Cultural Dimensions Influencing The Capital Structure: A Study On The G7

Author: T.D. Willemink
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,
Even though capital structure determinants have been researched extensively in the past decades, there is still no answer available to the capital structure puzzle, termed by Myers (1984). Previous literature has shown that both firm-specific as well as country-level determinants influence the capital structure choices of companies. Firm-specific determinants have, however, received much more attention compared to country-level ones. For this reason, the culture of a country has also not been researched a lot in existing literature. Therefore, this study aims to fill this gap in the existing capital structure literature by providing an examination on what degree Hofstede's five cultural dimensions impact the capital structure choices made by firms in the G7. This was tested by way of four OLS regressions using the data of 5,216 listed companies, in which was shown whether Hofstede's cultural dimensions would significantly impact the leverage ratio of companies. This study finds, also after controlling for other firm-specific and country-level determinants, that Hofstede's cultural dimensions do result in significant differences in the capital structure formation of companies. Because of this, it is concluded that the cultural dimensions do indeed have an influence on the capital structure choices of companies.

Graduation Committee members:
Henry van Beusichem,
Xiaohong Huang,
Siraj Zubair,
Rezaul Kabir

Keywords
Capital structure; Cultural dimensions; Firm-specific determinants; Country-level determinants; G7 countries; Hofstede

11th IBA Bachelor Thesis Conference, July 10th, 2018, Enschede, The Netherlands.

1. INTRODUCTION

One of the most important issues that every company has to keep in mind is how they intend to finance their operations. There are various ways to achieve an effective capital structure formation and numerous variables impacting this eventual formation, and because of all these factors an universally accepted capital structure theory has not been formed to date. This has not been due to a lack of existing literature, as research on the determinants of the capital structure of companies and its theories has already been done extensively since the 20th century.

Myers (1984) described this as the capital structure puzzle, a puzzle that up until today still needs to be solved. The fact that there is still no single accepted capital structure theory shows how complex it has been to determine the perfect capital structure for a particular company. No theory developed so far has been suitable for explaining all the capital structure variance.

Modigliani and Miller's (1958) proposition theory on the capital structure has often been cited as forming the basis of modern thinking on the capital structure. This initial proposition theory has been the source and inspiration of more recently developed capital structure theories. The most dominating modern capital structure theories used in the existing literature are the trade-off theory, the pecking order theory and the agency theory.

The first theory, the trade-off theory, suggests that companies try to optimize their leverage level by balancing the costs and benefits of debt. The second one, the pecking order theory, suggests that the company follows a predefined order of preferences in the decisions-making process on how to finance their business. And, finally, the agency theory suggests that companies strive to reduce inefficiencies caused by asymmetric information by increasing or decreasing the relative amount of debt in the capital structure. The above mentioned theories on the capital structure of companies have been used extensively in an attempt to find an answer to the question about what determinants influence the chosen capital structure of companies. They offer different views on the determinants of capital structure, suggesting that all three offer important contributions to the ongoing literature on the capital structure puzzle, but that each of them also has its limits.

Aside from the three above mentioned theories, other theories have also been developed in the past decades in order to provide insight into the capital structure puzzle. However, these other theories have provided no consistent research results as to what determinants affect the decision on the level of leverage in a company and why. Because of this reason, this study will only look at the above mentioned theories in its analyses.

There are a wide variety of determinants that have been found to have an impact on the capital structure choices of companies, whom can be divided into firm-specific and country-level determinants. However, even though existing literature, such as Gungoraydinoglu & Öztekin (2011), suggests that country-level determinants are an important factor on the eventual choice on the capital structure of companies, explaining as much as one-third of the variation in the capital structure across countries, most research has been focused on firm-specific variables.

De Jong et al. (2008) also argued that there are internal as well as external determinants that influence the capital structure of companies. Additionally, De Jong et al. (2008) also concluded that determinants of the capital structure of companies can differ among countries and cannot be generalized. This is not surprising, since culture has already shown to influence numerous other fields of research, such as education (Tierney, 2008), innovation (Efrat, 2014) and consumer behaviour (Solomon, 2012). The potential impact that culture, as part of the country-level variables, may have on the capital structure formation has noticeably not received as much attention in existing literature compared to other country-level determinants, such as GDP growth or inflation.

By studying organizations in a wide number of countries, Hofstede (2001) developed five dimensions of culture, namely power distance, individualism and collectivism, masculinity and femininity, uncertainty avoidance, and long-term and short-term orientation. These dimensions and their developed indexes formed the basis of the research in this study as the five cultural dimensions that were investigated on if they influenced the capital structure choices of companies.

The aim of this study was to contribute to the subject of capital structure influences by providing recent empirical data and findings on if and how the five cultural dimensions influence the capital structure. Therefore, the underlying research question was formulated as follows*: "Do Hofstede's five cultural dimensions significantly influence the capital structure of listed companies from the G7?"*

In order to answer this research question, this study examined the countries that are in the IMF's Group of 7 (G7) over the period 2011-2015. The total sample size used for the analyses consisted of 5,216 companies. Moreover, the five examined cultural dimensions were represented as power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI) and long-term orientation (LTO). The results were based on the dominating modern capital structure theories, namely the trade-off theory, the pecking order theory and the agency theory.

The remainder of this paper is set up as follows: Section 2 discusses the capital structure definitions, its recognized modern theories and summarizes the past literature research on the influence of country-level determinants on the capital structure; Section 3 explains the five cultural dimensions and shows how the hypotheses were formulated; Section 4 describes the methodology of this study, in which the variables and the data sample are explained; Section 5 shows the results from the data analyses; and finally, Section 6 shows the conclusion, which explains the main findings of this study.

2. LITERATURE REVIEW

In this section of the study, the most dominating modern capital structure theories are introduced and explained. In addition, the existent literature related to country-related influences on the capital structure are briefly analyzed.

2.1 Capital Structure Theory

In this section of the study the most dominating modern capital structure theories are introduced and explained. "Capital structure is defined as the mixture of long-term debt and equity maintained by a firm" (Hillier et al., 2014, p. 5). It allows a firm to understand what kind of funding the company uses to finance its overall activities and growth. "Long-term debt is defined as the long-term borrowing by the firm (longer than one year) to finance its long-term investments. Equity is the amount of money raised by the firm that comes from the owners'

(shareholders') investment" (Hillier et al., 2014, p. 6). Following De Jong et al. (2008), leverage is defined as the book value of long-term debt over the market value of total assets.

The capital structure theories have the purpose of explaining how a company should ideally use the mix of options it has available to finance themselves. The Modigliani and Miller proposition (1958) started the discussion on what the best possible leverage type was for a company to take on. After this initial proposition, multiple theories were developed and used to get a grasp on the reason why companies opt for one capital structure over another, but existing literature suggests that there is at the moment no universally accepted theory of capital structure, and that there is no reason to expect one either (Jaros and Bartosova, 2015). Among these theories, the most recognized ones in the existing modern literature are the trade-off theory, the pecking order theory and the agency theory.

