Master Thesis

Corruption and cash dividend payout in the European Union

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Abstract

In the past decades, plenty of research has been conducted in order to solve the 'dividend puzzle'. However, the determinants of dividend payout are still not clear to this date despite the extensive research on this field. Prior studies point out that corruption influences the decision making in finance, potentially to mitigate agency costs and to protect the interest of shareholders.

Using firm-specific financial date and country-specific indices of the 27 EU countries for the period of 2015-2022, this research attempts to unravel whether dividend payout in the EU can be explained by the level of perceived corruption. A quantitative study with Logistic Regression (LOGIT) and Ordinary Least Squared (OLS) analyses have been conducted to assess the impact of corruption on both the Decision to Pay (DTP) and the Dividend Payout Ratio (DPR). Findings show that there is a statistically significant positive relationship between both dependent variables and the level of perceived corruption in the given firm´s country. Therefore, indicating that that the level of perceived corruption in EU countries explains dividend payout policy to a certain extent. The study also highlights the importance of considering cultural factors when tackling the dividends puzzle. Power Distance negatively affects the Decision to Pay, providing statistical confirmation to the outcome model of Agency Theory. The study shows that the main predictors of the payout decision within the EU have remained the well-established ones such as profitability, cash holding, leverage and firm size. These results may contribute to the better understanding of the dividends puzzle and the influence of corruption on corporate financial strategies.

Contents

1.Introduction

In the last decades, the determinants of dividend payouts have been researched intensively (Miller & Modigliani, Dividend Policy, Growth, and the Valuation of Shares, 1961) (Black, 1976) (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Various views exist, however, there is no consensus among researchers on what decides a firm's payout policy. In attempt to answer "*why do corporations pay dividends?*" several implications were assessed. The widely mentioned dividend irrelevance theory by Modigliani and Miller states that within perfect capital markets, the firm´s payout policy is irrelevant to shareholders as those do not add value to the firm´s stock price, therefore does not increase shareholder value and wealth (Miller & Modigliani, 1961). This might be correct under the assumption of perfect markets, but within the current market taxes, transaction costs and several imperfections exist. Still the question is not answered, there are no definitive determinants or factors which could explain payout policies across different companies. The complexity and irrationality of dividend payouts, referred to as "the dividend puzzle" (Black, 1976). In attempt to solve this puzzle researchers focus on investigating the effect of several firm and country specific factors such as legal systems on dividend payout (Baker & Kilincarslan, 2019) (Michaely, Rossi, & Weber, 2018). According to (Chen, Leung, & Goergen, 2017) a possible determinant for dividend payout is board composition. Their findings show that firms with more females in the board pay more dividends. The free cash flow hypothesis posits that dividends are paid out to shareholder to mitigate the potentially rising agency costs (Jensen, 1986). Jensen states that dividend payouts are necessary to keep the management under control. This shows that there are many attempts to unravel the "dividend puzzle". Studies have developed several theories on why companies pay dividends, yet there is no universally accepted explanation.

A recently emerging topic in the context of payout policy is corruption, which is defined as "the abuse of entrusted power for private gain" (Tran, 2020) (Hossain, Hossain, & Kryzanowski, 2021). Studies have shown significant differences in dividend payouts related to corruption. Professor Lawrence Kryzanowski, who conducted research about the link between corruption and dividend payouts in the United states, stated that "I am surprised the connection is as robust as it is". The results of the study show that state level corruption is a motivator for higher dividend payouts. Tran (2020) examines the reasons for why there is a correlation between higher corruption and dividend payout. He conducted an international study which concluded that higher level corruption increases the agency costs for shareholders (Tran, 2020). The reason for that is that managers might use available cash for bribing or to gain private benefits and expropriate outsider shareholders. Therefore, shareholders require to pay out excess cash in the form of cash dividends in order to mitigate agency risks. The willingness and

ability for shareholders to force managers to pay out cash also depends on the legal protection and the culture of the country. In countries with low investor protection firms might pay out cash to maintain their reputation, while in stronger investor protection countries dividends are the result of shareholder protection (La Porta, Lopez-de-Silanes, & Shleifer, 2000) (Alzahrani & Lasfer, 2012). As the level of corruption influences the effectiveness of legal systems, it is assumed that in corrupt countries dividends are used as substitutes for the weak interest alignments between managers and shareholders (Tran, 2020). Considering the agency theory, culture can affect the expectations the principal has towards the agent. Beliefs (how things are done) and values (how things should be done) are different in each culture and therefore the severeness of agency problems might differ. In some cultures, unethical behaviour and the lack of equality is accepted, while other cultures seek for more control over individuals and dishonest dealings are unacceptable (Hofstede G. , 1980). With regards to the principal agent relationship this implies, that if a culture is more accepting towards corrupt behaviour, the agent expects this behaviour from the principal and might not perceive this as a problem. The differences between these cultural values also lead to differences in payout policy (Fidrmuc & Jacob, 2010) (Renneboog & Szilagyi, 2015).

As of today, no study focusing on EU member countries has been conducted. The large differences between the EU member countries' perceived levels of corruption (TransparencyInternational) could lead to new insights regarding dividends payouts. Based on the findings of (Tran, 2020) and (Hossain, Hossain, & Kryzanowski, 2021) increased dividend payouts could be the result of higher level of corruption. Therefore, the goal of this empirical research is to find out how perceived corruption affects dividend payouts in the EU. In more detail, it is aimed to find if there is a correlation between the perceived corruption level of a country and the decision to pay dividends and the dividend payout ratio within the European Union context. This cross-country research includes 27 out of 28 European Union countries (excluding Greece where dividend payments are mandatory (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, Agency Problems and Dividend Policies around the World, 2000)) and includes firm-specific financial data and country specific indexes and cultural variables. The study does not include firms specific corporate governance or organisational culture variables. The results of this study potentially could contribute to the understanding of the dividend puzzle in the 21st century on the country level. The following research question was developed to further explore the relationship between corruption and dividend payouts:

How does the level of corruption affect cash dividend payouts of firms in the European Union?

2.Literature review

This chapter reviews the relevant existing literature on the determinants of payout policy with regards to agency problems and corruption. Section 2.1 introduces the development of payout policy. Next, in Section 2.2 the influence of agency problems on dividends is discussed. Section 2.3 discusses the relevance of corruption in dividend payouts based on recent studies. Finally, Section 2.4 the chapter ends with the formulation of the hypothesis.

2.1 Payout policy

Investors of public firms purchase a fraction of the firm, in return for their investments the shareholders are expecting financial returns. One form of rewarding equity shareholders for their contribution is corporate payouts. Generally there are two forms of monetary value distribution utilised by public companies, dividends and repurchases. The decision between returning capital to shareholders in the form of dividends, or to give the buyback option to shareholders is referred as corporate payout policy (Barclay & Smith Jr., 1988). The study by (Barclay & Smith Jr., 1988) assessing the form of value distribution by companies, reveals that even though repurchases have tax advantages over cash dividends, firms still more likely to pay out cash dividends than offer repurchases in the US context from 1960 to 1979. They describe this phenomenon due to the utilization of information asymmetry, in which managers can benefit by rebuying shares on the cost of shareholders. In case of cash dividend payouts, the opportunity to exploit insider information does not arise, resulting dividends to become the preferred alternative for value distribution. Suggesting that the preference for dividends is the result of agency problems mitigation. Payout policy has been a widely researched topic in corporate finance (Holder, Langrehr, & Hexter, 1998) (Frankfurter & Wood, 2002) (Al-Malkawl, Rafferty, & Pillai, 2010). This study focuses solely on the dividend part of payout policy, more specifically cash dividends. Cash dividends ideally are paid out based on the company´s current earnings or accumulated profit. The ability to make these direct cash payouts are highly dependent on firm specific characteristics, therefore not all public companies distribute their accumulated cash in the form of cash dividends. Literature argues that the availability of excess cash depends on the capital structure and investment opportunities of the company (Brealey, Myers, & Allen, 2020). Companies with more investment and growth opportunities or higher level of leverage tend to not pay out cash dividends. Besides the propensity to pay, the intensity of cash dividends also varies by firms. In attempt to finding an optimal dividend policy for companies, (Lintner, 1956) concluded that managers aim to set up a sustainable target payout ratio based on the firm´s current earnings. The study observed that managers are reluctant

