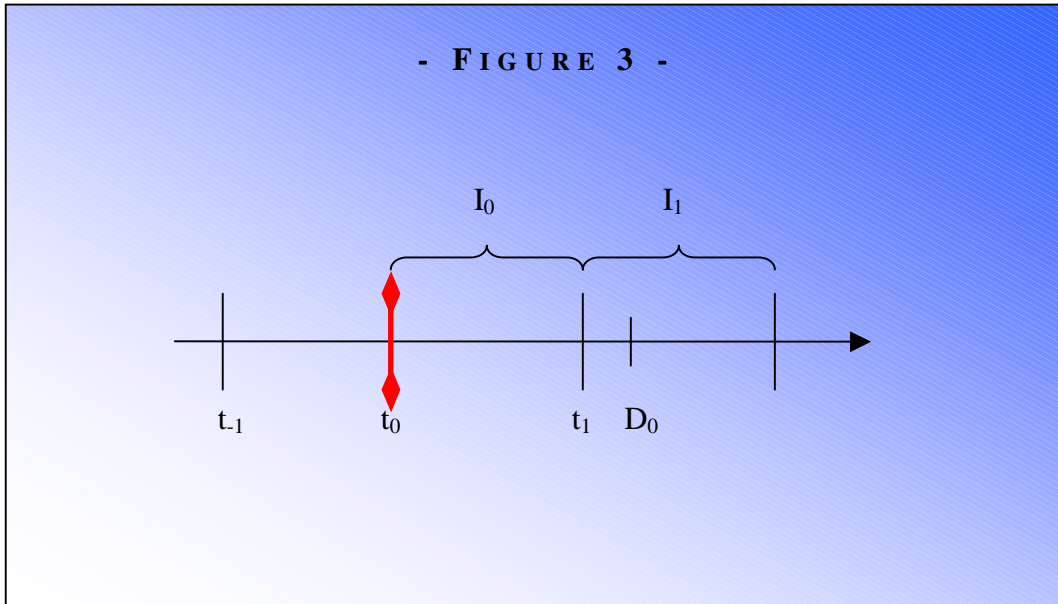
$$\text{Tobin's } Q = \frac{\text{Equity}_{\text{Market Value}} + \text{Debt}_{\text{Short Term}} + \text{Debt}_{\text{Long Term}} - \text{Assets}_{\text{Short Term}}}{\text{Total Capital}}$$

Regarding Time Lags

The time lag between firm years and dividend payouts is examined carefully. Dividends in year t_0 are generally paid to shareholders in the first half of year t_1 . The lag between firm year and dividend payout might lead to a time lag between dividends and investments. We identify two possibilities.

³⁵ Ross et al (2001), Corporate Finance

- (i) Firms may decrease investments in year t_0 in order to fulfill dividend payments for year t_0 .
- (ii) Firms may decrease investments in year t_1 when the actual dividend payment for year t_0 is transferred.



We argue that firms with increasing dividends are following a predetermined strategy and therefore may cut investments in advance. Firms that maintain or decrease dividends are either reacting to the decline in earnings or following a strategy why it is complicated to answer when investments are affected by the dividend strategy. Companies with constant dividends may cut investments in year t_1 as a reaction to the dividend payout which is transferred in early t_1 .

Descriptive Statistics

All groups will be examined by means of descriptive statistics to illuminate eventual differences in firm features. First, the general growth rate of all sample firms will be examined. One may argue that the macroeconomic impact may influence our results, which will be discussed when displaying in which time period our sample firms appear. A brief assessment of the total sample's appearances will also be carried out. However, any industry specific disparities will not be examined.

Subsequently, the sample will be analyzed when divided into dividend groups and size groups. Variables included in the regression analyses as well as market values will be described by mean and median values. Differences in mean values for all subgroups will be statistically determined by F-tests in a variance analysis to derive conclusions. Each regression analyses will be preceded with a descriptive table as an introduction to the variables in the sample.

Regression Analyses

After the descriptive statistics, we will determine the direct relation between certain variables. Our main concern is to evaluate how investments change in relation to dividend payouts and we examine this inter-relation by means of linear regression analyses, computed by the basic OLS-method. The regressions will be calculated with the following equation:

$$\Delta Investments_t = \alpha + \beta_1 * Dividends_t + \beta_2 * Earnings_t + \beta_3 * Fundsratio_t + \beta_4 * Debratio_{t-1} + \beta_5 * TobinsQ_t + \varepsilon$$

This regression will initially be computed for all the dividend groups (see above) and subsequently for all dividend groups divided into size groups with either high or low dividends. To examine potential time lags we will perform each regression on the change in investments in year t_0 as well as the change in t_1 . In a regression on year t_0 , initial values of funds, debts and Tobins Q at t_0 will be included as well as earnings and dividends in year t_0 . In a regression on year t_1 , dividends will derive from year t_0 , remaining variables will be from year t_1 .

Investments, dividends and earnings will be standardized by the total amount of capital. By definition, the debt ratio, funds ratio and Tobins Q will also be divided by the total amount of capital. All variables will be logged to have normally distributed values.

Database and Variables

We have gathered utmost all data in this paper from the database Sixtrust. However, Sixtrust is a somewhat incomplete database and we completed our sample by summoning missing data from prime sources such as annual reports. As a quantitative study, the initial data consist of all firms quoted on the Swedish exchange between 1979 and 2000. We chose 1979 as our starting point because necessary data were available only from this year onward. Furthermore, the 1979 data were only used to construct lags. 2000 is the last year of the study since repurchase of stocks was legalized in Sweden as of this year³⁶. Hence, the year 2000 becomes a natural breaking point and calculations for repurchases of stocks will not be necessary. Annual changes in earnings will be displayed from the year 1980 through 2000, which creates a sample that will be generalized unto the quoted firms of today. Various firm specific variables were needed to perform the intended sampling and regression analyses and a brief description of these is provided below.

- *Market Value of Equity*: The price of the share times the number of outstanding shares.

³⁶ SFS 2000:66

- *Value of Equity*: Firm equity is based on the book value of adjusted total equity.
- *Value of Debt*: Firm debt is based on the book value of short-term and long-term debt.
- *Value of Total Capital*: Defined as the book value of debt plus the book value of equity.
- *Value of Internal Funds*: By definition all available short-term funds within a firm.
- *Value of Short Term Assets*: The book value of total short term assets.
- *Earnings*: Income after interest, taxes, depreciation and amortization.
- *Dividends*: the amount of profits paid to ordinary shareholders out.
- *Value of Investments*: The book value of investments including costs of new establishments and adjusted for depreciation.

All variable values refer to the end of each year and are presented in annual terms.

Criticism of the Sources

It is important to question the correctness of our sources' information. All presented information and data in this paper derives from reputed databases, journals and academic institutes. It is our belief that our sources are reliable even though they present secondary data. We have performed a number of random tests to ensure that our secondary data corresponds to primary data presented by individual firms.

Validity and Reliability³⁷

By definition, the validity of research implies that one is actually scrutinizing the intended thesis or survey question and as a rule one makes a distinction between internal and external validity.

Internal validity contemplates the project as such and the connection between theory and empirical findings. Svenning (1999) mentions the conception of face validity, which means that concordance is achieved between theory, empirical findings and validity of contents, that is, all aspects of the research question are considered in the course of survey. In this paper, we strive to obtain both face validity and validity of contents by means of retrospect along with regular controls of the survey.

External validity deals with the comprehensive picture of a project as a whole and the possibility for generalization by means of a specific survey. One may argue that this study can be used for generalization since the survey is of quantitative nature

³⁷ Nyman, J., Ragnar, J., Ekelund, J. & Olsson, M.L. (2003). Lojalitetsprogram och kundkort – utformning och användning. *School of Management and Economics, Lund University*.

and consists of all companies that are quoted on the Swedish exchange. However, developing new theories is not the main intention with this survey but rather confirming and revising previous international research. Nonetheless, we comprehend the eventual dilemmas associated with external validity and, therefore, analyze and present empirical findings with scrupulous impartiality throughout the scrutiny.

Another factor of utmost importance for the trustworthiness of the survey is the reliability of results. If a sample remains one and the same, two discrete observations with indistinguishable purpose and methodology ought to result identical conclusions³⁸. As a rule, the necessity of reliability is higher in quantitative research since such surveys are generally associated with a generalizing character³⁹.

