

The impact of cultural clusters on capital structure decisions: Evidence from European retailers.

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ABSTRACT, Capital structure is a highly controversial topic in the financial arena. Beside firm-specific determinants, research has also shown that country-specific determinants are able to explain certain variations in capital structures among different firms. In fact, national culture is a country-specific determinant, whose impact on capital structure has not yet been studied that extensively by academic literature as compared to other determinants. Therefore, it is the aim of this paper to examine the impact of cultural clusters on the capital structure decisions made by European retailers. In the analysis it is tested, using an OLS Regression, whether a firm's membership in a certain cultural cluster has a significant impact on its leverage ratio. The paper finds, even after controlling for other firm- and country-specific determinants, a significant difference between the mean capital structures of the different cultural clusters. Hence, it is concluded that culture indeed has an influence on the capital structure choices of firms.

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Keywords

Capital structure; Cultural clusters; National culture, Firm-specific determinants, Country-specific determinants

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1. INTRODUCTION

Although there have been many academic papers that sought to determine an optimal capital structure for firms, it is still one of the most controversial topics in the financial arena. Modigliani and Miller (1958), with their propositions, paved the way for a discussion between numerous researchers that aimed to investigate the appropriate ratio between debt and equity, up to now.

Large part of the extant body of literature, however, covers the impact of firm- or industry-specific variables on the capital structure choice, while spending less attention on country-specific variables (Wang and Esqueda, 2014).

Nevertheless there are also some papers who focus on institutional differences between countries, and especially on the legal and economic environment. (e.g. Rajan and Zingales, 1995; Booth et al. 2001). Besides these institutional differences, there is also the cultural background, which is seen to have a considerable impact on the capital structure choices of firms (Antonczyk and Salzmänn, 2014).

Gray et al. (2013) refer to the national culture as an *informal* institutional factor, which establishes the 'rules of the game' that organizations tend to follow with respect to corporate decision making. Unlike the formal institutional factors including constitutions, laws and regulations, national culture, as an informal institutional factor, is much harder to grasp, because generally it is not something that is written down on paper, but it is rather reflected in customs, traditions and codes of conduct (Li et al., 2011).

In order to rationalize the characteristics of a nation's culture, Geert Hofstede (2001) developed a framework containing different dimensions of culture. These dimensions are namely: Power Distance, Individualism, Uncertainty Avoidance, Masculinity, Long-term Orientation and Indulgence. For approximately 100 countries he assigned a score to the respective dimension for each single country. With the help of these scores, it is now possible to distinguish different cultures by means of these dimensions. Additionally, this facilitates the formation of groups that share similar attributes, which can be compared to each other. These groupings are referred to, by House (2004), as cultural clusters. These include for instance the Anglo-Saxon countries like the USA, UK and Australia and the Germanic European countries like Germany, Switzerland and Austria.

Thus, the aim of this paper is to investigate the relationship between national culture and capital structure based on the aforementioned cultural clusters. Although some research in this field has already been carried out, this paper distinguishes from the existing literature, as it focuses exclusively on a sample European retailers. The reason for choosing the retail industry is the fact that it represents a relatively stable industry and by choosing a specific industry one ameliorates problems associated with comparing firms from different industries. Therefore this research has the potential to develop new insights on that topic and add value to the existing body of knowledge. The research question is the following:

Does membership in a specific cultural cluster, beside other firm- and country-level determinants, have a significant impact on the capital structure decisions, made by European retailers?

Subquestions

What are the determinants of capital structure?

What is culture?

What are the dimensions of culture?

What are cultural clusters?

Does a firm's membership in a certain cultural cluster have an influence on its capital structure?

2. LITERATURE REVIEW

In the following I am going to review the existing body of literature on capital structure theory, as well as the literature on culture and financing decisions. Thereby, the major firm- and country-level determinants of capital structure, which were approved by several academic papers in that field, will be outlined and described in more detail. Moreover, I am going to define the term "culture" and afterwards elaborate on specific cultural factors, the formation of cultural clusters and its impacts on capital structure decisions by firms.

2.1 Firm-level determinants

It was 1958, when Modigliani and Miller laid the foundation for the discussion about the existence of an optimal capital structure, which still persists today. They proposed that firm leverage does not impact firm value. (Modigliani and Miller, 1958)

This "irrelevance" assumption, however, has later been modified by application of the *static trade-off theory*. This theory, by Modigliani and Miller (1963), assumes that there are benefits and costs to consider when employing corporate debt. The benefits of using debt comprise the tax savings that arise through deducting interest payments to bondholders from taxable income. The costs are represented by the increased risk of financial distress associated with higher leverage. Thus Modigliani and Miller (1963) assume that there is a target capital structure, firms aim to achieve, where the tax benefits of interest deductibility are somewhat offset by the costs of financial distress (Arosa et al., 2014).