We look at these main modern day capital structure theories that have been used for numerous studies related to the capital structure of companies. These modern day capital structure theories have build the framework of this study and previous literature on the subject of capital structure.

2.1.1 The Trade-off Theory

The trade-off theory is based off of the study by Kraus and Litzenberger (1973), which suggested that companies try to optimize their leverage level by balancing the costs and benefits of debt. By making use of debt, the company is able to profit from the tax savings gained thanks to the tax shields, resulting in a higher profit as compared to not using debt. However, the benefits from the tax savings can be outweighed by the financial distress caused by bankruptcy costs should the company rely on debt too much (Warner, 1977). Therefore, the trade-off theory assumes that companies aim for a good balance between the costs and benefits of debt, resulting in an optimal leverage ratio.

2.1.2 The Pecking Order Theory

The pecking order theory is based off of the study by Myers and Majluf (1984), which showed that the company follows a certain predefined order of preferences in determining its decisions on how to finance their business. It is seen as an opposing theory towards the trade-off theory, as it does not state that there is a certain optimal leverage ratio that can be reached.

The order of preferences starts with using a company's internal resources. Once this resource is not available anymore, the company moves on to debt. After that resource becomes unavailable, equity is used as a last option. The order of preferences is based on the concept of asymmetric information, which is the reason for conflicts between agents and principals (Jensen and Meckling, 1976). Compared to equity, debt is less sensitive to asymmetric information problems between a company's insiders and outsiders due to its fixed payments. So, when internal resources become insufficient to finance opportunities for the company, debt is used as the next best option and is preferred over equity financing.

2.1.3 The Agency Theory

The agency theory is based off of the study by Jensen and Meckling (1976), which suggested that the interests between various stakeholders of a company are not aligned. In a company, there are multiple principal-agent relationships at work: between owners and managers; between a creditor and owners/managers; and between an employer and employee.
Looking more into the owners-managers relationship, even though managers are agents of the owners, their interests can differ greatly. The difference in the interests between managers and owners can lead to additional costs. The managers could pursue personal goals at the expense of the owners by overinvesting in negative net present value projects. This problem could be handled by increasing the leverage of a firm, since the interest payments would reduce the cash flow that can be spend by managers. This would result in a change in capital structure of companies in a way that was not handled in the two aforementioned theories, and for that reason it is an important theory to consider in the capital structure literature.

2.2 Related Literature

Although a lot of literature exists on the capital structure topic, surprisingly little has been mentioned about external factors that might influence the capital structure of companies. Because of this, country-related influences have not received all too much attention. In what follows, the most significant existing literature on the topic will be analyzed.

We start with the earliest reported research about if and how the capital structure differs by country. This pioneering study was made by Rajan and Zingales (1995), who searched for evidence on the capital structure determinants in the G7 countries. Up until this point, most research on capital structure was based on firm-specific determinants, but thanks to this study, this original focus changed towards also including the possible impact of country-level factors, such as inflation and gdp growth. Their results showed that tangibility seemed to always have a positive effect on leverage, whereas profitability had a negative effect. They also found that the size of a company had a positive effect on leverage, with the exception of German companies. Several studies were done in the following years building on the focus of this initial study.

One of them, Booth et al. (2002), researched the capital structure differences between ten developing countries and they found that there are some persistent differences across those countries, indicating that culture might affect a company's capital structure. In addition to that, De Jong et al. (2008) found capital structure to be influenced by many factors. Their study analyzed capital structure choices of companies from 42 countries, which were equally divided between developing and developed countries. They found that country-specific factors had a significant effect on the leverage of the companies that were analyzed.

A more recent study on the topic by Antonczyk and Salzmann (2014), assessed whether cultural traits could explain changes in the capital structure of companies. They analyzed capital structure choices of companies from 42 countries and provided evidence that these decisions were influenced by the degree of individualism that was associated with the country where the company based in. They found that higher degrees of individualism were associated with more optimism and the overestimation of a person's abilities, which would result in a bias of what was considered as an optimal leverage ratio of companies.

3. CULTURAL DIMENSIONS THEORY

In this section the theory behind the five dimensions of culture that will be used as the cultural dimensions in this study are closely examined. The five dimensions of culture were developed by Hofstede (2001), as a result of an analysis of a worldwide survey of employee values by IBM, which was taken between 1967 and 1973. The results of these five dimensions have been continuously refined and updated ever

since the initial analysis was done by Hofstede back in 1984. Each of these five dimensions has an index available to them that scored all the analyzed countries based on a 0-100 range on each dimension.

Originally, Hofstede (1980) had only discovered four dimensions of culture: power distance, individualism/ collectivism, uncertainty avoidance and masculinity/ femininity. However, thanks to independent research (Chinese Culture Connection, 1987), Hofstede added a fifth dimension to his model, named long-term/short-term orientation. This dimension was not initially discovered in the IBM data, due to the western mindset of the IBM study (Hofstede, 2001).

The G7 countries each have their own traditions, culture and way of thinking that gives companies in these countries an unique environment to cope with. Additionally, according to Bhaird and Lucey (2014), culture influences capital structure in enterprises. Companies operating in these countries will therefore face challenges that have to be approached in different ways per country, because of for example the differences in the general economic situation or legal system between these countries, influencing both the external and internal aspects for a company. For this reason, this study hopes to give more insight on the possible influence that the cultural dimensions could have on the capital structure formation of companies, as the five cultural dimensions could perhaps be another reason for companies to take different choices based on the countries they are located in. In the rest of this section, I will explain the definitions of each of the five cultural dimensions and developed the hypotheses related to each of these cultural dimensions.

3.1 Power Distance

The first measure, power distance, has been defined as "the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally. All societies are unequal, but some are more unequal than others" (Hofstede, 2011, p. 9). The power distance scores give us information about the dependence relationships for each country (Mac an Bhaird and Lucy, 2014).

The Dutch social psychologist Mulder, who investigated power dynamics, termed this dimension as power distance. All the countries that were included in the IBM study were given a score on the Power Distance Index (PDI) (Hofstede, 2001). "This index was derived from country mean scores or percentages on three survey questions. These questions dealt with perceptions of subordinates' fear of disagreeing with superiors and of superiors' actual decision-making styles, and with the decision-making style that subordinates preferred in their bosses" (Hofstede, 2001, p. 79).

Higher degrees on the PDI-index indicate that a clear hierarchy is established and followed without much resistance, whereas lower degrees indicate that people tend to question authority more and attempt to distribute the power.