Svenning⁴⁰ contemplates various sources of error related to certain procedures in the course of research that should be taken into consideration since they may affect the result of the survey:

- Coding errors – Data can be misconstrued due to deficient preparations, instructions or negligence. The coding process in this survey has been accomplished by great vigilance along with retrospective control and coding errors should consequently be avoided or minimized.
- Theoretical fallacies – The theoretical linkage becomes erroneous or inadequate. Genuine inspection and questioning are of essential value in order to circumvent erroneous conclusions.
- Technical fallacies of analysis – If one misconstrues data, excludes essential variables or applies erroneous statistical measures, the conclusion may be founded upon tenuous evidence and consequently be deceptive. Again, genuine inspection and questioning are of essential value in order to circumvent erroneous conclusions.

³⁸ Svenning, C. (1999). *Metodboken*. Lorentz

³⁹ Davidsson, B. & Patel, R. (1994). *Forskningsmetodikens grunder*. Studentlitteratur.

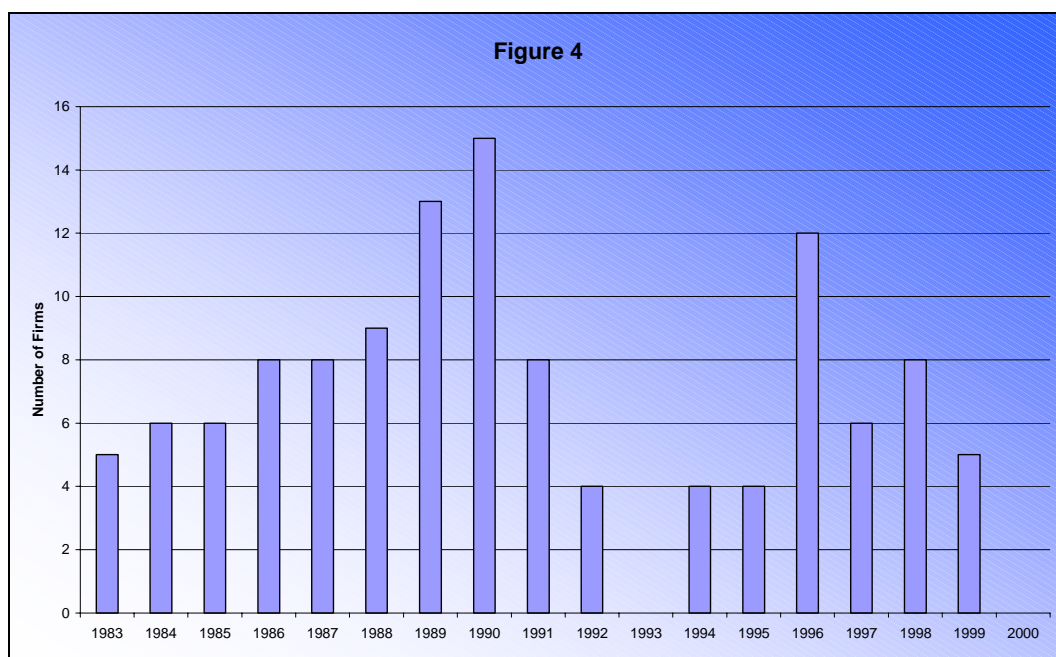
⁴⁰ Svenning, C. (1999). *Metodboken*. Lorentz

Empirical Analysis

The original data consisted of all firms quoted on the Stockholm stock exchange from 1979 to 2000. Our model allocates 135 firms that have a decrease in earnings after a minimum of three consecutive years of growth. When the sampling procedure is completed (accordingly to our methods states earlier), the data consist of 121 firms that are allocated over 18 years. 12 firms were excluded as they do not pay dividends and one firm is excluded at each tail to eliminate extreme values in investments.

In this sample, we find 24 companies appearing twice and 3 firms that are represented thrice. Our results could be biased if these 27 firms, which represent 57 cases of our 121, always chose the same dividend policy at t_0 . Fortunately, 10 of 27 firms employed a different strategy when faced with decreasing earnings. Of 121 firms, 78 (64%) firms increased, 29 (24%) maintained and 14 (12%) decreased their dividend payments. Of the 57 cases we find a similar pattern where 40 (70%) increased, 12 (21%) maintained and 5 (9%) decreased dividend payments. We conclude that the reappearing firms should not bias our results since more than a third change strategy and the pattern corresponds to the sample as a whole. We will begin our analysis by examining in which years the sample firms are encountered.

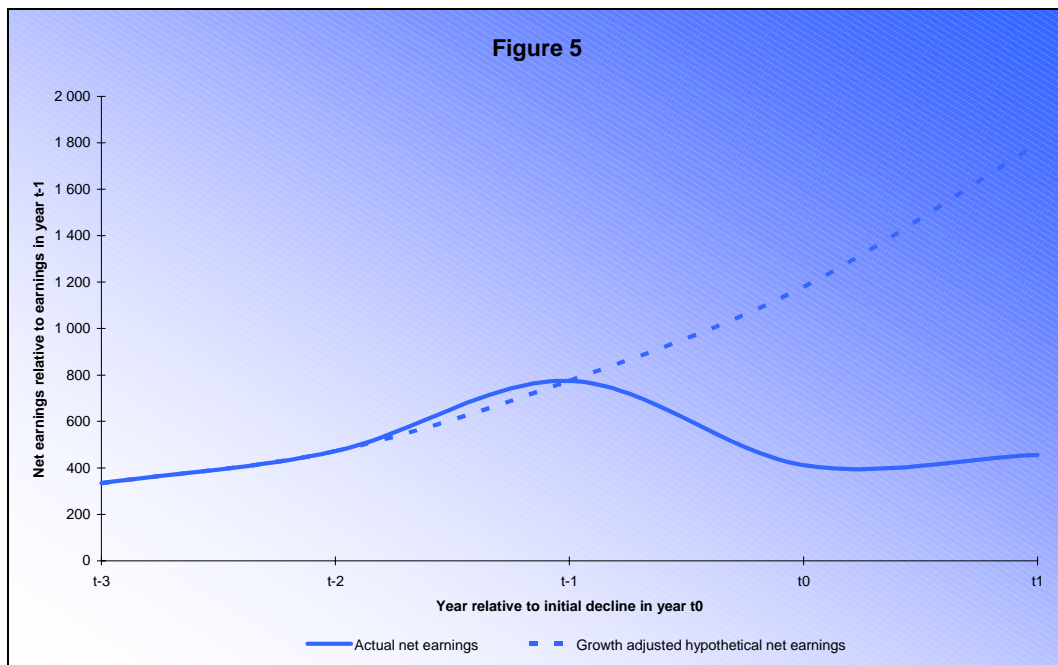
Distribution of Sample Firms along Time Period



As presented in figure 4, 1983 constitutes the first event year in our study because 1979 is only used as lag year to calculate earnings growth for 1980. Consequently, firms could experience growth from 1980 through 1982 and a decrease in earnings

can appear earliest in 1983. As may be seen in the graph, the majority of our sample firms experience a decline in the late eighties and in the beginning of the nineties. This result may be a natural outcome since the later half of the eighties was characterized by an immense overall increase in the Swedish economy. Our peak years, 1989 and 1990, may be explained by the fact that our sample firms had the opportunity to flourish during the previous economic boom and later presented decreasing results due to the stagnation in the Swedish economy. The minor representation of sample firms during the heavy depression in Sweden (peaking in 1992) may be logical: The time interval between the economic boom and depression did not allow for the possibility of three consecutive years of positive earnings growth. Companies were facing difficulties in maintaining the growth of the eighties and earnings continued to fluctuate in the early nineties. Not a single company experience consecutive growth in earnings during the years 1990 through 1992. Moreover, the pattern proceeds from 1993 through 1995, when firms were able to experience continuous growth, followed by a decline in 1996. Residual firm years in our analysis have cases in the region of or below average and are not further commented.

Average Annual Earnings Revisited



Our sample data has an average growth rate in earnings equal to 52 percent per year, t_{-3} through t_{-1} . This is a relatively high rate of growth but may be a logical result because the majority of our sample firms are encountered during two economic

booms. The high growth rate is followed by a noticeable adjustment when earnings seize the pattern of growth and decline in year t_0 . As presented in figure 5, the hypothetically continued growth rate corresponds to the dotted line in the graph. The actual earnings growth is depicted by the bold line and corresponds to a 47 percent decline in year t_0 . Earnings increase with 130 percent from year t_3 to year t_1 and could theoretically increase with 250 percent into year t_0 . With the decline in earnings in year t_0 , the actual increase adjusts to a modest 23 percent for the whole period of four years. The difference in the development of earnings implies that our argument for the model stands true. Facing such a downturn in the growth of earnings, investors and shareholders would be interested in every signal given by the company regarding the future, especially the dividend policy.

