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CAPITAL STRUCTURE AND RELIGION. SOME INTERNATIONAL EVIDENCE*

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In the recent years, an increasing number of papers deepened cross-disciplinary studies, examining how different cultural values influence financial variables. The main objective of our paper is to test if the dominant world religions (Buddhist, Christian, Hindu, Islamic, and Judaic), and, moreover, some Christian denominations (Catholicism, Protestantism and Eastern Orthodox Christianity) are related to some patterns in capital structure. Our paper considers distinctly the category of countries in which Agnostics, Atheists and non-religious people are predominant.

The results are promising. Companies located in the states with predominance of Islamic religion have a lower leverage, while the ones from predominantly Catholic, Eastern Orthodox, Hindu and Judaic countries, as well as those in mainly Agnostic, Atheist and non-religious ones, are indebted more than those from mainly Protestant countries. The debt maturity seems to be correlated to the dominant religions or denominations, with companies in the predominantly Eastern Orthodox, Buddhist and Agnostic, Atheist and non-religious countries relying more on short term debt, and those in the majority Catholic, Judaic and Hindu countries on long term debt.

Keywords: capital structure, culture, religion, firm-specific factors, country-specific factors

JEL classification indices: G32, Z12, Z13

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1. INTRODUCTION

Undoubtedly, debt-equity mix and the determinants of capital structure are issues that have received attention in corporate finance literature. Various theories try to explain the differences between companies' capital structures, over time and across regions.

According to the classical approaches in finance, investors make the decisions related to capital structure in a rational manner.[1] The behaviour of other stakeholders is seldom taken into account (Meyer 2016). The viewpoint expressed by De Bondt – Thaler (1995: 385) is illustrative: "in finance, we simply insist that, whatever the people do, they do it right. [...] As a result, it is nearly devoid of people." Symptomatically, the empirical evidences are not always consistent in substantiating a particular capital structure theory. Recent studies take more and more into account the socio-cultural factors in modelling corporate finance decisions. Unfortunately, sometimes (especially when large databases are used) it is difficult to precisely define culture as a quantifiable variable. However, religion, as a proxy for culture, has some advantages, one of the most important being the availability of data (e.g., Barro – McCleary 2003a).

In the past years, religion is analysed as a plausible determinant for different economic decisions (Iannaccone 1998; Helble 2007; Fourie et al. 2015; Schneider et al. 2015; Küçük 2016). Since more than 80% of the human population declare themselves as adherent to one religion or another,[2] religion can be an important factor. Religion is also involved in other corporate finance choices. For instance, the beginnings of the social responsibility concept are strongly related to religion (Mallin 2004; Renneboog et al. 2008).

In addition to the existing literature, our study reveals that some religions and major Christian denominations are associated with certain patterns in capital structure, both for developed and developing countries. Thus, companies located in the states with predominance of Islamic religion have a lower leverage, while the ones from mainly Catholic, Eastern Orthodox, Hindu and Judaic countries are indebted more than those from the predominantly Protestant countries. Moreover, the debt maturity seems to be correlated to the dominant religions or denominations, with companies in the predominantly Eastern Orthodox or Agnostic coun-

[1] Some studies are questioning the hypothesis of rational behaviour of different agents, but these studies are exceptions. See, for instance, among others, Shleifer – Summers (1990).

[2] According to http://www.thearda.com – World Religions (2005), only 11.3% of the world population declared themselves as non-religious and only 2.4% as atheist. In our study, we assume that people who declare this religions affiliation are (at least at large extent) adherent to that religion. Some studies put under question this assumption (see, for example, Herţeliu et al. 2015).

tries relying more on short term debt, and those in majority Hindu countries on long term debt.

From a quantitaive point of view, this study takes into account a greater number of countries (74 countries, compared to Gonzales – Gonzales 2008 and Fan et al. 2012, both with only 39 countries) for the period of 2005–2010. A wider range of religions have been taken into account too, including Buddhism, Hinduism, and Judaism. Also, we considered distinctly the category of countries in which the Agnostics, Atheists and non-religious people are predominant.[3] Regarding the methodology, we used panel analysis with random effects.

The rest of the paper is structured as follows. In Section 2, the most important studies on capital structure are reviewed and the tested hypotheses are presented. Section 3 describes the data and the methodology. The results are discussed in Section 4. Section 5 concludes the study.

2. RELATED LITERATURE AND TESTED HYPOTHESES

In their classical paper, Modigliani – Miller (1958) emphasised that, under certain restrictive conditions, the value of a company is unaffected by how the firm is financed. Later, relaxing these hypotheses (taking into account factors, such as taxation, agency problems, or asymmetric information), several empirical studies on developed or emerging countries concluded that the debt-equity choice is relevant.[4] Moreover, they revealed that capital structure is determined both by the firm-specific and the country-specific factors (see, among others, Cook – Tang 2010).

A huge list of firm-specific determinants of capital structure is proposed by the literature (*Table 2*). Other studies revealed the importance of the country-specific factors, like legal origin, corruption, economic development, development of the banking sector, equity and bond markets, protection of shareholders' and creditors' rights, corporate governance variables, level of interest rates, national culture, etc. (Chui et al. 2002; Deesomsak et al. 2004; Delcoure 2007; Gonzales – Gonzales 2008). Some of these country-specific factors have been widely studied in the literature (see the legal origin, e.g. La Porta et al. 1997, 1998 and the corruption, e.g. Fan et al. 2012), but there are others which were not sufficiently explored (e.g. religion).

[3] It can be noticed that all the countries in which Agnostics, Atheists and non-religious people are predominant are or were ruled by communist regimes.

[4] The surveys of Harris – Raviv (1991), Myers (2003) and Guriev – Kvasov (2009) present these main issues.

By now, the connection between *national culture* (with an accent on corporate culture) and decision-making is accepted in literature (Hilary – Hui 2009). Various relationships between stakeholders in companies from different countries are presented in a large number of papers of comparative finance (e.g., Sekely – Collins 1988; Fauver et al. 2004; Goergen et al. 2005; Mayer et al. 2007). Recent studies reveal that the maximization of the shareholders' wealth is not always declared as the most important objective for the management of companies (Loderer et al. 2010). A company is a coalition of groups with common but also conflicting goals, as defined by Cyert – March (1963). At corporate level, the decisions can be the effect of negotiations between different stakeholders, not only managers, shareholders and creditors, but also unions or other different employees with decision-rights, communities, policy makers, professional associations, NGOs, education institutions, etc. In this context, some cultural patterns can have a significant influence, even though this is not the result of a rational decision from a financial viewpoint based on corporate finance principles. According to the behavioural consistency theory (Cronqvist et al. 2012), the decisions in professional and personal lives are similar. The firm can be considered as an assembly of heterogeneous groups, each of them with different values, utility functions, powers in negotiation and decision making and also with common values given by the cultural and social environment in some cases too (see, also, Hofstede 1983; regarding capital structure, see Sekely – Collins 1988; Chui et al. 2002). Assuming that companies are at least as trend representative for the society to which they belong, it can be interesting to find if one religion or another is associated with some capital structure patterns.