Mac an Bhaird and Lucy (2014) expected that higher scores on the PDI-index were related to lower debt ratios. Countries that have a higher power distance score tend to be more respectful towards authority and hierarchy. Banks are considered as being the more powerful organizations, whereas companies are considered as being the weaker organizations. The reason being that when companies have to request funding, they often have to request it to the banks. This gives the banks a higher position in the financial system that makes them a higher, more powerful authority. Chui et al. (2002) showed that higher degrees of 'mastery', which is a cultural value developed by Schwartz and is similar to Hofstede's power distance dimension, tended to result in lower leverage ratios.

Companies in countries with a lower score on the PDI-index may have more bargaining power with the banks, due to the hierarchy structure being less of a focal point in these countries. This would allow companies to have access to higher levels of debt, or the potential to negotiate for loans more than companies in countries with a higher score on the PDI-index. Therefore, I hypothesize that:

Hypothesis 1: *higher degrees on the Power Distance Index lead to lower leverage ratios.*

3.2 Individualism

The second measure, individualism, indicates "the degree to which people in a society are integrated into groups. On the individualist side we find cultures in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. On the collectivist side we find cultures in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) that continue protecting them in exchange for unquestioning loyalty, and oppose other in-groups" (Hofstede, 2011, p. 11).

"The IBM database allowed the computation for each of 53 countries and regions of an Individualism Index (IDV). The Individualism Index is negatively correlated with the Power Distance Index, but the correlation all but disappears when national wealth is controlled for. Within Europe, IDV is negatively correlated with uncertainty avoidance" (Hofstede, 2001, p. 209).

Gleason et al. (2000) argued that countries with high IDV scores tended to be associated with managers pursuing their own interests and reputation. These managers were more likely to opt for lower debt levels. Also, "as autonomy is the ideal, this suggests that firm owners in highly individualistic societies will finance the firm with equity as much as possible" (Mac an Bhaird and Lucy, 2014, p.3). Additionally, they expected that higher degrees on the IDV-index would result in lower debt. And, finally, since higher degrees on the IDV-index are associated with more personal freedom, it suggests that owners prefer not to have high levels of debt (Mac an Bhaird and Lucy, 2014). Therefore, I hypothesize that:

Hypothesis 2: *higher degrees on the Individualism Index lead to lower leverage ratios.*

3.3 Masculinity

The third measure, masculinity, "refers to the distribution of values between the genders which is another fundamental issue for any society, to which a range of solutions can be found" (Hofstede, 2011, p. 12). The values "contain a dimension from very assertive and competitive on the one side, to modest and caring on the other. The assertive pole has been called 'masculine' and the modest, caring pole 'feminine'" (Hofstede, 2011, p. 12).

"A factor analysis of mean country work goal scores from the IBM data produced a strong factor opposing social to ego goals. Factor scores on this factor for each of 53 countries and regions

were converted into a country Masculinity Index (MAS). In higher-MAS countries, values of men and women in the same jobs differed more than in lower-MAS countries" (Hofstede, 2001, p.279).

De Jong and Semenov (2002) argued that in a country with a higher score on the MAS index, the regulatory environment would be more likely to encourage competition in the financial system. Because of this, shareholders' rights protection is expected to be stricter in countries scoring high on the MAS index. They also argued that in a less masculine country, managers would react more willingly to giving up their independence as compared to more masculine countries. They therefore suggested that higher degrees of masculinity were associated with greater debt.

This suggests that higher degrees on the MAS-index might have an influence on the capital structure of companies because of the increased desire for debt. Companies pursuing a faster growth rate may have a greater desire to add additional debt in the capital structure of these companies. I believe that higher degrees of masculinity will result in higher degrees of debt, because less consideration is given and the companies are more assertive. Therefore, I hypothesize that:

Hypothesis 3: *higher degrees on the Masculinity Index lead to higher leverage ratios.*

3.4 Uncertainty Avoidance

The fourth measure, uncertainty avoidance, indicates "to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, and different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict behavioral codes, laws and rules" (Hofstede, 2011, p. 10).

Countries were each given an Uncertainty Avoidance Index (UAI) score based on the data provided by the IBM study. These scores tend to be correlated with the Power Distance Index scores for European and Western countries, although the two indexes do differ (Hofstede, 2001). "UAI scores were derived from country mean scores or percentages on three survey questions dealing, respectively, with rule orientation, employment stability, and stress" (Hofstede, 2001, p.145).

Chui et al. (2002) showed that higher degrees of 'conservatism', which is also a cultural value developed by Schwartz and is similar to Hofstede's uncertainty avoidance dimension, tended to result in lower leverage ratios. In addition, Gleason et al. (2000) argued that using debt to finance companies would make the company more exposed towards the risk of bankruptcy. This suggest that countries with a higher uncertainty avoidance score would prefer lower levels of debt. Finally, Mac an Bhaird and Lucy (2014) also expected that higher degrees of uncertainty avoidance would lead to lower leverage ratios. Therefore, I hypothesize that:

Hypothesis 4: *higher degrees on the Uncertainty Avoidance Index lead to lower leverage ratios.*

3.5 Long-Term Orientation

The fifth and final measure, long-term orientation, is a measure "that is independent of the four identified in the IBM studies. The new dimension was found in the answers of student samples from 23 countries around 1985 to the Chinese Value Survey (CVS), an instrument developed by Michael Harris Bond. The fact that this dimension was not found in the IBM data can be attributed to the Western minds of the designers of the IBM questionnaire and other values lists used in international research so far. The long-/short-term orientation dimension appears to be based on items reminiscent of the teaching of Confucius, on both of its poles. East Asian countries scored the highest, Western countries on the low side, and some Third World countries the lowest" (Hofstede, 2001, p.351).

"Long-term orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and the present, in particular, respect for tradition, preservation of face and fulfilling social obligations" (Hofstede, 2001, p. 359).

One of the connotations of LTO differences that Hofstede (2001) describes about is the trait of being thrifty. Countries with higher LTO degrees are characterized as thrifty countries, whereas lower LTO degrees are characterized as countries that know how to spend money. Countries with lower LTO degrees are also characterized by wanting quick results, whereas higher LTO degrees are characterized by persistence.

This suggests that long-term orientation might impact the amount of money that is spend without consideration and if that is the case, companies with lower LTO degrees might be less reluctant to opt for debt for quick, short-term results or to achieve a faster growth rate. So, I believe that lower degrees of long-term orientation will result in higher degrees of debt, because companies with lower degrees will be less thrifty and want to achieve results faster. Therefore, I hypothesize that:

Hypothesis 5: *higher degrees on the Long-Term Orientation Index lead to lower leverage ratios.*

4. METHODOLOGY

This section of the study explains the methods that were used to investigate the relationship between the five defined cultural dimensions and capital structure. First, the related regression equations are defined; second, the determinants for leverage that will form the dependent variables are briefly explained; third, Hofstede's five cultural dimensions' indexes that form the independent variables in this study are shown; and, finally, the eight control variables are defined and explained.

