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The effect of gender diversification in a board on dividend pay-outs in different cultural systems

Abstract

This paper investigates whether the fraction of females in corporate boards of listed companies has a positive relationship with dividend pay-outs. Evidence was found that firms located in Europe and the United States with higher percentage of females in the board have greater dividend pay-outs. However, the question raised whether this positive relationship is affected by the culture of the country the company is based. This study has never been done and therefore it is an addition to the existing literature. Other literature found a negative relationship between dividend pay-outs and masculine countries. That means when a country is more masculine, the dividend pay-outs decrease in a country due to the fact that the managers are more competitive, egoistic and only want success for themselves. Masculinity is measured by the cultural dimensions of Hofstede. This added variable could imply that the positive relationship between dividend pay-outs and the percentage of females in the board decrease in strength when adding the effect of masculinity. However, this study found that culture does not affect the positive relationship and therefore we can say that dividend pay-outs increase when there are more females in the board of directors regardless if the company is located in a masculine or feminine country.

JEL classification: J16, G30, G35, M14

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1. Introduction

Dividend pay-outs are a major financial decision that corporate boards encounter. A study of Miller and Modigliani (1961) suggest that dividend policy is irrelevant in perfect and frictionless markets. However, in the real world, markets are imperfect. This means that dividend policy could be a tool to solve some market imperfections, for example agency problems (Dhanani, 2005). The agency problem is caused by the separation of ownership and control in large listed corporations (Jensen & Meckling, 1979; and Fama, 1980). The agency problem arises when the agent (managers and controlling shareholders) may not always act in the best interests of the principal (outside investors). This could lead to agency costs, especially monitoring costs incurred by the principal (Dyl, 1988). Dividend pay-outs could therefore be seen as a monitoring device.

Major financial decisions, such as decisions relating to dividend policy, are made by corporate boards. The aim and the effectiveness of these decisions are dependent on the characteristics of the board (Gyapong et al., 2019). According to several studies, stakeholders have called for greater emphasis on gender diversity within corporate boards and empirical evidence even suggest that gender diversity affects board effectiveness positively. This is a trend that is going on for the last couple of years. PwC came out with a rapport in march 2019 about this topic in the United States (PwC, 2019). Women are making up a larger share of the board of 37% in 2018 versus 31% in 2017. Of those who joined a board for the first time in 2018, more than 61% were female. These figures reflect the increasing positions female directors have in the S&P 500 overall 24% in 2019, which was 18% five years earlier. Boards want to diversify their boardrooms in terms of gender, race and age (PwC, 2019).

This is in line with the European Commission proposal they submitted in 2012. The commission wants to address the considerable imbalance between women and men in economic decision-making at the highest level. The reason why this proposal has an additional value is because it is necessary that females get equal chances to proceed high functions in companies, such as board positions. The proposal of the European Unison set the aim of a minimum of 40% of non-executive members of the under-represented sex on company boards (European Commission, 2012). Besides these proposal of the European Union, other European countries like Norway, Spain, Italy and Belgium have gender quotas for boards (Daunfeldt & Rudholm, 2012)

The number of women in board directions is increasing but the presence of women in those positions is still not uniform across large firms across the world (Hillman et al., 2007). Several studies suggest that women are more effective in monitoring and show more ethical behavior than men (Lakhal et al, 2015). This reduces the free cash flow, opportunities to overinvest or invest in negative net present value projects. That results in higher dividends payouts, because it is an indication that the firm has future profits (Jurkas et al. 2011). When looking at evidence on the effect of diversity of boards, a central hypothesis is that women on boards leads to reduced agency problems and thereby better corporate governance. Besides, gender diversity in boards led to an improvement of the quality of decisions by

bringing new perspectives and enriching the information set (Gul et al. 2011). This could improve the performance of a firm and has therefore higher future dividend payouts (Adams & Ferreira, 2009). The study of Pucheta-Martinez and Bel-Oms (2016) used Spanish data and found that a reduction of monitoring costs, better corporate governance, greater quality in decisions led to higher corporate cash payouts. Jurkas et al. (2011) used US data and found the same evidence. This supports the hypothesis proposed by La Porta et al. (2000) that firms use board gender diversity as a substitute for monitoring devices such as dividend payouts. However, most of these studies of gender diversity in boards on dividend pay-outs have been conducted in the United States. Nonetheless, there are studies that prove there is a difference in dividend pay-outs in different cultural systems.

As Shao et al. (2010) wrote: “A nation’s culture determines the importance of goals, and manifests itself in observable social norms, societal institutions and collective/individual behavior. Accordingly, substantial international business research has asked whether differences in national culture can help explain cross-country differences in various business and management practices” (Shao et al, 2010). This study concluded that when there is a high proportion of conservatism in a country, dividend payouts are higher. The opposite holds for a higher proportion of mastery, this results in a dividend pay-out which is lower. In addition, the paper of Bae et al. (2012) found that there is a significantly and negatively relation between dividend pay-outs and cultural dimensions. For a higher amount of masculinity in a culture they found that firms are likely to pay lower dividends. This means that when a culture is more based on ‘male’ perspectives dividend pay-out are lower than for more ‘female’ cultures. In more masculine countries, people are more assertive, ambitious, egoistic and competitive. People strive for material success. People respect everything that is big, strong and fast (Vitell et al, 1993). This means that people who are on corporate boards do not want to share their success. They want more success and invest therefore more in their own business than pay out dividends to their shareholders. It is expected that the positive relationship between dividend and the percentage of females will decrease in strength due to the fact that the company is located in a masculine country. This cultural difference between countries will strengthen or weaken the initial relationship. This research has never been done and therefore it is an addition to the economic science. When taken the relationship between dividend pay-outs, the fraction of women in the board and cultural differences into account. The research question of this paper is formulated as follows: *To what extent does the gender diversity of a board affect the dividend pay-outs of a firm and does culture affect this relationship?*

Motivated by the lack of empirical evidence on the interaction effect between gender and culture on dividend payouts, this paper wants to address how dividend pay-outs will be affected by the gender of the board and the cultural aspect. It will examine the dividend pay-outs of different boards while looking at the board composition and the culture of the country in which the firm is based. This research extends existing literature on this topic by focusing on gender diversity in boards with different cultural perspectives. This study uses a dataset which contains United States and Europe based listed firms, which could lead to a different results in order to cultural differences.

The findings of this paper are in line with the existing literature based on the positive relationship between dividend pay-outs and a higher fraction of females in the corporate board. The results are positive in every analysis, this means that over the whole sample in every case the dividends increase when the fraction of women in the board increase. The cultural aspect which is measured by the masculinity index found by Hofstede (2010) does not have any effect on the initial positive relationship dividend and the fraction of females have. This means that the cultural differences between countries, thus more masculine or more feminine, does not change the initial positive effect. These findings need serious acknowledgement. We can state that in every country it is better to have more females on the board because this leads to higher dividend pay-outs in any case.

