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Socio-cultural heritage and financial decisions: An empirical study

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This research proposes to introduce the sociology of culture to explain variations in national corporate capital structures. With the difference in standard finance theories that suggest that financing decisions should be determined only by rational considerations, this research adopts the impact of cultural values on national corporate debt ratio. Based on a sample of 14.594 firms belonging to three geographical areas (Latin America, Europe and East Asia and Pacific), this cross-sectional study suggests that national culture affects corporate capital structures. In particular, cultural values such as individualism and collectivism variables play a determining part to define the perimeters of financing the companies. The findings lead us to think of the need for supplementing the disciplinary vision of the debt to get to a richer representation (cognitive) for the explanation of the financial behavior of the firm.

Keywords: Behavioral corporate finance, cultural dimension, capital structure, leverage, stewardship theory.

INTRODUCTION

The theoretical reflections and the empirical investigations relating to the behavior of financing the firms have recently exceeded the organizational framework of the firm to attach more and more importance to the institutional differences (financial system: Demirguc-Kunt and Maksimovic, 1999; legal system: Laporta et al. 1998; investor protection: Licht, Goldschmidt and Schwartz, 2007 and corporate governance: Fan, Titman and Twite, 2006). However, the introduction of informal and cultural context is too limited.

The abstract institutional framework constitutes all the habits, traditions, standards, beliefs, taboos etc practiced in a given culture. Williamson (2000) qualifies the abstract one by *Embeddedness* and claims that this last largely influences the decision-making process of the actors. Within the framework of the *Theory* of Institutional Change, North (1990, 2003) postulates that the mental models of the decision maker and the whole of the factors allowing their construction (institutions, beliefs, ideologies) are an essential element to understand the decisions taken at a given time and in a given context.

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Recently, many studies integrate cultural and social factors to explain the economic phenomena (Guiso et al., 2006 and 2008; Siegel et al., 2010).

The negligence of the socio-cultural framework constitutes a deficiency for the studies on the determinants of capital structure. Indeed, to study decisions making, particularly in finance, it is necessary to begin with the institutional reference frame which embeds its behavior and its mental diagram (Camerer, 2003; Fairchild, 2005). Manager is at the same time with the listening of the external environment and is able to give the suitable instructions inside. He formulates his financial decisions under ethical, ideological and cultural “pressures”. Nevertheless, work which tests the explanatory capacity of the cultural variables on the structure of the capital is rare and the conclusions remain fragmented.

The objective of this research is two folds:

In addition to determining "rational" in the capital structure defined by the two rival theories trade-off and pecking order, we tried to enrich the vector explaining the behavior of financial firms by variables "irrational" including cultural. Our objective is to examine the explanatory power of cultural variables to enrich the analytical framework. Moreover, the study of the capital

structure under the prism of the cultural variables raises a strong theoretical debate referring to survival predictions of the Agency Theory which seems to support a contradictory logic with that of the behavioral currents.

Our research focuses on a cross-country instead of a sample-firm. The consequences of this approach are highly significant to set the institutional framework in advance before any analysis of the behavior of financial firms. Indeed, the approval of the agreement that cultural variables, determinants of capital structure, highlight the institutional framework at the expense of organizational framework.

Our attempt at research is justified by the absence of study that employs specific cultural variables to explain the differences in cross-national capital structure. With the difference in certain research which concludes that the consideration of the cultural variables seems to raise methodological problems (Harzing, 2004; Tihanyi et al., 2005; Kirkman et al., 2006), our step rests on the scores established by Hofstede (1980) to measure various dimensions of the cultural environmental framework.

To reveal brief replies to our problems of research, this paper is organized as follows: the first section comprises a theoretical exploration to highlight the impact of the culture on capital structure of the firms. We will present in a second section our methodological step. Sample and hypotheses to be tested will be also exposed. The interpretation of the results obtained will be the object of section four. Finally, the fifth section will be devoted to a conclusion.

LITERATURE REVIEW

The study of Chui et al. (2002) is a pioneer work which tried to explain the capital structure through the cultural variables. The authors base their work on the cultural indices established by Schwartz (1994) (See Schwartz (1994), Table 7.3, p.113) and suppose that the individualistic culture and/or collectivist has an explanatory capacity on the debt. Chui et al. (2002) compared debt ratio for 5.591 companies in four different industries across 22 countries. The authors showed that high scores of “embeddedness” and “mastery” affect the debt ratio negatively and concluded that the firms belonging to the countries whose culture attaches an importance to the social harmony and the agreement between the recipients were involved in debt. In spite of the findings, Chui et al. (2002) concluded that the study of the influence of the cultural factors on the behavior of financing of the firms remains a field of research which is worthy of more than exploration (Loyd and Kwok, 2002, p.122: ” Though culture has often been described as a fuzzy concept, it alerts custom to variations in being worth systems across countries and may be important determining the year in various corporate finance decisions. It is yearly area of research that is worthy of more exploration”).

Stulz and Williamson (2003) consider religion as a measure of culture. The authors postulate that the religion influences the decisions of financing of the firms. For example, to make pay, interest was regarded for a long time as a sin in the catholic religion, whereas the Calvinism had made a normal activity of the commercial life of it, thus allowing, in the Protestant countries, a recourse increased of the debt more important than in the catholic countries. More recently, Cheng and Shiu (2007) empirically consolidate work of Stulz and Williamson (2003) while relying on an international comparison through 45 countries of Asia, of Europe, of North America, of South America, of Africa, and Australia. Cheng and Shiu (2007) classify the countries according to two families of language (English and Not-English) and according to two religions (Christian and not Christian). The authors find that the firms operating in countries of Christian religion have higher levels of debts compared to those which operate in countries whose religion is Non-Christianity. In the same way, authors add that the firms belonging to the countries whose first language is “Non-English” are marked by high levels of debt.

Siegel et al. (2010a, 2010b) show that cross-country investment flows of equity, debt and foreign direct investments are farthest when countries match on the cultural dimension of egalitarianism.