to make cutbacks in dividends, even during a decline of earnings and even with higher reported earnings the dividend levels relatively stayed the same. The conservativeness of dividend policy still holds in the 21st century, based on empirical evidence and literature (Brav A. , Graham, Harvey, & Michaely, 2005). Besides answering the questions of how much and in which way return capital to the shareholders, the motivation of why to pay dividends is still not clear. The theories assessing dividend payout decision can be categorised into two main groups: dividend irrelevance and dividend relevance.

2.1.1 Dividend Irrelevance Theory

The Dividend Irrelevance Theory suggest that, within perfect markets, dividend policy is irrelevant to the firm's current market value (Miller & Modigliani, 1961). Therefore, investors are not better off by owning shares of companies which issue dividends in perfect markets. The theory suggests that shareholders are indifferent by receiving value through dividends or in the form of stock value increase. The assumption of perfect markets are based on four points: information is equally available to all buyers and sellers, there are no transaction and flotation costs, there are no tax differentials, and shareholders are indifferent to dividend or capital gains. Under these circumstances dividends do not affect personal wealth and does not increase the firm´s profitability. The amount of dividend paid out can be reinvested in the company, or in case of low dividends, stocks can be sold to generate cash flow. However these assumptions barely stand true. Payout policy gains relevance in imperfect markets in which investors have a systematic preference for paying out funds.

2.1.2 Signalling Theory

The combination of these several imperfections leads to the so-called dividend puzzle (Black, 1976). In attempt to solve this puzzle, studies have focused on the effect of dividend announcement and changes on profitability, risk and share price. In imperfect markets, under the assumption of asymmetric information, other views argue for the relevance of dividends, such as the signalling theory (Miller & Rock, 1985). It implies that dividends are used as means of eliminating asymmetric information between the management and the shareholders, therefore are used as a signal of future expected cash flow. An increase dividend payments would mean that the company has good cash flow potentials and the management is able to pay out retained earnings to shareholders and maintain the payouts in the future. Based on the theory, high dividend paying firms should be the most profitable ones, since to maintain the level dividends the company is required to generate sufficient cash flow on the long term. Survey results regarding the opinion of executives about the information content of payout policy reveal that dividend payouts and repurchases convey the management's confidence about the future (Brav A. , Graham, Harvey, & Michaely, 2005). The study also shows that managers consider the negative information content of payout policy (having less

profitable investment opportunities) less relevant to investors and that retail investors prefer dividends even if tax disadvantaged.

Empirical research about the relationship between dividend announcements and future profits found that dividends signal information of the riskiness of future cash flows (Michaely, Rossi, & Weber, 2018). Confirming the relevance of signalling theory but arguing that payout policy purely conveys information on the future cash flow volatility and not on profitability. Meaning that dividend payouts are the results of safer earnings, instead of higher earnings. Which is in line with literature that argues the most important indicator for investors is the level of change within the payout policy, as it provides information about the sustainability of future earnings (Brealey, Myers, & Allen, 2020). A cut in dividends would result a negative reaction from shareholder, as they expect a poor financial performance for the future in which paying out dividends is not sustainable. On the other hand an increase in dividends would mean safe and stable profits for the future.

However, "the fact that dividend changes often tell us things about the corporations making them does not explain why corporations pay dividends (Black, 1976)."

2.1.3 Free Cash Flow

Another argument for the relevance of dividends is based on the free cash flow hypothesis (Jensen, 1986). Based on the hypothesis, firms with a high amount of free cash flow tend to pursue growth beyond the optimal size. This incentive could lead to riskier investments and increases in managers´ compensation, resulting a decrease in the shareholders´ potential wealth and increased risks. With the distribution of excess cash among shareholders the company could mitigate these organizational inefficiencies. Therefore, a possible explanation for paying dividends is to address agency problems between corporate insiders and outside shareholders.

2.2 Agency Problems

In corporate finance managers act as the agents for shareholders (principals), ideally performing in the interest of the shareholders of the company, maximising shareholder value (Jensen, 1986). The agency relationship assumes that agents carry out services on behalf and interest of the principals. Agency problems arise when the managers interest is not aligned with the interest of investors which results in costs for the investors (Easterbrook, 1984). These problems practically occur when profits are distributed for the personal use of managers or to negative NPV projects which provide private benefits for managers, without benefiting outside investors (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000)**.** The relevance of agency problems increases when a firm generates substantial free cash flow. The insurance of the right allocation of resources and managers acting the best interest of the company and shareholders, is highly dependent investor protection which is associated with effective corporate governance (Thakur & Kannadhasan, 2019) (La Porta, Lopez-de-Silanes, & Shleifer, 2000). According to (La Porta, Lopez-de-Silanes, & Shleifer, 2000) *"Corporate Governance is, to a large extent, a set of mechanisms through which outside investors protect themselves against expropriation by the insiders".* Therefore, corporate governance mechanisms play an important role in attempt to reducing inefficiencies, such as self-dealing. To monitor managers could come with conflicts and extra agency costs, one way to control the spending of excess cash are payouts. Paying out profits to outside shareholders reduces the resources under the managements control, leaving less power for imperfect agents (Jensen, 1986). As a result, in case of additional financing needed, the firm has to get it from outsider sources such as banks which exposes the firm to market-imposed monitoring (Easterbrook, 1984) (Jensen, 1986). Additional parties check-up financial statements and records in order to lend money to the company. Resulting more severe agency problems in companies which have reduced reliance on external cash flows (DeAngelo, DeAngelo, & Stulz, 2006). These results are in line with the free cash flow hypothesis, stating that dividends are used for agency costs mitigation. While top managers might be reluctant to pay out excess cash, since it is expected to be maintained, payout makes the firm's reported earnings more credible, which could be crucial to keep up the stock price of a firm with opaque governance. As there are no fully satisfactory theoretical agency models of dividends, the relation between agency problems and dividends have kept researchers busy.

2.2.1 Outcome and Substitute model

Until recently, studies focused on the differences shareholder rights and the effectiveness of their enforcement across countries as a possible explanation for differences in payout policy (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000) (Alzahrani & Lasfer, 2012) (Athari, Adaoglu, & Bektas, 2016). On how the level of agency problems affects dividend payouts, in the light of investor

protection, generally two views exist, the "outcome model" and the "substitute model" as the primary determinant of dividend payments (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000).

The outcome model predicts that the likelihood of paying dividends and dividend payout ratios (other moderating effects being equal) are higher in countries with higher level of legal shareholder protection. Meaning that dividends are paid due to the pressure of shareholders to pay out excess cash.

The substitute model predicts that firms in countries with weak investor protection, even with better investment opportunities, are more willing to pay out more to maintain their reputation. Companies with weak corporate governance rather try to build on their "reputation capital" to convince shareholders that they will benefit from their investments. An established history of high dividend payments could well contribute to this reputation capital.