The paper continues by providing an overview of the most noticeable relevance in this research area. Hereafter, section 2 gives a literature review of already done research in this field. Section 3 gives the methodological insights of the research such as the statistical model that is used and the sample. Section 4 gives the results of this statistical analysis. Section 5 gives a conclusion on the research question and explains the limitations this research had.

2. Literature Review

2.1. Dividend pay-outs

The paper of Lintner (1956) laid the foundation for the modern understanding of dividend policy. He concluded that dividends are sticky, tied to long-term sustainable earnings. Dividends are only paid by mature companies and are smoothed from year to year. Besides, managers use a long-term pay-out ratio when determining the dividend policy. But during the past decades this perception of dividend has been changed.

Dividend pay-outs vary extensively over time and across firms. These differences are caused by the different theories about dividend and its policies. Despite extensive existing research, examining factors like agency problems and asymmetric information, this variation in the levels of dividend pay-outs is still for a large part unexplained (Allen & Michaely, 2003; Brav et al., 2005). Dividend theories could give an understanding why there is still a large part unexplained.

2.1.1. Agency theory

The agency theory explains the dividend puzzle by analysing the agency relationship between managers and shareholders. The papers of Black (1976) and Jensen (1986) showed that dividend policy is a consequence of the separation of ownership and control within a company. When a listed company sells their shares, shareholders become owners of the company. However, the company will be led by the managers. Managers and shareholders have different interests. Shareholders want to maximize the value of the firm, while managers want to have the highest possible salary and invest in projects they like the most (Jensen, 1986). Agency theory predicts that dividends are substantial and stable. Because, the

higher the dividends are, the less free cash flow there is. *Ceteris paribus*, there is thus less money in managers hands to spend on projects which might result in a negative net present value. Besides, the higher dividends are, the higher is the need to go to capital markets for new outside funding and the greater is the effectiveness of monitoring for investors.

2.1.2. Signalling effect theory

The second theory is the signalling theory. In general, the market reacts positively to announcements of increases in dividends and negatively to announcements of dividend decreases. The main explanation for this is the signalling hypothesis. This means that higher dividends are announced by managers to let the market know that there are higher cash flows expected in the future (Shao et al., 2010). However, Allen and Michaely (2003) found a little evidence that higher earnings follow larger dividends. Higher dividend pay-out policies could attract more equity and debt, which leads to higher earnings. Allen and Michaely (2003) conclude that if firms use dividends as a signal, the signal is not about future growth in earnings or cash flows, but it may give information about the board and financial decisions.

2.1.3. Bird in hand theory

The third theory is the bird in hand theory, this theory implies that investors should be indifferent between receiving cash dividends now and enjoy the future payoffs from future payoffs from capital benefits as long as the firm accepts only projects with a positive net present value and tries to avoid the redundant free cash (Shao et al., 2010). This means that dividend represent a bird in hand. So the bird in hand theory predicts that the stock of high dividend firms is particularly attractive to risk-averse investors because they are concerned with security and hence firms can raise their value by issuing high dividends and have a security for a positive net present value in projects and security there is no redundant free cash flow (Shao et al., 2010).

2.1.4. Pecking order theory

The last theory is founded by Myers (1984) and is also described by Shao et al (2010) and is called the pecking order theory. This theory argues that the traditional pecking order framework in which a firm prefers internal to external financing and debt to equity if it issues securities can be explained by a firm's capital structure choice. Because there is asymmetric information, external finance is more expensive than internal free cash flows for investment. Dividends could be seen as internal free cash flows if they have not been issued yet. These decisions about dividend pay-outs and their policies are made by the corporate boards. These corporate boards try to come along with the preferences of their shareholders. However, there are still some agency problems within. As already been said in the introduction, corporate board characteristics can change the decisions. Especially the fraction of women in a board could change the dividend pay-outs.

2.2. Gender diversity in corporate boards and dividend pay-outs

Corporate boards make important financial decisions. These decisions are highly influenced by the members of the board and thus the diversity of the board. The performance of functions like monitoring, controlling, advising, and linking with external environment, are influenced by the composition of the board. This implies that the performance of the firm is partly influenced by the composition of the board, like gender for instance (Carter et al., 2003) For a long time, the most corporate boards were led by the so-called “white and wise old men that have a lot of experience as a CEO or CFO” (PwC, 2019). But according to the latest studies, this trend is changing. More women are requested by large listed firms. In this sub-chapter it will be described how women can influence the decision-making in the board of directors and how this influences the dividend payouts.

In general, arguments for a positive relationship are based on the view that gender diversity in the board affects the firm performance positively and therefore higher dividend payouts are expected. According to Adams and Ferreira (2009), the gender quotas in many European countries are based on this assumption that there is a positive effect between firm performance and gender diversity in the board. But not only the performance of the board increases, also the dynamics of the board are affected by the gender composition. The quality of the boardroom discussions of complex problems is improved by the presence of female directors. Boards with female directors engage more interactions between the board members. This enhances the outcomes of the decisions that needs to be made. (Carter et al. 2013, Gul et al. 2011). According to Faccio et al (2016), females take out less debt and make generally less risky financing and investment choices. These lead to lower costs and more investment in NPV projects that are expected to give profit. These give the impress that higher future dividend will be paid. Corporate social responsibility is also a trending topic and Shaukat et al. (2016) found that female directors tend to focus more on these CSR and this attracts more investors. When there are females in the board, Matsa and Miller (2011) found that these females are more likely to hire other females for these top executives than other males. That means, when there are a couple of females in the board, the expectations are that the fraction of females will increase and this leads to higher performance according to Carter et al. (2003). This research is based on Fortune 1000 firms and found a significant positive relationship between the fraction of women on the board and the firm performance. The more diverse the board is, the more it is suggested to serve the monitoring function better because of the increased board independence.

As already been described, female directors are more likely to engage in monitoring. Monitoring leads to less agency costs. The female directors are more likely to attend the board meeting than their male counterparts and that implies that females are more aware of the day-to-day business. Besides, they are more likely to focus on auditing, nomination and corporate governance committees and thus try to have a good working firm on the inside (Adams and Ferreira, 2009). The agency problem, or the so-called free cash flow problem, holds that dividends can be reduced by the free cash flow of the firm. Free cash flow is defined as the cash flow that results from the net profit minus the dividend payouts.

So the higher the dividends, the less free cash flow ends up for the managers. Free cash flow can be used by managers to invest in negative NPV projects. Women in boards are less likely to accept those investments by the managers because they monitor stronger than male directors in the board. Strong support for this theory is found by Chen et al. (2017). Their paper describes results for a significant relationship between the board gender composition and the dividend pay-outs. When there is a 10 percentage point increase in the fraction of female directors, there is a 1.67 percentage point increase in the firm's dividend payout. This research was conducted by using 1691 S&P companies in the period of 1997-2011. This same evidence has been found by the paper of Jurkas et al. (2011), however, they used a sample of US firms. When there is a higher percentage of females in the boards, lower monitoring costs for the managers needs to be paid and this results in higher dividend payments.