Analysis of Dividend Groups

Table 1 below contemplates the sample during all years when grouped by dividend policy in year t_0 . The *increasing* group (firms that increase dividends) consists of 78 firms and *constant* (firms that maintain dividend) contains 29 companies. The *decreasing* group consists of 14 firms. We consider that these results verify our expectation that firms are reluctant to cut back on dividends in times of poor earnings due to stickiness. Even though the average decline in annual earnings amount to 47 percent – almost 90 percent of our sample firms either maintain or increase dividends at year t_0 .

All variables used in the regression analyses as well as the average market value of firms are included in the table to describe the sample. As may be seen, the market value increases from t_3 until t_1 and all dividend groups follow this pattern. However, the pattern tends to vanish in year t_0 , where the market value for the group with increasing dividends doubles. The market values for firms with decreasing and constant dividends rather appear to decline. This may be caused by the fact that annual earnings for *increasing* do not fall to the same extent as for *decreasing* and *constant*. According to the median of market value, one may argue that *increasing* is characterized by relatively larger firms than *constant*, whereas *decreasing* contains the smallest companies.

Although the market value between the dividend groups differs, the smaller firms in *decreasing* appear to invest at least as much as the other two. The results imply that firms in *decreasing* can be categorized as growth firms. We find no significant differences in investments in years t_3 through t_1 between the three groups.⁴¹

⁴¹ See Appendices B

TABLE 1

Summary Statistics for Firm Characteristics by Variables, All Years

Variables by Dividend Group			t ₃	t ₂	t ₁	t ₀	t ₁
Market Value	Increasing	Mean	5 369	7 199	9 160	18 558	16 150
		Median	1 162	1 432	2 344	2 469	2 051
	Constant	Mean	4 378	5 958	7 419	6 785	8 038
		Median	758	1 273	1 440	1 475	899
	Decreasing	Mean	4 569	5 591	7 329	6 004	5 661
		Median	476	437	608	580	556
Investments	Increasing	Mean	629	1 090	1 055	1 336	1 389
		Median	213	246	310	357	428
	Constant	Mean	999	905	1 075	1 488	1 499
		Median	110	116	152	204	137
	Decreasing	Mean	460	1 126	1 779	760	668
		Median	145	89	180	111	329
Dividends	Increasing	Mean	109	141	169	193	218
		Median	23	37	54	59	56
	Constant	Mean	149	298	227	228	225
		Median	22	29	35	35	33
	Decreasing	Mean	133	146	195	132	133
		Median	15	20	25	14	10
Earnings	Increasing	Mean	288	456	633	445	525
		Median	53	118	170	78	92
	Constant	Mean	433	516	911	318	335
		Median	65	90	143	59	79
	Decreasing	Mean	403	477	1 306	413	316
		Median	53	63	93	7	37
Funds ratio	Increasing	Mean	6,79%	6,44%	7,04%	5,80%	5,45%
		Median	4,79%	4,49%	4,60%	3,57%	3,51%
	Constant	Mean	8,48%	7,58%	7,42%	6,99%	5,77%
		Median	8,43%	6,31%	6,70%	5,47%	4,72%
	Decreasing	Mean	7,81%	8,08%	7,43%	5,35%	5,55%
		Median	4,72%	5,19%	3,67%	4,68%	3,44%
Debt ratio	Increasing	Mean	68,20%	66,96%	64,33%	64,20%	65,13%
		Median	74,12%	70,52%	69,40%	67,29%	71,82%
	Constant	Mean	69,32%	67,68%	64,31%	63,58%	62,36%
		Median	75,03%	72,32%	68,53%	71,83%	66,21%
	Decreasing	Mean	66,43%	65,69%	60,50%	58,95%	56,17%
		Median	61,95%	62,83%	61,96%	58,15%	55,54%
Tobin's Q	Increasing	Mean	0,99	1,03	1,00	1,07	1,03
		Median	0,83	0,89	0,88	0,84	0,81
	Constant	Mean	0,79	0,91	0,94	0,86	0,87
		Median	0,69	0,74	0,76	0,71	0,66
	Decreasing	Mean	0,89	0,85	0,70	0,65	0,63
		Median	0,95	0,83	0,64	0,65	0,64

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78, Constant: 29 and Decreasing: 14. The average value of Earnings, Investments, Dividends and Market Value are presented in million SEK. Funds and Debt ratios are presented in percent. Tobin's Q is the ratio, which is displayed in detail in the methodology and data chapter.

As can be seen in table 1, the mean values of investments seem to increase for the groups *increasing* and *constant* in year t₀, whereas they decrease for *decreasing*. The levels of investment are somewhat stabilized in year t₁. At a first glance, our results imply that the conclusions of Fazzari et al can be applied to our sample as well. However,

there are no significant changes in investments between the different years, which prevent us from drawing any direct conclusions about how firms react in year t_0 .⁴²

We cannot identify any significant differences between funds and debt ratios, neither between the different groups nor for the annual change in each dividend group.⁴³ The summary statistics implies that all firms have similar preconditions regardless of their dividend choice in t_0 . The funds ratio varies around five percent of total capital which we consider reasonable. The debt ratios range from 56 to 75 percent, which may be considered strikingly high compared to American firms. In the study of Kaplan & Zingales (1997), firms with debt ratios over fifty percent are considered financially constrained. If firms are prevented from issuing new debts they will be facing more financing constraints and the negative effect of dividends on firms' financial mobility will be more substantial. However, any direct conclusions cannot be drawn without further investigation of Swedish debt ratios.

The rather low values of Tobin's Q suggest that all firms be hindered to consummate further investments. However, we are skeptical to such conclusions and may only speculate in whether the consistently low values of Tobin's Q are caused by some kind of market phenomena. Since our sample includes larger value firms we should not have a bias towards smaller growth firms that might have lower Q values.

The preceding table has made an effort to describe the variables used in the regression analyses below. Table 2 displays the results of regression analyses when the dependent variable equals the percentage change in investments in year t_0 . As mentioned in the previous chapter, we anticipate that there might be an eventual time lag between dividend payouts and their actual effect on investments. We expect that firms with increasing dividends follow a pre-determined strategy and may consequently reduce investments already during year t_0 .

TABLE 2

Regression Results when Dependent Variable Equals Percentage Change in Investments t_0

		(Constant)	Dividends t_0	Earnings t_0	Funds ratio t_0	Debt ratio t_0	Tobin's Q t_0	Sig. F-test Adj. R ^{2*}
Increasing	Coef.	-1,6841	-0,3873	-0,0751	0,0396	-0,3366	0,1034	(0,205)
	Sig.	0,0323	0,0636	0,6390	0,5829	0,1610	0,6417	[0,031]
Constant	Coef.	3,2506	0,6059	-0,1024	0,2246	0,8900	0,1098	(0,347)
	Sig.	0,1513	0,1571	0,4730	0,1951	0,2551	0,6053	[0,038]
Decreasing	Coef.	-1,3507	0,2522	-0,3045	0,1052	-3,1912	0,0178	(0,149)
	Sig.	0,8100	0,8241	0,5539	0,8503	0,0528	0,9879	[0,461]

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78, Constant: 29 and Decreasing: 14. * Numbers within parentheses () display the significance of the F-test and numbers within brackets [] display the Adjusted R².

The coefficient for *increasing* is in fact negative and significant, which informs us that investments will be cut by 0,3873 percent for every one percent increase in

⁴² See Appendices A

⁴³ See Appendices C and D

dividends. The coefficients for dividends in the remaining dividend groups are not significant but positive, which implies that investments could increase along with dividend payments. The low number of firms in the *decreasing* group complicates our analyses and we remain careful in drawing any concrete conclusions. The adjusted R² value for increasing is not impressive and shows that our model does not explain more than 3,1 percent of the investment decisions but we *do* find initial results that contradict previous research. Firms that increase dividends are interpreted as not financially constrained by Fazzari et al (1988) but our results show that these firms in fact curtail investments in times of poor earnings.

The debt ratio coefficient of *decreasing* is negative and significant but may be caused by the low number of sample firms. Remaining coefficients are not significant but a few indicate somewhat intriguing results. The debt ratio of *increasing* is not far from significant with a negative coefficient, which implies that investments would decrease if debts were raised. As mentioned earlier, we include the debt ratio as a control variable since debts could be used to finance investments. The negative coefficient for *increasing* leads us to believe that debts are not used to finance investments but rather to pay out dividends and cover costs. There is a risk that firms' costs may be carried by debt when dividends are raised to the point that investments are curtailed. This reasoning implies that the effect of dividends might be even more extensive than we hypothesized. Internal funds may not only decrease to the extent that firms curtail investments but debts might also be needed to cover business costs. If the pecking order holds, firms will be financing their operations with more expensive capital which will be harmful to the firm value.