Previous cross-country studies support both views. A study analysing corporation of 33 countries around the world found support for the outcome view that higher dividends are paid in countries with better shareholder protection (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Another study with a sample of 24 countries under different tax systems shows that in countries with high investor protection the level of dividend paid and the buyback ratio is highly dependent on tax costs. While in weaker investor protection countries managers set dividends policies regardless of tax costs, suggesting that investors aiming to extract cash even on a higher cost (Alzahrani & Lasfer, 2012). A study about emerging markets in the Arabic financial sector setting, found support for both models under the same, low-level investor protection (Athari, Adaoglu, & Bektas, 2016). The results suggest that dividend policies can differ for companies operating in sectors with unique settings, even within the same level of investor protection. These findings provide a better understanding on how managers might try to mitigate agency costs to retain their shareholders.

A research focusing on the influence of country-specific factors on payout policy sampling 50 countries, found that the political freedom of countries has a stronger role in explaining cross-country corporate payouts than the legal protection of shareholders and creditors (Guedhami, Kwok, & Shao, 2017). The study also states that political freedom is negatively associated with cash payouts, which could be in line with the substitute model of payout policy, meaning that managers try to maintain reputation by offering cash payments as investors in countries with higher political risk prefer the "bird in hand" rather than the possibility of higher future gains. An international study examining the determinants of corruption identified that both economic and political freedom contributes to the reduction corruption (Goel & Nelson, 2005). Regarding these findings, the level of corruption could be a significant determinant in payout policy. Research focusing on the intercorrelation of legal systems

and corruption found significant correlation between the level of corruption and the ineffectiveness of legal systems in the European context (Herzfeld & Weiss, 2003). Therefore, it is assumed that higher level of corruption would result lower level of investor protection.

2.2.2 Culture

Besides evaluating agency problems based on the legal systems, cultural values also affect the character of agency relations and even payout strategies (Fidrmuc & Jacob, 2010). Hofstede (2003) defines culture as "the collective programming of mind that distinguishes the members of one human group from another." In perspective of agency problems culture gains relevance in reflection to what a group considers acceptable, legitimate, normal or ethical (Breuer & Quinten, 2009). Meaning that society specific cultural values create a preference for certain behaviours within economics interractions such as international trading, rate of savings, or shareholder control (Guiso, Sapienza, & Zingales, 2007). According to previous researches, generally three dimensions are being analysed while addressing corporate agency problems in perspective of culture (Johnson, Brown, & Droege, 2004) (Fidrmuc & Jacob, 2010) (Renneboog & Szilagyi, 2015). These three dimensions are Individualism, Uncertainty Avoidance and Power Distance. The cultural dimensions developed by (Hofstede G.), measure the cultural differences across countries built on how societies deal with similar basic issues or problems.

The individualism dimension refers to the difference in the society´s resolution of individual self-fulfilment versus conscience and action. High scores on this dimension indicates that individuals are concerned by themselves and act in their own interest rather than valuing the interest of the whole group. Suggesting that managers seek for personal growth and private benefits in individualistic countries. In line with the assumptions, evidence support that individualist cultures experience higher agency costs (Fidrmuc & Jacob, 2010). From the investors' perspective a higher level effort is required to align principal-agent interests. The study by (Fidrmuc & Jacob, 2010) also states that firms which operate in countries with high individualism scores, pay relatively higher dividends.

Uncertainty Avoidance measures the degree to how society feels about uncertainty and ambiguity "should we try to control the future or just let it happen?" (Hofstede G.). High scores on the index indicates low tolerance for unstructured situations, in contrast, low uncertainty avoidance societies have higher tolerance for uncertainty and ready to accept higher risks. High scoring societies are more risk averse and require higher reward for perceived risk. It is proposed that investor with low uncertainty tolerance prefer bird in hand in rather two in the bush (Johnson, Brown, & Droege, 2004). Evidence supports this statement, as a research found a positive correlation between uncertainty avoidance and cash holdings on a country level, and higher dividend payments (Tadesse & Ramirez, 2009) (Fidrmuc & Jacob, 2010).

Power distance another cultural dimension measures the society´s way of dealing with power relationships. According to (Hofstede G.), societies scoring low on the power distance index strive to equalise the distribution of power and demand justification for inequalities of power. Whilst the high power distance cultures social stratification permissible and well-practiced, therefore leading to an effortless incentive to align the interest of management and shareholders. In relation to dividend payouts studies have found significant negative correlation between power distance and dividends payouts (Fidrmuc & Jacob, 2010) (Renneboog & Szilagyi, 2015). Which could be in line with the outcome model of agency problems whereas shareholders pressure the management for equal distribution.

2.3 Corruption:

Corruption is defined by (TransparencyInternational), the global coalition against corruption, as "the abuse of entrusted power for private gain". Corruption related principal-agent problems are depending on the context, the principals can be seen as the society, bureaucratic supervisors or shareholders. Whereas the abusers of entrusted power (agents) could be the government, politicians or the corporate managers. Country level bureaucratic corruption on a corporate level could lead to inappropriate business practices including peculation, bribery, or nepotism (Guardo, Marrocu, & Paci, 2016). These practices in certain industries undermine competition, prompting the other firms to utilise similar practices in order to so stay competitive (Lee-Jones, 2018). The most widely used measurement of country level corruption is the Corruption Perception Index (CPI) issued by (TransparencyInternational). As corruption involves illegal and deliberately hidden activities, the measurement of this `variable` is highly complicated. The best attempt to measure is still only able to capture what is perceived in the given country based on expert´s experience and manifestations of corruption which came to light such as: bribery, diversion of public funds, nepotism, laws related to financial disclosure and potential conflicts of interest. The index ranks the country´s perceived corruption of their public sector on a global level. Countries scored based on at least 3 data sources collected by reputable institutions such as the World Bank and World Economic Forum, and based on questionnaires answered by experts and businesspeople.

Evidence supports both negative and positive influence of corruption on the economy due to inappropriate business practices (Blackburn & Forgues-Puccio, 2007) (Gupta, Davoodi, & Alonso-Terme, 2002). Political connections in a corrupt environment could grant access to discounted bank loans and enhance credit risk assessment in order to increase the firm's profitability and creditworthiness (Houston, Jiang, Lin, & Ma, 2014). While economic and firm growth might be influenced positively by corruption, the inequality of income distribution and poverty potentially increases as well (Gupta, Davoodi, & Alonso-Terme, 2002). These findings are considered to be valid for countries at different stages of economic development. According to several cross-country studies, there is a strong negative relationship between corruption and income per capita, suggesting that the level of perceived corruption in a country negatively affects the average income of the country (Svensson, 2005) (Mendonça & Fonseca, 2012) (Mustapha, 2014). A study about US based internationally operating companies found that the location of the firm (states with higher public corruption) has an impact on the firm's business strategy and performance (Dass, Nanda, & Xiao, 2020). The study suggests that firms with greater local public corruption perform worse in the long run compared to firms in states with less local public corruption. Examining the effect between corruption and cash holdings in emerging markets revealed cash is less valuable in corrupt

environment (Thakur & Kannadhasan, 2019). The research points out the adverse effect of corruption on cash holdings as excess cash can be value reducing in countries with low investor protection and high level of corruption. As a proposition they mention the importance of corporate governance mechanisms and investor protection to mitigate agency problems arisen by corruption, in attempt to facilitate firms to take optimal financial decisions and to achieve higher valuations. The relevance of investor protection becomes especially important in countries with political interference (La Porta, Lopez-de-Silanes, & Shleifer, 2000).