Following this argument, female directors are expected to be good monitors that strengthen shareholders' rights. Strong shareholders pressure managers to pay higher dividend. The paper of Saeed and Sameer (2017) summed up evidence about papers of many that found evidence for higher dividend pay-outs from listed companies with a higher fraction of females in the board. For example the paper of Pucheta-Martinez and Bel-Oms (2016), they examined the influence of the representation of women in Spanish corporate boards. They found a significantly and positively results between the fraction of women and the dividend pay-outs. This result is based on the reduction by female directors on the agency costs. This implies a better corporate governance and enhanced monitoring costs were reduced. That resolves the shareholder-manager conflict or the so-called agency problem.

However, contrary to the arguments discussed before, there are also arguments that argue for a negative relationship between board gender diversity in the board and dividend payouts. This contradicts the findings of the above literature. The paper of Saeed and Sameer (2017) confirms that the conservative behavior of female directors can affect the decision making in a negative way. Women are more likely to be risk averse and try to protect themselves or the company for unforeseeable downturns. This result in lower profits and thus lower dividend pay-outs (Levi et al. 2014, Chen et al. 2016). Female directors exhibit a greater need for precautionary cash holdings. This means that females in boards might be more inclined to retain the cash within the firm as a buffer for future uncertainties instead of using it as dividends. Besides, it was mentioned above, diversity in boards will lead to greater perspectives and better performance, a study of Earley and Mosakowski (2002) found that heterogeneous groups in general, and gender-diverse groups in particular, tend to communicate less frequent than homogenous groups. The reason for this is that the opinions in a diverse group are not likely to be shared because people tend to be scared to reveal their opinion when it will not be in line with that of the others. A paper of Ward & Forker (2017) found that gender diversity in boards can provide more informed and strategic basis to the investment decisions. This means that gender diversified boards can foresee new and better investment opportunities in a firm. Therefore there is a small amount of free cash flow because most of it will be used for investments that will grow the firm. That implies less to zero dividend payouts. However, this sample was used for emerging countries.

This paper will look at mature countries like European countries and the US. Positive and negative relationships between gender diversity and dividend payouts have been discussed. However, the increase in female members of the board, the female quotas for European firms and the evidence that is provided for mature countries all show a positive effect of the share of women on the board of dividend pay-out. Taking into account the data sample of mature European countries and the US, the following hypothesis is developed:

Hypothesis 1: There is a positive relationship between the number of women on the board and dividend pay-outs.

2.3. Cultural differences and dividend pay-outs

Besides this effect of gender diversity on dividend payouts which could be negative or positive, countries can have other factors which influence board diversity. Different time periods, different firms, different countries and especially different cultures can greatly influence the research on gender diversity and dividend payouts (Carter et al. 2010). Dividend pay-outs can be affected by the board in particular but also by other factors like culture. In this subchapter the link between culture and dividend payouts will be explained. “Culture, defined as a collective mindset manifested in certain shared values, norms, believed and expected behaviors that are deeply embedded, unconscious and often irrational” (Fidrmuc & Jacob, 2010). Shao et al. (2010) found that culture contributed to dividend policies of listed companies. They used Schwartz’s key cultural dimensions for their paper, namely conservatism and mastery to give each country an index. Conservative shareholders pay more attention to security and relations, thus are more embedded in groups and rely on non-material assets. Mastery shareholders have the same perspective as managers and like independence and successfulness and rely on ambition and material assets. They found that when a country is more conservative, the dividend pay-outs are higher. On the other side, when a country is more mastery, the dividend pay-outs are lower. This relies on the agency theory, the signalling effect theory, the bird in hand theory and the pecking order theory.

A more common used and famous index is the Hofstede cultural dimensions index. The Hofstede cultural dimensions give an understanding of cultural differences in other countries. He gave five dimensions to measure cultural differences, Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance Index (UAI) and the Long-Term Orientation (LTO). These dimensions are used as variables for the measure of culture differences in countries (Hofstede, 2001). Many papers use the individualism dimension to measure culture for dividend pay-outs

This analysis focuses on the masculinity dimension of Hofstede’s framework. When a country is considered as masculine, it means that male individuals are expected to be assertive, ambitious, competitive, strive for material success and to respect to what is big, strong and fast, the opposite for holds for feminine countries (Vitell et al. 1993). Masculine cultures expect that women serve and care

for the non-material quality of life, for children and for the weak. Feminine cultures, on the other hand, define no special roles for males and females and are not competitive or ambitious. Thus masculine cultures value material success and assertiveness while feminine cultures value qualities such as interpersonal relationships and concerns for weaker individuals (Vitell et al. 1993). For example, the United States scores 62 for masculinity, Germany has a score of 66, while the Sweden show 5 on masculinity (Hofstede, 2003).

A paper of Bae et al. (2012) found that there is a significantly and negatively relation between dividend pay-outs and cultural dimensions. Firms in high masculinity countries pay lower dividends than those in low masculinity countries. The findings are based on the effect that performance-driven managers have an incentive to hold large cash holdings to exploit investment opportunities rather than to pay out cash as dividends. This is in line with the free cash flow problem that occurs when there are more male in the firm.

Contrary, the paper of Newman & Nollen (1996) found that masculine countries have a “asymmetric nature of performance rewards”. This implies that managers are paid much higher compensation for good performance. Thus, in masculine cultures, there is a higher form of opportunistic behaviour. Opportunistic behaviour could lead to higher expectations of the firm and thus expect managers that the firm has positive future profits. Therefore they pay more dividend (Zheng & Ashraf, 2014). This study has been done to a sample of international banks representing 51 countries over the period of 1998-2007. Because the sample of this research contains to listed companies, the effect on our sample is being questioned.

2.4. Interaction of gender and culture on dividend pay-outs

In the past section, some evidence of the positive relationship between the fraction of women and the dividend pay-outs was discussed. Furthermore, existing literature seems to suggest that when a country has a different index number for masculinity, which implies cultural differences, there is a positive relationship with dividend pay-outs as well as a negative relationship. This paper wants to examine whether there is an interaction between the number of women in a board and the index number of the specific country for masculinity. With this proxy we can find out if masculinity changes the effect of board diversity in the corporate board on the dividend pay-outs. This study has never been done and therefore there is a lack in the existing literature. We expect that the interaction effect has a negative significant effect. When a country is masculine, dividend pay-outs are lower than in a feminine country. Thus when more females are in the board the dividend pay-outs are expected to be higher. However, when this company is located in a masculine country, the positive effect will then decrease. Therefore the following hypothesis is determined.

Hypothesis 2: the hypothesized relationship from H1 decreases in strength with a higher country's score on masculinity.