All firms have negative coefficients in earnings which go against the grain of all theory and logic. If earnings increase, a company should find themselves less financially constrained and investments should increase if the availability of projects exist. We identify two possible explanations and one need not exclude the other. First, earnings could be a poor measure of cash flow. If that explanation is correct, the remaining regressions will show similar patterns. However, investments opportunities might be scarce since our sample firms are encountered in economic booms and depressions, which could explain why firms do not increase investments although earnings increase. According to contemporary theory and logic, an increase in funds and Tobins Q will lead to increasing investments which corresponds to the positive coefficients.

The next regression in table 3 includes the percentage change in investments during year t_1 . If there is a time lag in *decreasing* and *constant* between the investment decision and the dividend payment, it will be unveiled in this regression.

TABLE 3

Regression Results when Dependent Variable Equals Percentage Change in Investments t_1

		(Constant)	Dividends t_0	Earnings t_1	Funds ratio t_1	Debt ratio t_1	Tobin's Q t_1	Sig. F-test Adj. R ^{2*}
Increasing	Coef.	0,9151	0,1634	-0,0890	0,0704	0,1113	0,2833	(0,4430)
	Sig.	0,2145	0,4117	0,4408	0,2939	0,5842	0,0993	[-0,002]
Constant	Coef.	-8,4288	-1,7882	0,1200	0,0918	-3,0462	-0,2616	(0,0160)
	Sig.	0,0075	0,0046	0,4219	0,5984	0,0022	0,3714	[0,347]
Decreasing	Coef.	-0,5926	-0,3058	0,1475	0,1278	-0,8816	0,3181	(0,6940)
	Sig.	0,8723	0,6532	0,8285	0,7412	0,7199	0,5257	[-0,263]

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78, Constant: 29 and Decreasing: 14. * Numbers within parentheses () display the significance of the F-test and numbers within brackets [] display the Adjusted R2.

The coefficients for dividends are in fact negative in both *decreasing* and *constant*, but what is more interesting is that the coefficient for dividends in the *constant* group is highly significant. Furthermore, the whole model has a significant F-value and a high explanation rate of 34,7 percent. A one percent increase in the level of dividends in year t_0 will cause a 1,7882 percent decrease in investments in year t_1 . Since earnings and dividends are stable in t_0 and t_1 (see table 1), we conclude that there is a time lag between dividends and investments for firms that maintain dividends. Investments are cut in year t_1 when the dividend payment is transferred. These results confirm our hypothesis and are not consistent with the findings of Fazzari et al (1988). What is more striking is that the coefficient for the debt ratio is substantially negative and significant. We find similar patterns in table 3 as in table 2. Firms that decrease investments in response to maintained or increased dividends are not able to use additional debts to raise investments. We reason that debts are used to pay dividends and cover costs.

The Q value of *increasing* is close to significant and indicates that, according to theory, an increase will lead to a raise in investments. However, the Q value of *constant* is negative which is puzzling. In table 1 we concluded that there are no differences in how the Q value changes from year to year. Nor did we find any differences in Q values between our dividend groups. Could it be that Swedish firms with higher Q values do not have the ability to increase investments or do they simply choose not to do so? We leave the issue open for future investigations. Earnings for *increasing* still report a slightly negative coefficient which is insignificant. Remaining variables are not significant but have coefficients that are in line with contemporary theory.

Analysis of Size Groups

Table 4 presents mean and median values for all variables used in the coming regressions. Our analysis continues along our model and we investigate firms with

high and low dividends in each dividend group. By means of this grouping procedure, we can categorize firms that might be locked into a *high* dividend policy in year t_0 . These firms are really the core of our hypothesis and the reason for our specific model.

The average market value is higher for firms with high dividends compared to companies with low payouts to shareholders. The difference is statistically significant in the case of *constant* and *decreasing* and close to significant in the case of *increasing*.⁴⁴ Firms with high dividends in our sample are large firms, which in fact supports research and theories in the area. We find significant differences between low and high dividend paying firms in the mean values of investments, dividends and earnings for all dividend groups.⁴⁵ Firms with high dividends have a higher market value, invest more, pay out more dividends and have higher annual earnings. However, high dividend paying firms in the *increasing* group in t_0 are not significantly different from high dividend paying firms in *constant* or *decreasing*, regarding the four previously mentioned variables.⁴⁶

TABLE 4

Summary Statistics of Sample Firms when Divided by Dividend and Size Group

Variables		Increasing		Constant		Decreasing	
		Low Dividends	High Dividends	Low Dividends	High Dividends	Low Dividends	High Dividends
Market Value t_0	Mean	758	36814	519	13052	199	11808
	Median	527	6911	355	5026	171	4685
Investments t_0	Mean	247	2453	60	2917	115	1404
	Median	97	1164	55	716	88	995
Dividends t_0	Mean	17	374	11	444	6	258
	Median	12	213	8	163	8	115
Earnings t_0	Mean	40	861	24	612	-1	828
	Median	30	361	17	254	1	450
Funds ratio t_0	Mean	0,09	0,06	0,07	0,07	0,11	0,04
	Median	0,06	0,03	0,07	0,05	0,07	0,03
Debt ratio t_0	Mean	0,66	0,62	0,59	0,70	0,71	0,50
	Median	0,74	0,66	0,60	0,72	0,75	0,49
Tobin's Q t_0	Mean	0,96	1,04	1,05	0,82	0,68	0,72
	Median	0,93	0,81	0,77	0,72	0,82	0,63

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78, Constant: 29 and Decreasing: 14. The average value of Earnings, Investments, Dividends and Market Value are presented in million SEK. Funds and Debt ratios are presented in percent. Tobin's Q is the ratio, which is displayed in detail in the methodology and data chapter.

⁴⁴ See Appendices E

⁴⁵ See Appendices E

⁴⁶ See Appendices F

Regarding the remaining variables, we find no significant differences between mean values in dividend groups or size groups for the funds ratio, debt ratio and Tobins Q, except for one.⁴⁷ Firms with high dividends in *decreasing* have a lower debt ratio than firms with low dividends. If we have value firms in the group of companies with high dividends, they should theoretically have higher debt ratios since it is harder for smaller growth firms to finance by debt due to information asymmetries and agency conflicts. Again, we find results that contradict theory but it is difficult to draw conclusions since we only have fourteen firms in *decreasing* (seven with high dividends and seven with low). It is possible that the general theory about firms' debt capacity is altered on the Swedish market because, for instance, regional characteristics in the banking sector and their relationship with smaller firms might be eccentric. The results can stem from macroeconomic factors that are present during our sample period. Sweden did experience a period of high loans in the private and firm markets that might explain our results. Further patterns would call for a closer investigation especially on the Swedish debt-market.

Fazzari et al (1988) argue that large value firms that pay high dividends are not financially constrained and have funds to finance investments. In our sample, large value firms that pay high dividends are encountered in all dividend groups. We have reasoned that firms with high dividends that are locked into their dividend policy might in fact curtail investments and possibly be labeled as financially constrained. The following regression will determine if our hypothesis is correct.

Table 5 displays the regression analyses when the dependant variable is the percentage change in investments in year t_0 . Regressions are not calculated on the group with decreasing dividends since they only had fourteen cases. Our first regression in table 2 demonstrated that firms with increasing dividends had to cut investments in year t_0 . As presented in table 5, we find that, increasing firms with high dividends curtail investments more than firms with low dividends, which confirm our hypothesis. Unfortunately, the coefficients are not significant. However, the coefficients for the group *constant* are still positive. By extension, the coefficient for low dividends in *constant* is highly significant and signals that investments can be raised by approximately two percent for every one percent increase in dividends. Firms with maintained low dividends can raise investments.

The model as a whole shows acceptable F-values in three cases out of four with high explanatory values and several coefficients of our control variables are significant. Firms with high dividends (in *increasing* and *constant*) curtail investments if annual earnings increase but with insignificant coefficients. Firms in *increasing* that have low dividends decrease investments when earnings increase, which is verified with a significant coefficient. The continued negative relationship between earnings

⁴⁷ See Appendices E

and investments amplifies the ambiguity whether earnings may be used as a proxy for cash flow.