4.1 Equations

Consistent with existing literature (De Jong et al., 2008; Deesomsak et al., 2004; and Joeveer, 2013) this study runs ordinary least squares (OLS) regressions to analyze the quantitative data gathered with leverage as the dependent variable and the five cultural dimensions' indexes developed by Hofstede (2001) as the independent variables for each of the seven countries in the data set. The style of the regression models is inspired by De Jong et al. (2008).

There are four regression analyses that are executed under this study. The first regression analysis includes only the independent variables (the cultural dimensions) to check if significant differences exist at all on the dependent variable, which is leverage. The second regression analysis includes only the control variables, meaning without the independent variables. The third regression analysis includes both the control variables and the independent variables to check if the differences of the five cultural dimensions remained significant

on the dependent variable. Finally, after multicollinearity became apparent in the first regression for the cultural dimensions, a fourth regression model was made that accounted for the multicollinearity issue, by splitting the cultural dimensions up in three separate regressions. The regression models look as follows:

$$LEV_{it} = \beta_0 + \beta_1 PDI_i + \beta_2 IDV_i + \beta_3 MAS_i + \beta_4 UAI_i + \beta_5 LTO_i + \varepsilon_{it} \quad \textbf{[1]}$$

$$LEV_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \beta_3 PROF_{it} + \beta_4 LIQ_{it} + \beta_5 LEGAL_i + \beta_6 GDPG_{it} + \beta_7 INFL_{it} + \beta_8 CORR_i + \varepsilon_{it} \quad \textbf{[2]}$$

$$LEV_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \beta_3 PROF_{it} + \beta_4 LIQ_{it} + \beta_5 LEGAL_i + \beta_6 GDPG_{it} + \beta_7 INFL_{it} + \beta_8 CORR_i + \beta_9 PDI_i + \beta_{10} IDV_i + \beta_{11} MAS_i + \beta_{12} UAI_i + \beta_{13} LTO_i + \varepsilon_{it} \quad \textbf{[3]}$$

$$LEV_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \beta_3 PROF_{it} + \beta_4 LIQ_{it} + \beta_5 LEGAL_i + \beta_6 GDPG_{it} + \beta_7 INFL_{it} + \beta_8 CORR_i + \beta_9 PDI_i + \beta_{10} IDV_i + \varepsilon_{it} \quad \textbf{[4a]}$$

$$LEV_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \beta_3 PROF_{it} + \beta_4 LIQ_{it} + \beta_5 LEGAL_i + \beta_6 GDPG_{it} + \beta_7 INFL_{it} + \beta_8 CORR_i + \beta_9 MAS_i + \varepsilon_{it} \quad \textbf{[4b]}$$

$$LEV_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \beta_3 PROF_{it} + \beta_4 LIQ_{it} + \beta_5 LEGAL_i + \beta_6 GDPG_{it} + \beta_7 INFL_{it} + \beta_8 CORR_i + \beta_9 UAI_i + \beta_{10} LTO_i + \varepsilon_{it} \quad \textbf{[4c]}$$

4.2 Dependent Variables

Leverage (LEV) was used in the analyses as the dependent variable. As mentioned before, leverage is defined as the book value of long-term debt over market value of total assets. So, calculating the ratio of long-term debt to total assets will be done to measure the leverage of companies included in the sample. This study used De Jong et al. (2008) as the basis for using this specific measure of leverage.

Long-term debt has been used instead of total debt, since the short-term debt consists in large part of trade credit that is influenced by different determinants than those handled in this study. Because of this, the analysis of the total debt ratio would likely end up with results that would be difficult to form an accurate conclusion on (De Jong et al., 2008).

As market values are not available in the database, this study replaces market values with book values of total assets. Previous research by De Jong et al., 2008 and Arosa et al., 2014 has shown that the differences between market or book values are minimal and should result in similar outcomes of leverage.

4.3 Independent Variables

The independent variables used in the analyses consist of the five, previously explained, cultural dimensions developed by Hofstede (2001), namely power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI) and long-term orientation (LTO).

Their values were based on the indexes provided by Hofstede (2001), which is based on his own research. The index scores of the five dimensions of culture by Hofstede (2001) are found in Table 1. These scores formed the basis of the analysis on the hypotheses on how cultural dimensions influence the capital structure of companies.

Table 1. Cultural Dimensions' Index Scores

Country	PDI	IDV	MAS	UAI	LTO
France	68	71	43	86	39
Germany	35	67	66	65	31
United Kingdom	35	89	66	35	25
United States	40	91	62	46	29
Canada	39	80	52	48	23
Italy	50	76	70	75	34
Japan	54	46	95	92	80

This table shows the index scores per country of the five cultural dimensions that were developed by Hofstede. The scores were taken from the index tables provided by Hofstede (2001).

4.4 Control Variables

Existing research has shown that other factors aside from cultural aspects were also responsible for the formation of the capital structure of companies. The two factors that were controlled for in this study were firm-specific and country-level variables. By controlling these variables, I was able to investigate the influence that the cultural dimensions had on the capital structure of companies.

The following variables were included as control variables based on existing literature (Alves and Ferreira (2011); Antonczyk and Salzmann (2014); Deesomsak et al., (2004)**;** De Jong et al. (2008); and Fauver and McDonald (2015); Joeveer (2013)) which showed that these variables had important empirical influences on the capital structure.

4.4.1 Firm-specific variables

The regression analyses controlled for four firm-specific variables. These four variables have been included as control variables based on the findings by existing literature that investigated the influence of firm-specific determinants on the capital structure.

Size (SIZE): This variable is measured by the natural logarithms of total assets (De Jong et al., 2008; Fauver and MacDonald, 2015; Deesomsak et al., 2004). The trade-off theory suggests "a positive relation between firm size and debt, since larger firms have been shown to have lower bankruptcy risk and relatively lower bankruptcy cost. In addition, large firms have lower agency costs of debt, relatively smaller monitoring costs, less volatile cash flows, easier access to the credit market, and require more debt to fully benefit from the tax shield" (Deesomsak et al., 2004, p. 8). SIZE is therefore expected to have a positive influence on LEV (Deesomsak et al., 2004; Alves and Ferreira, 2011).

Tangibility (TANG): This variable is measured as net fixed assets divided by the book value of total assets (De Jong et al., 2008). The agency theory suggests that companies with a high leverage ratio tend to under invest, leading to wealth being transferred from debt holders to equity holders. This causes lenders to require collateral, because the use of secured debt can help to ease this wealth transferring problem. Should a firm be unable to provide collateral to lenders, they will need to pay higher interest, or alternatively be forced to issue equity instead of debt (Deesomsak et al., 2004). TANG is therefore expected to have a positive influence on LEV (Deesomsak et al., 2004; Alves and Ferreira, 2011).