3. Research Method

3.1. Data sample description

To provide an answer to the research question, a quantitative research method will be adopted. Data on dividend payouts is retrieved from Eikon. Characteristics of the board are retrieved from Eikon as well, with the ESG data pack. This initial sample will include listed firms based in Europe and the United States, which have information available between January 2002 and December 2018. The data from ESG is only available since January 2002, therefore the sample is based on 2002-2018. Other specific data, for instance masculinity, for culture will be retrieved from the Hofstede (2010) and is for each country specific, this will be merged into a second data sample for the regression with the interaction. In this study, panel data will be used. The observations of the firms through different years should be seen as dependent of each other instead of independent observations. Panel data, or cross-sectional time-series data is used because this will look at the behavior of the firms across time. The variables change over time but the firms stay the same.

The original sample included 3784. These consist of all kind of companies based in Europe and the United States. The first step in the data cleaning process was to exclude the firms that had the same ISIN code but a different company name. After this, only 3731 companies were left. The amount of companies located in Europe is 771. The amount of companies located in the United States is 2.960. This means that only 20% of the sample is based on European companies.

In this study, a panel data regression will be combined with a random effects regression. This paper uses panel data because it uses observations for the same company during different years. Therefore the observations for each company should be seen as dependent. The observations during the years for each variable are dependent of the years before and therefore the data can not be treated as independent observations. The random-effects model is used because the company does not change over time, however the variables change over time. When fixed effect was used, we would assume that both does not change over time.

3.2. Variables

In the next chapters, the dependent variables and the control variables used in this paper will be explained. Table 1 gives an overview. The first column gives the variable names, the second column gives the explanation how the variable is measured and the third column gives the source of the variable.

TABLE 1: VARIABLES

Variable Name	Measurement	Source
Dependent Variable		
DIVIDEND	The variable is the dividend payout ratio which is defined as dividends over net income.	Eikon
Independent Variables		
FRACTION	The number of female directors divided by the total number of directors in the board expressed in a percentage point.	Eikon ESG
MASCULINITY	Masculinity indicates the extend of tough values such as assertiveness egocentric, success, competitiveness and dominance in values of a society. Each country gets an index number based on the cultural dimensions of Hofstede.	Hofstede (2010)
Control Variables		
SIZE	It measures the size of the firm as the lognormal logarithm of total assets. By using the lognormal logarithm, the total assets could be better compared to each other.	Eikon
LEVERAGE	It is defined as the ratio of total debt (short- and long-term debt) to total assets.	Eikon
TOBINQ	It is a proxy for growth opportunities, this is the ratio of the book value of assets (minus book value of equity plus market value of equity) to the book value of assets.	Eikon
CASH	It measures the cash reserves and is defined as cash and marketable securities divided by net assets (total assets minus cash and marketable securities).	Eikon
ROA	The return on assets is a measure for profitability. It is computed as earnings before interest, taxes, depreciation and amortization dividend by the total assets.	Eikon
GDP	It measures the GDP growth level of a country in a percentage	Worldbank
INDUSTRY	The SIC code is used for all the companies and are classified in different groups. See appendix A for the groups.	Eikon

The variables are used for the regression analysis. In the first column the variable name is presented. In the second column the explanation of the variable is presented and in the third column the source is presented.

As stated above, most of the data is retrieved from Eikon. The masculinity index is founded in the paper of Hofstede (2010) and the GDP growth level for each country is retrieved from the Worldbank.

3.2.1 *Dependent variable*

To practically examine whether the impact of board gender diversity on the dividend pay-out has a significant effect, the following baseline is estimated for the empirical model. This baseline is retrieved from the paper of Chen et al. (2017). The dependent variable is the dividend payout ratio and this is the percentage defined as the total amount of dividends paid out to the shareholders divided by the income of the company. (Chen et al. 2017). The dividend pay-out ratio will be described as the following variable: **DIVIDEND**.

To test for the first hypothesis the following regression will be used:

$$\text{Dividend payout}_{i,t+1} = \alpha + \beta \times \text{Fraction of female directors}_{i,t} + \text{YZ}_{i,t} + \text{Year}_t + \varepsilon_{i,t} \quad (1)$$

In the first regression the α stands for the constant, β stands for the coefficient that gives the direction in which the independent variable, the fraction of female directors in this regression, moves. The third sign in the regression is yZ, this stands for the control variables that are included in the regression. In the following paragraphs the control variables will be explained. For the second hypothesis, the interaction variable is included, and the variable for culture as well:

$$\begin{aligned} \text{Dividend payout}_{i,t+1} = & \alpha + \beta \times \text{Fraction of female directors}_{i,t} + \\ & \beta \times \text{Fraction of female directors} \times \text{Culture}_{i,t} + \beta \times \text{Culture}_{i,t} + \text{YZ}_{i,t} + \text{Year}_t + \varepsilon_{i,t} \end{aligned} \quad (2)$$

In the second regression the α , β and yZ are the same. The interaction term for the fraction of females x culture is added. This term will be explained later but this coefficient shows if the interaction term increases or decreases the strength that higher dividend will be paid if there are more females in the board.

3.2.2. *Independent variables*

The first independent variable is the fraction of female directors on the board.. The fraction is a number of female directors dividend by the total number of directors in the board expressed in a percentage point (Chen et al. 2017). The fraction of females will be described as the following variable: **FRACTION**. This paper expects a positive relationship based on previous evidence, between the fraction of females and the dividend pay-outs (Lakhal et al, 2015; Jurkas et al, 2011; Gul et all, 2011; Pucheta-Martinez and Bel-Oms, 2016).

The other independent variable is culture. This variable will be explained by the measurement of the cultural dimensions index of Hofstede (2010). Masculinity is one of the six dimensions Hofstede described. Masculinity indicates the extend of tough values such as assertiveness, egocentric, success, competitiveness and dominance in values of a society. Femininity stands for tender values such as a

preference for cooperation, caring for weak people, empathic, quality of life is important (Zheng & Ashraf, 2014). Each country gets an index number based on the Hofstede (2010) paper. The index begins at 0 and counts until 100. The higher the number is, the more masculine a country is. The lower the number is, the more feminine a country is. In appendix D the list of index numbers for each country is presented. The masculinity index number will be described as the following variable: **MASCULINITY**. This paper expects a negative relationship between masculinity and dividend pay-outs (Bae et al., 2012).

3.2.3. Control variables

The Z variable is a vector for control variables that could affect the firms dividend payout. These are retrieved from other existing literature (Chen et al. 2017, Bae et al. 2012).

The first firm specific control variable is the firm size. This is measured as the lognormal logarithm of total assets. By using the lognormal logarithm, the total assets could be better compared to each other. Therefore it becomes a better control variable. The firm size will be described as the following variable: **SIZE**. This paper expects a positive relationship between the size of a company and the dividend pay-outs. Bigger listed companies give normally more and consequent dividends when compared to smaller listed companies (Chen et al., 2017; Redding, 1997)

The second firm specific control variable is leverage. This is defined as the ratio of total debt (short- and long-term debt) to total assets. The leverage ratio is described as the following variable: **LEVERAGE**. This paper expects a positive relationship with leverage and dividend pay-outs. When a company has a higher amount of leverage, it means it is probably a more mature company. Therefore, the dividend pay-outs are expected to be higher (Chen et al., 2017).