2.3.1 Corruption in the EU

The Corruption Perceptions Index (CPI), issued by Transparency International, offers a relative global indicator of public sector corruption of 180 countries. The index reveals a wide spread of perceived corruption within countries of the European Union (TransparencyInternational). Starting with Denmark, viewed as one of the least corrupt countries in the world, ending with Hungary and Romania 43 score points away from Denmark (on the scale of 0-100). Hungary and Romania are ranked on the same level of corruption as Argentina, the country which has faced an economic crisis due to extreme inflation resulted by unfavourable monetary decisions (El-Erian, 2019). Recent findings support the connection between corruption and dividend payments as the means of agency cost mitigation, but there is a lack of research of this effect within the EU context. Controlling for investor protection and relevant cultural variables could drive to new insights on how cash dividends are used to mitigate agency problems under the different levels of perceived corruption.

2.4 Corruption and dividends (Hypothesis development)

Recently, the relationship between corruption and dividend payouts received increasing attention by researchers (Tran, 2020) (Hossain, Hossain, & Kryzanowski, 2021). According to a study assessing 47 countries, corruption is positively related to both the decision to pay dividends and payout ratio, arguing that dividend payouts are the result of the increased incentives from shareholders to mitigate agency costs in corrupt countries (Tran, 2020). They suggest that dividend is a result of the outcome model of agency theory, that shareholders force managers in corrupt countries to distribute cash as a mitigation for agency problems. Corruption as an agency problem is associated with cash holdings, managers might make unofficial payments or tend to expropriate outside shareholders. Another recent study assessing dividend payouts in the American context found that state-level corruption works as a motivator for increased dividend payout (Hossain, Hossain, & Kryzanowski, 2021). The study suggests that dividends work as a mean to shield against rent-seeking (to gain added wealth without any reciprocal contribution of productivity). Both studies applied multiple models to test their hypotheses and their findings are considered to be statistically and economically significant. The studies did not include a variable for investor protection which could interfere with the effect of

corruption on dividends. The study by (Tran, 2020) included one cultural dimension, namely uncertainty avoidance, but previous research suggest that multiple dimensions of the cultural measures have a potential influence on dividend payments.

Based on these findings in academic literature, the following hypotheses were developed:

H1: Higher level of perceived corruption increases the chance to pay dividends.

H2: Higher level of perceived corruption increases the dividend payout ratio.

3. Research method

This chapter discusses the research methods will be used to answer the research question of: How does the level of corruption affect cash dividend payouts of firms in the European Union. After discussing the applied method in Section 3.1, the formulated hypothesis will be answered based on the created model in Section 3.2. Finally, Section 3.3 gives a description about the included Dependent and Independent variables in the model.

3.1 Methods discussion

To assess whether there is a significant effect of corruption on dividend payout ratio (DPR) in line with previous studies, the Ordinary Least Squared (OLS) method will be used. The OLS regression analysis technique is a commonly used method to investigate the relationship between a dependent and multiple independent variables. This method is considered to be easy to interpret and flexible in adding variable, making it a widely used method in economics and finance. The objective of OLS is to predict the outcome of a dependent variable, based on the values of the multiple independent variables. OLS is considered to be an appropriate primary model in assessing the effect of firm- and country- level factors on dividend policy (Li & Islam, 2019) (Guedhami, Kwok, & Shao, 2017). With regards to this research the OLS multivariate model helps to assess the strength and the relationship of several independent variables predicting dividend payout policy. It estimates the correlation coefficients of the independent variables in a way that minimizes the squared residuals of the dataset. It requires the fulfilment of several assumptions, the violation of these assumptions could lead to biased or inefficient estimates. Alternative estimation techniques, such as Generalized Least Squares or Instrumental Variables Regression, may be considered if necessary to improve the robustness of the model.

Controlling for both firm- and country-level variables, the research model created based on relevant firm-specific variables determining dividend policy and extended with investor protection and cultural variables will be used to measure the impact of corruption on dividend payout ratio (DPR). The firm

specific variables are included based on the findings of previous research, identifying the determinants of payout policy within the European Union (Arndt & Kučerová, 2019).

The effect of corruption on the decision to pay dividends (DTP) will be measured with the logistic regression model (LOGIT) (Denis & Osobov, 2008) (Tran, 2020). Also here, the assumptions of normal distribution, linearity, independence and equal variance need to be fulfilled. This research follows closely the models of (Li & Islam, 2019) and (Tran, 2020). Due to the similarity of these studies with this research and to ensure better comparability of the results, the proposed methods appear useful to examine the effect of corruption of dividend payout. Aside from that, the methods have also been discussed by other researchers and their functionality has been proven. According to (Pohlmann & Leitner, 2003), LOGIT and OLS give comparable outcomes. LOGIT appears to give more accurate estimation of the probability of the dependent outcome however, it can only be used to measure binary variables.

3.2 Model

Dividend payout ratio

$$DPR = \alpha + \beta_1 PRO_{t-1} + \beta_2 FGR_{t-1} + \beta_3 CAH_{t-1} + \beta_4 LVG_{t-1} + \beta_5 SIZ_{t-1} + \beta_6 REA_{t-1} + \beta_7 IND + \beta_8 COI + \beta_9 UAC + \beta_{10} PWD + \beta_{11} IDV + \beta_{12} IPI + \varepsilon$$

Decision to pay

$$DTP = \alpha + \beta_1 PRO_{t-1} + \beta_2 FGR_{t-1} + \beta_3 CAH_{t-1} + \beta_4 LVG_{t-1} + \beta_5 SIZ_{t-1} + \beta_6 REA_{t-1} + \beta_7 IND + \beta_8 COI + \beta_9 UAC + \beta_{10} PWD + \beta_{11} IDV + \beta_{12} IPI + \varepsilon$$

Where the decision to pay dividend/dividend payout ratio are the dependent variables, α reports the constant and β denotes the regression coefficients regarding to the specific control and independent variables.

Firm characteristics:
The variable (PRO) is profitability, measured by the return on assets ratio.
(FGR) denotes firm growth measured by annual growth rate of Total Assets.
(CAH) is cash holdings calculated by the ratio of Cash Balance by Total Assets.
(LVG) is firm leverage based on Total Debt to Total Assets ratio.
(SIZ) is firm size measured by the natural logarithm of Total Assets
(REA) is retained earnings ratio based on Retained Earnings to Total Assets
(IND) is an indicator of ownership concentration

<u>Country specific:</u>

(COI) is corruption index retrieved from Corruption Perception Index by (TransparencyInternational).

(IDV) Individualism vs collectivism, a measure for national culture as the degree of interdependence a society maintains among its members (Hofstede G.)

(PWD) Power distance index measuring the attitude of the culture towards power inequalities (Hofstede G.).

(UAC) is national culture measured by the "uncertainty avoidance" dimension from (Hofstede G.), as a measure for cultural value for societies which significantly alters the character of agency relations (Fidrmuc & Jacob, 2010).

(IPI) Investor Protection Index, country level corporate governance measure (WorldBank).

Industry dummies

Year dummies

3.3 Measurement of variables

3.3.1 Dependent variables

Research includes two dependent variables, Decision to Pay (DTP) and Dividend Payout ratio(DPR).

-(DTP) is a dichotomous variable with values of 0 or 1 for public firms which do not pay or pay dividends.

-(DPR), which expresses the percentage of earnings paid out to shareholders, is calculated based on the (Total Cash Dividends /Net Income) of the company for the respective financial year t_0.