Religion is often used as a proxy for culture (La Porta et al. 1999; Hilary – Hui 2009; Fourie at al. 2015). In our study, we use the approach of Guiso et al. (2006: 23), who define culture as *"those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation"*. This definition focuses only on those dimensions of culture, inherited by any person from previous generations, which can impact economic outcomes. In this context, religion and religious practices are considered at least as a trend-invariant over an individual's lifetime and, moreover, more invariant from generation to generation for a long period of time. This perspective allows us to avoid the problem of causality between culture and economics. Thus, religion can be an explanatory variable for economics (including here debt-equity choice); but economics is not a necessary explanation for religion, because other variables (e.g. earnings, education, etc.), intergenerational mobility (Caballe 2016) can complicate this relationship. Hence, the association between religious affiliation (the specific religious group to which the stakeholders belong) and corporate behaviour as regards the debt-equity choice can be explained.

The existing literature already documented a positive relation between individuals' religiosity and *risk aversion* (Miller – Hoffmann 1995), extended at organisational level by Hilary – Hui (2009). Different studies provide evidence of the religiosity affecting mainly the trust, which is an important ground of individuals' financial behaviour. Arruñada (2010) points out that the Protestants are more likely to trust people. This may be one of the explanations of different levels of development of the capital markets across countries. Stulz – Williamson (2003) demonstrate that religion affects the degree of protection of investors' rights and this influence is more significant in the case of creditors' rights. They associate countries with the predominance of Protestant denomination with better corporate governance and higher protection of investors' rights compared with the Catholic ones (this can explain the preference for equity financing mainly in the predominantly Protestant countries).

Baxamusa – Jalal (2014) prove that the firms in the Catholic majority US counties are more indebted than those in the Protestant areas. They conclude that beyond the level of financial development, the predominant religion can help to explain the debt-equity choice. Also, religion can affect companies directly through a specific set of values and indirectly through its impact on wealth. Guiso et al. (2003) showed that religiosity increases the propensity to save, and that the Catholic value thrifts more than the Protestants. Renneboog – Spaenjers (2012) identify differences in attitude toward saving and investing decisions between the Catholics and the Protestants: the Catholic households have a high propensity to save, but are more risk averse. Considering these results obtained in previous studies, we could expect that the religious aspects impact the preference for debt and equity financing.

The mechanisms through which culture may influence managerial decisions are complex and economic literature is far from having explored them thoroughly. On the one hand, the *religious beliefs of the managers* can influence financial decisions, and on the other hand, stakeholders' cultural values can be equally important. Hence, the managers need to take into account the opinion of a broader range of stakeholders because their disagreement with the managerial decision can be harmful for the company. Therefore, we need to emphasise the role of *diverse stakeholders*.

Moreover, the cultural features of different stakeholders can affect organisational behaviour in the context of the association between religion and debt-equity choice (Baxamusa – Jalal 2014). Schneider (1987) proves that not the situational variables, such as technology, structure or external environment, but people determine organisational behaviour, and also that they are depending on an attraction-selection-attrition cycle. Similar people choose same type of organisations and gradually they begin to determine the behaviour of the companies. Further, those

employees who do not fit in the company leave, and those who remain become part of a more homogeneous group than at the beginning. So, similar employees in terms of cultural background will choose the same company, and then they will start to influence the goals, the processes and structures of the company.

In this context, in our approach the accent falls on the cultural characteristics of the society in which the companies operate. This approach has the potential to better comprise the diverse mechanisms through which culture and, in particular, the religious beliefs influence capital structure decisions.[5] Hence, our first tested hypothesis is:

H1: Religion is related to capital structure.

Formulating this hypothesis, we did not include any expectation regarding the sign of the dependency between different religions and capital structure. It is explainable because some deepest theological explanations in this multi-cultural context can be subtle for an economist, and maybe sometimes contradictory.[6] However, some expectations regarding the results can be formulated. For example, the Islamic tradition excludes all types of investments in preferred stocks and fixed-income securities that promise a guaranteed return (see, among others, Ayub 2007). Investors have the right to a "decent rate of return" (Zaher – Hassan 2001) based on the Profit-Loss-Sharing principle, which reduces the amount of speculation in the financial markets, but increases the volume of investments based on ethically responsible business practices (Walkshäusl – Lobe 2012). The investments must respect the principles of Islamic *Sharia,* thereby implying that some types of businesses are generally rejected.[7] Moreover, banks (among other investors/stakeholders) have to consider some financial ratio filters when they select companies for investment[8] (for a detailed presentation of these principles see Zaher – Hassan 2001, and Hussein – Omran 2005). Guiso et al. (2003) show that

[5] The manner in which different states are involved in regulating and enforcing some religious issues is very diverse. Thus, in different countries some religions can be encouraged or discouraged, accepted, not recognized, or even forbidden, financed from public sources or not, etc. The conformism to the main social accepted values (including religion) is an issue that can determine some differences between countries.

[6] An approach based on the theological arguments as explanations for the debt-equity mix can be an interesting field of study. Some insights, though not focused on the relation between capital structure and religion can be found in *Appendix A2* in Schneider et al. (2015).

[7] Milly – Sultan (2012) prove that the Islamic stocks listed globally have outperformed the conventional stocks and socially responsible investment stocks during the recent financial crisis.

[8] These ratios are: $\frac{Total\ Debts}{Total\ Assets} \leq 33\%$; $\frac{Account\ Receivables}{Total\ Assets} \leq 45\%$; $\frac{Non-operating\ Interest\ Income}{Revenues} \leq 5\%$. They are obviously related to the capacity of these companies to face their debt service (Zaher – Hassan 2001). Especially the first ratio determines a lower level of corporate leverage comparatively to the financial systems where this filter is not applicable.

relative to other religious denominations, Christianity fosters trust and that Christians rely more on private ownership than Muslims do. In contrast to Muslims who are against competition, Catholics favour competition. Moreover, according to the Profit-Loss-Sharing principle, the "depositors" in Islamic banks are very similar to shareholders that earn dividends when the company turns a profit and lose a part of their savings when it records a loss. From these perspectives, we expect the level of corporate leverage in predominantly Islamic countries to be lower relative to the companies from mainly Christian countries.

Assuming that it is possible for some religions to have an impact on capital structure decision, this study offers an answer to one supplementary question: Which religions have more influence on capital structure decision? Thus, it is possible for the values of one religion not to be in accordance with the values of another one. Which of them will determine a lower leverage?

Moreover, analysing the Christian religion deeper, it is found to be possible for some Christian denominations to have a different impact on the capital structure decision. Again, it is possible for the values of one denomination not to be in accordance with the values of another one. Consequently, the second tested hypothesis is:

H2: Christian denominations are related to capital structure.

For instance, are there significant differences between the leverage ratios in the predominantly Eastern Orthodox, Catholic or Protestant countries? Some expectations regarding the results can already be provided. Baxamusa – Jalal (2014) compared the leverage between the Catholic-majority and the Protestant-majority US counties and found that the firms located in the Catholic-majority counties had a higher leverage. They proposed one historical explanation, pointing out that the debt financing was encouraged by the Catholic Church in the medieval period. Following the Reformation movement, the Catholic Church did not encourage commercial interactions with the Protestants. In this unfriendly business environment, the Protestants were "forced" to develop an alternative financing system, more connected to equity financing. Also, cultural differences between these denominations can explain the differences in capital structure. According to Baxamusa – Jalal (2014), the Protestants consider that the benefits from property ownership belong to the owners, while the Catholics consider these benefits as social goods. Moreover, they state that the Catholic Church is more involved in the life of the community, as an arbiter of common good, unlike the Protestants, where each individual can decide for himself/herself what is good or wrong. A greater individualism for the Protestants is a better environment for equity financing (Aggarwal – Goodell 2010).