The third firm specific control variable is Tobin's q, this is a proxy for growth opportunities, this is the ratio of book value of assets(minus book value of equity plus market value of equity) to the book value of assets. The Tobin's q is described as the following variable: **TOBINQ**. This paper expects that there is a negative relationship between the Tobin's Q and the dividend pay-outs. When the Tobin Q is high, this means there are high growth opportunities, thus many investment opportunities. This means that there is less money to pay out for dividends. Therefore the expected relationship is negative. (Chen et al., 2017).

The fourth firm specific control variable is cash/ net assets. This measures the cash reserves and is defined as cash and marketable securities divided by net assets (total assets minus cash and marketable securities). The ratio for cash/net assets is described as the following variable: **CASH**. The expected relationship is positive, when more cash enters the company more dividend could be paid (Chen et al., 2017).

The fifth firm specific control variable is the ROA, return on assets and this is a measure for profitability. It is computed as earnings before interest, taxes, depreciation and amortization dividend by the total assets. The ROA is described as the following variable: **ROA**. The expected relationship is

positive because when a company has a high return on its assets it could imply that the company will give some of this return to their shareholders (Chen et al., 2017).

To control for country specific differences, GDP growth level in percentage is used. This is retrieved from the Worldbank. The GDP growth level is described as the following variable: **GDP**. The expected relationship is positive, when a company is based in a country with a high growth level, it means that the economy is doing well, shareholders have faith and more dividend will be paid than in comparison with a recession and thus low GDP growth (Bae et al., 2012).

The last control variable is the industry specific control variable. The SIC codes for all the companies are used and are classified in the following groups. Further information is in appendix A.

1. Agriculture, Forestry and Fishing
2. Mining
3. Construction
4. Manufacturing
5. Transportation, Communications, Electric, Gas and Sanitary Service
6. Wholesale Trade
7. Retail Trade
8. Finance, Insurance and Real Estate
9. Services

This control variable is described as the following variable: **INDUSTRY**. This control variable does not give an expected relationship. It only shows the different outcomes between the industries.

3.3. Interaction effect

The interaction for female directors on the board and culture in that country. The expected effect of this interaction is described by hypothesis 2. The hypothesis is stated as follows:

$$\begin{aligned}
 \text{Dividend payout}_{i,t+1} = & \alpha + \beta \times \text{Fraction of female directors}_{i,t} + \\
 & \beta \times \text{Fraction of female directors} \times \text{Culture}_{i,t} + \beta \times \text{Culture}_{i,t} + \gamma Z_{i,t} + \text{Year}_t + \varepsilon_{i,t}
 \end{aligned}
 \tag{2}$$

The interaction effect is a multiplication of the variable FRACTION, the fraction of females in the board, and the variable for masculinity MASCULINITY which is an index number. This variable measures the simultaneous effect of the two independent variables on the dependent variable DIVIDEND in which their joint effect is probably significantly greater (or significantly less) than the sum of the effects individual. This results in the following variable: **INTERACTION**. The interaction effect is expected to be negative. The positive relationship between dividend pay-outs and the fraction of females which is expected to be positive, will decrease in strength with a higher score on masculinity per country. That implies that the interaction effect gives a negative relationship with the independent variable dividend.

4. Results

4.1. Descriptive statistics

To get a clear overview of the information the variables have, the descriptive statistics of the firms and the countries are provided. Table 3 gives information about the Winsorized summary statistics of the firms. To mitigate the potential of effects of outliers, all the variables are winsorized at the 1st and 99th percentiles. Appendix B show the non-winsorized and the winsorized summary statistics. The dependent variable is DIVIDEND. The independent variables are FRACTION and MASCULINITY. The others are control variables.

TABLE 2: SUMMARY STATISTICS

Winsorized summary statistics listed firms Europe and United States between 2002-2018

Variable	(1) N	(2) Mean	(3) SD	(4) Min	(5) Q ₁	(6) Q ₂	(7) Q ₃	(8) Max
DIVIDEND	45513	21.741	25.8906	0	0	11.45	38.46	95.5
FRACTION	28645	15.8657	11.7955	0	8.33	14.29	23.08	50
MASCULINITY	63410	59.5678	11.5373	5	62	62	62	88
SIZE	52951	6.2687	0.8834	3.6578	5.7136	6.2546	6.8109	8.7152
LEVERAGE	52402	24.9961	21.7970	0	6.56	21.61	37.28	109.12
TOBINQ	49035	1.9225	1.4418	0.5415	1.0746	1.4129	2.1334	11.1701
CASH	45767	0.2017	0.7049	0	0.0137	0.05399	0.1516	10.6558
ROA	51091	3.1379	14.8894	-116.64	1.27	4.76	8.87	42.67
GDP	63410	1.9021	1.6488	-5.6971	1.5672	2.2170	2.8612	7.4708
INDUSTRY	63410	0	0	0	0	0	0	0

Summary statistics from the data retrieved from Eikon, Hofstede (2011) and the Worldbank of listed firms in Europe and the United States between 2002 and 2018

Table 2 has already been winsorized for 1 and 99 percentile which excludes the extreme outliers in the data set. Dividend pay-outs are on average 21.74% of the net assets of a company. The average fraction females have in the corporate boards is 15.87%. The highest fraction of females a corporate board has in our sample is 50%. This gives a good representation of an increasing proportion of females in corporate boards. Masculinity has a mean of 59.5678 and a value of 62 for the first, the second and the third quantile. This is because 80% of the sample is companies from the United States. The United States has a masculinity index score of 62, therefore almost the whole sample has a masculinity index number of 62. Only the minimum score and maximum score are respectively lower and higher. An index number which goes more towards 0 means a more female country and an index number which goes more towards 100 means a more masculine country (Hofstede, 2010). Therefore we can say that our sample is more masculine. The SIZE of the companies is distributed as expected. The size of the company is measured in a normal logarithm of the assets. Therefore the numbers are between 0 and 10. For LEVERAGE,

CASH and ROA are no rare findings found. These are all as expected. For GDP we found growth rates between -5.70% and 7.47, we can say this is because we have data between 2002 and 2018 which includes the credit crisis but also economic upturn before. This explains the distribution between the given numbers. For INDUSTRY no such numbers are given, only which industry the company is in. Therefore all the statistical numbers are 0.

4.2. Multicollinearity

Table 3 shows the correlations between the dependent variable for the dividend pay-outs DIVIDEND and the control variables which are the size of the company, the leverage the company has, the Tobin's-Q, cash divided by net assets, the return on assets, GDP growth rate and the industry in which a company is in. A high correlation between the control variables means that these variables move in the same direction and cannot be used as individual independent variables, or so-called control variables for this regression.

