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CORPORATE DIVIDEND POLICY IN THE TIME OF COVID-19: EVIDENCE FROM FINNISH LISTED COMPANIES

Bachelor's thesis

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Supervisor: Kalle Ahi, MA

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I hereby declare that I have compiled the thesis independently

and all works, important standpoints and data by other authors

have been properly referenced and the same paper

has not been previously presented for grading.

The document length is 9718 words from the introduction to the end of conclusion.

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ABSTRACT

This thesis provides a brief outlook on corporate dividend policy of Finnish listed firms during the time of the Covid-19 pandemic. The aim of this research is to find out if the dividend behaviour of Finnish listed firms was affected by the economic downturn induced by Covid-19. The year 2020 is used as a benchmark for the purpose of this research, as fear of economic fallout and the impact of regulative measures should be visible then. The main research question is "how does the economic downturn induced by Covid-19 impact the dividend payout of Finnish listed firms?". Using data on corporate financials, this paper investigates the effect of profitability, firm size, cash position, and financial leverage on dividend distribution during the economic fallout in Finland. This study uses multiple linear regression analysis as a quantitative method to find and examine the relationships. The majority of sample companies increased dividend levels during the crisis period. Empirical results show a significantly negative relationship between dividend payout and profitability. Similarly, a negative relationship is found for dividend payout and financial leverage. A positive relationship is confirmed between dividend payout and firm size. Yet, the same relationships hold for dividend-increasing firms whose earnings streams are shown to be relatively higher than for those decreasing dividends. A conclusion is drawn from empirical research that managers have a low propensity to adjust thei dividend levels to current earnings, and that corporate managers are generally reluctant to reduce dividends.

Keywords: corporate dividend policy, Covid-19 pandemic, Covid-19 in Finland, signalling theory, agency theory, clientele effect

INTRODUCTION

Explaining corporate dividend policy and understanding the factors influencing it has been a topic of dispute for decades. Several theories have been proposed to explain the phenomena, but even so, it remains a puzzle. The great amount of published literature about corporate dividend policy is replete with evidence that corporate managers are generally reluctant to reduce dividends. The mystery is, how do corporate managers bear the economic fallout induced by Covid-19 respective to their dividend policy.

Since the pandemic was declared in early 2020, countries have been forced to shut down their economic activity and adjust in an unprecedented way. The economic consequences induced by Covid-19 have been extensive worldwide and are unprecedented in the modern era. For that reason, a growing stream of literature has emerged aiming to analyse the adverse impact of the economic contraction and high uncertainty. This, along with personal interest in corporate dividend policy, have been motivating factors to further research the topic. To my knowledge, similar research has yet to be conducted in Finland. Moreover, due to the timeliness of the topic, overall research in the field is scarce.

The aim of this research is to find out if the dividend behaviour of Finnish listed firms was affected by the economic downturn induced by Covid-19. The main research question is "how does the economic downturn induced by Covid-19 impact the dividend payout policy of Finnish listed firms?". The year 2020 is used as a benchmark for the purpose of this research, as fear of economic fallout and the impact of regulative measures should be visible then. Still to this day, the effects of Covid-19 are present in economic activity worldwide. However, some countries and industry sectors have recovered from the shock better than others.

A large quantity of literature about corporate dividend policy draws on the work of Lintner (1956) and the predictions it yields. Lintner (1956) suggests that bottom-line earnings are the primary determinant of the amount of dividend paid to shareholders and that managers shape the

dividend policy based on that. Including a partial adjustment, dividend policy should reflect current net earnings, and there should be a positive relationship between dividend payout and reported earnings during the outbreak of Covid-19. If so, possible deteriorating earnings in 2020 should be reflected in the amount of dividends distributed for that year. Later in this paper, a hypothesis is drawn based on Lintner's theory and tested using regression analysis.

The thesis is divided into three main paragraphs. The composition of the paper proceeds with an overview of dividend policy and regulations regarding dividend policy in Finland. Relevant economic and financial theories are introduced, namely the signalling theory, agency theory and the clientele effect. Moreover, Covid-19 and its economic impact on Finland specifically are covered. Also, studies on dividend policy and Covid-19 conducted on the U.S. publicly traded firms and the S&P 1500 firms are introduced. Chapter two presents the data and methodology used. Data is composed of financial data on Finnish listed companies. Multiple linear regression is applied as a method to find whether bottom-line earnings and other corporate financials drive dividend policy decisions during the year 2020. In addition, an independent samples t test is used to further compare the profitability means of two sample groups: dividend-increasing and dividend-decreasing firms. The independent samples t test results provide additional value for analysis. The statistical analysis is performed and empirical results are presented and discussed in chapter three, with a contradiction of the economic and financial theories.

1. LITERATURE REVIEW

Several theories have been proposed to explain how corporate managers act when making financing decisions related to dividend distribution. Due to the vast amount of published literature about corporate dividend policy, only some most relevant theories will be discussed in this paper. Theories that are introduced as relevant to this research are signalling theory, agency theory and the clientele effect. In this section, a general overview of dividend policy is provided, together with relevant economic and financial theories. Moreover, the dividend policy in Finland is reviewed. Also, Covid-19 and its economic impact on the Finnish economy are discussed. Last, dividend policy is discussed in connection to Covid-19 and empirical results from previous similar research are introduced.

1.1. Dividend policy

Dividend policy is a statement guiding corporate managers in decision making as regards to the distribution of earnings to shareholders. Decisions on the amount of profit distributed to shareholders or alternatively kept within the firm comprise the dividend policy. Dividend decisions are not standardised and hence unique for each individual corporation. The distribution of dividends to shareholders can be done through cash dividends, but also in other forms such as share repurchases. Share repurchases are decisions made by corporations to buy back their own shares to boost the value of a stock. In this paper, however, only cash dividends will be further discussed. The factors and characteristics affecting corporate dividend payments and policy are widely researched, but a consensus on what drives dividend policy has not been found. Since the main motivation for paying dividends is still unsolved, dividend policy is characterised as an unsolved puzzle.

For many investors, the distribution of dividends and the size of those dividends are important aspects of an investment. Moreover, Gordon (1963) argues that investors prefer cash dividends over price appreciation due to the fact that price appreciation is highly uncertain. Investors find a

stable dividend stream less risky. Stock prices tend to fluctuate and therefore price appreciation is not deemed. Published news and investors' overreactions, to mention some, might reflect on stock prices rather quickly. Thus, information on how corporations distribute their dividends and what drives those decisions are important aspects for investors that are interested in dividend distributing stocks.