Very recently, Li et al. (2010) work on the Chinese context and have shown that culture has an important explanatory capacity on the debt. Indeed, the authors demonstrate that « mastery » has negative effects on foreign joint ventures’ leverage and short-term debt decisions and a positive effect on the likelihood of foreign joint ventures’ having long-term debt. In addition, they argue that cultural variables have an indirect effect on decision making.

However, the adoption of the conclusion which the explanatory capacity of the cultural and behavioral framework raises a strong theoretical debate relating to the survival of the financial theories of bases based on the prism of rational with the irrational one.

Financial Decision: the rational/irrational paradox

From academic point of view, work relating to Corporate Finance was massively based on the development of the agency theory (Berle and Means, 1932; Ross, 1973). According to these models, the manager behaves in an opportunist way to divert the funds of the company in order to make his replacement expensive.

According to the agency theory, the debt has a disciplinary role because it would encourage the managers to use the entrepreneurial resources effectively (Jensen and Meckling, 1976). Jensen (1986) adds that debt is a mechanism to avoid the extraction of the cash-flows (the Theory of Free Cash-flow). Several empirical

works confirm the predictions of the optics of agency for the study of the structure of the capital of the firms (Litov, 2005; Jiraporn, 2007).

The disciplinary logic of the theory of agency seems to be contradictory with that of the behavioral theory which is based on different concepts (the desire of achievement, the place of control, reputation).

The difference of the framework of analysis of the theory of the agency is based on the conflicts of interests between the recipients and the managers taking into consideration the cognitive and the cultural aspects which consolidate more and more the explanatory capacity of the theories of the behavior of the managers: the "Stewardship Theory" (Davis et al., 1997).

Stewardship Theory was introduced in order to study the relations between actors, while being based on behavioral assumptions different from those of the paradigm dominating, namely the conflict of interest. Taking into consideration the ideological and the cultural framework, it is presumed that the role of the debt exceeds the concepts of "free cash-flow", of the attitude or rooting of the managers.

The manager makes decisions from the point of view broader than that for the research of the personal interest because it "imposes" cohesion around common objectives. The culture becomes, then, panoply of behaviors which makes it possible the company to constitute a certain routine for the making of its decision. The theory overcomes the concept of conflict "of agency" and yields the place for the conflicts "cognitives" (While the conflicts of interests are exclusively justified by opportunism, the cognitive conflicts are at the origin of divergent perceptions quite simply).

Davis et al. (1997) show that Stewardship Theory is a field of analysis which explains the problems of the debt in an international context where the postulates of the theory of agency are not very suitable to be checked. Lee and O'Neill (2003) juxtapose agency theory and stewardship theory and conclude that Stewardship Theory has an explanatory capacity better in the Japanese firms.

Empirical works

Our paper is on the same line of work of Chui et al (2002) which constitute a basic reference. However, our work differs from the first of two parts:

- Unlike the work of Chui et al. (2002), our research focuses on a framework entirely formed by the countries in transition. Indeed, homogeneity sample improves the explanatory power of models.

- In addition, our research is based on Hofstede's indices for measuring the cultural variables. Many researchers have found strong support for Hofstede's work and its ability to predict human behaviour (Volkema, 2004). In addition, the inclusion of measures other than those used by Chui et al (2002) enriched certainly the topic.

Before presenting our sample and the assumptions to be tested, we will stress the question relating to the measurement of the culture, which remained for a long time unobservable variable.

Culture measurements

The measurement of the cultural identity for the nations was treated by two principal comparative investigations using the study of Hofstede (1980) and the study of Schwartz (1994) (According to Kirkman et al. (2006), there are over 180 studies based on the Hofstede's cultural model).

Hofstede (1980) explores the cultural differences in more than 50 nations. Defining the culture as "collective mental programming", Hofstede (1980) managed 116.000 questionnaires intended for the people belonging to the subsidiary companies of the multinational IBM between the years 1968 and 1972. The method consists of interpreting perceptions of questioned starting from answers to questions standardized in order to constitute values. These values were found starting from an analysis of the values on a national scale by using 32 questions relating to the values. Hofstede (1980) has found five dimensions of culture in his study of national work related values*: hierarchical distance*, *uncertainty avoidance*, *individualism vs collectivism*, *Masculinity vs. femininity* and *term orientation* of the country.

Schwartz (1992 and 1994) relies on 56 values gathered in ten motivational types to measure the cultural values of the individual. The advantage of the model of the values of Schwartz consists of measuring, rather, the impact of the values of the manager on debt (on the level of the individuals) and not to measure the impact of the cultural framework on debt (at the collective level /regional level).

To undertake our empirical study, we will rely on the basis of data of Hofstede known under the acronym "Hofstede Cultural dimension" which allows each studied country quantitative scores on each previous dimension.

Working Hypotheses

While postulating that the manager can be a "good hear" (Stewards), we will try to reveal the explanatory diagrams of the behavior of financing through the theory of behavioral finance. We will propose to present the incidence of four dimensions of the socio cultural heritage which forms an ideological diagram shared on the behavior of financing of the firms, namely: the hierarchical distance, individualism/collectivism, masculinity/femininity and the avoidance of uncertainty. To see in detail the methodologies of measurement adopted by Hofstede see *Geert Hofstede Cultural*

Dimensions (2006) from www.geert-hofstede.com.

The impact of hierarchical distance on debt

This dimension measures how much the less powerful members of institutions and organizations expect and accept that power is distributed unequally. In the cultures at strong hierarchical distance, the capacity is centralized and the style of direction is autocratic. Shane (1994) supposes that the hierarchical distance reflects the degree of confidence which characterizes an organization. Thus, in the companies marked by a strong hierarchical distance, interpersonal confidence is weak. Consequently, the need for setting up mechanisms of organizational control would be then more important in the cultures marked by a strong hierarchical distance of the relation between the shareholders and the manager.