TABLE 3: CORRELATION MATRIX

Correlation matrix of the independent variable FRACTION and the control variables

	FRACTION	LOG	LEVERAGE	TOBINQ	CASH	ROA	GDP	INDUSTRY
DIVIDEND	1.0000							
SIZE	0.1329	1.0000						
LEVERAGE	-0.0020	0.1743	1.0000					
TOBINQ	0.0032	-0.3639	-0.1363	1.0000				
CASH	-0.0166	-0.2891	-0.1216	0.2769	1.0000			
ROA	0.0209	0.2315	-0.0094	-0.0221	-0.3436	1.0000		
GDP	0.0469	-0.0233	-0.0230	0.0910	0.0145	0.0299	1.0000	
INDUSTRY	0.0278	0.0566	-0.0015	-0.0375	0.0307	-0.0196	0.0030	1.0000

The correlation matrix shows the correlation coefficients between the selected variables. The variables in this correlation matrix are the independent variable FRACTION and the control variables. FRACTION (the fraction of female in the board), LOG (natural logarithm of the total assets of the firm), LEVERAGE (the leverage ratio of the firm), TOBINQ (the Tobin-Q of the firm), CASH (cash to net asset ratio of the firm), ROA (return on assets of the firm), GDP (GDP growth in the country) and INDUSTRY (industry sector the firm is in).

Multicollinearity could be indicated when the correlation matrix gives a value which is lower than -0.4 or higher than +0.4. There is multicollinearity when an independent variable or a control variable is highly correlated with another independent variable, small changes in the sample lead to large changes in the output. This gives the results an unwanted bias. Since no value is lower than the bounds of -0.4 and +0.4, multicollinearity is not detected in this sample. Therefore we can use all the wanted variables.

To test for multicollinearity we can conduct another test as well. We use the “VIF” command to test for this. The results are given in table 4.

TABLE 4: MULTICOLLINEARITY TEST

Table for the VIF command in STATA to test for multicollinearity with the independent and control variables.

Variable	VIF	1/VIF
SIZE	1.31	0.7656
TOBIN	1.29	0.7769
CASH	1.26	0.7923
ROA	1.16	0.8640
LEVERAGE	1.03	0.9664
FRACTION	1.02	0.9764
INDUSTRY	1.02	0.9846
GDP	1.01	0.9915
MEAN VIF	1.14	

This table shows the variance inflation factor. Values higher than 5 indicate potentially multicollinearity. The tolerance is shown in column 3, this is used by many researchers to check the degree of collinearity and show the same results.

Multicollinearity can be found when the VIF value is greater than 5, this indicates that potentially correlation between the independent and the control variables is found. A value around 1 indicates there is no correlation between the dependent variable and the control variables. Because all of the values are slightly higher than 1, we can conclude that there is no multicollinearity in this dataset found. Therefore we can conclude again, all the wanted variables can be used.

4.3. Regression results

In this chapter, the results of the regressions will be discussed. The aim of the analysis of the regressions is to determine whether there is a significant difference in the dividend pay-outs and the fraction of females in the board in European and United States based firms. This study uses firm's information about the dividend pay-outs, the fraction of females and control variables. Later we will add the interaction effect which will look at the effect of culture on the relationship between dividend pay-outs and the fraction of females in the board.

4.3.1 Regression results first hypothesis

Empirical results of the regression of the first hypothesis are presented in the following chapter. The first hypothesis is stated as:

Hypothesis 1: There is a positive relationship between the number of women on the board and dividend pay-outs.

We expect that the relationship is positive based on the existing literature. When the hypothesis is positively significant, we can say that the higher the fraction of females in the corporate board, the more dividend will be paid to their shareholders. Table 4 presents the results of the regression. This table shows if the results are significant and if so if they are positively significant or negatively significant. We used a significance level of 5%, this is reported in the table as the p-value with *, ** or *** stars. This is explained in the description under the table.

TABLE 5: FIRST REGRESSION ANALYSIS

Panel data random effects regression model for dividend pay-outs of listed companies between 2002-2018 in Europe and the United States with the independent variable, firm specific control variables and the country and industry specific control variables.

(1)	
VARIABLE	DIVIDEND
FRACTION	0.2031*** (-0.014)
SIZE	8.2936*** (-.4505)
LEVERAGE	0.0153 (0.0113)
TOBINQ	0.4884*** (-0.1499)
CASH	-0.9066** (-0.4028)
ROA	-0.015 (-0.0157)
GDP	-0.3987*** (-0.0785)
INDUSTRY	0.4029** (-0.1746)
Constant	-34.5510*** (3.0872)
Observations	21.453
Number of firms	3467
R-Squared	0.0299

Panel data random effects regression model includes all listed companies. Robust standard errors are reported in parentheses. The * indicates the statistical significance at the 1%, 5% and 10% level, respectively *** p<0.01, ** p<0.05, * p<0.1. The independent variable DIVIDEND in column 1 is the dividend pay-out a company has done per year.

The results from the panel data regression are summed up in table 5. When the coefficient for fraction is significantly positive, it means that there is evidence that more females on the board will lead to higher dividend-payouts. This means we cannot reject hypothesis 1. Looking at the variable of FRACTION we

see a value of 0.2031***. This means that given the p-values of 1%, 5% and 10% significance level, the fraction of females in the board is significantly positive.

For the control variables there were expected relationships. A positive relationship will be explained by a positive coefficient and a negative relationship will be explained by a negative coefficient. The control measures are the size of the company, the Tobin's-Q, cash divided by net assets, GDP level and the industry level. For all the control variables a positive relationship was expected. In table 5 we find a positive and significant effect for the size of the company and the industry the company is categorized. These relationships were positive as expected (Chen et al. 2017). For the control variables CASH and GDPor we also expected a positive relationship (Chen et al. 2017). However, a negative coefficient and significant relationship is found. A possible explanation for a negative relationship between GDP growth and dividend payouts is that companies try to convince their shareholders during a recession or an economic downturn that the company is still doing good. There could be said that the signaling theory is used here. Even when a company's business is below average, it could give a signal that the company is doing above average. The stock price stay the same and companies do not make any losses on decreasing stock prices while they already in a recession (Shao et al., 2010). For the TOBINQ variable, we expected a negative relationship. However, a positive relationship is founded. A possible explanation could be that shareholders have more faith in the company when the company has more growth opportunities. The company is expected to that these faithful shareholders will keep the stock, in exchange the company give them dividend (Chen et al. 2017).

4.3.2 Regression results second hypothesis

In the literature review we found that dividend pay-outs are lower in masculine countries than in feminine countries. This paper wants to find out if there is an effect of a cultural difference between countries and the positive effect between dividend pay-outs and the number of females in the board. The second hypothesis was stated as follows:

Hypothesis 2: the hypothesized relationship from H1 decreases in strength with a higher country's score on masculinity.

We expect a decreasing effect because Bae et al. (2012) found a negative relationship between the dividend pay-outs and cultural dimensions of Hofstede (2010). More masculine countries pay less dividend than more feminine countries. To find out if there is a decreasing effect on the positive relationship of more females in the board and dividend pay-outs, an two variables are included. The first variable is the interaction term which consists out of the following variables: FRACTION x MASCULINITY. With this interaction term this regression show if there is a significant increasing, a decreasing or no effect at all. The second variable which is included is MASCULINITY. Besides, we

centered the variables FRACTION and made the interaction term with the centered variable for FRACTION x MASCULINITY. This makes it easier to interpret the results when having an interaction variable. In table 6 the regression is presented.