In his seminal paper, Lintner (1956) surveys corporate managers aiming to further understand the dividend puzzle. Lintner (1956) finds that an existing dividend rate forms a benchmark for management. Furthermore, he notes that there is an existing belief within management that stock-holders prefer a reasonably stable dividend rate and that the market puts a premium on the stability of growth. Hence, corporate managers are reluctant to make inconsistent changes in dividend rates and for that reason dividends can be perceived as sticky. In addition, Lintner (1956) proposes that bottom-line earnings are the primary determinant of the amount of dividend paid to shareholders. Based on that, a positive relationship should be identified between dividends and reported earnings.

An array of existing empirical research relies on the work of Lintner (1956). For example, DeAngelo et al. (2004) document that an increase in real earnings of dividend-paying firms also increases the amount of dividends paid to shareholders. Moreover, DeAngelo and DeAngelo (1990) find that financial distress and loss result in dividend reductions. They report that all sample companies that declared losses also reduced dividends. In addition, they observe that managers are not only reluctant to cut dividends to a still positive level, but they are especially reluctant to omit them. Also, Baker et al. (2001) add to the existing literature supporting Lintner's (1956) ideology. They find that the most important factors in dividend decisions are the patterns of past dividends, stability of earnings and the level of current and expected future earnings.

In Finland, dividend distribution is regulated by Osakeyhtiolaki, which is translated as the Limited Liability Companies Act. For the purpose of this study, the Finnish translation is used when referring to it. According to Osakeyhtiolaki, the distribution of funds is decided in the annual general meeting and is based on the most recently approved financial statements. The law regulates that dividends can not be distributed if the company is insolvent or if the distribution

can cause insolvency. The amount of dividend distributed is usually based on a proposal made by the board of directors. The amount proposed has to be formulated based on the latest financial statement.

In Finland, dividends are most commonly distributed on an annual basis. However, some companies choose to distribute dividends in several instalments. The definite amount of dividend distributed by corporations are available on company annual reports and financial statements after the financial year-end. Important dates to keep in mind when holding a dividend-paying stock are the declaration date, ex-dividend date, record date and payment date. The declaration date is the date on which the annual general meeting decides on the amount of dividend distributed. The declaration date is the date on which the investor must be on the company's books in order to receive the dividend. Ex-dividend date represents the date, after which one is no longer entitled to the dividend and on this day the stock trades without a dividend. The payment date is the actual date that the dividend is paid to shareholders.

1.2. Dividend based theories

To further understand how corporate managers make dividend decisions, the signalling theory is worth recognizing. Dividend signalling theories were developed to explain positive abnormal returns following announcements by firms on increases in dividends (Bernhardt et al. 2005). To understand the motive behind dividend distributions, researchers have constructed signalling models in which firms convey private information about profitability through dividends (Bernhardt et al. 2005). Theory suggests that an increase in dividend payout is an indication of positive future prospects. Within the signalling literature, a common belief is that the signal must contain valuable information and that the signal should not be possible to be copied by others. For example, firms with positive investment potential are more likely to signal positive future prospects, while weaker firms without such prospects refrain.

Under the signalling theory, according to Miller and Rock (1985), the presumption has been that dividend announcements convey information about the firm's future earnings prospect. In other words, dividend announcements send signals to outside investors. As per Bernhardt et al. (2005),

signalling theories were developed to explain positive abnormal returns following dividend increase announcements. Meaning that, financials wanted to understand why an increase in dividends resulted in positive abnormal returns and if signalling was the answer to that.

Also, Miller and Modigliani (1961) observe signalling theory in relation to manager reluctance to reduce dividends. According to them, managers are reluctant to reduce dividends but are not willing to increase dividends to an unmaintainable level either. What they observe is that an increase in dividends is associated with a rise in general dividend levels. If companies were unable to maintain the elevated dividend level, they would send a negative signal to investors and share value would likely drop.

There is a wide range of empirical research on dividend signalling, contributing to the dividend puzzle. As per Bernhardt et al. (2005), a common assumption in line with the signalling theory is that the greater the rate that dividend income is taxed relative to capital gains income, the greater the value of information revealed by a particular dividend yield. In other words the higher the cost, the greater the value of information. However, they only find this relationship positive for some levels of dividend signal and thus do not support the signalling theory. Accordingly, their findings suggest that signalling does not explain why corporations issue cash dividends.

Equally important, Joos and Plesko (2004) test the dividend signalling hypothesis for loss firms with negative cash flows, to see if dividend payments are signalling based. Their results support the existing signalling theory and find that costly dividend increases by loss firms constitute a strong signal of future performance. Joos and Plesko (2004) also find it worthwhile to mention that the increase in cash dividend could signal a strong commitment to an increased level of dividend cash outflow in the future as well, due to the fact that previous research documents high reluctance of management to cut dividends.

Another, well-established strand of literature indicates that managers have personal interests when it comes to making dividend decisions and changes in dividend policy. Management acting in their personal interest may not be in the best interest of shareholders, and an agency problem arises when the two conflict. Agency theory provides an explanation of why corporate managers and shareholders often conflict of interest. As per Jensen (1986), conflicts of interest over payout

policies are extremely severe in companies that have large excess cash holdings. The problem is how to motivate managers to distribute cash rather than fund unprofitable investments.

Furthermore, as per Jensen (1986), payouts to shareholders reduce the resources under managers' control, making them vulnerable to the monitoring of capital markets. For that reason distributing dividends forces management to seek outside financing, simultaneously positioning themselves in the capital marketplace. Thus, the role of debt is considered to motivate organisational efficiency. Moreover, Gordon (1989) mentions that investors prefer corporate leverage over personal leverage. All in all, a possible agency problem could be mitigated by the distribution of cash dividends.

Easterbrook (1984) adds to the existing literature and attempts to understand how dividends may be useful in reducing the agency costs of management. Easterbrook (1984) confirms that dividends keep managers in the capital marketplace, where monitoring of managers is available at a lower cost. In other words, when companies raise debt from banks and other financial institutions, the role of monitoring shifts from shareholders to larger institutions. Thus, the cost of monitoring is lower for shareholders.

According to Miller and Modigliani (1961), financial decisions made by management should not affect the value of the firm and therefore are irrelevant. In other words, managers acting in their personal interest should not affect firm value. It is irrelevant whether a corporation finances activity with debt, reinvested profits or new stock issued. They find this true in the perfect capital markets. Thus, the concept of market imperfections has shifted this theory and dividends after all matter. Empirical evidence is to support that dividend decisions do not follow the irrelevance theory and that managers acting in their self-interest affect firm value.