Next to this, Myers and Majluf (1983) use the *pecking order theory* in order to explain capital structure decisions made by firms. *Pecking order theory* suggests that there is a hierarchy of preferences that firms consider. This hierarchy is due to variations in the level of asymmetric information between retained earnings, debt and outside equity (Antonczyk and Salzmänn, 2014). Here, outside equity represents the least preferable option for firms to employ, whereas debt only entails minor problems of information asymmetry. Retained earnings, however, avoid the problem altogether. Hence, the pecking order framework postulates that firms first use internal funds (i.e. retained earnings), followed by debt and then external equity, in order to minimize the problems associated with information asymmetry (Antonczyk and Salzmänn, 2014).

Another major theory that is addressed to capital structure choices, is *agency theory*. The main concept behind this theory is the assumption that a conflict between shareholders and bondholders motivates managers to accept risky projects, which will shift the profits from bondholders to shareholders (Jensen and Meckling, 1976). Myers (1977) claims that debt prevents firms from growing because any gains will accrue to

bondholders rather than shareholders, which will result in an underinvestment problem.

Taking together all the above mentioned theories, one can refute the propositions put forth by Modigliani and Miller (1958), as managers have indeed the opportunity to influence value to the shareholder by choosing the appropriate debt to equity mix.

2.2 Country-level determinants

Besides the firm-level determinants, prior research (De Jong et al., 2008; Demirgüç-Kunt and Maksimovic, 1999) finds that capital structure is also influenced by country-level determinants. These are basically represented by differences among legal, economic and institutional factors across countries. Gray et al. (2013) suggest that there are two groups of institutional factors. First, there are formal institutional factors, including formal rules, laws and regulations and constitutions. Next to this there are informal institutional factors reflected by behavioral norms and culture.

2.3 National Culture

Hofstede (2001), defines culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another". The essence of culture is the way people think feel and act. The features of culture, by which one culture can be distinguished from another, are reflected through artifacts, behavioral patterns, rituals, values, beliefs and underlying assumptions (Hofstede, 2001). So, in order to classify different countries, regions, ethnicities, or even organizations according to their diverging cultures, Hofstede (1980) introduced four dimensions of culture. These dimensions include power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity.

Uncertainty avoidance is associated with an unknown future and it reflects the extent to which people avoid or feel uncomfortable with uncertain, unforeseeable, ambiguous and unstructured events or situations.

Individualism reflects the degree to which a society emphasizes the role of the individual versus the role of the group. It gives an assumption about the extent to which an individual is integrated in society.

Power distance refers to the extent inequality in power distribution is expected and accepted by the less powerful.

Masculinity focuses on the extent to which male assertiveness (e.g. represented by making money and striving for material success) is promoted as dominant values in society as opposed to "female nurturance", which values relationships higher than money or success (Zheng, 2012).

Later, Hofstede (1991) added a fifth dimension, namely Long-term orientation, to the original four dimensions. This was due to the fact that research revealed that there is a significant difference in thinking between Eastern and Western countries. So, according to Hofstede (1991), this was a difference, which could not be excluded from his framework and thus he introduced a fifth dimension. Long-term orientation refers to the extent to which a society encourages persistence and stresses the importance of future-oriented rewards, and particularly adapting to changing circumstances. A short-term oriented society, on the contrary, attaches more value to the past and present.

Although some researchers might argue that the data contained in Hofstede's framework are outdated, Hofstede contends that the data retains their validity over a long period (Zheng et al., 2012), because on the one hand national culture tends to be extremely stable over time and on the other hand the scores of the dimensions do not provide the absolute position, but rather relative position of a country, compared to other countries. Thus, even if single culture changed, it would not have a significant impact on the cultural dimensions (Zheng et al., 2012).

2.4 Cultural Clusters

Based on the findings of Hofstede (1980), Schwartz (1994) and several other researchers, who studied the different aspects of national culture, House et al. (2004) launched the GLOBE project. The GLOBE project is a study that examines 62 societies (i.e. countries) based on their differing cultural aspects. The aim of this study was to create clusters of countries, which share similar attributes regarding their national culture. Here, House et al. (2004) use in total 9 cultural dimensions to categorize the different countries. In fact, 3 of those 9 dimension were adapted from Hofstede (1980), which are namely: *Uncertainty avoidance*, *Power Distance* and *Masculinity*. Eventually, House et al. (2004) create 10 different cultural clusters: Anglo, Nordic Europe, Germanic Europe, Latin Europe, Sub-Saharan Africa, Eastern Europe, Middle East, Confucian Asia, Southern Asia and Latin America.