3.3.2 Independent variables

The aim of this study is to assess the effect corruption on dividend payouts, ideally a measurement for the firm-level corruption would give the most valuable insights on this relationship. Due to the focus on legally questionable activities of this variable, it is nearly impossible to gather publicly available data on how severe the presence of corruption in a given firm is. Similar to previous studies assessing the effect of country level corruption on the private sector, the Corruption Perception Index (CPI) is utilised as an Independent Variable(Tran, 2020) (Thakur & Kannadhasan, 2019) (Swaleheen, 2011). This study uses (COI) as Independent Variables, which is created based on the Corruption Perception Index.

3.3.3 Control variables

Control variables include several variables which could possibly correlate with the decision to pay dividends and the dividend payout ratio. The selection of control variables were based on previous researches and recommendations, the firm specific control variables are lagged with one year t_{-1}.

Firm specific control variables are included which are expected to correlate with the dependent variables of decision to pay dividends and dividend payout ratio.

3.3.3.1 Firms specific control variables

-Profitability (PRO) will be measured based on the return of assets ratio of the firms (Net Income / Total Assets) based on (Tran, 2020). The study of (Fama & French, 2001) suggesting that profitability and firm growth are essential predictors of dividend policy.

-Growth (FGR) will be measured based on the annual growth rate of total assets as a relevant measure for actual growth [(Total Assets / Total Assets$_{t-1}$) - 1] (von Eije & Megginson, 2008) (Fama & French, 2001).

-Cash holdings (CAH) will be calculated based on the ratio of cash balance (Cash / Total Assets). (Tran, 2020)

-Leverage (LVG) is measured (Total Debt / Total Assets) of the firm

-Firm size (SIZ) measured as the natural logarithm of Total Assets (Tran, 2020)

-Retained earnings (REA) Retained Earnings/ Total Assets (von Eije & Megginson, 2008)

-Board independence indicator (IND) measured by the number of shareholders and the percentage of their direct or total ownership in the company (Filsaraei & Zarei, 2017) (Horobet & Belascu, 2019)

3.3.3.2 Country specific control variables

- Uncertainty Avoidance (UAC), measures the degree to which how society feels about uncertainty and ambiguity. It is proposed that investor with low uncertainty tolerance prefer bird in hand rather two in the bush (Johnson, Brown, & Droege, 2004).

- Power distance (PWD) another cultural measures the society´s way of dealing with power relationships. In relation to dividend payouts studies have found significant negative correlation between power distance and dividends payouts (Fidrmuc & Jacob, 2010) (Renneboog & Szilagyi, 2015).

-Individualism (IDV) measures the extent to which people in a society value the importance of attaining personal goals. (Fidrmuc & Jacob, 2010)

-Investor Protection Index (IPI) The index provided by the (WorldBank) measures the level of minority investor protection in the given country. The index includes the measurement of corporate governance standards such as ownership and control, corporate transparency, shareholders rights and director liability.

3.4 Data and sampling

To measure the level of corruption within the countries, the Corruption Perception Index published by Transparency International will be used, which is a commonly used indicator in social science studies. Firm specific data on EU listed public firms is accessed through Orbis database. Country specific control variables on culture is collected from Hofstede-Insight and data on investor protection is retrieved from WorldBank. The proposed analysis will exclude firms belonging to the financial sectors (SIC 6000-6999) and utility firms (SIC 4900-4999) due to their unique regulatory requirements which could affect payout policy, and the higher leverage applied by financial firms (Tran, 2020). Data is collected for the consecutive years of 2014-2022. Control variables are lagged by one year making the study focusing on the period of 2015-2022.

CountryISOcode	2015	2016	2017	2018	2019	2020	2021	2022
AT	31	31	31	31	14	14	14	14
BE	42	42	42	42	29	29	29	29
BG	57	57	57	57	55	55	55	55
CY	23	23	23	23	4	4	4	4
CZ	4	4	4	4	1	1	1	1
DE	311	311	311	311	173	173	173	173
DK	64	64	64	64	61	61	61	61
EE	11	11	11	11	9	9	9	9
ES	69	69	69	69	39	39	39	39
FI	87	87	87	87	108	108	108	108
FR	316	316	316	316	113	113	113	113
GR	107	107	107	107	6	6	6	6
HR	47	47	47	47	47	47	47	47
HU	12	12	12	12	5	5	5	5
IE	41	41	41	41	39	39	39	39
IT	123	123	123	123	27	27	27	27
LT	11	11	11	11	12	12	12	12
LU	22	22	22	22	13	13	13	13
LV	7	7	7	7	4	4	4	4
MT	11	11	11	11	6	6	6	6
NL	68	68	68	68	60	60	60	60
PL	292	292	292	292	176	176	176	176
PT	24	24	24	24	4	4	4	4
RO	128	128	128	128	11	11	11	11
SE	285	285	285	285	339	339	339	339
SI	11	11	11	11	3	3	3	3
SK	15	15	15	15	2	2	2	2
Grand Total	2219	2219	2219	2219	1360	1360	1360	1360

Table 1 Firms per country 2015-2022

After the exclusion of financial and utility firms, firms with incomplete or missing data, a final sample size of 2542 unique companies were created, with 14316 firm-years observations over 8 years. Over this 8 years period 7219 firm-years observations are collected on dividend payer firms. Table 1 shows the distribution of the number of firms within the countries of the given year.

In order to capture the effect of corruption on payouts on the biggest scale, outliers were handled by winsorizing the dependent variable of DPR, the independent variable and the control variables excluding CAH as it shows normal distribution without winsorizing) on a upper and lower 1% tails (van Beusichem, 2016). This way it is possible to preserve data of smaller sample size countries with outlier values (but more extreme COI values).

4. Results

This chapter presents results of the performed analysis. Starting with Section 4.1, the Descriptive Statistics are discussed. Followed by Section 4.2 the strength and direction of linear relationships assessed with Pearson´s Correlation Matrix. Section 4.3 represents the results of the multicollinearity check. Finally, in Section 4.4 the results of both of the Logistic Regression and Ordinary Least Squared Regression are reported.

4.1 Descriptive Statistics

Before proceeding with the regression models, the primary diagnostic tests are ran. The result of descriptive statistics for the whole period of 2015-2022 on the dependent, independent and the firm/country level control variables can be found in Table 2. The variables (DPR), COI, PRO, FGR LVG, SIZ, REA are winsorized in order to prevent distorted results caused by extreme outliers, while DTP, CAH, IND, UAC, PWD, IDV, IPI are not winsorized as those do not have any extreme outlying values. The one year lag of control variables are taken into account.

First looking at the dependent variables within the observed sample period, about half of the firms decided to pay dividends (DTP) mean of 0.504. The mean value of payout ratio (DPR) indicates that the observed firms on average pay out one quarter of their net income generated in the previous year. With a relatively high standard deviation of 0.565. The maximum value of 3.5 states that a firm paid out more than 3 times of their net earnings in cash dividends. The negatives minimum value exists due to firms which had a negative net income, but still decided to pay dividends.

Corruption Perception Index (COI) represents itself on a range of 43 to 87 with a mean value of 69.849. On a world scale EU countries score reasonable knowing that two-thirds of the countries on the world score below 50. Still it is worth pointing out that within the region one country scores 2 times higher than the lowest scoring countries.