According to Wu (2018), changes in dividend policy are negative predictors of management turnover. Wu (2018) finds that for firms that lower their dividends, managerial turnover goes up by one-third. Therefore, it is obvious that management is reluctant to reduce dividends even if that would be in the best interest of shareholders. Based on empirical estimates, Wu (2018) finds that 39 percent of observed dividend smoothers among U.S. firms are driven by managements' own career concerns, not shareholders' preferences. Conflicting with the above-discussed

irrelevance theory by Miller and Modigliani (1961), Wu (2018) finds that the steps management takes to accommodate their career-concern-based dividend smoothing affect firm value negatively. In other words, Wu (2018) proposes that decisions made by corporate managers do not follow the irrelevance theory.

Adjaoud and Ben-Amar (2010) argue that agency theory offers the most promising framework to dividend policy. In their work, a positive relationship is identified between dividend payout and shareholder rights. Furthermore, their results suggest that when shareholders' rights are strong, shareholders can use their power to pressure managers to pay higher dividends instead of using that amount for private benefits. Thus, the relationship limits managers' devious behaviour in payout policy.

Last, the clientele effect is worth mentioning. In their seminal paper, Miller and Modigliani (1961) propose the clientele effect hypothesis to explain corporate dividend payout policies. According to their hypothesis, firms opt for different payout ratios to attract specific investor profiles. Moreover, they point out that the portfolio choice of individual investors might be influenced by certain market imperfections such as transaction costs, tax rates and different mixes of capital gains and dividends. These groups, based on individual preferences, are defined as "clienteles" (Miller, Modigliani 1961).

A wide range of empirical research draws on the work of Miller and Modigliani (1961), providing evidence in support. For example, Elton and Gruber (1970) investigate if the dividend policy of a firm affects the tax rates of its marginal stockholders. Thus, investors could be grouped by the preference of tax brackets. Their empirical results provide evidence in support of the clientele effect, suggesting that a change in dividend policy could cause a costly change in shareholder wealth.

Since investors can be grouped by "clienteles", a conclusion can be drawn that inconsistent changes in dividend policy may be unfavourable to investors preferring a specific tax bracket or dividend payout. For example, investors that are particularly interested in dividend-paying stocks find a specific dividend rate important. For that group of investors, an unpleasant shift in

dividend policy may in the worst case cause them to sell the stock, further resulting in an overall share price drop.

1.3. Covid-19 in Finland

Year 2020 was by all odds out of the ordinary, owing to the vast spread of Covid-19 and its wide-ranging impact on society. The economic consequences induced by the pandemic were already noticeable in early 2020. At that time, governments worldwide imposed restrictive measures to stop the spread of the virus and so was the case in Finland. Restrictive measures had a direct impact on Finnish companies, but to different amplitudes depending on the industry in question. In any case, the effect of the pandemic on the economy is undoubtedly negative.

According to the Finnish government agency, Statistics Finland, the overall volume of Finland's gross domestic product (GDP) fell by 2.3 percent in 2020 (Statistics Finland 2022a). Household consumption fell and unemployment went up. As reported by Statistics Finland, the industries that were affected the most include transportation, accommodation and food services. With no doubt, the event and gathering measures, as well as travel restrictions, had hit those industries heavily. However, it is worthwhile mentioning that among manufacturing industries, the electronic and electrical industries grew clearly in 2020 (Statistics Finland 2022a). Nevertheless, overall economic consequences are negative in Finland.

To this day, several studies have been conducted in Finland to analyse the adverse impact of Covid-19 on the Finnish economy. Household consumption in Finland has a significant impact on the economy as a whole. Thus, consumer uncertainty and market caution have a direct impact on the success of Finnish corporations. Without consumer investments, corporate cash balances and profit margins decrease.

In his study, Kallinen (2021) aims to analyse the multidimensional impacts of the pandemic in Finland. He finds that the sudden decrease in consumer consumption has a direct impact on Finnish imports and exports during the pandemic, which on the other hand reflects an increase in risk of layoff and unemployment. Furthermore, household and corporate sources of income were

unstable leading to financial issues. Moreover, in 2020 the Finnish government approved a total of seven supplementary budgets, which indicates the significant impact of the pandemic on the economy.

As a whole, the negative impact of Covid-19 has remained modest in Finland. Already in 2021, Finland's GDP grew by 3.5 percent (Statistics Finland 2022b). According to Statistic Finland, private consumption was clearly growing in 2021 and rose above pre-crisis levels. Furthermore, the employment rate trend recovered. A conclusion can be drawn that the overall economic impact on Finland has remained modest and a clear recovery from the temporary slump is apparent.

1.4. Studies on dividend policy and Covid-19

Taken together, existing empirical literature finds inconsistent patterns in corporate dividend policy and the determinants driving it. The vast amount of literature in the field indicates that researchers are intrigued to further explore the so-called dividend puzzle. The recent outbreak of Covid-19 and its economic consequences are now a new strand of worthwhile research in the field of dividend policy. Many researchers have already explored dividend policy related to Covid-19, however, research in the field is scarce.

Krieger et al. (2021) have conducted research on dividend payouts of publicly traded firms in the U.S. during the Covid-19 pandemic. They find that dividend cuts and omissions are significantly higher during the pandemic than in any other quarter since 2015. Furthermore, they find net income and debt as the primary determinants of dividend cuts during all periods from 2015 to 2020. However, according to them, the economic significance was much greater during the pandemic. In other words, the effect of net income and debt on dividend policy was in a higher role during the pandemic.

Similarly, Ali (2021) has examined the Covid-19 pandemic effects on corporate dividend policy for a sample of firms listed in the G-12 countries. Also, Ali (2021) finds that dividend cuts and omissions are significantly higher during the pandemic. However, the majority of firms were

able to maintain a stable dividend or even increase their dividend during the pandemic. He maintains the signalling theory and suggests that firms aim to signal their financial prospects during the crisis by increasing their dividend. Furthermore, firm profitability, earnings prospects, size and leverage were noted as the most important determinants of dividend policy during the time of crisis.

Equally important, Mazur et al. (2020) observe the dividend behaviour of S&P 1500 firms during the pandemic, finding that the majority of firms maintain or increase dividends during the economic downturn. Thus, supporting the ideology of managers' reluctance to reduce dividends despite uncertainty. However, when examining the determinants affecting dividend payout during the pandemic, their findings contradict the ones presented above. They find that dividend payout and bottom-line earnings available for common shareholders are significantly negative.