Religion can have effects on different decisions (including here the decision regarding the debt-equity mix) through at least four channels: (i) religion can

impose some requirements, especially in the case in which religious power interferes with the legal and quasi-legal regulations; (ii) even when the requirements like the ones mentioned at (i) are no longer enforced by the law, instead a conservatory attitude maintaining some of these old rules can be present in legislation or other rules; (iii) religious beliefs can induce a specific individual behaviour (similar to Cronqvist et al. 2012); (iv) social conformism can motivate a person to adopt a behaviour in accordance with the socially accepted rules, even he or she has no personal values concordant with these rules.

3. DATA AND METHODOLOGY

In order to test these hypotheses, a combined model was estimated, taking into account both firm-specific and country-specific determinants. The following model is applied:

$$Debt\ Ratio_{it} = \alpha + \sum_k \beta_k X_{kit} + \sum_j \gamma_j X_{jt} + \omega_{it}, \quad (1)$$

where $\omega_{it} = \varepsilon_i + v_{it}$ (random effects) and i is the index corresponding to each company in the sample; t records the year, X_k are the firm specific determinants; X_j are the characteristic variables for country j (country specific determinants), α is the level of *Debt Ratio* assumed to be independent of exogenous variables and β_k and γ_j are the coefficients. The use of random effects in the model is justified by the lack of variation in time of some of the country factors that influence capital structure, such as religion/denomination variables.

Three categories of variables are used, such as for: (i) capital structure; (ii) firm-specific factors; and (iii) country-specific factors.

We started with a sample of companies from 82 countries for the period of 2005–2010. The data were obtained from the Thomson Reuters Datastream and include all the companies available in this database listed in the most important national equity indices. From this initial sample, we excluded financial companies because they are subject to specific regulation regarding the debt ratios and they also affect data homogeneity for Price to Book ratio (hereafter, P/B) or for the return on assets (Isakov – Weisskopf 2014). We also eliminated companies with negative or null values for total assets, net sales and market capitalisation and negative values for capital expenditures, long and short term debt. In order to avoid bias in the results generated by the companies in distress, we also excluded companies with negative shareholders' equity. As a final filter, we kept in our sample only the companies presenting reliable financial indicators for the entire period of 2005–2010. These companies are listed in the main national equity

index for at least six years consecutively, which proves their maturity. Thus, we limit the possible bias caused by the inclusion of young companies, which are expected to have a different financing policy due to their phase of life cycle rather than to a financial strategy. Hence, as a starting point we have a database containing 5402 companies.

A second set of reliability filters was then imposed on the database to avoid misreporting. We excluded companies for which total assets were reported to be lower than property, plant and equipment, current assets or total shareholders' equity and firms reporting current assets inferior to inventories. To increase the reliability of our results, we also winsorised the extreme 2.5% of the series of debt ratios, profitability ratios, Price-to-Book ratios, tangibility and size.[9] We also excluded the companies from countries for which, according to Barro – McCleary (2003a), the dominant religion was defined as "other religions" and "other eastern religions", as these categories are not included in our study.[10] We eliminated Palestinian Territories because the database of La Porta et al. (2008) does not provide information regarding the legal origin of this territory. Thus, we obtained a final sample of 3530 companies from 74 countries for the period of 2005-2010 (see *Table A1* in the *Appendix*).

The information regarding the major religions was gathered from the dataset of Barro – McCleary (2003a). In some cases, we used additional information from the Central Intelligence Agency's (CIA) World Factbook, the Association of Religion Data Archives (www.thearda.com), and Stulz – Williamson (2003). For each country, the dominant religion is considered the religion having the highest number of adherents. We considered the per cent of the population affiliated with major religions/denominations: Catholic, Protestant[11], Orthodox, Muslim, Hindu, Buddhist and Judaist. For countries where agnostics, atheists or non-religious people are prevalent, we create a special category, named "Agnostics, Atheists and non-religious".

For data regarding the legal origin we used the database from La Porta et al. (2008), available on the Andrei Shleifer's website[12]. Data regarding GDP are

[9] Thus, to winsorise our samples (symmetrically) 2.5% times, we replaced each of the 2.5% lowest and 2.5% highest observations by the values of their nearest neighbours (Dixon ─ Yuen 1974). Through the winsorising procedure, the extreme values are replaced with less extreme values, thus obtaining a more homogenous statistical population.

[10] For this reason, we excluded from our database: Botswana, Ghana, Ivory Coast, Kenya, Republic of Korea, and Tanzania (all of them with "other religions") and also Hong Kong (with "other eastern religions").

[11] In our study, we also included some denominations defined in Barro – McLeary (2003a) as "other Christian religions", if they were related to Protestantism.

[12] See http://scholar.harvard.edu/shleifer/publications/economic-consequences-legal-origins

obtained from the World Bank database and gathered in millions USD/capita. Corruption is measured through the Corruption Perception Index (CPI), provided by the Transparency International. The index is measured between 1 and 10, with greater values signifying a lower level of corruption.

The formal definitions and some descriptive statistics regarding the indicators used for capital structure/leverage, using their book and market values are presented in *Table 1*.

In the existing literature, these variables are commonly used as measures for capital structure.[13] We agree to Sweeney et al. (1997: 17), who state that "studies using both types of data may well be more informative than those using only one type". Sweeney et al. (1997) also emphasizes the superiority of market values. However, the use of market values can be misleading as long as the companies from capital markets with a low level of market efficiency are included in the database. Moreover, in comparison with market values, book values are more stable and can better highlight the strategy of a company regarding its financing policy (see, for instance, a desirable, target-level for leverage, such as in De Miguel – Pindado 2001 and Lööf 2004).

By the previous literature, in order to understand how company characteristics influence capital structure, assets tangibility, size of the firm, profitability, growth opportunities, liquidity, non-debt tax shields and dividend policy were considered. *Table 2* reports some descriptive statistics of control variables (used as firm-specific determinants).

Previous studies have documented that capital structure is related to the legal origin, corruption and the wealth of the nations (De Jong et al. 2008; Fan et al. 2012). In this context, we use legal origin and the perception regarding corruption next to the dominant religion from each country as country-specific factors. We also control for the impact of general economic conditions measured through GDP per capita. *Table A1* in the *Appendix* provides a detailed description of the variables for religion and legal origin for all the countries included in our database.

We defined a dummy variable for the legal origin, which equals to 1 if the country has a common law system and 0 otherwise. We also defined seven dummy variables for predominant religions/Christian denominations corresponding to each country from our sample:

[13] It can be mentioned that the alternative measures, such as $\frac{\text{Total debt}}{\text{Equity}}$, can be easily derived from the first measure (Rajan – Zingales 1995; Reid 1996; Driffield et al. 2007, etc.).