2.5 Impact of National Culture and Cultural Clusters on financing decisions

In the following I am going to reflect on the findings by several academic papers, which examine the impact of Geert Hofstede's cultural dimensions as well as the cultural clusters by House et al. (2004) who employ these dimensions, on firm leverage. The reason why I choose to focus on Hofstede's cultural dimensions is that his framework is most widely known and applied in the academic context. Next to this, another advantage over similar papers is that Hofstede's study is based on the interviews of employees in an organization unlike e.g. the framework by Schwartz, which is based on the interviews of students. Hence, Hofstede's dimensions tend to be better applicable in a business context. (Arosa et al., 2014)

Although, by now cultural influences have been recognized to be an important factor for organizations to consider when making decisions, there has been little research about the actual effect on companies capital structure decisions. The table below summarizes recent findings on the influence of national culture on capital structure by the respective authors. All of them undertake a cross-country research, with a country sample ranging from 22 to 42 countries. Besides, Wang and Esqueda (2014) include only emerging countries in their sample. Moreover, it is important to remark that Chui et al. (2002) did not use Hofstede's cultural dimensions, but Schwartz's cultural dimensions. Nevertheless, it has been postulated by Wang and Esqueda (2014) and Arosa et al. (2014) that the *Conservatism* dimension by Schwartz can be closely related to *Uncertainty avoidance*, *Power Distance* as these capture similar levels of risk aversion. Also the dimension *Mastery* by Schwartz can be linked to *Masculinity* as both terms represent the importance of individual success. Hence the table below, which serves as an

overview of the findings by the respective authors, also includes the findings by Chui et al. (2002).

Table 1
Empirical studies of capital structure and national culture

	Chui et al. (2002)	Wang and Esqueda (2014)	Antonczyk and Salzman (2014)	Arosa et al. (2014)	Gray et al. (2013)
Uncertainty Avoidance	-	-	n/a	-	-
Power Distance	n/a	-	n/a	-	n/a
Masculinity	-	-	n/a	n/a	n/a
Individualism	n/a	+	+	n/a	+

The table depicts the impacts of the respective cultural dimensions by Hofstede (1980) on firm leverage found by the respective authors. Here, a "+" indicates a positive relation with leverage and "-" indicates a negative relation.

Regarding *Uncertainty avoidance* Chui et al. (2002), Wang and Esqueda (2014), Arosa et al. (2014) and Gray et al. (2013) find a negative impact on leverage. This is probably due to the fact that firms place a high priority on certainty. Hence, managers of firms that are located in countries of high *Uncertainty avoidance* might be reluctant to use debt financing, because they do not want to be tied to interest payments and expiration dates. They rather prefer equity issues, as these do not comprise obligatory payments and are permanent in nature (Wang and Esqueda, 2014). Here it is to note that Zheng et al. (2012) find that firms of uncertainty avoiding countries prefer the use of short-term debt. This, however, can be also related to the amount of debt, used. Therefore, this paper includes the findings of Zheng et al. (2012), although these originally concern the impact on debt maturity.

Moreover it was found by Chui et al. (2002), Wang and Esqueda (2014) and Arosa et al. (2014) that *Power distance* has a negative impact on leverage. As a possible interpretation, Zheng et al. (2012) suggest that firms of home countries with a high score on *Power distance* tend to have higher transaction costs for long-term debt contracts. This is due to the fact that high *Power distance* societies are associated with lower levels of trust and more opportunistic behavior. Hence, firms in those countries might be discouraged from using long-term debt contracts. Apart from that, Arosa et al. (2014) argue that managers try to seek the "safer" path by minimizing debt as well as the associated bankruptcy costs. This explanation, however, is quite similar to the one that aims to explain the relationship between *Uncertainty avoidance* and leverage.

According to *Masculinity*, Chui et al. (2002), Wang and Esqueda (2014) and Zheng et al. (2012) find an inverse relationship with debt usage. A possible explanation would be that in a masculine society individual success is highly valued, thus managers tend to accept projects with the highest probabilities of success. So, if a firm cannot meet debt payments and goes bankrupt, management is most likely blamed for the failure. Hence, if managers are more concerned with their personal success they are likely to employ less debt (Chui et al., 2002).

Individualism was found by Zheng et al. (2012), Fidrmuc and Jacob (2010), Wang and Esqueda (2014), Antonczyk and Salzman (2014) and Gray et al. (2013), to have a positive impact on leverage.

Zheng et al. (2012) suggest that a possible interpretation for this finding could be that members of individualist societies tend to be overoptimistic with predicted outcomes and overconfident with their own capabilities. This means for instance that they have overly positive expectations about the profitability of potential projects and that they think that their abilities are above average. Therefore, the positive relationship with leverage might be due to the fact that the interpretation of information by investors differs among different cultures, since they are subject to different psychological biases (Zheng et al., 2012). So the higher debt to equity ratio may result from an overoptimistic assessment of individualist creditors.