Despite the inconsistency in previous literature, I will set a hypothesis based on Lintner's (1956) ideology. Prudent management should adjust their dividend payout according to earnings and thus act in the best interest of shareholders. The hypothesis set is based on Lintener's ideology, but includes a partial adjustment. The hypothesis is stated below and later tested using regression analysis:

H1 Firms adjust their dividend payout to the realised earnings during the Covid-19 crisis.

The decision to accept or reject the established hypothesis will be discussed in the following sections of the thesis.

2. DATA AND METHODOLOGY

In this section the data and methods used for the research are presented. In the first part, data and sample size are thoroughly explained and the time span used for research is told. Moreover, descriptive statistics are presented, aiming to further clarify the dataset. In the second subchapter, the applied methods are presented in connection to the research aim.

2.1. Data

This research uses data of companies that are listed on Nasdaq Helsinki. The initial sample consists of 140 Nasdaq Helsinki constituents. Dividend information is retrieved for all initial sample companies for both years 2019 and 2020. Some calculations are made based on the initial sample size, in order to see how corporations respond to the economic downturn induced by Covid-19 in early 2020. However, data is ultimately cleaned and outliers are excluded for the purpose of accurate regression analysis and independent samples t test calculations. When referring to dividends for the year 2020, those are dividends based on the 2020 financial year-end reports but paid later in 2021.

The regression and independent samples t test are ultimately run on data for the year 2020, as it represents the year of Covid-19 outbreak and should reflect the economic shock and fear induced by the pandemic. Data retrieved for statistical analysis include dividend per share (DPS), earnings per share (EPS), net income, total assets, total liabilities and total shareholders' equity. Further calculations are then made by the author using the collected variables. For this research, only cash dividends are taken into account. Meaning that special dividends and stock repurchases are excluded for the purpose of this research. Also, capital returns made by companies are excluded.

Furthermore, in the case that a company trades two series of shares on the stock exchange, the other one is excluded. For example, Alandsbanken "A", Kesko "A", Metsa Board "A", Oriola

"A", Orion "A", Stora Enso "A" and SSAB "A" are excluded from the sample, since alternative shares Alandsbanken "B", Kesko "B", Metsa Board "B", Oriola "B", Orion "B", Stora Enso "R" and SSAB "B" are traded respectively. In all cases, the shares differ in terms of voting rights. The market prices of shares are different and shares can be traded individually on the exchange. However, retrieved data on those firms are the same and thus the other is removed.

Data on DPS and net income are collected from the Nasdaq website. Figures are then individually checked from each company's annual reports, in order to make sure that the data is correct. In addition, other company characteristics mentioned above are retrieved from company annual reports and year-end financial statements. Moreover, to plot the evolution of the stock market during Covid-19, price data on the OMX Helsinki Gross Index (OMXHGI) is collected for the years 2019 to 2020. Price data is retrieved from the Nasdaq website.

Using the initial sample data, companies are divided into dividend-paying stocks and non-dividend paying stocks. The division enables the observation of dividend increases, reductions, suspensions, initiations, and unchanged dividends for the year 2020. Furthermore, to represent the stock market crash induced by Covid-19 and the v-shaped recovery, price data on OMXHGI is collected and presented in Figure 1. The index represents the returns on stocks listed on Nasdaq Helsinki, and thus represents the stock market crash of the sample companies in question.

The rapid spread of Covid-19 in early 2020 and the uncertainty that came with it, is clearly visualised by the rapid stock price drop. The evolution of OMXHGI is a great representation of the stock market crash induced by Covid-19 and the recovery pattern. The evolution of the index is represented below in Figure 1 and runs from January 2020 to August 2020. March 2020, in the middle of the figure, represents the stock market crash induced by Covid-19. Stock prices constantly shift due to fluctuations in supply and demand, and the relationship between supply and demand is highly sensitive to new information and economic events. What is particularly interesting to see, is that by August 2020 the index has recovered to the same level that it was before the pandemic. This rapid recovery can be characterised as a v-shaped recovery.
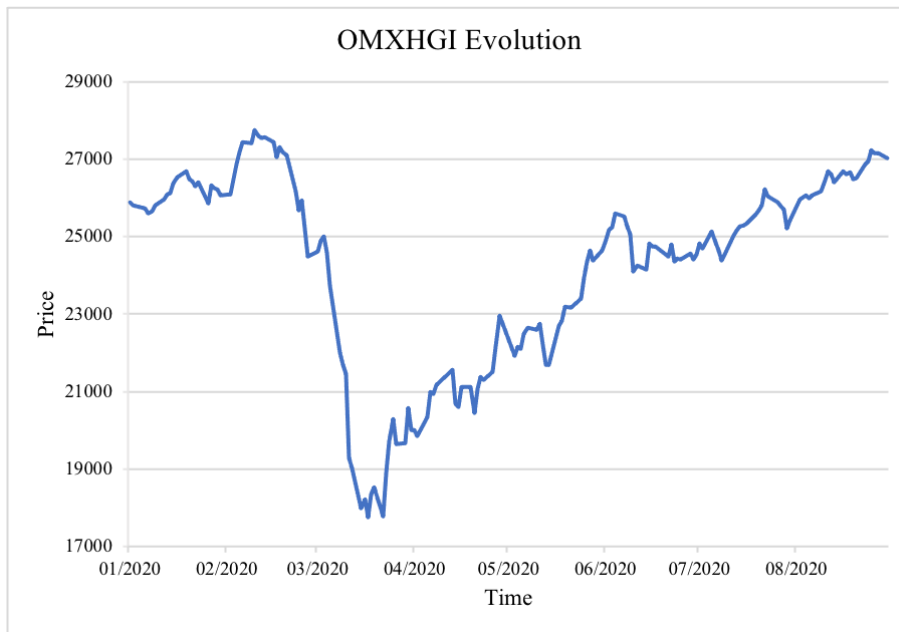
Figure 1. The Evolution of OMX Helsinki Gross Index from January 2020 to August 2020
Source: Author's calculations

Not only did the stock market crash due to the outbreak of the pandemic, but company operations were affected to a large extent as well. Table 1 reports statistics on change of dividend policy in 2020 for dividend-paying stocks on Nasdaq Helsinki. Dividend-paying stocks are defined as companies that paid stocks either in 2019 or 2020. Non-dividend paying stocks, on the other hand, are those that did not distribute any dividend during either year 2019 or 2020. Of all sample companies listed on Nasdaq Helsinki, 97 (69,29%) are defined as dividend-paying stocks and 43 (30,71%) are defined as non-dividend paying stocks. Since the financial year 2020 may be defined as the most influential to the outbreak of Covid-19, measures taken by companies and their management are worth exploring for that particular year.