Moving to the control variables, profitability (PRO) shows a negative mean value of -1.3%. The reason for low profitability could be the relatively high annual growth rate (FGR) of the sample with a mean of 1.102, meaning a higher growth potential for the sampled firms. Besides that cash holdings (CAH) stand positive amongst firms on average with a ratio of 0.142. The proportion of borrowed capital to total assets (LVG) has a mean value of 0.138 as well. The relatively high standard deviation of the firm size (SIZ) 2.547, points out the variance of observed firms, form smaller enterprises to large corporations. While retained earnings (REA) are in the negative zone could mean that firms pay out more dividends than their finances would allow to. (IND), the Ownership concentration indicator shows that the sample firms on average have a medium-low ownership concentration with a recorded shareholder of less than 50% ownership.

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
DTP	14316	.504	.5	0	1
DPR	14316	.247	.565	-1.472	3.528
Independent Variable					
COI	14316	69.849	14.336	43	87
Control Variables					
PRO	14316	-.013	.184	-1.001	.32
FGR	14316	1.102	.427	.496	3.88
CAH	14316	.142	.164	-.108	1
LVG	14316	.138	.146	0	.669
SIZ	14316	11.856	2.547	6.448	17.771
REA	14316	-.147	.954	-6.292	.717
IND	14316	4.948	3.367	1	11
UAC	14316	67.717	24.821	23	115
PWD	14316	49.952	19.32	11	100
IDV	14316	62.363	14.079	27	80
IPI	14316	38.023	17.562	9	102

Table 2 Descriptive statistics 2015-2022

The sample countries are well distributed on the three Hofstede cultural dimensions. The different variations can be seen at the power distance (PWD) variable, minimum score of 11 and a maximum of

100. Individualism (IDV) and uncertainty avoidance (UAC) have means values of 62.363 and 67.717 both potentially supporting the rise of agency costs and the preference of bird in hand rather two in the bush. The strength of investor protection (IPI) shows a mean score of 38.023 suggest relatively low protection for investors with high standard deviation 17.562 indicating significant variability across the EU countries.

4.2 Pearson´s Correlation Matrix

To test the strength and directions of the linear relationships of the variables, the pearson´s correlation analysis is applied. The coefficients range from -1 to 1, significant values indicate either a negative or positive relationship depending on the signage of the value. Values under -0.5 or above 0.5 are considered to have a strong correlation between variables, within the range on -0.3 to 0.3 correlation are low.

The matrix shows significant positive and negative relationships of the two dependent variables for almost every other variable. Perceived corruption (COI) shows a positive correlation to decision to pay (DTP) 0.164 and to profitability (PRO) a 0.1 significance level. The findings offer an initial support to the baseline regression model.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) DTP	1.000													
(2) DPR	0.433*	1.000												
	(0.000)													
(3) COI	0.164*	0.084*	1.000											
	(0.000)	(0.000)												
(4) PRO	0.386*	0.195*	-0.075*	1.000										
	(0.000)	(0.000)	(0.000)											
(5) FGR	-0.064*	-0.034*	0.122*	0.037*	1.000									
	(0.000)	(0.000)	(0.000)	(0.000)										
(6) CAH	-0.097*	-0.008	0.195*	-0.236*	0.228*	1.000								
	(0.000)	(0.352)	(0.000)	(0.000)	(0.000)									
(7) LVG	0.052*	-0.021	0.086*	-0.052*	-0.015	-0.177*	1.000							
	(0.000)	(0.011)	(0.000)	(0.000)	(0.070)	(0.000)								
(8) SIZ	0.539*	0.207*	0.213*	0.333*	-0.034*	-0.161*	0.280*	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							
(9) REA	0.355*	0.169*	-0.025*	0.617*	0.028*	-0.218*	-0.027*	0.364*	1.000					
	(0.000)	(0.000)	(0.002)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)						
(10) IND	-0.005	0.006	-0.249*	0.123*	-0.085*	-0.125*	-0.026*	-0.052*	0.076*	1.000				
	(0.579)	(0.441)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)					
(11) UAC	-0.036*	-0.028*	-0.767*	0.106*	-0.126*	-0.147*	-0.036*	-0.064*	0.047*	0.213*	1.000			
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(12) PWD	-0.151*	-0.083*	-0.835*	0.039*	-0.097*	-0.137*	-0.084*	-0.204*	-0.006	0.195*	0.814*	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.483)	(0.000)	(0.000)			
(13) IDV	0.161*	0.064*	0.702*	-0.060*	0.120*	0.202*	0.058*	0.217*	-0.001	-0.156*	-0.510*	-0.563*	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.904)	(0.000)	(0.000)	(0.000)		
(14) IPI	0.113*	0.073*	-0.015	0.111*	-0.071*	-0.052*	0.026*	0.125*	0.046*	0.045*	0.347*	0.087*	-0.001	1.000
	(0.000)	(0.000)	(0.073)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.869)	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3 Pearson´s Correlation

As expected, profitability (PRO) and firm size (SIZ) show a significant positive correlation with both to the decision to pay (DTP) and to dividend payout ratio (DPR) 0.386, 0.195 and 0.539, 0.207 respectively. On the contrary firm growth (FGR) show negative correlation to both (DTP) and (DPR).

Perceived corruption´s (COI) relation to uncertainty avoidance (UAC), power distance (PWD) and individualism (IDV) are relatively high -0.767, -0.835 and 0.702. To check if multicollinearity problems exist the predictor variables of the regression models the below test was conducted.

4.3 Variance Inflation Factor (VIF)

Multicollinearity is tested by the Variance Inflation Factor (VIF) the VIF values should be below 10 but preferably below 5 to rule out multicollinearity between two or more variables (Henseler, 2020). Table 4 shows a minimum value of 1.09 and a maximum value of 5.296. COI, PWD and UAC show a moderate but tolerable correlation. This is expected, due to the nature of these variables the cultural and institutional factors may overlap in explanatory power. The mean VIF of 2.291 suggest that no multicollinearity issue exists between the variables and all the variables of the model are worth to be included in the model.

	VIF	1/VIF
COI	5.296	.189
PWD	4.596	.218
UAC	4.594	.218
IDV	2.039	.49
PRO	1.75	.571
REA	1.721	.581
SIZ	1.475	.678
IPI	1.429	.7
CAH	1.246	.803
LVG	1.162	.86
IND	1.094	.914
FGR	1.09	.918
Mean VIF	2.291	.

Table 4: Variance Inflation Factor

4.4 Regression results

4.4.1 Logistic Regression

The dependent variable, decision to pay (DTP) is binary, taking value 0 if the firm does not pay dividends and taking the value of 1 if the firm pays dividends. The model is statistically significant, X^2 = 60044.229, p<0.01. Pseudo-R value of the model indicates that about 30% of the variances in the decision to pay are explained by the included variables.