Table 1. Definitions and some descriptive statistics of the variables used as dependent variables, %

Variables	Definition	Average	Median	Standard deviation	Min.	Max.
Financial debt ratio in book values	$\frac{Financial\ debt}{Total\ assets}$	27.29	25.00	21.56	0	93.09
Long term debt ratio in book values	$\frac{Long\ term\ financial\ debt}{Total\ assets}$	16.11	11.45	16.99	0	70.28
Short term debt ratio in book values	$\frac{Short\ term\ financial\ debt}{Total\ assets}$	11.44	6.72	13.16	0	57.34
Commercial debt ratio in book values	$\frac{Commercial\ debt}{Total\ assets}$	22.61	18.53	16.35	2.14	83.73
Financial leverage in book values	$\frac{Long\ term\ financial\ debt}{Shareholders'\ equity}$	33.04	32.64	23.61	0	99.78
Financial debt ratio in market values	$\frac{Financial\ debt}{Market\ capitalization + Financial\ debt}$	21.23	17.21	18.67	0	78.35
Long term debt ratio in market values	$\frac{Long\ term\ financial\ debt}{Market\ capitalization + Financial\ debt}$	12.61	8.05	14.08	0	59.36
Short term debt ratio in market values	$\frac{Short\ term\ financial\ debt}{Market\ capitalization + Financial\ debt}$	8.71	4.73	10.60	0	47.47
Commercial debt ratio in market values	$\frac{Commercial\ debt}{Total\ assets\ in\ market\ values}$	15.59	12.35	11.95	1.53	58.95

Table 2. Description and summary statistics for financial variables

Variable	Definition	Related studies	Average	Median	Standard deviation	Min.	Max.
Tangibility[a] (%)	$\frac{Total\ assets - Current\ assets}{Total\ assets}$	Deesomsak et al. (2004); Lööf (2004); Cheng – Shiu (2007); De Jong et al. (2008); Fan et al. (2012)	54.70	55.88	22.75	0	99.86
Size1	ln(net sales)	Dević – Krstić (2001); Chui et al. (2002); Cheng – Shiu (2007); Gonzales – Gonzales (2008); Bae et al. (2011)	6.48	6.38	1.35	0.30	12.51
Size2	ln(total assets)	Deesomsak et al. (2004); Delcoure (2007); De Jong et al. (2008); Wu – Yue (2009); Fan et al. (2012)	6.70	6.53	1.24	0.48	11.74
Size3	ln(number of employees)	Gianetti (2003); Lööf (2004)	3.40	3.40	0.93	0	5.79
Profitability1 (%)	$\frac{Net\ profit + Interest\ expenses}{Shareholders' equity + Financial\ debt}$		8.64	7.89	10.13	–25.47	40.37
Profitability2 (%)	$\frac{EBIT}{Total\ assets}$	Chui et al. (2002); Cheng – Shiu (2007); De Jong et al. (2008); Wu – Yue (2009)	9.96	8.31	10.75	–15.77	46.80
Profitability3 (%)	$\frac{EBITDA}{Total\ assets}$	Deesomsak et al. (2004); Gonzales – Gonzales (2008)	14.11	12.26	11.55	–11.87	53.21
Profitability4 (%)	$\frac{Net\ profit}{Shareholders' equity}$		11.69	10.8	17.76	–48.47	64.59
Price-to-Book ratio[b] (P/B)	$\frac{Market\ value\ of\ equity}{Book\ value\ of\ equity}$	Dević – Krstić (2001); Cheng – Shiu (2007); Gonzales – Gonzales (2008); Bae et al. (2011); Fan et al. (2012)	2.46	1.79	2.22	0.26	12.34
Dividend payment	1, if the firm paid dividends in a given year and 0 otherwise		0.71	1	0.45	0	1
Non-debt tax shield (%)	$\frac{Depreciation}{Total\ assets}$	Deesomsak et al. (2004); Lööf (2004); Delcoure (2007)	4.12	3.63	2.88	0	14.87
Liquidity	$\frac{Current\ assets}{Current\ debts}$	Deesomsak et al. (2004); De Jong et al. (2008)	1.48	0.89	8.95	0	1126.34

Source: The calculations are made using financial information provided by Thomson Reuters Datastream.

Notes: [a] We used this relation according to other studies, but we are aware that it is only a rough proxy for tangibility. On one hand, it includes (at the numerator), tangible assets, intangible fixed assets, but it does not include the inventories here. However, due to the purpose of our study, this impediment is not significant for the results.

[b] Price-to-Book Ratio (P/B) can be considered as a proxy for market expectations. Market capitalization reflects the market value of the company, mainly based on the estimation of its future earnings. Also, the accounting perspective estimates the value of the company mainly based on the cost approach. In this context, the relationship between market expectations (higher expectations mean higher P/B ratio) and lenders expectations (a direct correlation between P/B ratio and leverage can mean trust in the future of the company) was analysed. Further, P/B ratio can be seriously biased if the market is less efficient (price is thus biased) or accounting has difficulties in some assets' recording (see, for instance, high inflation).

$$d_{Catholic_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Catholic} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Muslim_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Muslim} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Eastern\ Orthodox_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Eastern Orthodox} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Buddhist_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Buddhist} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Agnostics, atheists\ and\ non-religious_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Agnostics, atheists and non-religious} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Hindu_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Hindu} \\ 0, & \text{otherwise} \end{cases}$$

$$d_{Judaic_j} = \begin{cases} 1, & \text{if country } j \text{ is majoritary Judaic} \\ 0, & \text{otherwise} \end{cases}$$

In our analysis, the companies in the predominantly Protestant countries were considered as the reference group. This decision is motivated by the fact that the influence of the Protestantism on capital structure decision has been studied far more than that of other religious denominations. As our main interest was to put in evidence the role of cultural factors, such as religion, we used a random effects procedure which deals with the time invariability of the cultural factors. The reported results were corrected for autocorrelation in the residuals. The independent variables in the model were not allowed to have correlation coefficients higher than 0.3 in absolute values. The influence of the economic sectors was also taken into account. The industry dummies enhance the robustness of our results and confirm that the relation between religion/denomination and capital structure remains significant even when the economic sector is taken into account.

4. RESULTS

Table 3 and *Table 4* present the relationships between leverage and different firm-specific and country-specific variables, including the socio-cultural ones (dominant religion, legal origin and corruption perception index), in book (*Table 3*) and in market values (*Table 4*). We conducted econometric analyses with and without industry dummies and obtained similar results, as listed below.

Our results may suggest an association between the debt-equity choice and the country-dominant religion or denomination. This can be related to the Weberian hypothesis of a strong relationship between the religious values and the economic behaviour (Weber 1934). Moreover, some differences are to be noticed