Table 1. Statistics on the Change of Dividend Policy in 2020

	Frequency	Percentage of Total Dividend Paying Firms
Suspensions	1	1.03%
Initiations	12	12.37%
Reductions	18	18.56%
Increases	52	53.61%
Unchanged	14	14.43%
Dividend-paying stocks	97	100%

Source: Author's calculations

Surprisingly, 52 (53.61%) dividend-paying stocks increased their DPS in 2020 despite the economic downturn. Furthermore, 12 (12.37%) companies are characterised as dividend initiators. Meaning that those companies paid zero dividend in 2019, but chose to pay a dividend for 2020. This is particularly interesting, keeping in mind all the events of 2020. Moreover, only one dividend-paying stock suspended its dividend completely in 2020. What is worthwhile mentioning is the fact that the dividend suspension was in relation to negative earnings.

Furthermore, following the suggestions made by Lintner (1956) an assumption is drawn that bottom-line earnings are the most important factor driving dividend decisions. The earlier mentioned study by Mazur et al. (2020) hypotheses similarly. They use the logarithm of dividend payout and dividend yield as variables representing company dividend policy. However, they conclude that dividend payout is more adequate. The measure of dividend payout better captures the part of net income that is available for shareholders. For that reason, the natural logarithm of dividend payout is used as the dependent variable for the purpose of this research as well.

Moreover, in their study the key explanatory variable bottom-line earnings is measured as company EPS. However, it is arguable that EPS is an unscaled variable, because of how the amount of outstanding shares affects its outcome. EPS is calculated as net income divided by outstanding shares. Meaning that two companies with the same level of income but totally different number of outstanding shares will not be in scale. Thus, this value does not fully explain the effect of bottom-line earnings on dividend policy.

Instead for the purpose of this study, return on assets (ROA) is used as a measure of firm profitability, and thus the effect of bottom-line earnings is reflected on dividend policy. ROA is measured as net income divided by total assets. Meaning that company profitability is based on how much profit a company is able to produce with its assets. Moreover, similarly to previous research, other possible determinants driving dividend policy are included. The set of controls include firm size measured by the natural logarithm of total assets, cash position computed as the sum of cash and cash equivalents to total assets, and the financial leverage measure debt-to-equity ratio calculated by dividing a company's total liabilities by its shareholder's equity.

The transforming of variables to logarithmic terms in a regression model is a very common way to handle situations where a non-linear relationship exists between independent and dependent variables (Benoit 2011). In addition, logarithmic transformation helps to transform highly skewed variables into one that is more approximately normal. Considering a simple linear regression model, there are several possible combinations of transformations involving logarithms: the linear case with no transformations, linear-log model, the log-linear model, and the log-log model.

To further explore the relationships between dividend payout and the earlier mentioned variables, descriptive statistics are presented below in Table 2. Since company financials are mostly retrieved from company annual reports and financial statements, the data available is different for each individual company. A fraction of companies are excluded from the initial sample due to the fact that sufficient information was not found. Also, an extreme outlier was identified from the sample and excluded.

Table 2. Descriptive Statistics: Full Sample

Variable	Observations	Mean	Standard Deviation	Min	Max
Log (Dividend Payout)	77	-0.44162	0.74151	-1.64866	3.18989
Profitability	77	0.05764	0.04130	0.00198	0.19711
Firm Size	77	6.50485	2.00983	3.43266	13.22159
Cash Position	77	0.13406	0.13771	0.00004	1.00000
Financial Leverage	77	2.38304	3.37753	0.08024	19.64273

Source: Author's calculations

All in all, data for the regression analysis consists of dividend-paying stocks for 2020, excluding possible outliers and companies with limited data available. One company characterised as a dividend-paying stock suspended its dividend for 2020, meaning that it paid no dividend for the year 2020. Therefore, it is excluded from the regression sample as well. Moreover, if the company pays two series of shares only the other is included. The final sample used for regression analysis consists of 77 companies and their characteristics.

2.2. Methodology

The method applied for this research is multiple linear regression (MLR). The method of MLR is applied as a statistical technique to model the linear relationship between a dependent variable and independent variables (Weisberg 2005). This method is an extension of ordinary least square (OLS) regression, allowing us to make predictions with more than one independent variable. MLR is based on the assumption that there is a linear relationship between variables, and that variables are selected independently and randomly from the population (Poole, O'Farrell 1971). On top of that, an assumption is drawn that the independent variables may not be linearly correlated (Poole, O'Farrell 1971). The formula for MLR is as follows:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \epsilon \qquad (1)$$

where
y – dependent variable
x_1 – independent variable
x_2 – independent variable
x_3 – independent variable
x_4 – independent variable
β_0 – y-intercept
β_n – slope coefficients for each variable
ϵ – model error

The purpose of the application of MLR is to determine the strength of each independent variable in connection to the dependent variable. Important statistical figures drawn by MLR are R Squared and Adjusted R Square, which are known as the coefficients of determination. These figures indicate how much variation of a dependent variable is explained by the independent variables. The main difference between the two is that Adjusted R Square adjusts the variable predictors in the model. Meaning that Adjusted R Square has the capability to decrease when adding less significant variables into the model. Therefore, Adjusted R Square can be considered more reliable and accurate. Other important statistics are the correlation coefficients and p-values. The correlation coefficients represent the linear relationship between each independent variable and the dependent variable. The p-values then help to determine the statistical significance of each chosen independent variable. In this study, the excel data analysis toolpak is used to conduct the regression analysis.

For this research, a MLR is performed to get a better understanding if there are variables that influence the dividend policy of Finnish listed firms during the time of Covid-19. The dependent variable used is the natural logarithm of dividend payout ratio. Furthermore the dividend payout ratio is calculated as DPS to EPS. Independent variables are chosen randomly, but based on previous literature conducted. The main independent variable chosen is company ROA for the year ended 2020, which measures firm profitability. In addition, firm size, cash position and financial leverage measures are included in the regression model. Those are the natural logarithm of total assets, cash and cash equivalents to total assets, and the debt-to-equity ratio respectively.

Moreover, since the sample can be divided into subcategories based on dividend policy, further testing is conducted. An independent samples t test is run in order to compare the profitability means of two smaller sample groups. An independent samples t test is a hypothesis test for determining whether the population means of two independent groups are the same (Salkind 2010). A null hypothesis is usually set to assume equal means between samples. The null hypothesis is then accepted or rejected based on the independent samples t test results. The three primary requirements to produce accurate results are as follows: independent observations, equal variances and normality (Salkind 2010). For the purpose of this research, the independent samples t test is run by using the excel data analysis toolpak.