TABLE 5
Regression Results when Dependent Variable Equals Percentage Change in Investments t_0

		(Constant)	Dividends t_0	Earnings t_0	Funds ratio t_0	Debt ratio t_0	Tobin's Q t_0	Sig. F-test Adj. R ^{2*}
Increasing	Low Dividends	Coef. -0,9013	-0,1424	-0,2617	0,2518	-1,5778	0,2264	(0,0120)
		Sig. 0,3229	0,4893	0,0580	0,0156	0,0015	0,3552	[0,253]
Constant	High Dividends	Coef. -2,3116	-0,3218	-0,1995	-0,1458	-0,0498	-0,0293	(0,4920)
		Sig. 0,1988	0,5490	0,6888	0,1204	0,8884	0,9332	[-0,013]
Increasing	Low Dividends	Coef. 9,3774	1,9591	0,0390	-0,1569	4,3907	-0,5176	(0,0860)
		Sig. 0,0228	0,0121	0,7510	0,2414	0,0372	0,0597	[0,467]
Constant	High Dividends	Coef. 3,9736	0,2489	-0,2233	1,2754	0,5824	-0,0870	(0,0030)
		Sig. 0,0246	0,4628	0,1224	0,0002	0,2316	0,6499	[0,818]

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78 and Constant: 29. * Numbers within parentheses () display the significance of the F-test and numbers within brackets [] display the Adjusted R².

Increasing with low dividends and *constant* with high dividends can naturally raise investments if they have access to funds. Firms in the *constant* group increase investments if they raise the dividend payout level or issue new debts. However, *increasing* that cut investments for every increase in dividend payments also cut investments if the debt ratio increases. The coefficients strengthen our argument in the previous part – that internal funds are decreasing to the point that even debts are used to finance costs.

The Q values are negative in three cases, one of them is significant on the ten percent level. As discussed in table 3, we remain puzzled to why we find results contradicting theory. Since the Q value is only introduced as a control variable with the perception that firms could increase investments, we do not try to perform a meager explanation but await future surveys.

In the concluding part of our empirical research, we study if investments are cut in year t_1 . We have had indications of a time lag, especially in the group of *constant*. As displayed in table 6, firms with high dividends also have a higher market value, invest more, and have higher annual earnings.⁴⁸ There are no differences in the market value, investments, dividends and annual earnings between high dividend paying firms in *increasing, constant and decreasing*.⁴⁹

⁴⁸ See Appendices G

⁴⁹ See Appendices H

TABLE 6

Summary Statistics of Sample Firms when Divided by Dividend and Size Group

Variables		Increasing		Constant		Decreasing	
		Low Dividends	High Dividends	Low Dividends	High Dividends	Low Dividends	High Dividends
Market Value t_0	Mean	758	36814	519	13052	199	11808
	Median	527	6911	355	5026	171	4685
Investments t_1	Mean	305	2501	73	2924	154	1181
	Median	107	1473	51	781	31	733
Dividends t_0	Mean	17	374	11	444	6	258
	Median	12	213	8	163	8	115
Earnings t_1	Mean	56	1005	32	637	7	626
	Median	39	446	22	259	3	342
Funds ratio t_1	Mean	0,06	0,05	0,08	0,06	0,07	0,04
	Median	0,05	0,03	0,07	0,04	0,06	0,03
Debt ratio t_1	Mean	0,67	0,62	0,58	0,69	0,68	0,50
	Median	0,71	0,62	0,55	0,74	0,64	0,47
Tobins Q t_1	Mean	0,88	1,27	0,98	0,75	0,47	0,83
	Median	0,83	0,94	0,76	0,55	0,39	0,99

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78, Constant: 29 and Decreasing: 14. The average value of Earnings, Investments, Dividends and Market Value are presented in million SEK. Funds and Debt ratios are presented in percent. Tobin's Q is the ratio, which is displayed in detail in the methodology and data chapter.

There are no significant differences on a five percent level in the remaining variables, neither between dividend groups nor between size groups.⁵⁰ Firms with higher market value and high dividends could theoretically have had higher debt and Q ratios but the absence of differences does not incline us to draw any further conclusions. What would be striking was if our results presented the opposite numbers of theoretical expectations. Lacking differences can stem from our specific sample or macroeconomic factors. Inarguably, we do have a sample that corresponds to classical categorization, larger firms pay higher dividends. This sample only strengthens our hypothesis since we still find differences in the investment behavior that are not mapped out in previous research but do concur with our hypothesis. The final regressions will confirm whether firms with *constant* dividends do cut investments in year t_1 . According to our hypothesis, firms with high dividends will decrease investments more than firms with low payouts to shareholders.

According to table 7, firms with increasing dividends curtail investments in t_0 but are able to raise investments in t_1 . Firms with high dividends are able to raise investments with 0,8298 percent for every percentage increase in dividends in year t_0 , which is verified by the significant coefficient. If we assume that the signaling theory holds, firms that experience a decrease in earnings but still have investment prospects to consummate will increase their dividends as a signal to the market. Since the

⁵⁰ See Appendices G and H

increase in the level of dividends coincides with the decline in earnings, internal funds will be reduced. Consequently, investments will be reduced in t_0 but increased in the following year since firms have available projects. New issues of debt can also be used to finance investments. An increased debt ratio is most beneficial to firms with low dividends, which also have lower market values, since a one percent increase will lead to a 4,4257 percent increase in investments.

TABLE 7

Regression Results when Dependent Variable Equals Percentage Change in Investments t_1

		(Constant)	Dividends t_0	Earnings t_1	Funds ratio t_1	Debt ratio t_1	Tobin's Q t_1	Sig. F-test Adj. R ^{2*}	
Increasing	Low Dividends	Coef.	2,5134	0,2395	0,0953	-0,0662	4,4257	-0,0020	(0,0070)
		Sig.	0,0346	0,3432	0,4772	0,5229	0,0002	0,9939	[0,309]
	High Dividends	Coef.	4,3334	0,8298	0,1756	0,1174	0,3671	0,2264	(0,0150)
		Sig.	0,0032	0,0361	0,3531	0,1002	0,0989	0,2212	[0,271]
Constant	Low Dividends	Coef.	-3,2267	-0,4967	-0,1839	0,0862	-1,3093	-0,2497	(0,1330)
		Sig.	0,3557	0,4202	0,2264	0,5442	0,5530	0,5419	[0,429]
	High Dividends	Coef.	-12,9587	-2,8711	0,3397	0,0068	-4,2967	-0,3402	(0,0970)
		Sig.	0,0358	0,0341	0,1561	0,9794	0,0137	0,5392	[0,404]

The sample contains 121 firms that report a decline in annual earnings after earnings growth over at least three consecutive years. The number of firms in each dividend group is as follows: Increasing: 78 and Constant: 29. * Numbers within parentheses () display the significance of the F-test and numbers within brackets [] display the Adjusted R2.

Firms with constant dividends endure a different pattern. The choice to maintain dividends despite decreasing earnings is rather a sign of sticky dividends than a sign of a future turn around to continued growth. There are almost no differences in the mean and median values of earnings in year t_0 and t_1 for firms with high and low dividends. The regression analyses confirm this pattern and indicate that investments are maintained during t_0 but reduced in the following year. Firms that maintain high dividends decrease investments with 2,8711 percent for every percentage increase in dividends, which is significant at the five percent level. These firms will also reduce investments with 4,3 percent for every percentage increase in debt ratio. We argue that debts are not used to finance investments but rather to cover costs. This reasoning implies that internal funds are scarce to the extent that investments will decrease even if the debt ratio increases. The model is significant with an F-significance at the ten percent level along with a high explanatory value of 40,4 percent.

Summary

Firms that prioritize an increase in their already high dividends in year t_0 also reduce investments in t_0 . The decline in retained earnings leads us to believe that these firms will be further exposed to financing constraints. Our conclusions are reinforced by the fact that further debts do not raise investments but are most likely used to finance payouts and to cover costs. However, the obvious signal of a raise in

dividends, even when facing declining earnings, is of essence according to signaling theories. Consequently, investments are raised once again in year t_1 . Our results are in favor of the signaling theory but enlighten an aspect that is yet to be discussed. What are the implications of signaling? If the method is successfully used by managers to overcome information asymmetries, what consequences will it have on a firm's financial mobility? We find that firms which signal prospects by raising dividends cut investments. Firms with high dividends decrease investments to a larger extent than companies with low payouts. As a consequence, there is a price for signaling.

The dubious signaling of firms that maintain dividends results in a more substantial cut in investments but with a time lag. Investments are curtailed in t_1 when the actual dividend payment is transferred. It is likely that a hesitant dividend decision is a reaction to declining earnings and thus, the time lag is logical – investments decrease when liquidity decreases. We argue that debts play a similar role and are used to finance payouts and cover costs. The role of debts is an interesting detail which has contributed with an additional dimension to this survey. Debts are an important tool in a firm's financial mobility but still considered inferior to retained earnings in the pecking order. We conclude that the effects of dividend policy are more extensive than we first considered.

Conclusion

This thesis continues on Fazzari's closing discussion where he poses the question whether high dividend paying firms are still financially strong if they experience decreasing earnings. We argue throughout this thesis that firms which engage in high dividend strategies and maintain or increase payments, are likely to reduce investment in times of poor earnings. Our results support our hypothesis with minor modification and invite to further speculation.