Profitability (PROF): This variable is measured as the operating income divided by the book value of total assets (De Jong et al.,

2008) The pecking order theory suggests "that managers prefer to finance projects internally because of the informational asymmetry between managers and outside investors. In addition, profitable firms prefer not to raise external equity in order to avoid potential dilution of ownership" (Deesomsak et al., 2004, p.6). Empirical results investigating with the relationship between PROF and LEV are in line with the hypothesis formed by the pecking order theory (Alves and Ferreira, 2011). PROF is therefore expected to have a negative influence on LEV (Deesomsak et al., 2004; Alves and Ferreira, 2011).

Liquidity (LIQ): This variable is measured as the ratio of total current assets to total current liabilities (De Jong et al., 2008; Deesomsak et al., 2004). The pecking-order theory suggests that companies with a high liquidity ratio tend to have less debt. In addition, agency costs of debt will increase when managers manipulate liquid assets at the benefit of the owners at the cost of the debt holders. LIQ is therefore expected to have a negative influence on LEV (Deesomsak et al., 2004).

4.4.2 Country-level variables

Besides controlling for the four firm-specific variables, the regression analyses will also control for four country-level variables. These four variables have been included as control variables based on the findings by existing literature that investigated the influence of country-level determinants on the capital structure.

Legal System (LEGAL): This variable identifies the legal system of the bankruptcy law of each country. It is indicated as a dummy variable. The dummy variable will equal 1 should a country's legal system be based on civil law, and 0 should the legal system be based on common law (La Porta et al., 2008; Antonczyk and Salzmann, 2014). Legal systems that are based on civil law tend to give investors worse protection compared to those based on common law, which was supported by Antonczyk and Salzmann (2014), who indeed found higher debt ratios in countries with a civil law system. LEGAL is therefore expected to have a positive relationship on LEV.

GDP growth (GDPG): This variable is a measure of the annual real GDP growth rate of each country. Previous literature suggests that the general economic situation of a country has shown a positive influence on the leverage ratio of companies (De Jong et al., 2008; Joeveer, 2013). De Jong et al. (2008) also found that in countries with a relatively higher rate of economic growth, firms are more willing to use higher levels of debt to finance new investments, which is why it has been included as a control variable. GDPG is therefore expected to have a positive relationship on LEV.

Inflation (INFL): This variable is a measure of the annual percentage change in the Consumer Price Index as reported by the IMF. Previous literature has shown that inflation has a negative influence on the leverage ratio of companies (Antonczyk and Salzmann, 2014), and as such it has also been included as a control variable in the analyses of this study. INFL is therefore expected to have a negative relationship on LEV.

Corruption (CORR): This variable is a measure of the corruption in governments in the International Country Risk assessment (average of 1982-1995), which was defined by La Porta et al. (1998). Previous literature on the topic has included this variable in its research as having a positive influence on the leverage ratio of companies (De Jong et al., 2008; Antonczyk and Salzmann, 2014; Joeveer, 2013), which is why it has also been included as a control variable. CORR is therefore expected to have a positive relationship on LEV.

4.5 Data Sample

The data necessary for the calculations and analyses of the variables used in this study was obtained from the ORBIS database, which contains data of large companies from around the world. This database is provided by Bureau van Dijk (BvD). The data sample used in this study contains non-financial listed companies in the period of 2011 – 2015. The firms selected for this study belonged to different industries, which makes this study a non-industry related one.

Following Rajan and Zingales (1995), financial companies (i.e. insurance companies and banks) were excluded from the data sample. This is because of the influence that investor insurance schemes would have on the leverage ratio of such companies, resulting in a leverage ratio that would normally be unrealistic to have in the case of non-financial companies. Also, as mentioned before, this study takes the IMF's Group of 7 (G7) classification as the representative group of countries that were analyzed.

The important financial data that was needed from the companies in the dataset included the following: long-term and short-term debt; total, current and fixed assets; and net income. Firms having the required data for at least three of the five years between 2011-2015 were selected.

The ultimate sample size that was used for the countries in the G7 was as follows: for Germany 473, for the United Kingdom 902, for the United States of America 1,094, for Canada 896, for Italy 163, for France 560, and for Japan 1,128. This resulted in a total sample size of 5,216 companies and 16,055 company-year observations.

5. RESULTS

This section shows the results of the analyses that were performed using the data sample of this study. It also includes short discussions about the most significant results found in the analyses. In the first part, a summary of the descriptive statistics are shown. The next part shows the results of the bivariate analysis that was performed. These results show the relationships that the variables used in this study have between each other. In the final part, the results of the four OLS regressions are shown.

5.1 Descriptive Statistics

The information for the descriptive statistics are derived from Table 5, which is found in the appendix section of this study. All the analyses were based on a total data sample of 26,055 company-year observations. This total sample came to pass, because each of the 5,216 companies had the years 2011-2015 analyzed. The descriptive statistics section analyzes the seven variables that had no fixed values per country to them. The most extreme outliers (representing less than one percent of the total data sample analyzed) that were present in the data sample for the variables LEV, SIZE, TANG, PROF and LIQ, were excluded from all the analyses to give a more accurate overview of these variables. The next part of this section shows the most significant findings in the descriptive statistics.

We start with LEV, where we can notice that the standard deviations per country are relatively small, meaning that there is a high concentration around the mean outcome of LEV. The

United Kingdom represented the largest standard deviation (0.255), whereas Japan represented the smallest standard deviation (0.129). The mean scores of LEV across the countries were varying from 0.167 for the United Kingdom to 0.392 for the United States of America. This implies that the United Kingdom has on average the smallest LEV ratio and the United States of America has the biggest out of the seven countries analyzed. The total mean score for LEV came out at 0.226. The absolute minimum came out negative for Canada, Germany and the United Kingdom, whereas the other countries showed a positive minimum outcome. The maximum score shows that most countries had a maximum outcome of around 1.5, with the exception of Japan (0.798).

The variables SIZE and LIQ show a noticeably bigger standard deviation compared to the other variables analyzed. The smallest and biggest standard deviation for SIZE were found respectively in Japan (1.304) and Canada (3.318); for LIQ this was Italy (0.890) and Canada (4.398). It is because of this, that it is not surprising to find that the mean and maximum for both these variables are also bigger compared to most of the other variables.

The outcomes from the variable PROF are interesting in the sense that three of the seven countries in fact show on average a negative outcome, resulting in a negative total mean score for PROF (-0.029). This can be attributed to bad years for companies, in which losses were made. It is surprising though to find that, on average, companies in Canada (-0.288), France (-0.021) and the United Kingdom (-0.005) made losses during the years 2011-2015. Keeping this in mind, it is not surprising to find that the biggest minimum scores out of all the variables are largely from the variable PROF.