The purpose of the independent samples t test is to understand if the means of two sample groups differ from each other in statistical terms. The means for groups are known, but the significance of difference can be tested using the statistical method. An important output variable is the p-value. If the p-value is low, indicating statistical significance, the null hypothesis is rejected. Thus, a conclusion can be drawn that the means are different from each other and the obtained data is significant. However, if the p-value is high and statistically insignificant, the likelihood of having obtained results by chance is higher and population means are considered equal after all.

For this research, an independent samples t test is performed in order to compare the profitability means of dividend-increasing and dividend-decreasing firms. By comparing the profitability means of two sample groups, a further conclusion can be made if the magnitude of earnings streams affect dividend payout in any way.

3. EMPIRICAL RESULTS

In this chapter, I will present empirical results and further analyse them through discussion. In the first subchapter, I will explore two regression models and present the independent samples t test results. In the second subchapter, I will comprise my results with previous theories and literature, as well as explore limitations and raise suggestions for further research.

3.1. Empirical analysis of results

First, the regression model for the full sample is performed and analysed. To conduct a regression analysis, independent variables must not be correlated with each other and therefore a correlation analysis is performed and represented below in Table 3. The correlation matrix shows that there is no significant correlation between chosen independent variables, and therefore a multiple regression analysis can be further conducted using the chosen independent variables.

Table 3. Correlation Matrix 1: Independent Variables

	Profitabilty	Firm Size	Cash Position	Financial Leverage
Profitability	1.00			
Firm Size	-0.27	1.00		
Cash Position	0.31	-0.20	1.00	
Financial Leverage	-0.41	0.40	-0.10	1.00

Source: Author's calculations

The regression analysis is run in excel and some important statistics to consider from the output of the model are R square, adjusted R square and the number of observations. The most important statistic for this model is adjusted R square, which is 0.21. This figure explains that roughly 21 percent of the variation of dividend payout can be attributable to profitability, firm size, cash position and financial leverage. Moreover, the R square for this model is 0.25 and 77 observations are included. Due to the fact that R square and adjusted R square are of the same magnitude, the selection of independent variables for the model are considered to be good.

Furthermore, the estimates of the regression model are presented below in Table 4. Based on that, the MLR equation can be formed as follows:

$$y = (-0.57) + (-7.95) \times x_1 + 0.11 \times x_2 + (0.20) \times x_3 + (-0,06) \times x_4 \qquad (2)$$

where
y – dividend payout
x_1 – profitability
x_2 – firm size
x_3 – cash position
x_4 – financial leverage

In addition to the above presented equation, the estimates of the regression model are presented below in Table 4. The correlation coefficients in the model tell us whether there is a positive or negative relationship between dividend payout and each independent variable. A negative coefficient indicates that the two variables tend to move in opposite directions, and in the case of a positive coefficient variables move in the same direction.

Table 4. Estimates of Regression Model 1

	Coefficients	P-value
Intercept	-0.56632	0.08300
Profitability	-7.95144	0.00034*
Firm Size	0.10920	0.01100*
Cash Position	0.20234	0.73011
Financial Leverage	-0.06478	0.01546*

Source: Author's calculations

What is understood is that profitability and financial leverage have a negative relationship with dividend payout. Yet, firm size and cash position have a positive relationship. In order to further interpret the results, statistical significance must be confirmed. The p-values represented above determine the statistical significance of each chosen independent variable. For this model, p-values for profitability, firm size and financial leverage are lower than 0.05. This means that these chosen independent variables have a statistically significant relationship with the dependent variable. However, cash position has a p-value greater than 0.05, which indicates that the relationship between dividend payout and cash position is not statistically significant. Due to the lack of significance, cash position can be singled out as statistically insignificant.

Furthermore, for the year 2020 companies have been initially grouped by different categories: suspensions, initiations, reductions, increases, and unchanged dividend. Companies reporting dividend increases and reductions represent the largest population of the sample, and therefore further analysis is constructed to understand their dividend behaviour. An independent samples t test is conducted to see if the profitability means of dividend-increasing and dividend-decreasing firms differ statistically. The null hypothesis and alternative hypothesis are stated as follows:

H0: The profitability means of dividend-increasing and dividend-decreasing firms are equal.

Ha: The profitability means of dividend-increasing and dividend-decreasing firms are unequal.

Furthermore, it is assumed that observations of the samples are independent of each other to the extent that each observation is not predictive of the other. Also, the assumption of equal variance and normality is confirmed. The independent samples t test results are presented below in Table 5, providing descriptive statistics of the samples as well. Out of the full sample of 77 companies, 43 increased their dividend for 2020 and only 13 were identified as dividend-decreasing firms. Data shows that the mean profitability of dividend-increasing firms is on average higher than for dividend-decreasing firms. In order to understand if data is statistically significant, but not coincidence, an independent sample t test is conducted. Based on the p-value of the output, statistical significance can be confirmed to accept or reject the null hypothesis. The independent samples t test results are presented below in Table 5.

Table 5. Independent Samples t Test Results

Group	Observations	Mean	Standard Deviation	Min	Max	P-value
Increasing	43	0.0696	0.0378	0.0020	0.1541	0.0008
Decreasing	13	0.0309	0.0323	0.0021	0.0997	

Source: Author's calculations

The p-value is the most important statistic of the independent samples t test, as it determines the statistical significance of the mean difference of two groups. Since the p-value is lower than 0.05, a conclusion can be made that data is statistically significant. Meaning that the null hypothesis can be rejected with statistical significance. Thus, the alternative hypothesis can be accepted. In accordance, a conclusion can be drawn that the groups of dividend-increasing and

dividend-decreasing firms differ in terms of profitability. The profitability means of these two groups are statistically different.

Since the difference of profitability means are found statistically different, and data shows that dividend-increasing firms are on average more profitable than dividend-decreasing firms, a second regression model is run for a sample consisting of only dividend-increasing companies. This is to see if the negative relationship between bottom-line earnings and dividend payout still holds for this specific group of companies. The descriptive statistics for the second regression model are presented below in Table 6.

Table 6. Descriptive Statistics: Dividend-Increasing Firms

Variable	Observations	Mean	Standard Deviation	Min	Max
Log (Dividend Payout)	43	-0.51416	0.75222	-1.64866	3.18989
Profitability	43	0.06956	0.03782	0.00198	0.15409
Firm Size	43	6.53116	1.86614	3.56538	10.9649
Cash Position	43	0.15534	0.17356	0.00004	1.00000
Financial Leverage	43	2.28004	3.30102	0.17056	19.6427

Source: Author's calculations

The sample consists of dividend-increasing companies for 2020. Furthermore, to conduct the regression analysis independent variables must not be correlated with each other. A correlation analysis is performed and represented below in Table 7. The correlation matrix shows that there is no significant correlation between chosen independent variables, and the second MLR can be further conducted.