Table 3. Determinants of debt ratios in book values

Dependent variable	Financial debt	Financial debt	Long term debt	Long term debt	Short term debt	Short term debt	Commercial debt	Commercial debt	Financial leverage	Financial leverage
GDP per capita	**0.851 (0.008)**	**1.14 (0.00)**	**2.03 (0.00)**	**2.20 (0.00)**	**–1.37 (0.00)**	**–1.24 (0.00)**	**0.616 (0.003)**	**0.629 (0.002)**	0.472 (0.179)	**0.822 (0.021)**
Corruption	0.001 (0.541)	–0.001 (0.769)	**–0.003 (0.077)**	**–0.003 (0.094)**	**0.002 (0.042)**	**0.003 (0.015)**	**–0.002 (0.067)**	**–0.002 (0.062)**	0.0006 (0.808)	0.001 (0.635)
Muslim	–0.005 (0.712)	0.014 (0.536)	**–0.019 (0.063)**	**–0.020 (0.057)**	0.004 (0.578)	0.001 (0.875)	**–0.030 (0.001)**	**–0.032 (0.001)**	**–0.052 (0.001)**	**–0.055 (0.00)**
Catholic	**0.033 (0.004)**	**0.012 (0.034)**	**0.024 (0.10)**	**0.017 (0.059)**	–0.001 (0.863)	–0.002 (0.600)	–0.001 (0.888)	–0.002 (0.816)	**0.023 (0.072)**	0.017 (0.188)
Eastern Orthodox	**0.054 (0.008)**	**0.041 (0.049)**	0.009 (0.548)	–0.001 (0.928)	**0.035 (0.001)**	**0.032 (0.001)**	–0.011 (0.310)	–0.013 (0.229)	**0.057 (0.013)**	**0.046 (0.050)**
Agnostics, Atheists and non-religious	**0.080 (0.00)**	**0.015 (0.00)**	**–0.25 (0.022)**	**–0.031 (0.004)**	**0.091 (0.00)**	**0.090 (0.00)**	0.005 (0.626)	0.005 (0.605)	**0.035 (0.034)**	**0.031 (0.054)**
Buddhist	0.003 (0.824)	–0.006 (0.683)	**–0.046 (0.00)**	**–0.043 (0.00)**	**0.036 (0.00)**	**0.035 (0.00)**	**–0.043 (0.00)**	**–0.047 (0.00)**	–0.018 (0.200)	–0.019 (0.162)
Hindu	**0.040 (0.011)**	**0.028 (0.044)**	**0.053 (0.026)**	**0.057 (0.012)**	–0.019 (0.11)	–0.012 (0.306)	**0.054 (0.002)**	**0.054 (0.002)**	–0.007 (0.823)	0.005 (0.871)
Judaist	**0.114 (0.003)**	**0.122 (0.001)**	**0.083 (0.009)**	**0.087 (0.004)**	0.016 (0.191)	**0.021 (0.066)**	–0.013 (0.359)	–0.016 (0.252)	**0.139 (0.001)**	**0.146 (0.00)**
Common law	0.001 (0.872)	0.001 (0.891)	–0.006 (0.396)	–0.007 (0.312)	0.005 (0.239)	0.005 (0.191)	0.004 (0.424)	0.003 (0.532)	0.015 (0.125)	0.013 (0.189)
Tangibility	**–0.141 (0.00)**	**–0.156 (0.00)**	**0.016 (0.081)**	**0.002 (0.799)**	**–0.138 (0.00)**	**–0.140 (0.00)**	**–0.315 (0.00)**	**–0.315 (0.00)**	0.013 (0.256)	0.004 (0.736)
Size 1	**0.031 (0.00)**	**0.028 (0.00)**	**0.025 (0.00)**	**0.023 (0.00)**	**0.005 (0.003)**	**0.004 (0.019)**	**0.018 (0.00)**	**0.018 (0.00)**	**0.055 (0.00)**	**0.052 (0.00)**

Table 3. cont.

Profitability 2	**–0.002 (0.00)**	**–0.002 (0.00)**	**–0.001 (0.00)**	**–0.001 (0.00)**	**–0.001 (0.00)**	**–0.001 (0.00)**	0.00001 (0.923)	0.00002 (0.874)	**–0.004 (0.00)**	**–0.004 (0.00)**
Price-to-Book Ratio	**0.004 (0.00)**	**0.004 (0.00)**	**0.003 (0.00)**	**0.003 (0.00)**	0.0001 (0.328)	0.001 (0.239)	**0.005 (0.00)**	**0.005 (0.00)**	**0.009 (0.00)**	**0.009 (0.00)**
Liquidity	–0.002 (0.114)	–0.002 (0.111)	**–0.0002 (0.080)**	**–0.0003 (0.076)**	–0.002 (0.121)	–0.002 (0.118)	–0.001 (0.135)	–0.001 (0.136)	–0.002 (0.119)	–0.002 (0.117)
Non-debt tax shields	**1.317 (0.00)**	**1.360 (0.00)**	**0.805 (0.00)**	**0.832 (0.00)**	**0.459 (0.00)**	**0.484 (0.00)**	**0.640 (0.00)**	**0.637 (0.00)**	**0.406 (0.00)**	**0.435 (0.00)**
Dividend payment	**–0.028 (0.00)**	**–0.030 (0.00)**	**–0.010 (0.002)**	**–0.012 (0.00)**	–0.020 (0.00)	–0.020 (0.00)	–0.008 (0.001)	–0.008 (0.00)	**–0.036 (0.00)**	**–0.038 (0.00)**
Intercept	**0.076 (0.003)**	**0.236 (0.00)**	**–0.063 (0.00)**	**0.0100 (0.00)**	**0.150 (0.00)**	**0.165 (0.00)**	**0.24 (0.00)**	**0.228 (0.00)**	0.030 (0.271)	**0.100 (0.002)**
Industry effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
R-squared	0.025	0.064	0.1418	0.1914	0.2475	0.2669	0.3178	0.3293	0.1540	0.1917
Number of observations	14556	14556	14554	14554	14424	14424	14424	14424	14556	14556

Notes: p-values are given in brackets. Values in bold are statistically significant. All regressions include cross-section random effects.

The results are similar for alternative measures of profitability and size.