However, the adoption of the behavioral currents leads to a negative relation between the culture at strong hierarchical distance and the recourse to the debt. Indeed, cognitive skews resulting from the theory of "Locus of control", which is focused on the motivation study of the individual behavior through its own attributions can resolve a decision of debt (Duffy and Al, 1977). According to this approach, the managers do not make any decision, particularly in finance, but when they judge that the events are controlled by its own actions. Moreover, in a medium at strong hierarchical distance, the value of the individual success is very accentuated (Own Successes). Hirshleifer and Thakor (1989) assert that when the managers are concerned by their own reputation, they choose surer projects and when the firm cannot face the obligations of the debt, bankruptcy is perceived like a personal "gave" of the manager. For these reasons, the managers attach more importance to their personal success and call less upon the debt.

The impact of individualism/collectivism on debt

Individualism means that the members of company prefer to act as individuals rather than members of a group. This dimension concentrates on the point to which the company looks at the individual like an entity autonomous or built-in in a social group. Collectivism occurs in the countries where values such as the harmony of the working relationships between anybody and group are favored (Johnson and Lenartowicz, 1998). Values such as moderation, the social order, safety, the tradition are judged like crucial. In individualistic cultures, the conflicts of interests and informational asymmetry are clearly pronounced within the firms (Davis et al., 1997). According to the theory of agency, the firms call upon the debt more and more as mechanism to reduce the costs of agency (Jensen and Meckling, 1976; Jensen, 1988). The disciplinary role of the debt should be more effective in firms with individualistic cultures.

However, the cultural study of Schwartz (1994) established a negative relation between collectivism and debt through two principal axes:

The first axis is based on the fact that the preserving companies tend to underline harmonious working relationships. The importance attached to solidarity within the group or of the community, the concern of preserving the wellbeing of the employees, the quality of the working relationships and employment encourage the managers to use fewer debts to reinforce financial stability, to reduce the default risks and to create more value for the various recipients. Titman (1984) adds that the firms belonging to preserving companies characterized by a strong harmony and a good agreement between Stakeholders, support very important costs of liquidation. Consequently, these firms call less upon the debt.

The second axis is focused on the fact that collectivism off stimulates the values of the safeguarding of the public image "Greater importance Saving Face". The managers belonging to cultures collectivists are more "conformists" in the direction where they seek to respect the standards of the group and to make the good public image their firms. The safeguarding of the public image of the firm has implications on its decisions of financing. Indeed, a heavily in debt firm is often considered like having a high probability to be in financial brittleness.

The impact of uncertainty avoidance on the debt

The cultures with strong avoidance of uncertainty are companies where the members feel threatened by ambiguous situations, risk, little structure and thus tend to avoid all that is risky (Hofstede, 1980). In addition, many researches indicate that the perception of the risk varies from a culture with another (Shane, 1994 and Riddle, 1992). The translation of "Theory off locus off control" causes control or center of control. It is an approach which makes it possible to study the behavior of the individual according to his personal motivation (Duffy and Al, 1977).

Debt is a risky choice whose consequences are considerable (for example, the risk of bankruptcy). Consequently, it is reasonable to propose that financing by debt, as risked decision, changes according to whether the culture is preserving compared to the risk or not. The firms belonging to a preserving culture call upon the debt in last spring (Mayrhofer 2002). Moreover, in a culture with a strong avoidance of uncertainty, imitation and routines can play the part of an institutional entity to guide the behavior of the managers (Bickhchandani et al., 1992). According to this cultural approach, the decisions of financing are determined by the imitation and the routines (Cyert and March, 1963), in particular, when the manager is in phase of cognitive saturation (Hallowell, 2005). According to work which lies within the

scope of the financial theory, the decisions of financing are within a framework of uncertainty and informational asymmetry (Jensen and Meckling, 1976; Jensen, 1986; Myers and Majluf, 1984). If it is admitted that the most answered attitude is that of the aversion to risk (Camerer, 2003), the manager must make more the decisions (financial) “usual” and refuse any mode of financing which can modify the way of path of the firm.

The impact of Masculinity/femininity dimension on debt

This dimension measures the value placed on traditionally masculine or feminine values (as understood in most Western cultures). In so-called 'masculine' cultures, people value competitiveness, assertiveness, ambition, and the accumulation of wealth and material possessions. In so-called 'feminine' cultures, people value relationships and quality of life.

In the masculine cultures, the risks of conflicts of agency must be higher than in female cultures. The reason is that the male cultures are cultures plus materialists, related to the money, enrichment and the personal success. Consequently, the managers can be tempted to engage the entrepreneurial resources in a manner which is not advantageous for the shareholders. The problems of asymmetry of information can be more important in male cultures and the more effective debt in the creation of value for the shareholders. However, in a female culture, the authors consider that the relations between the shareholders and the managers are described better within the framework of the theory of the intendance. Consequently, the financing by debt in these cultures should not be very effective in the reduction of the costs of agency.

In the same way, the male cultures put a particular access on the need for personal achievement. They should be laid out to take more risks and not to test a reserve towards the debt which gives them the means of their ambition, even at the price of a supplement of risk. On the other hand, the companies with female culture are more reticent with respect to the debt, because of the general fear of the default risk.

The sample

To undertake our empirical study, we rely on the World scope data, which publishes financial data for firms operating in more than 50 countries. Within the framework of our study, we retained financial information relating to 10 countries. The selected countries are: Bulgaria Brazil, Colombia, Indonesia, Malaysia, Peru, Singapore, Romania, Turkey, and Vietnam.

Better detecting the regional cultural impact on the capitalization, we chose a study will intra area and not will intra country. We gathered poor countries in three geographical areas according to the classification selected of the World Bank (Latin America, Europe and East Asia and pacific). After the necessary cleaning justified primarily by unavailability of information, our final sample includes or understands 14594 observations distributed as follows: 3027 observations for the area of Latin America, 7223 observations for area of the Eastern and Peaceful Asia and 3027 observations for the area of Europe. All data are observed in 2007. Selected companies belong to industrial, commercial, tourism and service sector. Financial institutions were excluded because their funding policies are very different from those of non-financial firms.