Table 7. Correlation Matrix 2: Independent Variables

	Profitability	Firm Size	Cash Position	Financial Leverage
Profitability	1.00			
Firm Size	-0.47	1.00		
Cash Position	0.26	-0.31	1.00	
Financial Leverage	-0.46	0.31	-0.06	1.00

Source: Author's calculations

The adjusted R square for the second regression model is 0.27, indicating that roughly 27 percent of the variation of dividend payout can be attributable to profitability, firm size, cash position and financial leverage. Furthemore, the estimates of the second regression model are presented

below in Table 8. The results show that the negative relationship between profitability and dividend payout also holds for the sample of dividend-increasing firms. Also other relationships within this model hold. A negative relationship between dividend payout and financial leverage is identified, and positive relationships for firm size and cash position.

Table 8. Estimates of Regression Model 2

	Coefficients	P-value
Intercept	-0.895	0.119
Profitability	-8.142	0.016*
Firm Size	0.158	0.015*
Cash Position	0.509	0.408
Financial Leverage	-0.072	0.043*

Source: Author's calculations

Furthermore, statistical significance of variables follows the regression output of the first model. Profitability, firm size and financial leverage show to be statistically significant, as p-values fall below 0.05. Moreover, cash position with a p-value of higher than 0.05 can be signalled out as statistically insignificant.

3.2. Discussion

Data shows that the rapid spread of Covid-19 in early 2020 can be characterised by a stock market crash and a v-shaped recovery. Even though the stock market recovered shortly to pre-crisis levels, restrictive measures imposed by the government continued to shake the economy. Despite the economic shock, the vast majority of sample companies increase dividend levels for the year 2020. In that sense showing no sign of distress.

Furthermore, data show that for the year 2020, dividend-increasing firms were on average more profitable than those decreasing dividends. Empirical results underpin the statement, as the profitability means of the two groups are found to differ with statistical significance. Thus, earnings streams of dividend-increasing firms should be relatively higher than for those decreasing dividends. A conclusion can be drawn that for companies with lower profitability, investing the majority of earnings back into business operations might be desirable. Moreover,

the presence of Covid-19 might have further impact on the decision of dividend reductions for companies with lower profitability. Since managers are generally reluctant to reduce dividends, there must be a compelling reason to do so.

Moving on, two regression models were run to reflect the effects of Covid-19 on company dividend policies. The first regression model was run on the full sample, and the later for a sample of only dividend-increasing firms. Both regression model outputs indicated identical relationships between variables, as correlation coefficients were of the same sign. Furthermore, variables were similar in statistical significance. Thus, regression results are interpreted in conjunction.

Empirical results show that correlation coefficients of profitability and financial leverage are negative, which means that during the year 2020 a decrease in firm profitability and financial leverage resulted in an increase in dividend payout. In other words, a decrease in profitability would still lead to an increase in dividend payout. A positive relationship is identified for firm size and dividend payout. Indicating that an increase in company size results in an increase in dividend payout. Similarly, cash position and dividend payout shows to have a positive relationship.

Results in profitability, firm size and financial leverage were statistically significant, while cash position shows to be statistically insignificant. This suggests that the effect of profitability, firm size and financial leverage on dividend payout is more reliable than the effect of cash position. Thus, cash position is signalled out as statistically insignificant.

The empirical results contradict the set hypothesis that a positive relationship should be identified between dividend payout and reported earnings, at least in the case of companies listed on Nasdaq Helsinki during the year 2020 representing the appearance of Covid-19. The hypothesis may be rejected based on the two regression models. Moreover, the empirical findings contradict Lintner's (1956) suggestion that dividend policy should reflect current net earnings. That said, an assumption is drawn that company managers do not set their dividend policy based on current earnings.

Also, other assumptions can be drawn based on the results of the regression models. The negative relationship between profitability and dividend payout based on the year 2020 can be explored through several perspectives. First, the negative relationship indicated that company managers are generally reluctant to reduce dividends. This derives from the fact that despite deteriorating earnings, company managers are increasing dividend payout. Similar findings have been documented in previous literature as well. Several studies have aimed to understand the driving forces behind such decisions. What is understood is that stock-holders prefer a reasonably stable dividend rate and that the market puts a premium on stability of growth.

The signalling theory supports the above discussed. Dividend signalling is a theory suggesting that an increase in dividend payout is an indication of positive future prospects. Which is based on the fact that dividend increases have resulted in abnormal positive returns. The reluctance to cut dividends during uncertain times can be signalling based in the sense that companies want to signal positive future prospects to keep investors in the loop. Moreover, the clientele effect suggests that company share price will deviate due to investors' reactions to different information. Investors prefer a growing dividend stream and find a stable dividend stream less risky. Thus, the decision to decrease dividend payout to current earnings might have extensive consequences for companies.

Furthermore, the role of management should be explored. Managers have an important role in decision-making within a company and therefore managers are constantly under the observation of shareholders. Decisions made within the corporation reflect back to the managers, in any case negative or positive. Therefore, there is a possibility that managers act in their self-interest when making financial decisions on behalf of the company. The fact that unprofitable companies are not setting their dividend policy according to earnings might enhance an agency problem between management and shareholders. Since, previous literature suggests that changes in dividend policy are negative predictors of management turnover, an assumption can be made that company managers act in their own self interest. To conclude, managers would not follow the earnings patterns but rather distribute dividends based on personal interest.

What is also worthwhile mentioning, is the fact that the Finnish Osakeyhtiolaki regulates dividend policy in Finland. According to those regulations, dividends can not be distributed if

the company is insolvent or if the distribution can cause insolvency. Therefore, it is worthwhile mentioning that even though companies are performing unprofitably for the year 2020, their financial situation has to be more or less stable to still be able to keep a certain level of dividend distribution. From initial data, a company reporting negative earnings for the year 2020 had to suspend its dividend completely for that year. In the case a company reports negative earnings, but distributes dividends despite, it most likely has excess cash reserves which can be exploited. A conclusion can be made that the Finnish Osakeyhtiolaki supports not only the company but its shareholders as well.