TABLE 6: SECOND REGRESSION ANALYSIS

Panel data random effects regression model for dividend pay-outs of listed companies between 2002-2018 in Europe and the United States with the independent variable, firm specific control variables and the country and industry specific control variables including the interaction term.

(1)	
VARIABLES	DIVIDEND
FRACTION	0.1547*** (0.04644)
INTERACTION	0.0001 (0.0008)
MASCULINITY	-0.1471*** (0.0337)
SIZE	8.2772*** (0.4480)
LEVERAGE	0.0148 (0.0113)
TOBINQ	0.4998*** (0.1499)
CASH	-0.8788** (0.4026)
ROA	-0.0172 (0.0157)
GDP	-0.3968*** (0.0786)
INDUSTRY	0.4616*** (0.1748)
Constant	-22.8161*** (3.7178)
Observations	21,453
Number of firms	3,467
R-Squared	0.0695

Panel data random effects regression model includes all listed companies. Robust standard errors are reported in parentheses. The * indicates the statistical significance at the 1%, 5% and 10% level, respectively *** p<0.01, ** p<0.05, * p<0.1. The independent variable DIVIDEND in column 1 is the dividend pay-out a company has done per year.

In table, the coefficient for FRACTION is still positive and significant with a value of 0.1547 which is almost the same as in table 4. The second hypothesis will be tested with the interaction term. The

interaction term coefficient is 0.0001 and not significant. This means that the effect is almost 0 and not significant at all. Therefore, the conclusion can be made that the effect of masculinity in a country does not significantly influence the positive effect between dividend payouts and the amount of females in the board. In addition, this means that the second hypothesis is rejected. However, the second variable MASCULINITY, gives a negative and significant coefficient. This is in line with the paper of Bae et al. (2012). When a country has a higher effect of masculinity, it will decrease the dividend pay-outs of the firm that is located in that specific country. All the other variables have a slightly different coefficient but the effects are the same.

4.4. Robustness check

In the past paragraph we rejected the second hypothesis because the coefficient showed a value of almost 0 and not significant. Since 80% of our sample is based on firms located in the United States, we can ask if the masculinity index of the United States biases the results. To find out if there is no decreasing effect at all, we conduct a robustness check. We made another sample with only the except of the United States. With this sample we can check whether the positive effect between dividend pay-outs and the fraction of females is still positive and significant. Besides, we can test whether the effect of culture on this positive effect is still not significant and almost 0 or decreasing as expected.

The sample we use for this robustness check includes the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Switzerland, Swede, Turkey and the United Kingdom. Table 7 shows the regression.

TABLE 7: ROBUSTNESS CHECK ANALYSIS

Panel data random effects regression model for dividend pay-outs of listed companies between 2002-2018 in Europe without the United States, the dependent variable, the independent variable, firm specific control variables and the country and industry specific control variables including the interaction term.

(1)	
VARIABLES	DIVIDEND
FRACTION	0.1776*** (0.05524)
INTERACTION	-0.0002 (0.0010)
MASCULINITY	0.0159 (0.032)
SIZE	6.3175*** (0.7071)
LEVERAGE	-0.0419 (0.0021)
TOBINQ	3.2860** (0.3438)
CASH	-9.0827** (2.2128)
ROA	-0.1908*** (0.0388)
GDP	-0.3136*** (0.1050)
INDUSTRY	0.3421 (0.2798)
Constant	-11.6495*** (5.2956)
Observations	9,741
Number of firms	1,084
R-Squared	0.0318

Panel data random effects regression model includes all listed companies. Robust standard errors are reported in parentheses. The * indicates the statistical significance at the 1%, 5% and 10% level, respectively *** p<0.01, ** p<0.05, * p<0.1. The independent variable DIVIDEND in column 1 is the dividend pay-out a company has done per year.

Even when we exclude the United States, we find that the interaction effect is still almost 0 and not significant. The positive relationship between dividend pay-outs and the fraction of women in the board

is still positive and significant. The coefficient for MASCULINITY is not significant anymore. Therefore we cannot say that masculinity decreases the dividend pay-outs in a country in Europe. The coefficient of leverage has changed from positive to negative when excluding the United States. However, it is not significant therefore we cannot take this into account. The ROA variable has changed into a significant coefficient. When the return on the assets are increasing, the dividend pay-outs decrease. Besides, the variable for industry is not significant anymore.

In conclusion, the results from hypothesis 1 have not changed. We still can say that when there are more females in the board, the dividend pay-outs increase. However, when we exclude the United States, the second hypothesis is still not rejected. The variable for masculinity has become positive. This is not in line with the paper of Bae et al. (2012), who expected a negative relationship. Nevertheless, the coefficient is not significant, therefore we cannot take this into account.

5. Discussion & Conclusion

This paper tried to search for more evidence about the dividend pay-outs when a firm has more females in the board. This study has already been done by multiple researchers. However, the timeframe and the countries included is new. In addition this paper has included a cultural effect. This has never been done and therefore new insights have been showed. The sample consisted of 3731 companies. The amount of companies located in Europe is 771. The amount of companies located in the United States is 2.960. In order to provide an answer to the research question, two hypothesis were conducted. This chapter continues by discussing the findings of the previous chapter. These findings will also be compared with prior research results. Then this paper will end with a conclusion and some limitations and recommendations for further research.

5.1. Discussion

The results of the first hypothesis show that the increase of women in the corporate board of a listed firm, significantly increase the dividend pay-outs the firm pays. This is in line with prior evidence that is conducted in the United States but also in Europe (Saeed and Sameer, 2017; Pucheta-Martinez and Bel-Oms, 2016; Jurkas et al, 2011). Because this research has been done in many countries, there could be said that cultural differences should be incorporated. However, none of these studies have been included culture in their analysis. Therefore this research has made a second hypothesis that want to find out if culture has a positive or a negative effect on the relationship between dividend and the fraction of women on the board. Past research have shown that cultural differences can decrease the amount of dividend that will be paid (Bae et al. 2012). However, the second hypothesis does not give any significant outcome. The variable that controls for culture gives a decreasing effect on dividend as expected. The interaction term that controls for the interaction between culture and the given relationship

between dividend and the fraction of women on the board is not significant. Therefore we can conclude that culture does not affect the positive relationship between dividend and more females in the board.