We point out that we retained the scores of Hofstede to measure the cultural variables. That is to say four scores for each country (individualism, the hierarchical distance, masculinity and uncertainty). Our step consists of measuring the impact of each cultural dimension on the debt ratio. The endogenous variable being debt ratio was measured in book and market values.

Specification of the models

To meet our aim of work, we suppose that the effect of the explanatory variables on the endogenous variable is linear. While taking as a starting point the work by Chui et al. (2002), our basic model arises as follows:

$$\mathrm{DEBT}_{ij} = \alpha_i + \mathrm{x}_{ij}^{'}\beta + \mathrm{z}_{ij}^{'}\gamma + \varepsilon_{ij}$$

(Model : M1)

$i=1, 2, 3$ and $j=1, 2, ..., N_i$ with i indicates the region and j indicates the company.

The debt ratio is explained by two vectors of variables. The first vector gathers the variables of control to knowing profitability, size, tangibility and Market Book ratio (Rajin and Zingales 1995). The second vector gathers Hofstede’s cultural dimensions of previous definition. In addition to the direct effects, we have introduced into the model the effects of interaction of the cultural variables on the debt. *Appendix I* presents variable definitions and sources of information.

Taking account of the possible correlation between the cultural variables (Chui and Kwok, 2009), these last will be introduced individually for the estimate of the model. The estimate of the model (M1) will be carried out according to two methods. While the first supposes the homogeneity of the companies (OLS regression), the second pronounces the presence of an individual effect for each region (Within regression). The model (M1) supposes the homogeneity of the sample and supposes that the influence of the cultural variables on the debt does not vary an area with another. This assumption appears unrealistic since the impact of culture on the decisions of the firm must change from one country / company to another. To take account of a total

heterogeneity between the areas, we will carry out estimates on a system of apparently independent equations (SUR Model: Zellner 1962). The model becomes then:

$$DEBT_{ij} = \alpha_j + x'_{ij}\beta + z'_{ij}\gamma_j + \varepsilon_{ij}$$

(Model :M2)

$i=1, 2, 3$ and $j=1, 2, ..., N_i$ with i indicates the region and j indicates the company.

Interpretations of the results

Culture impact on the debt: the inter-region effect

In this paragraph, we hypothesize that the impact of the cultural values on debt does not change from one region to another (model 1).

Tables 1 and 2 summarize the regressions results using book debt ratio respectively from two methods *OLS* and *Within* estimations. The tests of total significance of the estimated models are all significant at 1% level and conclude that the whole of the explanatory variables introduced into our models is significant. The values of R^2 obtained are low; taking into account the erratic nature of the endogenous variables, the explanatory capacity of our models appears satisfactory. The found results are similar for the two methods of estimate (OLS and Within), consequently we will interpret the coefficients obtained simultaneously.

The regression (1) relates to the model basic and only introduced specific variables to the firm. It arises that the profitability (EBIT) of the firm affects the debt ratio negatively. This result consolidates the assumptions of the Pecking Order theory (Myers and Majluf, 1984) and joined the majority of the empirical results (Rajan and Zingales, 1995; Leary and Roberts, 2007). The variable tangibility (TANG) influences negatively debt. This result does not confirm the assumption according to which strong proportion of permanent assets constitutes one guarantee for the creditors. The coefficient of variable (MTB) is negative. This result can be explained according to two different points of view. According to the first, this result rises from the assumption of underinvestment of Miller (1977). The second postulates that the firms tend to emit actions when their course is high on the market compared to their book value, which reduces temporarily the share of the debt (Market Timing Theory: Baker and Wurgler, 2002).

Regressions of (2) to (5) integrate, besides the variables of control, the cultural variables. Although they present low values, the coefficients of the cultural variables estimated are all significant at 1%:

The variable (DIS) which reflects the hierarchical distance presents a negative sign and shows that, in the cultures marked by a strong hierarchical distance, the debt is weak. Indeed, the unequal distribution of the capacities and the interpersonal mistrust affect the recourse to the debt negatively. Moreover, in a hierarchical culture, values such as the individual success and independence are much accentuated. The financial difficulties following an additional debt as well as the bankruptcy are interpreted like a “personal fault”. Such a cultural environment discourages the manager to off make recourse to the debt “Locus off Control Theory”. Empirically, our results are in conformity with those found by Chui et al. (2002).

Variable (UNC) presents a negative sign. This result is in conformity with our hypothesis which wire-drawer that the degree of anxiety affects negatively the debt. Being given the risky nature of a decision of financing per debt, the managers operating in cultures with strong avoidance of uncertainty make less recourse to the debt.

Variable (MAS) which reflects the masculine/feminine dimension presents a negative sign. Our result indicates that the firms belonging to cultures with marked masculinity make less recourse to the debt than the other countries. The reason is that the male cultures are cultures plus materialists, carried on the personal success. In accordance with the arguments of behavioral approach (achievement of is, aversion to the risk…), the manager must avoid financing by debt.

Like preceding interpretations, the negative sign obtained for the variable (MAS) seems to contradict the optics of agency which supposes a relation positive between the masculinity and the debt in order to profit from the disciplinary role of the debt since the conflicts of interest and the problems of asymmetry of information are more important in male cultures than those female.

The variable (IND**)** which measures the level of individualism of a culture presents a positive sign. This result is non-conforming with expectations. Indeed, according to the behavioral approach, the individualism which accentuates cognitive skews in the manager such as “the personal failure”, “the aversion with the risk” and the “valorization of oneself” negatively affects the recourse to the debt because of the debt. However, our results seem to be in conformity with those found by Chui et al. (2008) which suggest that individualism is positively associated with excess confidence and car-attribution to the manager. This skew affects debt positively (Fairchild, 2005; Barros and Silveira, 2007).