This interpretation aligns with the one by Antonczyk and Salzman (2014), who further claim that managers in individualist societies perceive their firms equity positions as highly undervalued, resulting in an increased use of debt. Moreover, they argue that that overconfident managers think that their firm's cash flow volatility is lower than it actually is, which causes them to employ more debt, as they undervalue the associated bankruptcy costs. Another potential interpretation for this finding is provided by Fidrmuc and Jacob (2010) who employ Hofstede's cultural dimensions to study agency problems. They suggest that in individualist countries agency problems could be more severe, since their member tend to pursue their own personal interests instead of focusing on shareholder wealth maximization. Consequently, firms in home countries with high individualism prefer the use of debt, which serves as a way to mitigate agency costs (Wang and Esqueda, 2014).

Apart from the above mentioned authors, who investigate the impact of every single cultural dimension by itself, Gleason et al. (2000) examine whether there are differences in capital structure between different cultural clusters. They group their sample countries according to the cultural clusters by Hofstede (1980). So, Gleason et al. (2000) rather attempt to measure the aggregate impact of a group of 3 cultural dimensions, namely *Uncertainty avoidance*, *Masculinity* and *Power Distance*. Moreover, their research is distinct from the others due to the fact that they do not hypothesize that the cultural dimensions affect leverage positively or negatively, but rather that there is a significant difference between the mean capital structures of different cultural clusters. Gleason et al. (2000) find that, even after controlling for firm-specific and country-specific determinants, there is still a significant difference in the mean capital structure between the different cultural clusters. Hence, they conclude that among other firm- and country-specific determinants, cultural differences must also play a role with respect to capital structure decisions.

To sum up one can say that the authors basically agree on the effects of national culture on capital structure. Especially regarding *uncertainty avoidance* there seems to be an overall consensus that it affects firm leverage negatively. However, at this point it must be considered that each of the papers differs according to their research purpose as well as their sample (i.e. countries and types of firms) and cultural dimensions used (Hofstede vs. Schwartz). In fact, there has not been any

universal evidence from literature to support the effects of Hofstede's cultural dimensions on capital structure. In order to prove the effects of each of the cultural dimensions, one needs to collect data from a large number of countries and a large number of firms. Due to the fact that little research about the influence of national culture on capital structure has been carried out yet, my paper leans on the methods used by Gleason et. al (2000), who apply the cultural clusters by House et al. (2004) and study whether capital structure differs among different cultural clusters. The intention of this paper is to measure the aggregate impact of cultural dimensions on capital structure. Thus, based on the discussion of the previous sections Hypothesis 1 can be stated as:

H1: Cultural clusters have a significant impact on the leverage ratio of European retailers.

3. METHODOLOGY

In this section the methods, used in this paper, will be discussed. In the beginning the equations for the regression analysis are presented. Here, it is to note that 2 basic sets of regressions will be performed. First, only the independent cluster variables are included in the regression in order to see whether there are any significant differences between debt-to-assets ratios at all. Next, also the control variables are included in the regression in order to see whether the cluster variables are still significant for explaining differences in the debt-to-assets ratios. In this second step, however, the paper distinguishes between different models of the regression, where country specific and firm specific control variables are included in 2 separate as well as one pooled regression. Thereby, one can observe the impacts of both types of variables on their own as well as the combined impact. Afterwards, the dependent, independent and control variables will be described in more detail. In the end of this section, the characteristics and the size of the sample will be explained.

The equation for the first regression will be the following:

Regression 1

$$\frac{TD_i}{TA_i} = \alpha_0 + \beta_1 C1_i + \beta_2 C2_i + \beta_3 C3_i + \varepsilon_i$$

Where

$\frac{TD_i}{TA_i}$ = Total debt to total assets ratio for firm i
 CX_i = Dummy variable = 1 if firm i is in Cluster X; =0 if otherwise.
 $X= 1,2,3$
 α_0 = intercept, mean $\frac{TD_i}{TA_i}$ ratio for Cluster 4

Regression 2

$$\begin{aligned} \frac{TD_i}{TA_i} = & \alpha_0 + \beta_1 C1_i + \beta_2 C2_i + \beta_3 C3_i + \beta_4 SIZE_i + \beta_5 TANG_i \\ & + \beta_6 NDTS_i + \beta_7 PROF_i + \beta_8 LIQ_i \\ & + \beta_9 LEGAL_i + \beta_{10} ANTIDR_i + \beta_{11} INVP_i \\ & + \beta_{12} GDPGROWTH_i \\ & + \beta_{13} INFLATION_i \varepsilon_i \end{aligned}$$

where

$\frac{TD_i}{TA_i}$ = Total debt to total assets ratio for firm i
 CX_i = Dummy variable = 1 if firm i is in Cluster X; =0 if otherwise.
 $X= 1,2,3$
 α_0 = intercept, mean $\frac{TD_i}{TA_i}$ ratio for Cluster 4
 $SIZE$ = natural logarithm of total assets of firm i
 $TANG$ = ratio of fixed assets to total assets of firm i
 $NDTS$ = ratio of depreciation to total assets of firm i
 $PROF$ = ratio of earnings before interest, tax and depreciation to total assets of firm i
 LIQ = ratio of current assets to current liabilities of firm i
 LEG = Dummy variable = 1 if firm i is subject to common law; =0 if civil law
 $ANTI$ = measure strength of outside investor protection on a scale from 1-5; =1,2,3,4,5
 $INVP$ = measure outside investor protection on a scale from 0-10
 $GDPG$ = growth in real GDP in the year 2012, measured in %
 $INFL$ = Inflation as change in Consumer Price Index, measured in %