It appears to be firms with maintained dividends that really have sticky payouts and are thereby exposed to further financial constraints. Our expectations were that firms which increase payments would most likely be forced to cut investments significantly. However, these firms seem to increase payouts for a reason and therefore, the decrease in investments is modest but still present.

According to our analysis, there is not any statistical certainty that the investment decision of low dividend-paying firms should be affected by payouts to shareholders and this result is independent of dividend policy in year t_0 . On the other hand, firms that maintain high dividends, reduce investments to a greater extent than remaining firms in the sample. By maintaining dividends, the signal of future prosperity is rather weak. The unchanged dividends are either a demand from existing owners or a feeble managerial attempt to calm investors and shareholders. Investments are in fact substantially reduced when internal funds diminish to pay shareholders.

Is it feasible to generalize this conclusion on all firms? Is there a possibility that the investigated firms simply decided not to invest, perhaps in lack of opportunities, but to pay dividends due to any given reason? The firms in our sample are dominant on the Swedish market and operate in Sweden, Europe and other parts of the world. It remains improbable that international companies of this rang should lack investment opportunities. A case study would shed more light on the investment decisions of each firm. Despite circumstances, we argue that the relevant firms actually are exposed to financing constraints.

Obviously, managers prefer dividends to investments but the actual result of this behavior is yet to be discovered. Should decreased investments be comprehended as a bad sign from a shareholder point of view? One could claim that investment projects with positive net present values will increase shareholder wealth. In this case, a reduction of undertaken investment projects would diminish future cash flow, which would consequently affect shareholders negatively. However, agency theories state that executives do not always act in the interest of owners and may be undertaking investment projects with negative net present values. According to our results, firms are forced to curtail investments due to sticky dividends in times of

poor annual earnings. If we assume that companies cut back on bad projects with negative or poor net present values, the future value of firms will increase. Under these circumstances, shareholders may actually benefit from the situation. However, the question whether dividends pay dividends remains highly interesting and ought to be considered more closely in future research. A rather natural extension to this survey would be to investigate how earnings, investments and market values develop after our analysis – what happens in years t_2 through t_5 ?

Firms with high dividends can generally be labeled as risky in times of poor earnings since most companies keep dividends and thereby reduce investments. It would be beneficial for investors to refrain from purchasing shares in companies that curtail investments with positive net present values, but how can one define a high level of dividends? Investigating the payout ratio could be advantageous since the analysis could determine a target value, for instance: a payout ratio over seventy percent indicates that firms have high dividends, which may consequently reduce investments. To determine whether the firms in our study have high dividends, one would need to benchmark the results against the market or even provide an industry specific comparison.

The ownership structure in Sweden is also of interest. Large financial institutions have become major owners on the Stockholm exchange. A great amount of public savings are invested in the mutual funds of these financial institutions and together with official Swedish pension funds, they play an important role as owners. The aim of these institutions is to create value and not to act as majority owners. This precondition forces them to invest in larger companies with a great deal of capital and numerous owners. Financial institutions are in need of dividends as the main inflow of capital, to pay wages and return on capital. Taxes in Sweden do not apply for dividends paid to institutions, which may be one of the reasons why firms maintain or increase dividends even in times of poor earnings. These firms may be more or less forced to maintain dividends to please institutional owners. In this survey we assume that dividend policy is an independent process which could easily be examined in an independent thesis. The role of financial institutions could turn out to be more substantial than general theories in the area of dividend policy.

A different approach to the problem would be to consider investments as purely related to financing constraints and include dividends in the focus of a survey. The process of dividends would be irrelevant and the preceding years in our analysis could be excluded. The stickiness of dividends would become irrelevant whereas the level of dividends, either actual payouts or payout ratios, would be of interest. This thesis does not consider the downturn in earnings, although the actual result is still a substantial average decline of 47 percent. When examining firms with decreasing earnings, a target level may be set to exclude companies that only experience a decline equivalent to *business as usual* or firms that undergo comprehensive changes or

shocks in their operations. Firms with a decline amounting to, for example, 10-50 percent can be analyzed and the pattern of whether firms with high dividends reduce investments may be disclosed. Yet another framework that was discussed in the initial setting of this thesis was the period in early nineties when Sweden experienced macroeconomic changes and financial markets were unavailable for companies. What would the impacts be on high dividend paying firms under these circumstances?

Another element that should be considered when construing our results is that many of the leading incorporations in Sweden are in effect owned by business spheres. The representatives of these business spheres are usually involved in the corporate control of firms as executives and/or members of the board. In this case there is no difference between managerial and owner interest. How may this ownership structure influence the dividend policy if personal wealth is preferred to corporate development? One could argue that these representatives could use their power to redirect funds from firms to personal bank account by paying out high dividends. Accordingly, firms may face a new agency conflict between owners with different sets of goals. Whether these business spheres are associated with the sticky dividends in our sample is a question beyond the boundaries of this survey but would be of great interest to examine in detail.

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Appendices

APPENDICES A

Differences in Investments and Dividends between Years, Across Dividend Groups

Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
Increasing	Investments	Between Groups	2,90329E+19	4	7,25823E+18	1,395924	0,234711
		Within Groups	1,97584E+21	380	5,19959E+18		
		Total	2,00488E+21	384			
	Dividends	Between Groups	7,52511E+17	4	1,88128E+17	1,002777	0,40593
		Within Groups	7,12906E+19	380	1,87607E+17		
		Total	7,20431E+19	384			
Constant	Investments	Between Groups	9,29171E+18	4	2,32293E+18	0,354579	0,840473
		Within Groups	8,71313E+20	133	6,55123E+18		
		Total	8,80605E+20	137			
	Dividends	Between Groups	2,80682E+17	4	7,01705E+16	0,242309	0,913869
		Within Groups	3,85156E+19	133	2,89591E+17		
		Total	3,87963E+19	137			
Decreasing	Investments	Between Groups	1,45278E+19	4	3,63195E+18	0,690479	0,601276
		Within Groups	3,31383E+20	63	5,26004E+18		
		Total	3,4591E+20	67			
	Dividends	Between Groups	3,72125E+16	4	9,30312E+15	0,122529	0,973898
		Within Groups	4,78331E+18	63	7,59256E+16		
		Total	4,82052E+18	67			

APPENDICES B

Differences in Investments and Dividends among different Dividend Groups for all Years

Year	Variables		Sum of Squares	df	Mean Square	F	Sig.
t ₁	Investments	Between Groups	6,36929E+18	2	3,18464E+18	0,501587	0,606972
		Within Groups	6,85706E+20	108	6,34913E+18		
		Total	6,92075E+20	110			
	Dividends	Between Groups	7,39918E+16	2	3,69959E+16	0,160571	0,85186
		Within Groups	2,48834E+19	108	2,30402E+17		
		Total	2,49574E+19	110			
t ₀	Investments	Between Groups	5,18013E+18	2	2,59007E+18	0,322671	0,724849
		Within Groups	9,47181E+20	118	8,02696E+18		
		Total	9,52361E+20	120			
	Dividends	Between Groups	8,47916E+16	2	4,23958E+16	0,214111	0,807571
		Within Groups	2,3365E+19	118	1,98008E+17		
		Total	2,34497E+19	120			
t ₁	Investments	Between Groups	6,41505E+18	2	3,20752E+18	0,49937	0,60819
		Within Groups	7,57931E+20	118	6,42314E+18		
		Total	7,64346E+20	120			
	Dividends	Between Groups	7,08645E+16	2	3,54322E+16	0,18124	0,834467
		Within Groups	2,30689E+19	118	1,95499E+17		
		Total	2,31397E+19	120			
t ₂	Investments	Between Groups	8,82548E+17	2	4,41274E+17	0,09859	0,906189
		Within Groups	5,23673E+20	117	4,47584E+18		
		Total	5,24555E+20	119			
	Dividends	Between Groups	5,31601E+17	2	2,658E+17	0,922931	0,400226
		Within Groups	3,36955E+19	117	2,87996E+17		
		Total	3,42271E+19	119			
t ₃	Investments	Between Groups	4,0613E+18	2	2,03065E+18	0,884399	0,415752
		Within Groups	2,64049E+20	115	2,29608E+18		
		Total	2,6811E+20	117			
	Dividends	Between Groups	4,46885E+16	2	2,23443E+16	0,268317	0,765143
		Within Groups	9,57672E+18	115	8,32758E+16		
		Total	9,6214E+18	117			