The variables GDPG and INFL differ from the other five variables, in the sense that these variables only had 1 data point per year, resulting in 5 data points per country and a total of 35 data points in the entire data sample. Also, these variables show percentage outcomes, not ratio outcomes like the other variables. The means show that the smallest and biggest outcomes were respectively -0.581 for Italy and 2.243 for Canada when it comes to GDPG; 0.700 for Japan and 2.281 for the United Kingdom when it comes to INFL. TANG was the only variable that showed no real surprising results.

5.2 Correlation Results

The results on the correlations between the leverage, cultural dimensions and control variables are shown in Table 2. The results were calculated using Pearson's correlation method.

5.2.1 Correlations between leverage and cultural dimensions

The correlation results between LEV and the cultural dimensions all show weak relationships. Out of all the cultural dimensions, IDV had the highest relationship with LEV at 0.189 and was also the only cultural dimension that had a positive relationship with leverage, as the other four cultural dimensions had a negative one. The cultural dimension PDI was shown to have the weakest relationship with LEV. All correlation results between LEV and the cultural dimensions were shown to be statistically significant at the 0.01 level. It can therefore be concluded that the cultural dimensions do seem to have a relationship with LEV, however it seems to be a weak one according to the correlation results.

5.2.2 Correlations between leverage and control variables

It is not surprising to find that there is a moderate positive relationship between LEV and SIZE, as this was assumed by the trade-off theory. The relationship between LEV and TANG had the strongest relationship at 0.463 when it comes to LEV out of all the variables examined. TANG also has a positive relationship, which is in line with the assumption of the agency theory. PROF showed a positive relationship with LEV, even though the pecking order theory assumed a negative one. Additionally, PROF had the weakest relationship with LEV out of all the firm-specific variables at 0.055, however it was not the weakest of them all. INFL was shown as the variable to have the weakest relationship with LEV (-0.004). LIQ was the variable that had the strongest negative relationship with LEV (-0.176), which supports the assumption made by the pecking order theory that LIQ had a negative relationship with LEV.

Out of all the control variables, SIZE, TANG, PROF and GDPG had a positive relationship with LEV, and the other four a negative one. All correlation results between LEV and the control variables were shown to be statistically significant at the 0.01 level, with the exception of the correlation between LEV and INFL.

5.2.3 Multicollinearity

In Table 2, it is shown that the relationships between the cultural dimensions themselves are often very strong. This could indicate a case of multicollinearity between these variables and can result in the regression models being sensitive to minor changes. After the variance inflation factors (VIF) were checked, it resulted in VIF values above 5 between the cultural dimensions when all variables were included in the analysis. Therefore, multicollinearity is assumed for this study.

Table 2. Correlations Results (Pearson's R)

	LEV	SIZE	TANG	PROF	LIQ	GDPG	INFL	LEGAL	CORR	PDI	IDV	MAS	UAI	LTO
LEV	1													
SIZE	0.394[b]	1												
TANG	0.463[b]	0.344[b]	1											
PROF	0.055[b]	0.419[b]	0.079[b]	1										
LIQ	-0.176[b]	-0.171[b]	-0.229[b]	-0.049[b]	1									
GDPG	0.077[b]	-0.071[b]	0.109[b]	-0.083[b]	0.085[b]	1								
INFL	-0.004	-0.117[b]	0.036[b]	-0.029[b]	0.049[b]	0.043[b]	1							
LEGAL	-0.126[b]	0.086[b]	-0.196[b]	0.133[b]	-0.084[b]	-0.562[b]	-0.346[b]	1						
CORR	-0.092[b]	-0.382[b]	0.049[b]	-0.289[b]	0.137[b]	0.461[b]	0.125[b]	-0.447[b]	1					
PDI	-0.087[b]	0.105[b]	-0.148[b]	0.083[b]	-0.092[b]	-0.482[b]	-0.304[b]	0.706[b]	-0.269[b]	1				
IDV	0.189[b]	-0.106[b]	0.174[b]	-0.076[b]	0.055[b]	0.443[b]	0.393[b]	-0.847[b]	0.231[b]	-0.591[b]	1			
MAS	-0.099[b]	0.325[b]	-0.095[b]	0.188[b]	-0.082[b]	-0.264[b]	-0.249[b]	0.440[b]	-0.469[b]	0.109[b]	-0.708[b]	1		
UAI	-0.117[b]	0.158[b]	-0.173[b]	0.108[b]	-0.084[b]	-0.542[b]	-0.406[b]	0.927[b]	-0.379[b]	0.841[b]	-0.908[b]	0.493[b]	1	
LTO	-0.130[b]	0.289[b]	-0.148[b]	0.159[b]	-0.093[b]	-0.413[b]	-0.380[b]	0.713[b]	-0.385[b]	0.599[b]	-0.916[b]	0.843[b]	0.847[b]	1

This table shows the bivariate results of the fourteen variables that were analyzed in this study. The superscript b denotes that the correlation results are significant at the 0.01 level (2-tailed).

5.3 Regression Results

For analyzing whether there were significant differences in the leverage ratios because of the cultural dimensions, four ordinary least squares (OLS) regressions were used. The OLS regression results can be found in Table 3. In the first regression (Model 1), only the dependent variable and the independent variables were included in the analysis. By doing this, whether there were any significant differences at all impacting the capital structure thanks to the cultural dimensions could be identified. In the second regression (Model 2), only the dependent variable and the control variables were included in the analysis. This was to assess the impact that the control variables themselves had on the capital structure choices of companies. In the third regression (Model 3), the dependent, independent and control variables were all included in the analysis. This was to see what the impact of each variable was on the eventual capital structure choice of companies. This also showed whether the cultural dimensions were still judged to have a significant impact in the presence of the eight control variables. And in the final regressions (Model 4a to 4c), the cultural dimensions, which showed high VIF values amongst each other, were separated to deal with the multicollinearity issue between them.

Starting with the first regression, we can see that all the coefficients are significant at the 0.001 level. The intercept indicates the starting point of the leverage ratio. Due to the coefficients being standardized, an increase of one standard deviation of PDI, for example, would result in a drop in LEV of -0.028 standard deviation. The results were given as standardized, due to differences in measurement between the variables. Model 1 shows that PDI and MAS have a negative impact on LEV, whereas IDV, UAI and LTO have a positive impact on LEV. We find that PDI has the largest negative result (-0.028), whereas IDV has the largest positive result (0.025). Due to the significance level, it can be concluded already that all five cultural dimensions do have a significant impact on the leverage ratios of companies. This is already good news for the study, as this implies that cultural dimensions do seem to account for a part of the capital structure. In Model 1 however, this impact seems to be relatively small. Another notion should be made on Model 1, as the cultural dimensions showed relatively high VIF values amongst each other. This was already hinted at in the correlation table, but now the regression output has confirmed that multicollinearity is present between the cultural dimensions. Because of this, Model 4 was created, which was divided into three separate regression outcomes, to see the regression output of each of the five cultural dimensions without them having high VIF values.