Starting with (COI), there is a positive statistically significant effect on (DTP) on a 0.1% level. Meaning that the level of perceived corruption increases the likelihood that a firms pay cash dividends. The effect is small, as the coefficient stands at 0.019, with a confidence interval 0.013 to 0.025 confirming the robustness of the relationship. The results are consistent with the first hypothesis, as well with previous findings on globally sampled firms (Tran, 2020). Based on this finding the first hypothesis is supported. **H1: Higher level of perceived corruption increases the chance to pay dividends.**

Logistic regression

DTP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
COI	.019	.003	5.94	0	.013	.025	***
PRO	2.702	.173	15.61	0	2.363	3.041	***
FGR	0	0	-1.27	.204	0	0	
CAH	-.512	.143	-3.58	0	-.792	-.232	***
LVG	-1.812	.155	-11.71	0	-2.116	-1.509	***
SIZ	.559	.012	46.71	0	.536	.583	***
REA	.022	.009	2.48	.013	.005	.04	**
IND	.009	.006	1.46	.145	-.003	.022	
UAC	.012	.002	6.55	0	.009	.016	***
PWD	-.007	.002	-3.07	.002	-.012	-.003	***
IDV	.004	.002	1.86	.062	0	.008	*
IPI	.001	.001	0.46	.648	-.002	.004	
Constant	-8.381	.315	-26.57	0	-8.999	-7.763	***

Mean dependent var		0.504	SD dependent var		0.500
Pseudo r-squared		0.305	Number of obs		14316
Chi-square		6044.229	Prob > chi2		0.000
Akaike crit. (AIC)		13826.922	Bayesian crit. (BIC)		13925.320

*** p<.01, ** p<.05, * p<.1

Table 5 Logistic Regression (DTP)

The results indicate that (PRO) is a significant and strong predictor of dividend payment decision, coefficient of 2.702. Meaning that more profitable firms are more likely to pay out cash dividend payments. Several studies support these findings, in attempt to solving the dividend puzzle profitability stays a dominant predictor of the decision to pay cash dividends (Fama & French, 2001) (Denis & Osobov, 2008) (Tran, 2020).

(SIZ) and (REA) also show a positive and statistically significant effect on the dependent variable 0.559 and 0.022, in line with the with the study of (Fama & French, 2001) stating that besides profitability,

size is the another key predictor on the decision to pay dividends. The Life Cycle Theory also supports this statement, as retained earnings can be used for a proxy for maturity (DeAngelo, DeAngelo, & Stulz, 2006).

Surprisingly, based on the sample (CAH) has a significant negative correlation to the decision to pay with a relatively high -0.512 coefficient. This could be related to agency issues in firms where the dividend payouts are not utilised in order to leave less room for imperfect agents to expropriate shareholders (La Porta, Lopez-de-Silanes, & Shleifer, 2000). Another explanation for this negative relationship could be described by the earlier life stage of the companies, where having available cash for potential investment opportunities is more important than to signal financial stability. The survey with executives conducted by (Brav A. , Graham, Harvey, & Michaely, 2005) points out that investors prefer cash dividends even if it forecasts less profitable investment opportunities. Still once the commitment has been made to pay dividends, the level of paid out dividends has to be maintained even in recession as a negative change in cash dividends could forecast non-sustainable future earnings to investors (Brealey, Myers, & Allen, 2020).

(LVG) is also significantly negatively related with an even higher coefficient of -1.812. That has not came with any surprises, as firms with higher amount of debt should fulfil their obligations first to their lenders rather than giving back to their investors. This way firms can avoid liquidity issues and focus more on growth opportunities. (FGR) the annual growth rate of total assets, does not have a statistically significant effect on the decision to pay.

Looking at the country-specific cultural factors, (UAC) and (IDV) both show positive relation to (DTP) coefficients of 0.012 and 0.004. Both cultural factors of uncertainty and individualism lead to the preference of ´bird in hand rather two in the bush´ (Johnson, Brown, & Droege, 2004) (Hofstede G. , 1980). Individualist cultures suggest a higher chance for both managers and investors with an aim to pursue personal growth and private benefits. Deciding to pay out the cash to the investors could make the firm´s paper more attractive to investors and could create a control point against agency problems.

On the other hand (PWD) has a negative and significant effect on the decision to pay with a coefficient of -0.007. Suggesting the work cultures with a wider acceptance on hierarchical inequalities are less likely to pay dividends. This phenomenon is well explained by the Outcome Model of agency problems, whereas shareholders with preference to low power distance pressure the management for equal distribution (Renneboog & Szilagyi, 2015).

(IND) and (IPI) do not seem to have an impact on the decision to pay. Both board independence and investor protection are well explored indicators of payout policy in the corporate governance

literature (Filsaraei & Zarei, 2017) (Horobet & Belascu, 2019) (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). This study did not find significant support for the historical findings regarding these two variables.

The results highlight the importance of firm specific characteristics such as profitability, leverage, firm size and cash holdings. The results also show a statistically significant positive relationship between perceived corruption and the decision to pay dividends.

4.4.2 Ordinary Least Squared Regression

First loooking at the R-squared value of 0.075, 92.5% of factors causing the variablity in payout ratio is not captured by the model. Still multiple both positively and negatively affecting predictors are identified.

While other variables being constant, (COI) does not seems to have much impact on the payout ratio, with a coefficient of 0.002. The effect seems minuscule, (COI) shows statistically significant positive relationship to DPR at a 1% level. Based on the regression results of the given sample, the second hypothesis **H2: Higher level of perceived corruption increases the dividend payout ratio** is also supported. The results of this research are in line the previous findings of (Tran, 2020) (Hossain, Hossain, & Kryzanowski, 2021).

The main positive predictors of payout ratio of the sample aligned with previous findings are (PRO) and (CAH) with a coeffiecients of 0.385 and 0.17 (Fama & French, 2001) (Tran, 2020). This is also aligned with the Signalling Theory suggesting that high dividend paying firms are the most profitable ones. The Agency Theory also supports this result, dividends are used as a corporate governance mechanism to decrease the impact of imperfect agents and to maximise shareholder value (Jensen, 1986) (Easterbrook, 1984).

(SIZ) and (REA) also do have positively significant effect on payout ratio, the effects are smaller, with coefficients of 0.033 and 0.027. From a theoretical perspective this can be explained by the life cycle of the firms, where at a matured stage firms signal stability with higher dividend payouts, tackle less investment opportunities (DeAngelo, DeAngelo, & Stulz, 2006). That statement is also backed up by the statistically significant negative effect of firm growth (FGR), companies which still have a positive annual growth rate are paying less dividends with a coeffient of -0.066.

From the negative predictors (LVG) stand out with a coefficient of -0.214, the negative relationship between the debt to asset vs cash dividends to net income ratio can be accounted to the prioritizing logic of the firms. As pointed out by the Pecking Order Theory, maintaining financial stability and

meeting obligatory payments should come before distributing to shareholders, which leads to a more conservative level of dividend payments. (Fama & French, 2001)

Ordinary Least Squared Regression result

DPR	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
COI	.002	.001	3.09	.002	.001	.004	***
PRO	.385	.033	11.81	0	.321	.449	***
FGR	-.066	.011	-5.95	0	-.088	-.044	***
CAH	.17	.031	5.51	0	.11	.231	***
LVG	-.214	.034	-6.36	0	-.28	-.148	***
SIZ	.033	.002	15.32	0	.029	.037	***
REA	.027	.006	4.36	0	.015	.039	***
IND	.002	.001	1.18	.239	-.001	.004	
UAC	.001	0	1.40	.161	0	.001	
PWD	-.001	.001	-2.55	.011	-.002	0	**
IDV	0	0	-1.08	.28	-.001	0	
IPI	.001	0	3.55	0	0	.002	***
Constant	-.209	.069	-3.04	.002	-.344	-.074	***

Mean dependent var		0.247	SD dependent var			0.565
R-squared		0.075	Number of obs			14316
F-test		97.064	Prob > F			0.000
Akaike crit. (AIC)		23200.072	Bayesian crit. (BIC)			23298.471

*** $p<.01$, ** $p<.05$, * $p<.1$

Table 6 OLS Regression (DPR)

Looking at the cultural variables, only (PWD) shows a statistically significant relationship to (DPR) with a negative coefficient of -0.001. That is in line with the findings of (Renneboog & Szilagyi, 2015) and the LOGIT regression results of this study. Shareholders in lower power distance countries are more willing to push their rights and require higher level of transparency of the books and records. (IPI) the Investor Protection Index shows a significant positive relationship to the payout ratio on a 0.001 coefficient level. It worths to mention that on the decision to pay (IPI) did not have a significant effect, but the positive relationship between investor protection and the decision to pay supports the Outcome Model of Agency Theory (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000).