Taking account of the signs obtained, it appears probably which the impact of the cultural variables on the debt describes better from a behavioral point of view than from a point of view of agency.

In comparison with the regression (1), we notice that the integration of the cultural variables changes the signs of the specific variables on the debt. This result consolidates the mediation of the institutional variables, in particular, cultural which interacts with the specific variables to explain the level of debt of the firms.

Concerning the variables of interactions, the coefficients obtained are significant in the near total of the

Table 1. Book debt ratio regressed on endogens variables (standard cross-sectional (OLS) regression).

Specific Variables	Regression (1)	Regression (2)	Regression (3)	Regression (4)	Regression (5)
EBIT	-0.043***	0.198***	-0.989***	0.624***	0.273***
	(-3.263)	(2.735)	(-7.119)	(5.242)	(5.225)
SIZE	0.025***	-0.066***	0.187***	-0.059***	-0.053***
	(16.241)	(-8.115)	(13.2)	(-6.374)	(-7.516)
MTB	-0.005***	0.011***	-0.019***	0.013***	0.008***
	(-1.939)	(2. 936)	(-3.397)	(2.888)	(2.856)
TANG	-0.023**	0.022	-0.282***	-0.097***	0.132***
	(-2.516)	(0.436)	(-3.124)	(-1.4)	(3.149)
C	0.182***	0. 361***	-0.190***	0.404***	0.328***
	(21.551)	(9.189)	(-2.574)	(8.573)	(9.187)
Cultural variables : principal effect					
DIS		-0.004***			
		(-5.161)			
IND			0.004***		
			(5.093)		
MAS				-0.003***	
				(-4.648)	
UNC					-0.002***
					(-4.494)
Cultural variables: interaction effect					
DIS*EBIT		-0.005***			
		(-3.581)			
DIS*SIZE		0.002***			
		(12.177)			
DIS*MTB		-0.0002***			
		(-3.392)			
DIS*TANG		-0.001			
		(-1.231)			
IND*EBIT			0.010***		
			(6.762)		
IND*SIZE			-0.001***		
			(-11.136)		
IND*MTB			0.0002***		
			(3.372)		
IND*TANG			0.003***		
			(2.785)		
MAS*EBIT				-0.010***	
				(-5.670)	
MAS*SIZE				0.001***	
				(8.991)	
MAS*MTB				-0.0002***	
				(-3.054)	
MAS*TANG				0.0009	
				(0.819)	
UNC*EBIT					-0.006***
					(-6.612)
UNC*SIZE					0.001***
					(12.772)
UNC*MTB					-0.0001***
					(-3.336)

Table 1 continue

UNC*TANG					-0.002***
					(-4.115)
R^2	0.185	0.256	0.232	0.222	0.233
Fischer-test	69.04	42.629	54.135	37.637	55.285
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

The sample includes 14.594 observations. The results are robust to heteroscedasticity problem. Regression (1) introduces only four exogenous variables. EBIT, SIZE, MTB, TANG and C are respectively the profitability of the firm, size, market to book ratio, tangibility and the constant of model. Regressions (2), (3), (4) et (5) introduce cultural variables one by one. Values in parentheses are t-student. * significant at 10%, ** significant at 5% and *** significant at 1%.

Table 2. Book debt ratio regressed on endogens variables by Within regression.

Specific Variables					
EBIT	-0.047***	0.223***	-0.906***	0.637***	0.254***
	(-3.616)	(3.062)	(-6.735)	(5.262)	(4.908)
SIZE	0.031***	-0.052***	0.252***	-0.037***	-0.072***
	(13.731)	(-6.089)	(14.461)	(-3.361)	(-9.194)
MTB	-0.001*	0.007***	-0.027***	0.009**	0.010***
	(-1.939)	(2.068)	(-4.250)	(2.133)	(3.555)
TANG	-0.023*	0.080	-0.202***	-0.072	0.098***
	(-1.872)	(1.479)	(-2.222)	(-1.006)	(2.276)
C	0.164***	0.331***	-0.537***	0.335***	0.443 ***
	(15.180)	(8.073)	(-5.915)	(6.693)	(10.567)
Cultural variables : principal effect					
DIS	_	-0.003***			
		(-4.170)			
IND	_		0.008***		
			(7.734)		
MAS	_			-0.002***	
				(-3.535)	
UNC	_				-0.004***
					(-6.918)
Cultural variables: interaction effect					
DIS*EBIT		-0.006***			
		(-3.912)			
DIS*SIZE		0.001***			
		(10.018)			
DIS*MTB		-0.002***			
		(-2.617)			
DIS*TANG		-0.002**			
		(-2.158)			
IND*EBIT			0.009***		
			(6.369)		
IND*SIZE			-0.002***		
			(-12.767)		
IND*MTB			0.003***		
			(4.038)		
IND*TANG			0.002**		
			(2.019)		
MAS*EBIT				-0.011***	
				(-5.683)	

Table 2 continue

MAS*SIZE				0.001***	
				(6.247)	
MAS*MTB				-0.0001***	
				(-2.532)	
MAS*TANG				0.0006	
				(0.577)	
UNC*EBIT					-0.005***
					(-6.276)
UNC*SIZE					0.001***
					(13.729)
UNC*MTB					-0.0002***
					(-4.379)
UNC*TANG					-0.002***
					(-3.019)
R^2	0.18	0.226	0.235	0.223	0.35
Fisher test	51.208	36.658	48.675	32.457	48.505
Prob	(0.000)	(0.000)	(0.000)	(0 .000)	(0.000)

The sample includes 14.594 observations. The results are robust to heteroscedasticity problem. Regression (1) introduces only four exogenous variables. Regressions (2), (3), (4) et (5) introduce cultural variables one by one. Values in parentheses are t-student. *significant at 10%, ** significant at 5% and *** significant at 1%.

estimates carried out. This result shows that the cultural variables have an effect of interaction with the variables specific to the firm and explain the decisions of financing.