5.2. Conclusion

This study contributes to the existing literature by providing a better understanding of the relationship between dividend pay-outs within listed companies and the number of women on the corporate board. This conclusion gives an answer to the research question: *To what extent does the gender diversity of a board affect the dividend pay-outs of a firm and does culture affect this relationship?*. On the first part of the research question we can give an answer that gender diversity of a board has a positive significant effect on the dividend pay-out. More women in boards increase the presence of other women in positions (Hillman et al., 2017). Women are more effective in monitoring and have more ethical behavior than men (Lakhal et al., 2015). This means that when there are more women in boards, better decisions are made for example, more investments in net present value projects that are positive. In addition, monitoring costs decrease when more women are in the board because women reduce agency problems (Jurkas et al., 2011). All this evidence is in line with our study. The sample of 3731 firms located in Europe and the United States show that the higher the fraction of women is, the higher the dividend pay-outs are. Besides, this study tries to find out if culture affects the relationship between dividend and the fraction of females in the board. Culture can decrease, increase or not affect the relationship at all. This research has never been done and therefore this study is unique. Past evidence show that cultural differences, decrease dividend pay-outs. This study used the index numbers of Hofstede (2010) to give each country an index number to measure the cultural differences. The analysis showed that the interaction of masculinity and the fraction of females does not decrease or increase the relationship with dividend at all. It did not affect the relationship and therefore we can give an answer to the research question.

Some limitations are involved when reviewing this research, these can provide as a guide by further research. Firstly, we used the Hofstede (2010) index, it could be the reason that another index like the paper of Shao et al. (2010) did. They used the Schwartz's key cultural dimensions for their paper. Instead of using masculinity Schwartz use conservatism and mastery to give each country an index number. It could be that by using this index the cultural differences do affect the positive relationship of dividend and the fraction of women. Secondly, 80% of the sample are firms that are located in the United States, this could give the results a bias that goes more towards the results of the United States. However, when we look at the robustness check which is the same regression but excluding the United States, we see the same results for hypothesis 1 and 2. Nevertheless, we see that masculinity is decreasing the dividend pay-outs in the sample with the United States. Thirdly, this paper used a sample of data between 2002-2018, this means that it used data before, during and after the crisis. The sample therefore is a good representative for every economic state.

In conclusion, some advice for further research is that another index like the index of Schwartz can be used to check whether this gives other results. Besides, the sample can be extended by using countries in Asia, Middle-Asia, Africa, South-America and the Pacific. Only then it can be concluded if cultural differences affect the relationship between dividend pay-outs and the fraction of females positively or negatively worldwide.

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7. Appendices

Appendix A.

Table 8: INDUSTRY CODES EIKON

Industry codes for firms that are classified in specific categories

Number	Meaning
0100-0999	Agriculture, Forestry and Fishing
1000- 1499	Mining
1500-1899	Construction
2000-3999	Manufacturing
4000-4999	Transportation, Communications, Electric, Gas and Sanitary Service
5000-5199	Wholesale Trade
5200-5999	Retail Trade
6000-6799	Finance, Insurance and Real Estate
7000-8999	Services

Appendix B.**TABLE 9: DESCRIPTIVE SUMMARY STATISTICS NON-WINSORISED***Non-winsorized summary statistics listed firms Europe and the United States between 2002-2018*

Variable	(1) N	(2) Mean	(3) SD	(4) Min	(5) Q ₁	(6) Q ₂	(7) Q ₃	(8) Max
DIVIDEND	45513	21.7718	25.9758	0	0	11.45	38.46	100
FRACTION	28645	15.9145	11.9445	0	8.33	14.29	23.08	100
MASCULINITY	63410	59.5678	11.5373	5	62	62	62	88
SIZE	52951	6.2663	0.9114	0	5.7137	6.2547	46.8109	9.5132
LEVERAGE	52402	43.4094	2771.9	0	6.56	21.61	37.28	460191.7
TOBINQ	49035	3.4687	221.1344	-477.6116	1.0747	1.4129	2.1333	45765.1
CASH	45767	0.3980	5.5831	0	0.0137	0.1516	37.28	56.6719
ROA	51091	-13.4527	2612.418	-540639.2	1.27	0.05399	0.1516	1204.1
GDP	63410	1.913455	1.7433	-9.1325	1.5672	2.2170	2.8612	25.1625
INDUSTRY	63410	5.9552	2.2442	1	4	5	8	9

Summary statistics from the data retrieved from Eikon, Hofstede (2011) and the Worldbank of listed firms in Europe and the United States between 2002 and 2018

TABLE 10: DESCRIPTIVE SUMMARY STATISTICS WINSORISED*Winsorized summary statistics listed firms Europe and United States between 2002-2018*

Variable	(1) N	(2) Mean	(3) SD	(4) Min	(5) Q ₁	(6) Q ₂	(7) Q ₃	(8) Max
DIVIDEND	45513	21.741	25.8906	0	0	11.45	38.46	95.5
FRACTION	28645	15.8657	11.7955	0	8.33	14.29	23.08	50
MASCULINITY	63410	59.5678	11.5373	5	62	62	62	88
SIZE	52951	6.2687	0.8834	3.6578	5.7136	6.2546	6.8109	8.7152
LEVERAGE	52402	24.9961	21.7970	0	6.56	21.61	37.28	109.12
TOBINQ	49035	1.9225	1.4418	0.5415	1.0746	1.4129	2.1334	11.1701
CASH	45767	0.2017	0.7049	0	0.0137	0.05399	0.1516	10.6558
ROA	51091	3.1379	14.8894	-116.64	1.27	4.76	8.87	42.67
GDP	63410	1.9021	1.6488	-5.6971	1.5672	2.2170	2.8612	7.4708
INDUSTRY	63410	0	0	0	0	0	0	0

Summary statistics from the data retrieved from Eikon, Hofstede (2011) and the Worldbank of listed firms in Europe and the United States between 2002 and 2018

*Appendix C.**TABLE 11: DETAILED SAMPLE COUNTRIES*

The frequency of observations of each country.

COUNTRY	(1) FREQUENCY
AUSTRIA	272
BELGIUM	544
CHECH REPUBLIC	85
DENMARK	476
FINLAND	425
FRANCE	1,972
GERMANY	2,074
GREECE	323
HUNGARY	68
IRELAND	187
IRALY	1,071
NETHERLANDS	731
NORWAY	561
POLAND	578
PORTUGAL	153
SPAIN	867
SWEDEN	1,156
SWITZERLAND	1,054
TURKEY	510
UNITED KINGDOM	6,613
UNITED STATES	43,707
TOTAL	63,427

Appendix D**TABLE 12: HOFSTEDE (2010) MASCULINITY INDEX NUMBER OF EACH COUNTRY**

The index numbers are retrieved from the Hofstede (2010) paper.

Country	Masculinity index number
Austria	79
Belgium	54
Czech Republic	57
Denmark	16
Finland	26
France	43
Germany	66
Greece	57
Hungary	88
Ireland	68
Italy	70
The Netherlands	53
Norway	8
Poland	64
Portugal	31
Spain	42
Switzerland	70
Sweden	5
Turkey	45
The United Kingdom	66
The United States	62

All index numbers have a number between 0 and 100. When an index number of a country goes more toward 0 it means it is a feminine country. When an index number of a country goes more toward 100 it means it is a masculine country. Hofstede (2010) stated a country as feminine between 0 and 49, and a country is stated as masculine when it has a number between 50 and 100.