When we look at Model 2, we find that by only including the eight control variables, that the intercept has become insignificant (0.199). We also find that the relationship between LEV and INFL is insignificant (0.915). The other seven control variables were judged to be significant at the 0.001 level. This would imply that the impact of only the control variables themselves are not significant to the leverage ratio. This could be due to only four firm-specific and country-level determinants being included in this study, where numerous determinants have been left out. For the variables SIZE, TANG and GDPG, whom this study expected to have a positive relationship with LEV, we see that the relationship is indeed positive. For the variables PROF, LIQ and INFL, whom this study expected to have a negative relationship with LEV, we can also see that the relationship is indeed negative. The variables LEGAL and CORR had a different relationship with LEV than was predicted by the study. However, we will see that the direction and significance of these variables fluctuates between the Models.

Table 3. Standardized Regression Results (OLS)

	Mod.1	Mod.2	Mod.3	Mod.4a	Mod.4b	Mod.4c
Interc.	-1.348[a]	-0.033	.-2.517[a]	-0.619[a]	0.318[a]	0.071[b]
	(0.001)	(0.199)	(0.001)	(0.001)	(0.001)	(0.006)
SIZE		0.315[a]	0.296[a]	0.360[a]	0.342[a]	0.359[a]
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TANG		0.349[a]	0.330[a]	0.332[a]	0.333[a]	0.324[a]
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
PROF		-0.114[a]	-0.110[a]	-0.129[a]	-0.114[a]	-0.115[a]
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LIQ		-0.048[a]	-0.063[a]	-0.047[a]	-0.049[a]	-0.053[a]
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDPG		0.045[a]	-0.004	0.015[c]	0.042[a]	0.031[a]
		(0.001)	(0.504)	(0.021)	(0.001)	(0.001)
INFL		-0.001	-0.021[a]	-0.038	-0.014[c]	-0.020[a]
		(0.915)	(0.001)	(0.445)	(0.013)	(0.001)
LEGAL		-0.104[a]	0.053[c]	0.238[a]	-0.049[a]	-0.082[a]
		(0.001)	(0.038)	(0.001)	(0.001)	(0.001)
CORR		-0.074[a]	0.157[a]	-0.005	-0.137[a]	-0.112[a]
		(0.001)	(0.001)	(0.470)	(0.001)	(0.001)
PDI	-0.028[a]		-0.689[a]	-0.064[a]		
	(0.001)		(0.001)	(0.001)		
IDV	0.025[a]		1.425[a]	0.349[a]		
	(0.001)		(0.001)	(0.001)		
MAS	-0.012[a]				-0.195[a]	
	(0.001)				(0.001)	
UAI	0.018[a]		1.533[a]			0.202[a]
	(0.001)		(0.001)			(0.001)
LTO	0.017[a]		0.279[a]			-0.339[a]
	(0.001)		(0.001)			(0.001)
Adj. R^2	0.138	0.321	0.372	0.322	0.347	0.349

This table shows the results of the regression analyses. The superscripts a, b and c denote that the regression results are significant at the 0.001, 0.01 and 0.05 level, respectively. In this table, P-values are reported in parentheses.

The third regression, which included all thirteen variables of this study, shows the fact that one variable, MAS, was judged to have a too high of a VIF value that it did not show up in the output. This again is a confirmation that multicollinearity is present in the dataset. Accounting for all thirteen variables, we can see that the intercept, as well as all the firm-specific control variables and the four cultural dimensions that did get results gave significant results at the 0.001 level. For the country-level control variables, we see that only CORR and INFL gave significant results at the 0.001 level; LEGAL gave only significant results at the 0.05 level; and the output of GDPG was not significant at all. As far as the relationships with LEV goes, we find for the firm-specific control variables no changes in the direction of the relationship. This, however, is not the case for the country-level control variables, where we can notice a change in the direction with LEV of the variables GDPG, LEGAL and CORR. Only the relationship of INFL and LEV remained in the same direction. The directions of the four presented cultural dimensions remained unchanged. Because the cultural dimensions results remained significant in this regression as well, it can be concluded that besides firm-specific and country-level variables, the cultural dimensions also seem to play a role in the choice of capital structure.

Due to the dataset showing a possibility of multicollinearity between the cultural dimensions, a multicollinearity test was performed on all the variables. Because of the results of this test, a fourth Model was made, which separated the cultural

dimensions over three regressions. The VIF values of these regressions showed normal results, so multicollinearity was dealt with in this way. After dealing with the multicollinearity issue, we can see that GDPG, LEGAL, CORR and LTO changed directions between Models 3 and 4, while the direction of the other variables, remained unchanged. Model 4 was used to evaluate the hypotheses of this study.

Table 4. Direction of Relationship with LEV

Variable	Exp. Result	Actual Result	Variable	Exp. Result	Actual Result
SIZE	+	+	CORR	+	-
TANG	+	+	PDI	-	-
PROF	-	-	IDV	-	+
LIQ	-	-	MAS	+	-
GDPG	+	+	UAI	-	+
INFL	-	-	LTO	-	-
LEGAL*	+/-	-			

*This table shows the expected and actual relationship between each of the analyzed variables and the dependent variable, LEV. The actual results were taken from the regression outcomes of Model 4, which took into account multicollinearity. * indicates that the results varied for this variable in Model 4.*

The last part of this section turns towards the hypotheses of this study and whether they got rejected or not based on the results of this study. Hypothesis 1 stated that higher degrees on the Power Distance Index would lead to lower leverage ratios. This was confirmed in our regression output, where we saw a negative relationship between LEV and PDI. This result was consistent with previous research by Chui et al. (2002). Hypothesis 2 stated that higher degrees on the Individualism Index would lead to lower leverage ratios. This was rejected in our regression output, where we saw a positive relationship between LEV and IDV. Hypothesis 3 stated that higher degrees on the Masculinity Index would lead to higher leverage ratios. This was rejected in our regression output, where we saw a negative relationship between LEV and MAS. Hypothesis 4 stated that higher degrees on the Uncertainty Avoidance Index would lead to lower leverage ratios. This was rejected in our regression output, where we saw a positive relationship between LEV and UAI. Hypothesis 5 stated that higher degrees on the Long-Term Orientation Index would lead to lower leverage ratios. This was confirmed in our regression analysis, where we saw a negative relationship between LEV and LTO.