Tables 3 and 4 refer to results on the market debt. These results are similar to those found for the book debt. Our results do not confirm the superiority of market approach (Welch, 2004) and show a convergence between the two approaches (book and market).

Culture impact on the debt: the intra-region effect

Tables 5, 6 and 7 report the regression results using book debt ratio, respectively for the three regions (Latin America, East Asia and pacific and Europe). The regressions show that the impact of the cultural variables clearly changes area with another. Our results consolidate heterogeneity between the different regions/countries.

Estimation by SUR leads to a very low R2. However, this indicator does not reflect any economic sense.

Taken individually, specificities of the American cultural context seem to have an impact on the debt ratio. Of the whole of the cultural variables, the individualism and the avoidance of uncertainty have a significant capacity on the structure of the capital of the firms. The negative impact of the variable avoidance of uncertainty on the debt is in conformity with the financial approaches (in particular Trade-off Theory) and behavioral. The positive effect of individualism on the debt is not in conformity with expectations. However, this positive relation can be explained by the presence of an excess of confidence in the managers belonging to a strongly individualistic culture which encourages them to be involved in debt. The variables DIS and MAS are not significant. This result indicates that the hierarchical distance and masculinity value do not influence the decisions of financing of the American managers.

The Asian culture seems to determe decisions of financing of the firms operating in this context. Except for the variable “individualism”, the other variables affect debt negatively. The found signs are in conformity with expectations. In the context European, cultural dimension “individualism” is not significant. The other cultural variables all are significant and present the awaited signs. The culture, through its various dimensions, influences in a similar way the decisions of financing in the two regions of Asia and Europe.

Concerning the control variables, only the growth opportunities and firm size are significant. The signs are found consistent with the Trade-off theory.

Tables 8, 9 and 10 report the regression results using market debt ratio respectively for the different regions.

As the market debt ratio, the most remarkable result for the regressions on the American region appears on the level of the variables masculinity (MAS) and uncertainty avoidance (UNC) which become non-significant. The explanatory capacity of cultural dimension “avoidance of uncertainty” seems to be to neutralized by the introduction of the market evaluation which is primarily a measurement directed towards the future. The variables hierarchical distance and individualism remain significant at 1%.

In the same way, market debt measure affects the

Table 3. Dependent variable Market Debt ratio.

Specific Variables					
EBIT	-0.071***	0.231***	-1.028***	0.497***	0.307***
	(-5.027)	(2.911)	(-6.561)	(4.080)	(5.250)
SIZE	0.018***	-0.089***	0.203***	-0.048***	-0.076***
	(13.49)	(-12.108)	(16.628)	(-6.242)	(-11.796)
MTB	-0.006***	-0.007***	-0.017***	0.011***	-0.007***
	(-9.128)	(-2.341)	(-4.197)	(2.839)	(-3.160)
TANG	-0.043**	-0.059	-0.293***	-0.166***	0.123***
	(-3.713)	(-1.240)	(-4.320)	(-3.117)	(3.352)
C	0.184***	0.474***	-0.334***	0.378***	0.427***
	(25.125)	(13.411)	(-5.324)	(10.194)	(12.758)
Cultural variables : principal effect					
DIS	_	-0.006***			
		(-9.301)			
IND	_		0.006***		
			(8.289)		
MAS	_			-0.003***	
				(-5.240)	
UNC	_				-0.003***
					(-7.986)
Cultural variables: interaction effect					
DIS*EBIT		-0.007***			
		(-4.047)			
DIS*SIZE		0.002***			
		(-15.95)			
DIS*MTB		1.4E05			
		(0.209)			
DIS*TANG		$2.9^{E}05$			
		(0.030)			
IND*EBIT			0.011***		
			(6.123)		
IND*SIZE			-0.002***		
			(-14.828)		
IND*MTB			0.0001***		
			(2.813)		
IND*TANG			0.003***		
			(3.662)		
MAS*EBIT				-0.009***	
				(-4.702)	
MAS*SIZE				0.001***	
				(8.544)	
MAS*MTB				-0.0002***	
				(-4.301)	
MAS*TANG				0.001*	
				(2.228)	
UNC*EBIT					-0.007***
					(-6.840)
UNC*SIZE					0.001***
					(16.864)
UNC*MTB					$1.9^{E}05$
					(0.524)

Table 3. Continue

UNC*TANG					-0.002***
					(-4.975)
R^2	0.164	0.45	0.251	0.228	0.155
Fisher test	60.858	77.653	88.878	47.127	95.951
Prob	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Model is a standard cross-sectional (OLS) regression. The sample includes 14.594 observations. The results are robust to heteroscedasticity problem. Regression (1) introduces only four exogenous variables. Regressions (2), (3), (4) et (5) introduce cultural variables one by one. Values in parentheses are t-student. * significant at 10%, ** significant at 5% and *** significant at 1%.

Table 4. Dependent variable is Market Debt ratio.

Specific Variables					
EBIT	-0.077***	0.241***	-0.907***	0.512***	0.268 ***
	(-5.373)	(3.031)	(-6.081)	(4.178)	(4.664)
SIZE	0.028***	-0.081***	0.286***	-0.012	-0.108***
	(12.244)	(-9.890)	(18.349)	(-1.173)	(-14.703)
MTB	-0.008***	-0.010***	-0.027***	0.006	-0.004
	(-10.793)	(-3.103)	(-5.085)	(1.523)	(-1.516)
TANG	-0.030***	-0.036	-0.201***	-0.120***	0.059
	(-2.706)	(-0.744)	(-2.977)	(-2.233)	(1.574)
C	0.143***	0.482***	-0.750***	0.264***	0.616***
	(13.575)	(12.819)	(-9.886)	(6.488)	(16.224)
Cultural variables : principal effect					
DIS	_	-0.007***			
		(-9.395)			
IND	_		0.010***		
			(11.832)		
MAS	_			-0.002***	
				(-3.092)	
UNC	_				-0.007***
					(-12.957)
Cultural variables: interaction effect					
DIS*EBIT		-0.007***			
		(-4.153)			
DIS*SIZE		0.002***			
		(-2.617)			
DIS*MTB		3.9E05			
		(0.565)			
DIS*TANG		-0.002			
		(-0.232)			
IND*EBIT			0.009***		
			(5.617)		
IND*SIZE			-0.003***		
			(-16.880)		
IND*MTB			0.0002***		
			(3.590)		
IND*TANG			0.002***		
			(2.574)		
MAS*EBIT				-0.009***	
				(-4.805)	