3.1 Dependent variable

The dependent variable in my regression analysis will be the ratio of total debt to total assets. Although there are several other methods to measure the leverage of a firm this paper sticks to recent literature (Gleason et al., 2000; Arosa et al., 2014; Antonczyk and Salzmann, 2014), which suggests to use total debt-to-total assets. Additionally, this paper only deals with book values of shareholders equity, as for most of the sample firms, market values are not available. However, Arosa et al. (2014) and De Jong et al. (2008) find that using either market or book values leads to similar results. Therefore the results of regression are still expected to provide a meaningful contribution to the extant literature.

3.2 Independent variables

The independent variables are binary variables, which indicate whether the firm is a member in a certain cultural cluster. This paper examines four different cultural clusters which are according to Hofstede (1980) present in Europe. These clusters are formed based on the scores on 3 different cultural dimensions, namely *Uncertainty avoidance*, *Masculinity* and *Power Distance*.

Cluster 1 is characterized by a strong *Uncertainty avoidance*, a low score on *Masculinity* and a large *power distance*. The members of the sample are the following: Belgium, France, Portugal and Spain.

Cluster 2 is characterized by a weak *uncertainty avoidance*, a high score on *Masculinity* and a small *Power distance*. Its members are: Ireland and the UK.

Cluster 3 is characterized by a strong *uncertainty avoidance*, a high score on *Masculinity* and a small *Power distance*. Its members are Austria, Germany and Italy.

Cluster 4 is characterized by a weak uncertainty avoidance, a low score on Masculinity and a small Power distance. Its members are Denmark, Finland, Sweden and the Netherlands.

3.3 Control variables

As other factors beside cultural aspects may be responsible for capital structure decisions this paper employs firm-specific as well as institutional variables as control variables. The following factors are based on existing theoretical and empirical findings by the existing literature, which were also discussed in Section 2.

3.3.1 Firm-specific determinants

In this paper the natural logarithm of assets will be used to proxy for firm SIZE. The trade-off theory postulates a positive relation between firm size and leverage, as larger firms have an easier access to the credit markets, lower agency and monitoring costs, a less volatile cash flow and if they wanted to fully benefit from the tax shield they would require more debt. Thus, firm size is expected to have a positive influence on leverage.

Tangibility is measured as the ratio of total fixed assets to total assets. As already mentioned in the literature review agency theory suggests that highly levered firms tend to underinvest and thus transfer wealth from debtholders to shareholders. Hence, lenders are caused to require collateral as the use of secured debts can help to avoid this problem. So firms that are unable to provide collateral will have to pay higher interest rates, or will be forced to issue equity instead. Hence, a positive relation between tangibility and assets is expected (Deesomsak et al., 2004).

Non-debt tax shield is measured as the ratio of depreciation to total assets. Here, trade-off theory predicts that the major motivation for firms to use debt instead of equity is to save corporate tax. However, companies are able to reduce corporate tax through non-debt tax shields, such as depreciation. Thus, a higher depreciation reduces the potential tax benefit of debt and hence it should affect leverage negatively (Arosa et al., 2014).

Profitability is defined as the ratio earnings before interest, tax and depreciation (short: EBITDA) to total assets. As suggested by Pecking-order theory, managers prefer to finance projects using internally generated funds because of the information asymmetry between managers and outside investors. So, as profitable firms have more internally generated funds available, an inverse relation with leverage is expected.

Liquidity is measured by the ratio of current assets to current liabilities. Pecking-order theory suggests that firms with a high liquidity tend to borrow less. Additionally, due to the managers ability to manipulate liquid assets in favor of equity holder and against the interest of debt holders, agency costs of debt increase. Therefore, a negative relation between liquidity and leverage is expected (Deesomsak et al., 2004).

3.3.2 Country-level determinants

Further, I am going to include 5 country-specific variables in my regression analysis in order to account for institutional differences between countries. These are derived from findings by the existing literature and are in line with recent papers that are also examining the impact of national culture and capital structure.

A dummy variable that is used which identifies the LEGAL SYSTEM of the bankruptcy law of each country. The variable equals 0 if the country's legal origin is civil law, and 1 if it is common law (La Porta et al., 2008). Existing literature on law and finance found that legal systems based on common law offer investors better protection than those based on civil law.

Moreover I include the ANTI-DIRECTOR RIGHTS index by La Porta et al. (1998) in order to measure outside investor protection more directly. Last but not least, a further variable that measures outside investor protection will be included namely, INVP. This data is derived from the World Bank Doing Business index that measures the strength of protection on a scale from 0-10 scale.