APPENDICES C

Differences between Dividend Groups in Funds and Debt ratio across Years

Year	Variables		Sum of Squares	df	Mean Square	F	Sig.
t ₁	Funds ratio	Between Groups	0,000208269	2	0,000104135	0,025854	0,974483
		Within Groups	0,47528662	118	0,004027853		
		Total	0,475494889	120			
	Debt ratio	Between Groups	0,099964096	2	0,049982048	1,346001	0,264245
		Within Groups	4,381779458	118	0,037133724		
		Total	4,481743555	120			
t ₀	Funds ratio	Between Groups	0,003650885	2	0,001825442	0,293499	0,746192
		Within Groups	0,733910057	118	0,006219577		
		Total	0,737560942	120			
	Debt ratio	Between Groups	0,032783523	2	0,016391761	0,40981	0,664717
		Within Groups	4,719811012	118	0,039998398		
		Total	4,752594535	120			
t ₁	Funds ratio	Between Groups	0,000395697	2	0,000197849	0,022749	0,977512
		Within Groups	1,026262107	118	0,008697137		
		Total	1,026657805	120			
	Debt ratio	Between Groups	0,018145313	2	0,009072657	0,213343	0,80819
		Within Groups	5,018091886	118	0,042526202		
		Total	5,036237199	120			
t ₂	Funds ratio	Between Groups	0,004924502	2	0,002462251	0,344088	0,709575
		Within Groups	0,844393294	118	0,007155875		
		Total	0,849317796	120			
	Debt ratio	Between Groups	0,003709996	2	0,001854998	0,048043	0,953112
		Within Groups	4,556157952	118	0,038611508		
		Total	4,559867948	120			
t ₃	Funds ratio	Between Groups	0,006342274	2	0,003171137	0,581092	0,56088
		Within Groups	0,643950166	118	0,005457205		
		Total	0,65029244	120			
	Debt ratio	Between Groups	0,007858443	2	0,003929222	0,102728	0,902453
		Within Groups	4,513353293	118	0,038248757		
		Total	4,521211736	120			

APPENDICES D

Differences in Funds and Debt ratio between Years, for different Dividend Groups

Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
Increasing	Funds ratio	Between Groups	0,014079075	4	0,003519769	0,454444	0,769152
		Within Groups	3,020636131	390	0,007745221		
		Total	3,034715206	394			
	Debt ratio	Between Groups	0,096811293	4	0,024202823	0,589942	0,670107
		Within Groups	16,00006164	390	0,041025799		
		Total	16,09687293	394			
Constant	Funds ratio	Between Groups	0,010957592	4	0,002739398	1,038588	0,389768
		Within Groups	0,356078379	135	0,002637618		
		Total	0,367035971	139			
	Debt ratio	Between Groups	0,096079047	4	0,024019762	0,737036	0,568271
		Within Groups	4,399604865	135	0,032589666		
		Total	4,495683913	139			
Decreasing	Funds ratio	Between Groups	0,009408332	4	0,002352083	0,440481	0,778889
		Within Groups	0,347087734	65	0,005339811		
		Total	0,356496066	69			
	Debt ratio	Between Groups	0,108823979	4	0,027205995	0,633939	0,640093
		Within Groups	2,789527099	65	0,042915802		
		Total	2,898351078	69			

APPENDICES E

Differences among Size Groups in Year t_0

Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
Increasing	MV	Between Groups	2,5671E+22	1	2,5671E+22	1,797334	0,183977
		Within Groups	1,09978E+24	77	1,42828E+22		
		Total	1,12545E+24	78			
	Inv t0	Between Groups	9,61459E+19	1	9,61459E+19	12,69314	0,000634
		Within Groups	5,83247E+20	77	7,57463E+18		
		Total	6,79392E+20	78			
	Utd t0	Between Groups	2,51551E+18	1	2,51551E+18	13,11928	0,000522
		Within Groups	1,47641E+19	77	1,91742E+17		
		Total	1,72796E+19	78			
	Earnings t0	Between Groups	1,33243E+19	1	1,33243E+19	7,318835	0,008397
		Within Groups	1,40182E+20	77	1,82055E+18		
		Total	1,53506E+20	78			
	Funds ratio t0	Between Groups	0,017367285	1	0,017367285	1,628143	0,205796
		Within Groups	0,821353536	77	0,010666929		
		Total	0,838720821	78			
	Debt ratio t0	Between Groups	0,028588729	1	0,028588729	0,65171	0,421989
		Within Groups	3,377778719	77	0,043867256		
		Total	3,406367448	78			
	Tobins Q t0	Between Groups	0,144557724	1	0,144557724	0,266411	0,607229
		Within Groups	41,78115699	77	0,542612428		
		Total	41,92571472	78			
Constant	MV	Between Groups	1,0996E+21	1	1,0996E+21	6,005539	0,021301
		Within Groups	4,76052E+21	26	1,83097E+20		
		Total	5,86012E+21	27			
	Inv t0	Between Groups	5,71467E+19	1	5,71467E+19	7,561553	0,010705
		Within Groups	1,96496E+20	26	7,55753E+18		
		Total	2,53643E+20	27			
	Utd t0	Between Groups	1,31442E+18	1	1,31442E+18	8,707698	0,006629
		Within Groups	3,92468E+18	26	1,50949E+17		
		Total	5,2391E+18	27			
	Earnings t0	Between Groups	2,42245E+18	1	2,42245E+18	5,829363	0,023098
		Within Groups	1,08045E+19	26	4,1556E+17		
		Total	1,3227E+19	27			
	Funds ratio t0	Between Groups	1,16059E-05	1	1,16059E-05	0,004244	0,948558
		Within Groups	0,071105629	26	0,002734832		
		Total	0,071117235	27			
	Debt ratio t0	Between Groups	0,0821407	1	0,0821407	2,574961	0,120646
		Within Groups	0,829394342	26	0,031899782		
		Total	0,911535042	27			
	Tobins Q t0	Between Groups	0,357169086	1	0,357169086	0,664498	0,422381
		Within Groups	13,97504982	26	0,537501916		
		Total	14,33221891	27			
Decreasing	MV	Between Groups	4,71709E+20	1	4,71709E+20	3,932483	0,070725
		Within Groups	1,43942E+21	12	1,19952E+20		
		Total	1,91113E+21	13			
	Inv t0	Between Groups	5,81809E+18	1	5,81809E+18	8,38333	0,013441
		Within Groups	8,32808E+18	12	6,94007E+17		
		Total	1,41462E+19	13			
	Utd t0	Between Groups	2,22091E+17	1	2,22091E+17	4,269958	0,061077
		Within Groups	6,24149E+17	12	5,20124E+16		
		Total	8,4624E+17	13			
	Earnings t0	Between Groups	2,40456E+18	1	2,40456E+18	5,101915	0,043309
		Within Groups	5,65567E+18	12	4,71306E+17		
		Total	8,06023E+18	13			
	Funds ratio t0	Between Groups	0,021490754	1	0,021490754	2,716529	0,125228
		Within Groups	0,094933297	12	0,007911108		
		Total	0,116424051	13			
	Debt ratio t0	Between Groups	0,156875312	1	0,156875312	3,464854	0,08735
		Within Groups	0,543314084	12	0,045276174		
		Total	0,700189395	13			
	Tobins Q t0	Between Groups	0,005707256	1	0,005707256	0,051164	0,824858
		Within Groups	1,338588861	12	0,111549072		
		Total	1,344296117	13			

APPENDICES F

Differences between Dividend Groups in Year t_0 (low incr/const/decr) + (high incr/const/decr)