Coming back to the negative relationship between profitability and dividend payout, a second conclusion can be drawn. The negative relationship indicates that dividends truly are sticky. As previous literature suggests, corporate managers are reluctant to make inconsistent changes in dividend rates. In other words, if company earnings increase for the year 2020 managers are reluctant to increase dividends accordingly. In this case, based on data and the regression for the year 2020, company managers seem to be uncertain about the future. An explanatory factor to the reluctance to increase dividend levels according to increasing earnings during the year 2020 could be Covid-19. If company managers chose to increase their dividend rates in 2020, they would not want to lower that level at any time in the future. Choosing not to increase dividend according to earnings is playing on the safe side.

Moreover, keeping excess cash holding during uncertain times might be a motivating factor to the above discussed. However, according to previous literature, conflicts over payout policies are extremely severe in companies with larger excess cash holdings. Evidently, distributing dividends can help mitigate the agency problem by removing excess cash available from the management's control. By distributing dividends, company managers would have to turn back to the capital marketplace for financing. Thus, they would position themselves to the monitoring of capital markets.

A negative relationship is also identified for dividend payout and financial leverage. Indicating that a decrease in financial leverage results in an increase in dividend payout. Previous empirical results suggest that financial leverage is a primary determinant driving corporate dividend policy. This can be further confirmed with the regression models presented in this study. A significant

negative relationship is found between the two variables. An assumption can be drawn that as company debt obligations decrease, their ability to increase dividend payout rises.

Moving on, a positive relationship between firm size and dividend payout is found. The positive relationship confirms that an increase in firm size indicated an increase in dividend payout. From the aspect of Covid-19, this is practically significant, since larger companies are often perceived as more stable and prepared for different economic events. Larger companies have often operated for several years through which they have accumulated earnings. Thus, their ability to distribute dividends despite uncertain times is reasonable. On top of that, larger companies can use the power of signalling to gain advantage over weaker firms. A common belief within the signalling theory is that the signal should not be possible to be copied by others. Despite unprofitable periods, larger companies can use their accumulated earnings to cover dividend payouts. This is something a weaker firm might not be capable of doing due to financial incapability.

All things considered, depending on the regression model put together, 21 percent or 27 percent of the variation of dividend payout can be attributable to profitability, firm size, cash position and financial leverage of Finnish listed companies during Covid-19 in 2020. Hence, independent variables are not explaining much of the variation of dividend payout. An adjusted R square value of 21 percent or 27 percent is rather low, nevertheless, it does not indicate that the model is worthless. Even a small adjusted R square can have a unique contribution to the field of study. Dividend policy is driven by a variety of variables, and not all of them can be included in this study. An exploratory factor for the weakness of the models could be the earlier mentioned dividend puzzle. Dividend policy and factors influencing it has been researched for decades, without finding a single alignment to what drives it. Based on empirical results, a conclusion can be drawn that the so-called dividend puzzle still holds. Hence, the limitations of this study are identified and discussed.

Corporate dividend policy is not only driven by profitability, financial leverage and firm size. While firm profitability, leverage and size affect the distribution of dividends, factors such as type of industry, need for growth and expansion, maintenance of reserves, and legal restrictions affect the dividend policy of corporations. These aspects were not taken into account in this

study, hence this study does not fully explain the dividend policy of Finnish listed companies. Adding and changing independent variables could possibly indicate new outcomes, and those variables could result in a better regression model and thus predict dividend payout policies of Finnish listed firms better. Nevertheless, the model presented in this study is sufficient to draw conclusions to reflect on the research question and aim.

Apart from findings drawn by the regression analysis, data shows that managers are especially reluctant to omit dividends as they are reluctant to reduce dividends to a still positive level. Moreover, it is evident that despite the economic downturn induced by Covid-19, companies are consistent at distributing dividends. The majority of sample companies either maintained or increased dividends during 2020. What is surprising is the fact that despite the economic fallout and recorded economic consequences on a national level, companies are still committed to an increasing dividend. As theory and previous literature suggests, managers are generally reluctant to make inconsistent changes in dividend policy since it is associated with the rise of dividend levels in the future as well. Companies recognize the risk of rising dividend levels and the possibility to not maintain the elevated level. Thus, an assumption can be made that Finnish listed companies are positive about the future and possibly signal through dividend policy positive future prospects.

CONCLUSION

The major goal of this study is to find out if dividend behaviour of Finnish listed firms was affected by the economic downturn induced by Covid-19 in 2020. The year of 2020 was out of ordinary and the restrictions posed on corporate actions were unprecedented in the modern era. By analysing theoretical standpoints and reviewing previous literature in the field as well as conducting an empirical study, a clearer understanding on corporate dividend policy is formed. However, it can be confirmed that factors affecting dividend policy still remain a puzzle. Moreover, this empirical research adds to the existing literature.

The empirical part of this research was formed based on previous theoretical standpoints. Lintner's (1956) suggestion that firms adjust their dividend payouts to their realised earnings was chosen as a standpoint, and a hypothesis was formed based on that. Other variables, such as firm size, cash position and leverage were added to the analysis for more in-depth understanding on determinants driving dividend decisions.

A multiple regression analysis was first performed for all sample companies. A separate regression was performed for only dividend-increasing firms. Both regression models revealed similar results, thus a conclusion can be drawn based on the full sample regression model. Unfortunately, the regression model revealed only a minor explanation to dividend policy as the adjusted R square turned out to be roughly 21 percent. Meaning that the variation of dividend payout can only be explained by 21 percent. However, what is understood is the fact that dividend policy is a multidimensional corporate function, and is driven by multiple factors apart from bottom-line earnings, firm size, cash position and leverage.

On the basis of the empirical results, it can be concluded that profitability, firm size and financial leverage drive dividend payout during the time of Covid-19 for Finnish listed companies. Findings correspond to other empirical research in the field. A negative relationship between dividend payout and profitability is identified. The relationship holds for dividend-increasing

firms as well, whose earnings streams should be relatively higher to those of other sample companies. Moreover, low propensity of managers to adjust the dividend level to realised earnings is consistent with the agency framework of corporate behaviour. Equally important, data shows that the majority of sample companies increased their dividend in 2020 despite the economic fallout and uncertain times. Evidence is provided to reject the hypothesis as well as confirm that corporate managers are generally reluctant to reduce dividends.

This study focuses on data and assessments for the year 2020 and for that reason acknowledgements are bound to the Covid-19 crisis. Further research could be conducted to compare data on 2020 to previous year data, to see if there has been a radical change in corporate dividend policy from pre-crisis times in Finland, if at all. Findings within this research are uniform with dividend based theories and interpretations are explicit. Acknowledgements presented in this study can be taken further to understand the determinants driving dividend policy. These conclusions and assessments are carefully drawn from financial data on Finnish listed companies as well as the MLR and independent samples t test results. Moreover, drawn conclusions reflect on dividend theories and previous literature conducted in the field.

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