Table 4. Continue

MAS*SIZE				0.0006***	
				(4.028)	
MAS*MTB				-0.0002***	
				(-3.376)	
MAS*TANG				0.001*	
				(1.656)	
UNC*EBIT					-0.006***
					(-6.248)
UNC*SIZE					0.002***
					(19.061)
UNC*MTB					$-8.1^{E}05$
					(-1.976)
UNC*TANG					-0.001***
					(-2.712)
R^2	0.026	0.048	0.061	0.033	0.067
Fisher test	65.589	68.08	86.99	45.03	95.395
Prob	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Model is Fixed Effect regression (Within). The sample includes 14.594 observations. The results are robust to the heteroscedasticity problem. Regression (1) introduces only four exogenous variables. Regressions (2), (3), (4) et (5) introduce cultural variables one by one. Values in parentheses are t-student. * significant at 10%, ** significant at 5% and *** significant at 1%.

Table 5. Summary of the results of the equations of Zellner (1962) for the region of Latin America.

Specific Variables				
Constante	0.078	-0.785***	0.387***	0.914***
	(0.123)	(-4.532)	(3.010)	(2.397)
MTB	0.013*	-0.028***	0.017***	0.022*
	(1.867)	(-2.980)	(2.509)	(1.994)
SIZE	-0.042***	0.251	-0.044***	-0.119***
	(-2.637)	(10.233)	(-2.439)	(-5.387)
EBIT	-0.334	-0.657*	0.140	-0.440
	(-1.175)	(1.686)	(0.796)	(-1.216)
TANG	0.119	-0.140	-0.099	0.188
	(1.158)	(-1.020)	(-1.015)	(1.305)
Cultural variables : principal effect				
DIS	0.003			
	(0.210)			
IND		0.011***		
		(5.713)		
MAS			-0.002	
			(-1.353)	
UNC				-0.015*
				(-1.844)
Cultural variables: interaction effect				
DIS*MTB	-0.0003*			
	(-1.717)			
DIS*SIZE	0.001***			
	(3.326)			
DIS*EBIT	0.007*			
	(1.647)			

Table 5. continue

DIS*TANG	-0.002 (-1.144)			
IND*MTB		0.0003*** (3.111)		
IND*SIZE		-0 .002*** (-9.682)		
IND*EBIT		0.007* (1.633)		
IND*TANG		0.001 (1.020)		
MAS*MTB			-0.0002*** (-2.359)	
MAS*SIZE			0.0009*** (3.066)	
MAS*EBIT			-0.002 (-0.896)	
MAS*TANG			0.001 (1.006)	
UNC*MTB				-0.0004* (-1.882)
UNC*SIZE				0.002*** (5.874)
UNC*EBIT				0.009 (1.162)
UNC*TANG				-0.004 (-1.296)
R2	0.242	0.318	0.124	0.2003

The endogenous variable is the debt book ratio. The sample includes 3027 observations. Values in parentheses are t-student. * significant at 10%, ** significant at 5% and *** significant at 1%.

Table 6. Summary of the results of the equations of Zellner (1962) for the region of East Asia and Pacific.

Specific Variables				
Constante	0.416*** (4.721)	-0.603*** (-4.628)	0.406*** (3.979)	0.716*** (5.945)
MTB	0.013* (1.867)	-0.028*** (-2.980)	0.017*** (2.509)	0.022* (1.994)
SIZE	-0.042*** (-2.637)	0.251*** (10.233)	-0.044*** (-2.439)	-0.119*** (-5.387)
EBIT	-0.334 (-1.175)	-0.657* (1.686)	0.140 (0.796)	-0.440 (-1.216)
TANG	0.119 (1.158)	-0.140 (-1.020)	-0.099 (-1.015)	0.188 (1.305)
Cultural variables : principal effect				
DIS	-0.009*** (-4.246)			
IND		0.010*** (5.593)		
MAS			-0.004*** (-3.352)	

Table 6. continue

UNC				-0.009***
				(-5.536)
Cultural variables: interaction effect				
DIS*MTB	-0.0004***			
	(-3.057)			
DIS*SIZE	0.002***			
	(6.915)			
DIS*EBIT	-0.005			
	(-1.389)			
DIS*TANG	-0.002			
	(-1.187)			
IND*MTB		0.0003***		
		(2.082)		
IND*SIZE		-0.003***		
		(-8.333)		
IND*EBIT		0.001		
		(0.154)		
IND*TANG		0.002		
		(1.009)		
MAS*MTB			-0.0002***	
			(-3.461)	
MAS*SIZE			0.001***	
			(5.927)	
MAS*EBIT			-0.008***	
			(-4.015)	
MAS*TANG			0.001	
			(0.818)	
UNC*MTB				-0.0003***
				(-2.939)
UNC*SIZE				0.002***
				(8.402)
UNC*EBIT				-0.001
				(-0.454)
UNC*TANG				-0.002
				(-1.365)
R2	0.068	0.072	0.063	0.074

The endogenous variable is the debt book ratio. The sample includes 7233 observations. Values in parentheses are t-student. * significant at 10%, ** significant at 5% et *** significant at 1%.

Table 7. Summary of the results of the equations of Zellner (1962) for the region of Europ.