Table 4. Determinants of debt ratios in market values

Dependent variable	Financial debt	Financial debt	Long term debt	Long term debt	Short term debt	Short term debt	Commercial debt	Commercial debt
GDP per capita	0.426 (0.116)	**0.671 (0.014)**	**1.750 (0.00)**	**1.890 (0.00)**	**–1.39 (0.00)**	**–1.27 (0.00)**	0.088 (0.598)	0.111 (0.502)
Corruption	**–0.005 (0.010)**	**–0.004 (0.025)**	**–0.007 (0.00)**	**–0.006 (0.00)**	**0.002 (0.010)**	**0.003 (0.003)**	**–0.003 (0.005)**	**–0.003 (0.008)**
Muslim	–0.008 (0.470)	–0.012 (0.275)	–0.013 (0.111)	**–0.041 (0.00)**	0.0005 (0.923)	–0.002 (0.691)	**–0.015 (0.042)**	**–0.018 (0.017)**
Catholic	0.013 (0.191)	0.005 (0.590)	0.110 (0. 146)	–0.009 (0.170)	–0.003 (0.450)	–0.005 (0.249)	0.006 (0.312)	0.005 (0.444)
Eastern Orthodox	**0.112 (0.000)**	**0.101 (0.00)**	**0.047 (0.002)**	0.004 (0.786)	0.058 (0.00)	0.056 (0.00)	0.056 (0.00)	0.054 (0.00)
Agnostics, Atheists and non-religious	–0.006 (0.622)	–0.011 (0.353)	**–0.030 (0.00)**	**–0.035 (0.00)**	**0.019 (0.002)**	**0.018 (0.002)**	**–0.040 (0.00)**	**–0.040 (0.00)**
Buddhist	**0.022 (0.004)**	**0.022 (0.036)**	**–0.025 (0.001)**	**–0.024 (0.001)**	**0.039 (0.00)**	**0.038 (0.00)**	–0.010 (0.139)	**–0.013 (0.056)**
Hindu	0.024 (0.238)	0.031 (0.117)	**0.041 (0.010)**	**0.044 (0.004)**	**–0.022 (0.030)**	**–0.017 (0.094)**	0.0003 (0.979)	0.0004 (0.978)
Judaist	**0.093 (0.004)**	**0.098 (0.001)**	**0.075 (0.004)**	**0.077 (0.002)**	0.010 (0.367)	0.013 (0.183)	–0.0007 (0.949)	–0.002 (0.822)
Common law	**0.021 (0.008)**	**0.020 (0.010)**	**0.014 (0.015)**	**0.013 (0.022)**	0.006 (0.135)	0.006 (0.126)	**0.013 (0.002)**	**0.012 (0.005)**
Tangibility	**–0.046 (0.00)**	**–0.058 (0.00)**	**0.045 (0.00)**	**0.034 (0.00)**	**–0.082 (0.00)**	**–0.083 (0.00)**	**–0.191 (0.00)**	**–0.191 (0.00)**
Size 1	**0.030 (0.00)**	0.028 (0.00)	0.024 (0.00)	0.022 (0.00)	0.005 (0.00)	**0.004 (0.002)**	**0.019 (0.00)**	**0.018 (0.00)**
Profitability 2	**–0.004 (0.00)**	**–0.004 (0.00)**	**–0.002 (0.000)**	**–0.002 (0.00)**	**–0.002 (0.00)**	**–0.002 (0.00)**	**–0.002 (0.00)**	**–0.002 (0.00)**
Price-to-Book Ratio	**–0.003 (0.00)**	**–0.003 (0.00)**	**–0.002 (0.001)**	–0.002 (0.002)	–0.002 (0.00)	–0.001 (0.001)	–0.003 (0.00)	**–0.003 (0.00)**
Liquidity	–0.001 (0.135)	–0.001 (0.131)	–0.0001 (0.134)	–0.0002 (0.117)	–0.001 (0.137)	–0.001 (0.134)	–0.001 (0.135)	–0.001 (0.135)
Non-debt tax shields	**0.544 (0.00)**	**0.588 (0.00)**	**0.314 (0.00)**	**0.344 (0.00)**	**0.215 (0.00)**	**0.236 (0.00)**	**0.192 (0.00)**	**0.176 (0.001)**
Dividend payment	**–0.034 (0.00)**	**–0.036 (0.00)**	**–0.015 (0.00)**	**–0.016 (0.00)**	**–0.020 (0.00)**	**–0.020 (0.00)**	**–0.006 (0.003)**	**–0.006 (0.002)**
Intercept	**0.072 (0.001)**	**0.198 (0.00)**	**–0.046 (0.001)**	**0.019 (0.000)**	**0.126 (0.00)**	**0.131 (0.00)**	**0.171 (0.00)**	**0.160 (0.00)**
Industry effects	No	Yes	No	Yes	No	Yes	No	Yes
R-squared	0.1214	0.1622	0.1890	0.2320	0.2138	0.2339	0.2834	0.2951
Number of observations	14097	14097	14095	14095	13976	13976	13976	13976

Notes: p-values are given in brackets. Values in bold are statistically significant. All regressions include cross-section random effects.

The results are similar for alternative measures of profitability and size.

also regarding the influence of religious characteristics of the society on corporate debt maturity.

As expected, the Muslim religion is negatively correlated with all types of debt ratios: companies in the predominantly Islamic countries have lower debt ratios than those in the Protestant countries. Also, as expected, companies from the Catholic countries record higher total debt ratios measured in book values than those in the predominantly Protestant countries.

When considering book values for capital structure, in the Eastern Orthodox countries we noticed higher debt ratios than in the predominantly Protestant ones and a preference for short term debt compared to long term and commercial debt. In light of the conclusions by Torgler (2006) that the predominantly Eastern Orthodox countries are characterised by a lower tax morale and Arruñada (2010) that Protestants are more likely to trust others than the adherents to other religions, the preference for short term financial debt can be explained by the conjecture that in these societies there is a lower level of generalized trust that shapes the propensity of creditors towards closer maturities. Also, Schneider et al. (2015: 133) state that "countries dominated by Protestantism are associated with smaller shadow economies compared to Orthodox Christian countries, but also all other religious denominations seem to favour lower shadow economies compared to Orthodox Christianity". In market based measures, the debt ratios are higher in the predominantly Eastern Orthodox countries than in the Protestant ones, and this tendency is mainly due to short term financial and commercial debt contracts. The result is in line with our previous explanation regarding the lack of trust in these societies. Zheng et al. (2012) also consider that short term debt is used by creditors to limit their risk, their costs being lower in case of debtors' bankruptcy and therefore is more often used in systems with high informational asymmetries. In the same vein, Fan at al. (2012) put in evidence that the bank based financial systems and the countries with high level of perceived corruption are more prone to rely on short term debt.

The same pattern of high debt ratios generated mainly by the choice of short term debt is to be found for the predominantly "Agnostics, Atheists and non-religious" countries. In these countries, the long term debt ratios and commercial debt ratios tend to be lower than in the Protestant ones, while short term debt ratios are significantly higher. It can be noticed that all the countries defined as "Agnostics, Atheists and non-religious" in our database were related to the Marxian ideology (former communist countries). The lack of trust can be a possible explanation in this case, too.

We also analysed three world religions that are less studied in the financial literature, namely Buddhism, Hinduism and Judaism. The results confirm our hypothesis that there is a role to play for religious values in the economic behaviour,

and particularly in debt-equity choices of the companies. Hence, in the predominantly Buddhist countries, companies are less indebted in the long term than in the mainly Protestant ones and a preference for short term debt is obvious. In the predominantly Hindu countries, companies appeal debt more than in the mainly Protestant ones, and there is some evidence of a prevalence of long term debt. The same tendency as in the Hindu countries is acknowledged for the predominantly Judaic country (Israel). In this case, the explanation seems to be related to the historical context. According to Gaudin (1995), due to the banning of usury by the Catholic religion in Europe during the Middle Ages, the Jewish refugees became specialised in credit activities. The relaxation of this religious principle seems to have been imposed by the tradition, which ultimately prevailed.

Regarding the impact of corporate financial indicators, our results are in accordance with the main part of the literature. Hence, the negative correlation of the leverage with the ratio Profitability 2 ($\frac{EBIT}{Total\ assets}$) is also sustained by Fan et al. (2012). Chui et al. (2002), Nivorozhkin (2005), Delcoure (2007), De Jong et al. (2008), Cook – Tang (2010), and others observed the same negative correlation. The profitable companies seem to be less interested to take loans as long as they have owned enough financial resources, which can be explained in the context of the pecking order theory.

P/B ratio is directly associated with debt ratios in book values, but indirectly to those expressed in market values. If the market is efficient, a direct correlation between P/B ratio and leverage can mean the banks' trust in the future of the company. For this reason, banks accept higher levels of debt ratios. P/B ratio is also considered by many specialists as a proxy for the growth opportunities. The negative association between P/B ratio and leverage is also reported by Rajan – Zingales (1995), Wald (1999), Booth et al. (2001) and Gatchev et al. (2009). P/B ratio can also be seriously biased if the market is less efficient (price is thus biased) or accounting has difficulties in some assets' recording (see, for instance, high inflation).

Size is also an indicator that positively influences companies' propensity toward debt. The result is in line with the previous literature (Fan et al. 2012) and can be explained by creditors trusting the big companies more than the small ones.

Unsurprisingly, companies which pay dividends were proved to rely less on debt. The result is in line with the previous literature (Wald 1999). It may be related to the concern of creditors to prevent debtors from paying dividends. This concern is due to the informational asymmetry between banks and debtors on the one hand, but also because dividend payments decrease the level of collateral on the other hand. For this reason, banks are more reticent to lend money to companies that distribute high dividends.