Size Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
LOW	MV	Between Groups	2,12614E+18	2	1,06307E+18	2,071477	0,135222
		Within Groups	2,97652E+19	58	5,13194E+17		
		Total	3,18914E+19	60			
	Inv t0	Between Groups	4,0558E+17	2	2,0279E+17	1,266005	0,28963
		Within Groups	9,29049E+18	58	1,60181E+17		
		Total	9,69607E+18	60			
	Utd t0	Between Groups	8,85536E+14	2	4,42768E+14	2,693125	0,07613
		Within Groups	9,53559E+15	58	1,64407E+14		
		Total	1,04211E+16	60			
	Earnings t0	Between Groups	1,10503E+16	2	5,52514E+15	2,884536	0,063932
		Within Groups	1,11095E+17	58	1,91544E+15		
		Total	1,22146E+17	60			
	Funds ratio t0	Between Groups	0,007062909	2	0,003531454	0,553111	0,578161
		Within Groups	0,370313126	58	0,006384709		
		Total	0,377376035	60			
	Debt ratio t0	Between Groups	0,083918137	2	0,041959069	1,071469	0,349186
		Within Groups	2,271298661	58	0,039160322		
		Total	2,355216798	60			
Tobins Q t0	Between Groups	0,657541453	2	0,328770727	0,945902	0,394237	
	Within Groups	20,15927843	58	0,347573766			
	Total	20,81681988	60				
HIGH	MV	Between Groups	7,98562E+21	2	3,99281E+21	0,205788	0,814608
		Within Groups	1,10595E+24	57	1,94026E+22		
		Total	1,11393E+24	59			
	Inv t0	Between Groups	1,06995E+19	2	5,34977E+18	0,391557	0,677807
		Within Groups	7,7878E+20	57	1,36628E+19		
		Total	7,8948E+20	59			
	Utd t0	Between Groups	1,62262E+17	2	8,11312E+16	0,239568	0,787756
		Within Groups	1,93034E+19	57	3,38656E+17		
		Total	1,94657E+19	59			
	Earnings t0	Between Groups	6,46563E+17	2	3,23282E+17	0,117721	0,889159
		Within Groups	1,56531E+20	57	2,74616E+18		
		Total	1,57178E+20	59			
	Funds ratio t0	Between Groups	0,007280898	2	0,003640449	0,336271	0,715837
		Within Groups	0,617079336	57	0,010825953		
		Total	0,624360234	59			
	Debt ratio t0	Between Groups	0,183908253	2	0,091954126	2,114154	0,130105
		Within Groups	2,479188484	57	0,043494535		
		Total	2,663096737	59			
Tobins Q t0	Between Groups	0,951620222	2	0,475810111	0,734284	0,484332	
	Within Groups	36,93551725	57	0,647991531			
	Total	37,88713747	59				

APPENDICES G

Differences between Size Groups in Year t₁

Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
Increasing	MV	Between Groups	2,5671E+22	1	2,5671E+22	1,797334	0,183977
		Within Groups	1,09978E+24	77	1,42828E+22		
		Total	1,12545E+24	78			
	Inv t1	Between Groups	9,52213E+19	1	9,52213E+19	24,05404	5,1E-06
		Within Groups	3,04815E+20	77	3,95864E+18		
		Total	4,00036E+20	78			
	Utd t0	Between Groups	2,51551E+18	1	2,51551E+18	13,11928	0,000522
		Within Groups	1,47641E+19	77	1,91742E+17		
		Total	1,72796E+19	78			
	Earnings t1	Between Groups	1,78092E+19	1	1,78092E+19	2,94848	0,089978
		Within Groups	4,6509E+20	77	6,04013E+18		
		Total	4,82899E+20	78			
	Funds ratio t1	Between Groups	0,003160322	1	0,003160322	0,390804	0,533725
		Within Groups	0,622677016	77	0,008086714		
		Total	0,625837338	78			
	Debt ratio t1	Between Groups	0,048610748	1	0,048610748	1,213044	0,274161
		Within Groups	3,08564823	77	0,040073354		
		Total	3,134258978	78			
	Tobins Q t1	Between Groups	2,979267326	1	2,979267326	3,111481	0,081709
		Within Groups	73,72809828	77	0,95750777		
		Total	76,70736561	78			
Constant	MV	Between Groups	1,0996E+21	1	1,0996E+21	6,005539	0,021301
		Within Groups	4,76052E+21	26	1,83097E+20		
		Total	5,86012E+21	27			
	Inv t1	Between Groups	5,68786E+19	1	5,68786E+19	6,463917	0,017307
		Within Groups	2,28784E+20	26	8,7994E+18		
		Total	2,85663E+20	27			
	Utd t0	Between Groups	1,31442E+18	1	1,31442E+18	8,707698	0,006629
		Within Groups	3,92468E+18	26	1,50949E+17		
		Total	5,2391E+18	27			
	Earnings t1	Between Groups	2,55842E+18	1	2,55842E+18	2,718951	0,111196
		Within Groups	2,44649E+19	26	9,40959E+17		
		Total	2,70233E+19	27			
	Funds ratio t1	Between Groups	0,005539217	1	0,005539217	1,836165	0,187058
		Within Groups	0,078435019	26	0,003016732		
		Total	0,083974236	27			
	Debt ratio t1	Between Groups	0,075957351	1	0,075957351	2,093739	0,159854
		Within Groups	0,943236732	26	0,036278336		
		Total	1,019194082	27			
	Tobins Q t1	Between Groups	0,363018676	1	0,363018676	1,024173	0,320857
		Within Groups	9,215710934	26	0,354450421		
		Total	9,57872961	27			
Decreasing	MV	Between Groups	4,71709E+20	1	4,71709E+20	3,932483	0,070725
		Within Groups	1,43942E+21	12	1,19952E+20		
		Total	1,91113E+21	13			
	Inv t1	Between Groups	3,69152E+18	1	3,69152E+18	4,67627	0,051484
		Within Groups	9,47298E+18	12	7,89415E+17		
		Total	1,31645E+19	13			
	Utd t0	Between Groups	2,22091E+17	1	2,22091E+17	4,269958	0,061077
		Within Groups	6,24149E+17	12	5,20124E+16		
		Total	8,4624E+17	13			
	Earnings t1	Between Groups	1,34332E+18	1	1,34332E+18	3,466297	0,087292
		Within Groups	4,65044E+18	12	3,87537E+17		
		Total	5,99376E+18	13			
	Funds ratio t1	Between Groups	0,001968983	1	0,001968983	1,067706	0,32184
		Within Groups	0,022129499	12	0,001844125		
		Total	0,024098482	13			
	Debt ratio t1	Between Groups	0,106636494	1	0,106636494	2,783507	0,121101
		Within Groups	0,459721458	12	0,038310121		
		Total	0,566357952	13			
	Tobins Q t1	Between Groups	0,453722944	1	0,453722944	3,358851	0,09176
		Within Groups	1,620993223	12	0,135082769		
		Total	2,074716167	13			

APPENDICES H

Differences among Dividend Groups in Year t₁

Size Group	Variables		Sum of Squares	df	Mean Square	F	Sig.
LOW	MV	Between Groups	2,12614E+18	2	1,06307E+18	2,071477	0,135222
		Within Groups	2,97652E+19	58	5,13194E+17		
		Total	3,18914E+19	60			
	Inv t1	Between Groups	6,08971E+17	2	3,04486E+17	1,832882	0,169096
		Within Groups	9,63519E+18	58	1,66124E+17		
		Total	1,02442E+19	60			
	Utd t0	Between Groups	8,85536E+14	2	4,42768E+14	2,693125	0,07613
		Within Groups	9,53559E+15	58	1,64407E+14		
		Total	1,04211E+16	60			
	Earnings t1	Between Groups	1,71535E+16	2	8,57676E+15	0,852865	0,431467
		Within Groups	5,83272E+17	58	1,00564E+16		
		Total	6,00425E+17	60			
	Funds ratio t1	Between Groups	0,00413781	2	0,002068905	0,588728	0,558315
		Within Groups	0,203823243	58	0,003514194		
		Total	0,207961053	60			
	Debt ratio t1	Between Groups	0,077369568	2	0,038684784	1,010647	0,370302
		Within Groups	2,2200805	58	0,03827725		
		Total	2,297450067	60			
Tobins Q t1	Between Groups	1,253353828	2	0,626676914	1,739679	0,184613	
	Within Groups	20,89307986	58	0,360225515			
	Total	22,14643368	60				
HIGH	MV	Between Groups	7,98562E+21	2	3,99281E+21	0,205788	0,814608
		Within Groups	1,10595E+24	57	1,94026E+22		
		Total	1,11393E+24	59			
	Inv t1	Between Groups	1,45092E+19	2	7,25458E+18	0,775182	0,465415
		Within Groups	5,33437E+20	57	9,35855E+18		
		Total	5,47947E+20	59			
	Utd t0	Between Groups	1,62262E+17	2	8,11312E+16	0,239568	0,787756
		Within Groups	1,93034E+19	57	3,38656E+17		
		Total	1,94657E+19	59			
	Earnings t1	Between Groups	1,89034E+18	2	9,45168E+17	0,109141	0,896791
		Within Groups	4,93622E+20	57	8,66004E+18		
		Total	4,95513E+20	59			
	Funds ratio t1	Between Groups	0,000943291	2	0,000471646	0,051758	0,949604
		Within Groups	0,519418291	57	0,009112602		
		Total	0,520361583	59			
	Debt ratio t1	Between Groups	0,161867885	2	0,080933942	2,033583	0,140253
		Within Groups	2,26852592	57	0,0397987		
		Total	2,430393805	59			
Tobins Q t1	Between Groups	3,35103692	2	1,67551846	1,499952	0,231815	
	Within Groups	63,67172258	57	1,117047765			
	Total	67,0227595	59				