Like the regression conducted on finding the determinants of the decision to pay on the given sample, the main firm specific contributors for dividend payout ratio are profitability, leverage, cash holdings. Additionally, the historical growth rate of the firm also has an impact on the payout ratio. OLS also shows a small but significant relationship between perceived corruption and the dividend payout ratio.

The results of the robustness check can be found in the Appendix in Table 7. The results confirm the stability and significance of the OLS model´s key findings. The majority of the coefficients are consistent is significance and value at a 1% level. Slight changes can be noted in the t-values and standard errors after the robustness adjustment, but the overall findings of the regression remain

valid. The consistency of these results rule out the possibility of heteroskedasticity, supporting the credibility and reliability of the findings of this chapter.

5.Conclusion

This final chapter will discuss the main findings of study. In Section 5.1 the findings of the Results chapter are discussed, with reflection to the research question and the literature. Finally, Section 5.2 points out the potential weaknesses of this study, with recommendations to future research.

5.1 Discussion of findings

In attempt to answering the questions of why corporations pay dividends and what are the determinants of payout policy this study was conducted with consideration of a newly emerging variable, corruption. The conversation was started by the study of (Tran, 2020), findings supported a positive correlation between corruption and both to the decision to pay and the payout ratio with a sample of multiple countries. This study aims to contribute further to this discussion by answering the research question of **How does the level of corruption affect cash dividend payouts of firms in the European Union?** This question is answered in this section based on hypotheses.

Hypothesis one (H1) declares that **Higher level of perceived corruption increases the chance to pay dividends.** The results support this hypothesis, Pseudo-R value of the model indicates that about 30% of the variances in the decision to pay are explained by the included variables. While other factors being constant, there is about 1.9% increase in the likelihood of paying dividends with one unit increase of perceived corruption. These findings are similar to previously conducted research in this field (Tran, 2020) (Hossain, Hossain, & Kryzanowski, 2021). In the EU Denmark (score 90) has the least corruptly perceived country in the world and Hungary as the lowest scoring country (score 42). The result could be explained Agency Theory, the theory itself mainly focuses on investor protection, but this study did not find significant results on the effect of (IPI). The relation of corruption and investor protection is still up for further research. Based on this study´s findings and literature, it is assumed that in more corrupt environments cash dividends are used as a strategic tool to disguise the wrongdoings of the management and to keep the investors' confidence. Besides maintaining the creditworthiness, corruption also provides space for inappropriate business practices leading to competitive advantage and financial growth.

The main findings related profitability and debt provide the most explanation of why companies within the EU pay dividends. This is matches with previous empirical evidence, and the well established theories of Free Cash Flow and Signalling.

From a cultural perspective uncertainty avoidance and power distance seem to be the main determinants of the decision to pay. Both cultural traits contribute to the outcome model of Agency Theory.

Hypothesis two (H2) stated that **Higher level of perceived corruption increases the dividend payout ratio.** This is also supported by the statistics results. Corruption seems to have a direct positive relationship to the dividend payout ratio. The coefficient of 0.2% seems small, the perceived corruption within EU countries range from 42-90 points. Meaning that theoretically while other factors being equal, companies pay out **0.96%** more in cash dividends related to their net income in Denmark compared to Hungary. The effect is not as strong as expected based on the previously cited sentence from Professor Lawrence Kryzanowski forecasted "I am surprised the connection is as robust as it is". They have found a 2.61% difference in dividend payouts related to corruption, between the five least corruption states and the five most corrupt ones (Hossain, Hossain, & Kryzanowski, 2021). The long range of corruption scores within the EU countries came with the expectation of higher payout differences related to corruption.

A further study focusing on firm level corruption could lead to interesting results on how management hides extra agency costs by giving back an increased portion of gains to shareholders. Self-dealing could be another motivating factor for paying dividends in corrupt countries, the ownership concentration variable of this study did not result in significant impact. From a practical point of view, using dividends as a compensation mechanism for the wrong reason could lead to poor growth opportunities on the long term. Of course this is just scratching the surface, a more in depth analysis and a measure for firm-level corruption would be required to make a case-by-case decision when investing to a firm. As a matter of fact, profitability and leverage stay the main determinants of payout ratio based on the findings of this study. Worth to mentioned that the results of the OLS regression are only accounting to 7.5% of the variability in the payout ratio. The rest 92.5% of the dividend puzzle is not captured by this model.

This research could add one more piece in completing the dividend puzzle. The findings strengthen the relevance of country level corruption in payout policy, assessed in EU country companies through 2015-2022. Finally, to summarise the answer to the question of **How does the level of corruption affect cash dividend payouts of firms in the European Union?** Corruption positively affects both the decision to pay and the payout ratio within EU firms, the impact is not as robust as expected but still statistically significant.

5.2 Limitations and recommendations

In the following, the limitations of this study will be highlighted and recommendations for future research are given.

This study does not include firm specific corporate governance variables or taxation differences. Firm level corruption is not assessed and could differ from the country level corruption index of the firm´s registered location. It is understood that firm-level corruption is a huge challenge to measure, this was also out of the scope for this Master Thesis. Besides the currently used Corruption Perception Index, other alternatives could be tried to measure corruption on a country/sector level to assess the relationship from another angle.

Looking at the statistical results, the Logistic Regression for the Decision to Pay is only able to describe 30% variability in the sample regarding the decision to pay. The OLS Regression has the R-squared value standing at 0.075. 92.5% of factors causing the variablity in payout ratio are not captured by the model.

Considering the abovementioned limited explanatory power of the used variables for both regressions, it can also be seen as an opportunity for further research.

Furthermore, research should gather data on the firm-level corruption to get a more in-depth view of this relationship. Based on this study´s assumption that in corrupt countries dividends are used as compensation mechanisms for strategic and phycological reasons, it would be interesting to look at the stock volatility/payout policy of firms in high corruption countries. Firms in corrupt environments which decide to pay dividends experience lower volatility? What is the long-term performance of high dividend payer firms in a corrupt environment compared to their non-payer peers?

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Appendix

Table 7

OLS Robustness

DPR	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
COI	.002	.001	2.99	.003	.001	.004	***
PRO	.385	.023	16.72	0	.34	.43	***
FGR	-.066	.01	-6.91	0	-.085	-.047	***
CAH	.17	.033	5.13	0	.105	.236	***
LVG	-.214	.03	-7.24	0	-.272	-.156	***
SIZ	.033	.002	15.61	0	.029	.037	***
REA	.027	.003	8.25	0	.021	.034	***
IND	.002	.001	1.18	.238	-.001	.004	
UAC	.001	0	1.62	.105	0	.001	
PWD	-.001	0	-2.66	.008	-.002	0	***
IDV	0	0	-1.05	.296	-.001	0	
IPI	.001	0	3.48	0	0	.002	***
Constant	-.209	.065	-3.21	.001	-.337	-.081	***

Mean dependent var	0.247	SD dependent var	0.565	
R-squared	0.075	Number of obs	14316	
F-test	164.535	Prob > F	0.000	
Akaike crit. (AIC)	23200.072	Bayesian crit. (BIC)	23298.471	

*** p<.01, ** p<.05, * p<.1