Our results prove that the asset structure of companies matters for financing decisions. The relationships between tangible assets and short term and commercial debt are negative and statistically significant in all the regression models. The relation with long term debt ratio is positive and statistically significant. These results show that companies use their collateral to attract long term debt, which correspond with the maturity matching principle. Also, these are consistent with the trade-off theory due to the positive relation between long term debt and tangibility, but also with the pecking order theory for the negative correlation with the other measures of leverage.

We also find some puzzling results such as positive correlations between debt ratios and non-debt tax shields. We also notice weak evidence of a negative relationship between liquidity and long term debt. These results can be explained partially by the fact that our sample covers the period before, during and shortly after the financial crisis of 2007–2009 and such behaviour may to some extent be the result of a relaxed credit policy promoted by banks before the crisis. Basically, they granted credit to companies irrespective of their profitability and liquidity or collateral before the crisis, based on their own over-optimism in the context of highly profitable companies not being interested in appealing to debt.

The negative correlation with the CPI can be explained through the fact that actually, in the countries with higher values of CPI (with a lower perception of corruption) there is a greater chance to have lower debt ratios, while higher debt ratios are likely to occur in the countries with high degree of perceived corruption. The results are similar to Fan et al. (2012): the firms in more corrupt countries are less willing to pay out retained earnings, reflecting the greater difficulty associated with raising equity capital in these countries. Also, it is plausible that a greater level of perceived corruption is associated with a higher level of distortions in lending process and also in the process of recovery of unpaid debts. The more these deficiencies are noticeable, the higher the leverage will be. According to Fan et al. (2012), debt is expected to be used relatively more than equity when the public sector is more corrupt. This result can be connected to the main stream of literature. For instance, in the case of transitional economies with less developed capital markets and banks owned by the state, the lending activity can be influenced in a greater extent by politicians, who can use their influence to maximize their political and personal objectives (jobs to political supporters, bailing out poorly performing companies, etc. (Firth et al. 2008)). A higher level of corruption goes hand in hand with a higher leverage, which may prompt for caution in making investment decisions with a relative "exotic" character. Corruption which is usually related to public officials seems to be transferred to the banking system too (see Gradstein – Milanovici 2004, for a discussion of this issue). In some circumstances, corruption can determine an increase in leverage:

in a corrupt economic environment, the employees from the banking sector can grant loans with more ease than normal credit terms.

GDP per capita is positively related to total debt and long term debt and inversely related to short term debt. Also, it positively determines the level of commercial debt in book values. The finding indicates that the highly developed countries are more willing to use long term debt to finance new investments and, consequently, the short term debts are less used.

The influence of different institutional determinants on capital structure has already been proved in the existing literature. According to La Porta et al. (1998), the type of legal system (common law versus civil law) can affect the content of the laws and their enforcement, and implicitly the degree of legal protection for external investors (minority shareholders and creditors). On the one hand, we know that the common law countries offer to these types of investors better protection than the countries based on civil law, so we could expect outside equity to prevail on debt financing and long term debts to be more used than the short term ones. On the other hand, the common law countries can offer better protection for creditors and better legal enforcement, so the agency costs of debt can be mitigated and the use of debt can be increased, together with a decrease of the negative impact of business risk. These can be arguments for the (weak) evidence of a positive relation between the common law legal system, long term debt and commercial debt in our results. If the bankruptcy procedures are clearly defined and the period to enforce a debt contract is short, the lenders' bargaining power against the borrowers increases and the creditors are motivated to borrow more.

5. CONCLUSIONS AND LIMITATIONS OF THE STUDY

In line with the previous literature, this study emphasises that capital structure differs from country to country. The factors that determine such differences are firm-specific, but also related to certain social and cultural patterns. Related to the social and cultural factors, this study reveals that religion is related to capital structure, in the context of taking into account a large variety of religions and denominations.

Both hypotheses tested in this study are confirmed to some extent. Religion seems to be related with leverage. Comparative to Protestantism (the reference group), Islamic religion is associated with a lower leverage. However, Hinduism is associated to a higher one. Regarding the Christian denominations, both Catholic and Eastern Orthodox confessions are associated with a higher leverage than the Protestant one.

An interesting observation is that for some religions, specific patterns of the debt maturity can also be found. Hence, in states in which the Eastern Orthodox, the Buddhist, but also the Atheist, Agnostic and non religious persons are predominant, a preference for short term debt can be found, while for Hindus and Judaists, higher total debt ratios are also associated with higher long term debt participation to the capital.

Our paper can be useful for academics and practitioners in corporate finance, and also for policy makers. If denomination is a key determinant of capital structure, since religion is a value very difficult to be changed, the authorities should avoid some political measures concerning the economic activity, or by the contrary, should insist on some others. A good practice that proved to work in one economy cannot always be applicable in another. In this sense, a good example is the failure of the legal transplant from country to country, demonstrated by Berkowitz et al. (2003).

There are some limitations of this study: accounting data of different countries are prepared under different accounting rules and/or the lack of some variables in the database (such as the age of the company). Although religious convictions of the managers have a role in financial decisions, the entire environment of the company should be considered. It is partly determined by the religious adherence of other stakeholders, such as clients, creditors, suppliers, employees, community, due to the fact that it influences the financing sources available for the company in the local environment, as well as its image. Moreover, we consider that an interesting development can be made taking into account the real degree of religiosity of the population.[14] However, the study reveals the relation between religion and capital structure. This influence is presumed to be complex and can be related to psychological values and religious customs such as the practice of confession, but also to sociological features as the degree of trust enhancing the entrepreneurial relationships and the development of the financial markets.

Another concern is related to the difficulty of isolating the religion of other socio-cultural factors that can have an impact on capital structure. Since many cultural features are influenced by religion and (from a statistical viewpoint) correlated with it, our findings could reflect associations that are not directly caused

[14] Many indicators are used in different contexts for the analysis of the religious phenomenon (e.g., Herţeliu 2007; Herţeliu – Isaic-Maniu, 2009). For instance, Herţeliu (2007) mentioned the indicators of participation to the religious phenomenon: the intensity of religious implication (defined as the number of occasions when a person proves the integration in a certain religious community by assisting to church-service/divine service), the average annual time spent in religious activities, rate of the religious migration and the coefficient of religious mobility. Such indicators can provide a better understanding of the real impact of religion on financial decisions.

by religion. In fact, religion is a part of culture and it is possible that other, more subtle factors are the decisive determining factors of capital structure and other financial variables. From this perspective, our study can be considered exploratory in nature. The isolation of the impact of different socio-cultural factors can be a provocative new direction for future studies.[15]

Overall, the religion is related to the capital structure of companies. A future research question can be if this is also true for other financial policies of the companies.

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[15] For instance, in some countries there is no separation between state and religion.