Additionally, the variable GDPGROWTH is included in the analysis as a measure for the growth in real GDP of the respective country. It is found by academic literature that the economic situation of a country, also has an influence on a firms capital structure (Gleason et al., 2000; Arosa et al., 2014).

Finally, also the Variable INFLATION, as a measure of the change in the Consumer Price Index, is included in the regression as it is expected by several papers, to also have an influence on the capital structure. (Antonczyk and Salzmann, 2014; Arosa et al., 2014; Zheng et al., 2014)

3.4 Sample

In the following section the methodology will be discussed. As indicated by the research question this paper focuses on the differences in capital structure among European retailers with respect to their cultural backgrounds. The financial data for this study is obtained from the financial database ORBIS.

The initial sample for this study consists of 15,249 listed retail firms from 13 European countries in the year 2012. The reason why I chose these definite 13 European countries is that those were the ones which had most retail firm data available. Moreover, these are all members of the particular cultural clusters, I attempt to study in this paper. In order to avoid double entries, the sample has been restricted to only include parent companies. Consequently, the sample has been reduced to 1,852 firms. Firms, which lack information in either the following areas, were excluded from the sample: fixed assets, current assets, shareholders equity, long-term liabilities, short-term liabilities, earnings before interest and taxes and depreciation. Moreover, following De Jong et al. (2008), it is required for each country to have at least 10 firms to remain in the sample. This leads to a final sample of 1594 firms in the year 2012. Similar to Arosa et al. (2014) the sample is dominated by a few large European countries like the UK, France and Germany who constitute together about 57% of the sample.

First of all one might wonder why I chose the retail industry. There are two reasons for that. First, by choosing retailers, one can eliminate the potential problems associated with comparing firms of different industries with each other. Next to this the European retail industry represents a relatively static industry with a growth rate that is quite similar to the overall GDP growth rate of a country (Gleason et al., 2000). Thus, according to Gleason et al. (2000) it can also be assumed that capital structures of the retailing industry tend to be quite stable over time, which facilitates precise measurement.

3. RESULTS

First of all the descriptive statistics of the relevant variables will be presented. The sample consists of 1594 European retail firms in the year 2012. Table 1 states the amount of firms of the respective clusters. Here, Cluster 2 with its member states being the UK and Ireland dominate the sample with an amount of 563 firms. Cluster 4, including the Scandinavian countries Denmark, Sweden and Finland plus the Netherlands, has with 229 firms the smallest share in the total amount of firms.

Table 2
Membership of firms in cultural clusters

	Number of firms
Cluster 1	465
Cluster 2	563
Cluster 3	337
Cluster 4	229
Total	1594

This table indicates the amount of firms, which are member in the respective cultural clusters

Coming to the descriptive statistics in of the firm-specific variables Table 3, one can denote that the mean total debt to total assets ratio of the entire sample is roughly 63.7%. The minimum and maximum range from 1% to 100%, respectively. Regarding the remaining firm specific variables one does not notice any surprising findings.

For analyzing whether there are significant differences in the mean capital structures of the four different cultural clusters, 5 OLS regressions will be conducted. First, a separate regression, including only the independent variables and the dependent variable, will be performed.

Table 3: Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
LEV	1594	0,01	1,20	0,637	0,239
SIZE	1594	6,96	17,88	10,14	1,623
TANG	1594	0,00	1,00	0,47	0,251
NDTS	1594	-,01	0,97	0,044	0,046
PROF	1594	-1,09	1,10	0,10	0,113
LIQ	1594	0,00	18,37	1,534	1,49
GDPG	1594	-3,23	0,93	-0,33	1,09
LEGAL	1594	0,00	1,00	0,65	0,478
ANTI	1594	0,00	5,00	3,17	1,63
INVP	1594	4,70	8,30	6,47	1,24
INFL	1594	1,19	4,45	3,28	0,93
Valid N	1594				

In this table the descriptive statistics of the leverage ratios all the firm- and country specific variables are listed.

Thereby, one can identify whether there are any significant differences in mean capital structures between the different clusters, in the first place. (Model 1) Afterwards, the firm specific variables will also be employed in the regression as control variables, in order to see whether the dummy variables of the cultural clusters C1-3 still have a significant influence on the debt to assets ratio. (Model 2) Next, the country specific variables as control variables will be put into the regression, together with the independent variables, to see if the cluster dummies are significant, despite the presence of other country-specific determinants. In order to prevent multicollinearity among the independent variables and control variables from biasing the outcomes of the regression, the paper calculates the variance inflation factors (VIFs) for each variable across all of the 5 models. Here, the calculations yield that for the variables ANTIDR and INVP the VIFs are both above 5, which indicates that multicollinearity is likely to be present. Hence, the paper performs two separate regressions, namely Model 3 and Model 4 containing either ANTIDR or INVP. For the rest of the variables the paper does not encounter any problems related to multicollinearity.