Even though the hypotheses were met with mixed outcomes, this study can confirm that Hofstede's cultural dimensions do have an impact on the capital structure choices of companies due to the significance of the outcomes.

6. CONCLUSION AND LIMITATIONS

The aim of this study was to research the influence that cultural dimensions had on capital structure choices made by companies located in the countries that comprise the G7, that is Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America. The assumption made in this study was that, aside from the extensively researched firm-specific determinants and the less researched country-level determinants, cultural dimensions impact the capital structure choices of companies as well. For this reason, this study investigated if cultural dimensions had an influence on the capital structure choices of companies. These cultural dimensions, which were power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI), and long-term orientation (LTO) were derived from Hofstede (2001). The results suggest that the five cultural dimensions have a significant impact on the capital structure of companies, both before and after including the control variables. This supports the assumption that cultural dimensions have an influence on capital structure choices. The results show that PDI, MAS and LTO have a negative relationship with LEV, whereas IDV and UAI have a positive one. This was, however, not generally in line with the hypotheses that were made for each of these five cultural dimensions, as only two of the five were in the direction that was expected.

Aside from the cultural dimensions, we saw that for each of the firm-specific control variables the results were judged as significant. SIZE and TANG were both expected to have a positive relationship with LEV, and this study confirmed this. PROF and LIQ were both expected to have a negative relationship with LEV, and this study also confirmed this. Therefore, it can be concluded that the results for the firm-specific control variables are in line with existing literature (Deesomsak et al., 2004; Alves and Ferreira, 2011). Regarding the country-level control variables, this study found that after dealing with multicollinearity, only the variables LEGAL and GDPG got significant results consistently. For the variable LEGAL, the direction of the relationship with LEV could not be confirmed due to different results between Model 4a and 4b/c. GDPG was expected to have a positive relationship with LEV, and this study confirmed this. For CORR, a positive relationship with LEV was expected, however this study showed negative results. INFL was expected to have a negative relationship with LEV, which was also the case in this study.

The research done in this study contributes to the existing capital structure literature by confirming the significance of the five cultural dimensions on the capital structure choices of companies. Further research on this particular section of the capital structure puzzle will certainly be needed, as this study only looked at seven of the richest countries in the world. Results may differ when the impact of the cultural dimensions on LEV is analyzed on poor countries in the world instead of the G7. In addition, there are more firm-specific and country-level determinants that impact the capital structure choices than the eight control variables that this study has handled, so that is also an opportunity for further research.

7. ACKNOWLEDGEMENTS

I would like to thank my primary supervisor Henry van Beusichem and the entire supervisory team of the Finance & Accounting Track for the great and constructive feedback regarding my thesis.

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9. APPENDIX

Table 5. Descriptive Statistics Results

COUNTRY		Mean	St. Deviation	Minimum	Maximum	N
Total	LEV	0.237	0.226	-0.810	1.613	25709
	SIZE	13.018	2.769	0.000	19.281	25863
	TANG	0.519	0.250	0.000	0.984	25763
	PROF	-0.029	0.349	-4.861	0.563	24473
	LIQ	2.204	2.638	0.000	28.716	25498
	GDPG	1.661	1.010	-2.819	3.660	26055
	INFL	1.493	1.186	-0.300	4.500	26055
Canada	LEV	0.200	0.238	-0.753	1.547	4397
	SIZE	10.777	3.138	0.000	18.157	4451
	TANG	0.574	0.307	0.000	0.984	4380
	PROF	-0.288	0.690	-4.858	0.504	4281
	LIQ	3.038	4.398	0.000	28.716	4353
	GDPG	2.243	0.778	1.001	3.141	4476
	INFL	1.660	0.709	0.900	2.900	4476
France	LEV	0.211	0.186	0.000	1.546	2757
	SIZE	12.005	2.601	4.060	19.253	2760
	TANG	0.443	0.239	0.000	0.983	2757
	PROF	-0.021	0.194	-2.029	0.536	2282
	LIQ	1.880	1.917	0.000	28.104	2606
	GDPG	0.971	0.635	0.183	2.079	2792
	INFL	1.239	0.873	0.100	2.300	2792
Germany	LEV	0.258	0.201	-0.002	1.466	2342
	SIZE	12.033	2.644	2.890	19.281	2345
	TANG	0.485	0.243	0.000	0.984	2328
	PROF	0.004	0.178	-2.075	0.527	2196
	LIQ	2.538	3.083	0.026	27.723	2294
	GDPG	1.663	1.167	0.490	3.660	2363
	INFL	1.419	0.871	0.100	2.500	2363
Italy	LEV	0.255	0.175	0.008	1.251	805
	SIZE	13.400	1.868	9.168	19.241	805
	TANG	0.520	0.203	0.009	0.979	805
	PROF	0.003	0.110	-1.074	0.306	347
	LIQ	1.389	0.890	0.044	10.666	805
	GDPG	-0.581	1.450	-2.819	0.952	815
	INFL	1.540	1.337	0.100	3.300	815
Japan	LEV	0.175	0.129	0.000	0.798	5637
	SIZE	14.414	1.304	10.054	19.279	5632
	TANG	0.459	0.184	0.014	0.947	5637
	PROF	0.053	0.052	-1.047	0.563	5632
	LIQ	1.836	1.220	0.229	20.980	5637
	GDPG	1.022	0.775	-0.115	2.000	5640
	INFL	0.700	1.115	-0.300	2.800	5640

This table shows the descriptive statistics of the seven variables that do not have fixed values for each of the G7 countries. It shows the data amount, minimum, maximum, mean and standard deviation per variable.

Table 5. Descriptive Statistics Results (continued)

COUNTRY		Mean	St. Deviation	Minimum	Maximum	N
United Kingdom	LEV	0.167	0.255	-0.810	1.510	4346
	SIZE	11.954	2.518	3.611	19.225	4450
	TANG	0.504	0.276	0.000	0.984	4419
	PROF	-0.005	0.286	-4.861	0.546	4318
	LIQ	2.132	2.755	0.000	27.898	4364
	GDPG	2.077	0.595	1.453	3.054	4499
	INFL	2.281	1.491	0.000	4.500	4499
United States of America	LEV	0.392	0.234	0.000	1.613	5425
	SIZE	15.165	1.381	10.065	19.266	5420
	TANG	0.602	0.218	0.014	0.983	5437
	PROF	0.051	0.091	-2.641	0.525	5417
	LIQ	2.110	1.655	0.070	28.560	5439
	GDPG	2.187	0.491	1.601	2.862	5470
	INFL	1.680	0.973	0.100	3.100	5470

This table shows the descriptive statistics of the seven variables that do not have fixed values for each of the G7 countries. It shows the data amount, minimum, maximum, mean and standard deviation per variable.