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APPENDIX

Table A1. Main characteristics of our sample

No.	Country	Equity Index	Number of companies	Dominant religion (denomination)	Legal origin
1	Argentina	Merval Constituents AR	8	Christian (Catholic)	Civil law
2	Australia	S&P200	96	Christian (Protestant)	Common law
3	Austria	ATX	12	Christian (Catholic)	Civil law
4	Bahrain	DS-Market Constituents SBA	7	Muslim	Common law
5	Bangladesh	CO AC'S Worldscope	23	Muslim	Common law
6	Belgium	BEL20	17	Christian (Catholic)	Civil law
7	Bosnia-Herzegovina	Banja Luka Research BP	26	Muslim	Civil law
8	Brazil	BOVESPA	42	Christian (Catholic)	Civil law
9	Bulgaria	Sofix Weighting	7	Christian (Eastern Orthodox)	Civil law
10	Canada	S&P TSX Composite	121	Christian (Catholic)	Common law
11	Chile	IGPA Constituents CL	70	Christian (Catholic)	Civil law
12	China	Shanghai All-Share index	519	Agnostics, atheists and non-religious	Civil law
13	Cyprus	CO AC'S Worldscope Cyprus	60	Christian (Eastern Orthodox)[a]	Common law
14	Czech Republic	Prague SE PX	7	Christian (Catholic)	Civil law
15	Denmark	OMX Copenhagen	76	Christian (Protestant)	Civil law
16	Egypt	Hermes financial	20	Muslim	Civil law
17	Estonia	CO AC'S Worldscope Estonia	10	Agnostics, atheists and non-religious	Civil law
18	Finland	OMX Helsinki	78	Christian (Protestant)	Civil law
19	France	CAC-40	33	Christian (Catholic)	Civil law
20	Germany	DAX	22	Christian (Protestant)	Civil law
21	Greece	Athex composite index	41	Christian (Eastern Orthodox)	Civil law
22	Hungary	BUX	5	Christian (Catholic)	Civil law
23	Iceland	OMX Iceland All-Share	2	Christian (Protestant)	Civil law
24	India	BSE 100	49	Hindu	Common law
25	Indonesia	Jakarta Composite	198	Muslim	Civil Law
26	Ireland	ISEQ Overall Index	23	Christian (Catholic)	Common law
27	Israel	Israel All Share	55	Judaism	Common law
28	Italy	FTSEMIB	27	Christian (Catholic)	Civil law
29	Jamaica	CO AC'S Worldscope Jamaica	18	Christian (Protestant)[c]	Common law
30	Japan	Nikkei 225	195	Buddhism	Civil law

Table A1. cont

No.	Country	Equity Index	Number of companies	Dominant religion (denomination)	Legal origin
31	Jordan	Aman Financial Market All share Index	24	Muslim	Civil law
32	Kazakhstan	CO AC'S Worldscope Kazakhstan	18	Agnostics, atheists and non-religious	Civil law
33	Kuwait	DJIM Kuwait	8	Muslim	Civil law
34	Latvia	CO AC'S Worldscope Latvia	27	Agnostics, atheists and non-religious	Civil law
35	Lebanon	Lebanon Research	4	Christian (Catholic)	Civil law
36	Lithuania	CO AC'S Worldscope Lithuania	18	Christian (Catholic)	Civil law
37	Luxembourg	Luxembourg SE Luxx	5	Christian (Catholic)	Civil law
38	Former Yugoslav Republic of Macedonia	CO AC'S Worldscope Macedonia	20	Christian (Eastern Orthodox)	Civil law
39	Malaysia	FTSE Malaysia KCCI	17	Muslim	Common law
40	Malta	CO AC'S Worldscope Malta	9	Christian (Catholic)	Civil law
41	Mauritius	CO AC's Worldscope Mauritius	22	Hindu	Civil law
42	Mexico	Indice de Precios e Cotisatones	23	Christian (Catholic)	Civil law
43	Morocco	LMASIIDX	31	Muslim	Civil law
44	Netherlands	Amsterdam 25	13	Christian (Catholic)	Civil law
45	New Zealand	NZX 50	31	Christian (Protestant)	Common law
46	Norway	Oslo Exchange All Share	82	Christian (Protestant)	Civil law
47	Oman	Muscat SE General	9	Muslim	Civil law
48	Pakistan	KSE 100 Index	46	Muslim	Common law
49	Peru	Lima Selective	3	Christian (Catholic)	Civil law
50	Philippines	Manila Composite Index	21	Christian (Catholic)	Civil law
51	Poland	Warsaw General	109	Christian (Catholic)	Civil law
52	Portugal	Portugal PSI All Share	30	Christian (Catholic)	Civil law
53	Romania	BET composite	28	Christian (Eastern Orthodox)	Civil law
54	Russia	MICEX	16	Agnostics, atheists and non-religious	Civil law
55	Saudi Arabia	Saudi Arabia Tadawul All share	56	Muslim	Common law
56	Serbia	CO AC'S Worldscope Serbia	64	Christian (Eastern Orthodox)	Civil law
57	Slovakia	Reserch SX	11	Christian (Catholic)	Civil law
58	Slovenia	SBI Top Index	5	Christian (Catholic)	Civil law
59	South Africa	FTSE JSE All Shares	96	Christian (Protestant)[b]	Common law
60	Spain	IBEX35	21	Christian (Catholic)	Civil law
61	Sri Lanka	CO AC'S Worldscope Sri Lanka	100	Buddhist	Common law
62	Sweden	OMX 30 Stockholm	22	Christian (Protestant)	Civil law
63	Switzerland	Swiss Market Index	13	Christian (Catholic)	Civil law

No.	Country	Equity Index	Number of companies	Dominant religion (denomination)	Legal origin
64	Thailand	Thailand SE	268	Buddhist	Common law
65	Tunisia	CO AC'S Worldscope Tunisia	18	Muslim	Civil law
66	Turkey	ISE National 100	44	Muslim	Civil law
67	Uganda	Uganda All Sectors	1	Christian (Catholic)	Common law
68	Ukraine	IBES DULIST	10	Christian (Eastern Orthodox)	Civil law
69	United Arab Emirates	DFM General	4	Muslim	Common law
70	United Kingdom	FTSE 100	63	Christian (Protestant)	Common law
71	United States of America	S&P500	250	Christian (Protestant)[c]	Common law
72	Venezuela	General Sector Ve	3	Christian (Catholic)	Civil law
73	Zambia	Zambia All Sectors	7	Christian (Protestant)[c]	Common law
74	Zimbabwe	Zimbabwe All Share	3	Christian (Protestant)[c]	Common law

Sources: The information regarding the companies is provided by Thomson Reuters Datastream. The information regarding the major religions was gathered from the dataset of Barro – McCleary (2003a, 2003b, 2006). In some cases, we used additional information from the Central Intelligence Agency's (CIA) World Factbook, The Association of Religion Data Archives (www.thearda.com), and Stulz – Williamson (2003). For each country, the dominant religion is considered the religion having the highest number of adherents. For data regarding the legal origin, we used the database from La Porta et al. (2008), available on the Andrei Shleifer's website.

Notes: [a] In Southern Cyprus, from 788,457 inhabitants 91.8% are Christians and 0.4% Muslims. In Northern Cyprus, from 684,736 inhabitants 1.7% are Christians and 97.9% Muslims. Practically, there is not a dominant religion at country level, but a 50% – 50% partition. We did not have data individually for Northern Cyprus, and for Southern Cyprus, but we noticed that companies that reported data are from Southern Cyprus, so we considered the dominant religious denomination is Christian Eastern Orthodox (http://www.thearda.com).
[b] According to Barro – McCleary (2003a), Protestants are counted as 34.9% and Other Christian religions are counted as 35%, so we have approximately equal values. We considered Protestantism as dominant denomination, according to CIA Factbook and also Stulz – Williamson (2003).
[c] According to Barro – McCleary (2003a), Jamaica, US, Zambia and Zimbabwe are counted as Other Christian religions.