In the end, a pooled regression, containing the independent variables, as well as both groups of control variables (firm- and country specific) is conducted. (Model 5)

The estimates of the first regression are shown in Table 4 Model 1. The intercept represents the mean capital structure of Cluster 4. The other coefficients represent differences in the mean capital structures compared to the mean capital structure of Cluster 4.

All of the coefficients are significant at the 1% level. Cluster 4 has the lowest mean debt to asset ratio of 56,9 %. The mean debt-to-assets ratios of the Clusters 1,2 and 3 are 63,9%, 62,1% and 70,8%, respectively. Obviously, the difference in the mean debt to assets ratio between Cluster 3 and Cluster 4 is with almost 14% the largest. This finding is already in line with the initial assumption that cultural clusters have a significant impact on the leverage ratio. In this case it even appears that this impact is quite large.

Table 4 : The impact of cultural clusters on the leverage ratio

	Model 1	Model 2	Model 3	Model 4	Model 5
Int.	0,569*** (36,47)	0,827*** (23)	0,911*** (7,78)	0,864*** (8,12)	0,99*** (12,97)
C1	0,07*** (3,68)	0,03* (1,84)	0,05** (2,48)	0,044** (2,13)	0,013 (0,72)
C2	0,052*** (2,82)	0,02 (1,25)	0,08*** (2,85)	0,09*** (3,03)	0,08*** (2,79)
C3	0,139*** (6,9)	0,09*** (5,07)	0,11*** (4,22)	0,11*** (4,73)	0,07*** (3,72)
SIZE		-0,002 (-0,64)			-0,002 (-0,69)
TANG		-0,16*** (-7,19)			-0,16*** (-7,29)
NDTS		0,86*** (5,97)			0,67*** (5,87)
PROF		-0,33*** (-7,24)			-0,32*** (-7,05)
LIQ		0,08*** (-23,85)			-0,08*** (-23,8)
GDPG			-0,02*** (-2,95)	-0,02*** (-3,134)	-0,01 (-1,15)
LEGA			-0,09*** (-3,01)	-0,12*** (-3,63)	-0,07*** (-2,76)
ANTI			0,01 (0,9)		
INVP				-0,02 (-1,37)	-0,02 (-1,56)
INFL			-0,03** (- 2,34)	-0,02** (- (-2,03)	-0,18* (-1,94)
N	1594	1594	1594	1594	1594
Adj. R²	0,03	0,322	0,035	0,036	0,324

The table reports the coefficients and t-statistics from regressing leverage on the cultural clusters and firm- and country-level determinants of leverage. All the estimates of the regression are tested for heteroscedasticity. Furthermore, the table contains the adjusted R² values, which indicate the model fit. C1, C2, C3 are dummy variables of the respective clusters, where the value of 1 represents membership in that cluster. The variables SIZE, TANG, NDTS, PROF and LIQ represent the firm specific determinants, whereas the variables GDPG, LEGAL, ANTI, INVP and INFL represent the country specific determinants.

*** Significance at the 1%-level

** Significance at the 5%-level

* Significance at the 10%-level

When regarding Model 2 one can notice that the significance level of C1 changes from 1% to 10%. In addition, the difference between C2 and C4 is not significant anymore. However, the difference between the means of C3 and C4 remains significant at the 1% level. This means that the impact of cultural clusters is still significant despite the presence of firm specific control variables, but the manifestation of its influence is not as strong as in Model 1. That is also in line with the results by Gleason et al. (2000), who also find a declining influence of cultural clusters, once having introduced firm-specific control variables. Moreover, regarding the firm-specific variables, four of five are found to have significant impact on the debt to assets ratio at the 1% level. For SIZE, whose relation with leverage was expected to be positive (Deesomsak et al., 2004; Arosa et al., 2014), the analysis reveals an insignificant relationship. For PROFITABILITY and LIQUIDITY the regression yields a significant negative relation to leverage. This finding is also in

line with the one by Deesomsak et al. (2004) who refer to pecking order theory when explaining the inverse relation. Surprisingly though, the regression yields a significant positive relation for Non-debt tax shield with respect to leverage., although it is being suggested by static-trade off theory and several academic papers (Arosa et al., 2014; Deesomsak et al., 2004) that Non-debt tax shield would affect leverage negatively. What is also striking is that the regression gives a negative relation between TANGIBILITY and leverage, although both pecking-order as well as static trade-off theory suggest a positive relation.

Model 3 depicts the pooled effects of both the independent variables and the country specific variables. Here, Cluster 1 and 3 still have a significant impact on the mean total debt to total assets ratio. Moreover, the control variable LEGAL has a significant negative impact on leverage. As common law countries are seen as the reference countries to which civil law countries are compared, this finding suggests that membership in a civil law country is negatively related to the total debt to total assets ratio. This finding finds acceptance among academic literature, as it suggests that common law countries offer investors a better protection and therefore it is easier for firms to borrow. For the variable ANTI DIRECTOR RIGHTS though, the relation with leverage did not turn out to be significant. According to the variable GDPGROWTH one can assert a significant negative relation with leverage.

In Model 4, also the Cluster dummies and the country specific variables are included in the regression. However, in this Model I included the variable INVP, which indicates the degree of investor protection on a scale from 1-10, instead of ANTIDR since both of those variables make an assumption on the degree of investor protection. As multicollinearity has been diagnosed for these two variables, the paper employs them separated from each other to prevent the outcomes from becoming biased due to correlation among the two variables.

In Model 5 one can see the aggregate impacts of all the independent variables and control variables together. Having accounted for all control variables, one can notice that both the difference of Cluster 3 and Cluster 2 compared to Cluster 4 are significant at the 1% level. The reason why the other Cluster is not significant, after accounting for all control variables, might be due to the restricted sample size. One may assume that a larger sample size would increase the robustness of the test. In addition, it is to remark that the more independent variables one includes in a regression the weaker the measurable effect of each individual variable will be. Furthermore, only for the country-specific variables LEGAL and INFL the regression yields a significant negative relation. The factor GDPG is not significant in this model. A possible interpretation might be that it would have required a large sample of countries in order to provide a robust proof that GDP growth affects capital structure.

Moreover, Model 5 does not show a significant impact of INVP. The variable ANTIDR has been excluded from this pooled regression to avoid the aforementioned problem multicollinearity. However, I performed the same regression, including ANTIDR instead of INVP and the results were almost the same. So, in order to safe space and to keep the readability, this regression has been left out. Coming to the firm-specific control variables one can notice that each of them retain their significance levels, despite the presence of the country specific variables.

The outcomes of the regression are similar to Gleason et al. (2005) who do not find many significant relations of their country specific control variables like GDP growth or the legal system, but for their firm-specific control variables. Moreover, Gleason et al. (2000) find a significant difference in the mean capital structure for all of the clusters, when performing a separate regression. But, as they employ control variables in their equation, the mean capital structure of one clusters is not significant anymore. The authors conclude that although the presence of control variables weakens the relations of cultural clusters to capital structure, there is still a significant difference between some of the clusters mean capital structure and hence they suppose that in addition to firm and country specific variables, national culture also does play a role when determining capital structure. That is quite similar to the outcome of this regression.

4. CONCLUSION

The aim of this study is to investigate the impact of cultural clusters on capital structure decisions made by European retail firms. The assumption is that, beside the commonly approved firm specific as well as country specific determinants, culture does also play a role when it comes to the capital structure decisions. Therefore, this paper examines the mean capital structures of the firms of 4 different cultural clusters. These cultural clusters by House (2004) are, among other variables, based on the following 3 cultural dimensions by Hofstede (1980): *Uncertainty avoidance*, *Masculinity* and *Power distance*. As these clusters combine the attributes of 3 different cultural dimension it is difficult to predict a definite direction towards which these variables affect the total-debt-to-total-assets ratio. Additionally, the vast amount of literature on cultural influences on capital structure investigates the impact of the single cultural dimensions rather than the impact of cultural clusters. As, to the best of my knowledge, only Gleason et al. (2000) conducted research on the impact of cultural clusters on capital structure, the hypothesis of as well as the methods used in this paper are quite similar.

The results of the regression suggest that, even after controlling for both firm-specific and country-specific variables, the differences between mean capital structures of the different cultural clusters are significant. This supports the assumption that culture has an influence on capital structure decisions made by European retailers. Especially between Cluster 3 (containing Germany, Italy and Austria) and Cluster 4 (Sweden, Denmark, Finland and the Netherlands) the difference between the debt to assets ratios of 14% is very high.

Next to that, this paper finds a significant relation with leverage for the firm-specific variables *Tangibility*, *Non-debt tax shield*, *Profitability* and *Liquidity*. However, for *Non-debt tax shield* it was found a positive relation with debt, although static trade-off theory suggest a negative relation. Besides, the paper did not find a significant relation for *SIZE*. This means that these basic theories of financial literature can still be used to explain part of the capital structure choices made by European retailers.

Regarding the remaining country-specific factors the paper only finds a significant negative relation for the factor *INFLATION*. This is in line with the expected relationship by the extant body of literature.

6. LIMITATIONS AND RECOMMENDATIONS

First of all this study limits itself to the investigation of the 4 European clusters. It would be interesting to include all of the clusters by House et al. (2004) in further studies in order to see to what extent the capital structures of firms differ on a global basis. Next to this, the paper focuses exclusively on relatively large retail firms. Therefore, it remains to be proven by future research whether those cultural differences do also have an impact on firms from other sectors and whether small privately held firms are also affected.

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