Specific Variables				
Constante	0.239***	-0.014	0.399***	0.354***
	(3.384)	(-0.093)	(5.721)	(3.304)
MTB	0.013*	-0.028***	0.017***	0.022*
	(1.867)	(-2.980)	(2.509)	(1.994)
SIZE	-0.042***	0.251***	-0.044***	-0.119***
	(-2.637)	(10.233)	(-2.439)	(-5.387)
EBIT	-0.334	-0.657*	0.140	-0.440
	(-1.175)	(1.686)	(0.796)	(-1.216)
TANG	0.119	-0.140	-0.099	0.188
	(1.158)	(-1.020)	(-1.015)	(1.305)

Table 7. continue

Cultural variables : principal effect				
DIS	-0.002**			
	(-2.245)			
IND		0.001		
		(0.609)		
MAS			-0.006***	
			(-4.588)	
UNC				-0.003***
				(-2.599)
Cultural variables: interaction effect				
DIS*MTB	-0.0002***			
	(-2.432)			
DIS*SIZE	0.001***			
	(7.079)			
DIS*EBIT	0.003			
	(1.066)			
DIS*TANG	-0.003*			
	(-1.797)			
IND*MTB		0.0003***		
		(2.416)		
IND*SIZE		-0.002***		
		(-6.822)		
IND*EBIT		0.007		
		(1.332)		
IND*TANG		0.0007		
		(0.402)		
MAS*MTB			-0.0004***	
			(-3.318)	
MAS*SIZE			0.002***	
			(6.492)	
MAS*EBIT			-0.005*	
			(-1.618)	
MAS*TANG			0.0005	
			(0.307)	
UNC*MTB				-0.0003***
				(-2.410)
UNC*SIZE				0.002***
				(8.694)
UNC*EBIT				0.003
				(0.846)
UNC*TANG				-0.003*
				(-1.751)
R^2	0.066	0.073	0.068	0.069

The endogenous variable is the debt book ratio. The sample includes 3027 observations. Values in parentheses are t-student. * significant at 10%, ** significant at 5% and *** significant at 1%.

Table 8. Summary of the results of the equations of Zellner 1962 for the region of Latin America.

Specific Variables				
Constante	1.232***	-0.552***	0.303***	0.304
	(2.035)	(-3.647)	(2.633)	(0.849)
MTB	0.018***	-0.051***	0.023***	0.032***
	(3.151)	(-7.123)	(4.265)	(3.791)
SIZE	-0.057***	0.245***	-0.001	-0.133***
	(-4.607)	(13.116)	(-0.111)	(-8.008)
EBIT	-0.393***	-0.540*	-0.049	-0.527*
	(-2.520)	(-1.784)	(-0.334)	(-1.817)
TANG	-0.041	-0.050	-0.125	-0.020
	(-0.521)	(-0.488)	(-1.574)	(-0.189)
Cultural variables : principal effect				
DIS	-0.024*			
	(-1.629)			
IND		0.008***		
		(5.214)		
MAS			-0.001	
			(-0.525)	
UNC				-0.001
				(-0.170)
Cultural variables: interaction effect				
DIS*MTB	-0.0006***			
	(-4.687)			
DIS*SIZE	0.001***			
	(4.415)			
DIS*EBIT	0.009***			
	(2.366)			
DIS*TANG	0.001			
	(0.548)			
IND*MTB		0.0004***		
		(5.827)		
IND*SIZE		-0.002		
		(-13.063)		
IND*EBIT		0.005*		
		(1.703)		
IND*TANG		0.0006		
		(0.519)		
MAS*MTB			-0.0005***	
			(-5.801)	
MAS*SIZE			$7.9^{E}06$	
			(0.032)	
MAS*EBIT			0.0004	
			(0.183)	
MAS*TANG			0.002	
			(1.589)	
UNC*MTB				-0.0008***
				(-4.836)
UNC*SIZE				0.002***
				(7.841)
UNC*EBIT				0.010*
				(1.735)

Table 8. continue

UNC*TANG				0.0005
				(0.214)
R^2	0.014	0.015	0.014	0.014

The endogenous variable is the Market debt ratio. The sample includes 3027 observations. The results are robust to the problem of heteroscedasticity. Values in parentheses are t-student. * Significant at 10%, ** significant at 5% and *** significant at 1%.

Table 9. Summary of the results of the equations of Zellner 1962 for the Asian region.

Specific Variables				
Constante	0.460***	-0.629***	0.152*	0.764***
	(6.756)	(-6.358)	(1.875)	(8.377)
MTB	0.018***	-0.051***	0.023***	0.032***
	(3.151)	(-7.123)	(4.265)	(3.791)
SIZE	-0.057***	0.245***	-0.001	-0.133***
	(-4.607)	(13.116)	(-0.111)	(-8.008)
EBIT	-0.393***	-0.540*	-0.049	-0.527*
	(-2.520)	(-1.784)	(-0.334)	(-1.817)
TANG	-0.041	-0.050	-0.125	-0.020
	(-0.521)	(-0.488)	(-1.574)	(-0.189)
Cultural variables : principal effect				
DIS	-0.009***			
	(-5.610)			
IND		0.011***		
		(7.630)		
MAS			-0.001	
			(-1.032)	
UNC				-0.009***
				(-7.579)
Cultural variables: interaction effect				
DIS*MTB	-0.0006***			
	(-5.610)			
DIS*SIZE	0.002***			
	(8.853)			
DIS*EBIT	-0.003			
	(-1.049)			
DIS*TANG	0.003			
	(0.211)			
IND*MTB		0.0006***		
		(5.255)		
IND*SIZE		-0.003***		
		(-11.264)		
IND*EBIT		-0.0001		
		(-0.021)		
IND*TANG		0.0003**		
		(0.200)		
MAS*MTB			-0.0004***	
			(-6.142)	
MAS*SIZE			0.0007***	
			(3.647)	
MAS*EBIT			-0.005***	
			(-3.446)	

Table 9. continue

MAS*TANG			0.001	
			(1.144)	
UNC*MTB				-0.0005***
				(-5.648)
UNC*SIZE				0.002***
				(11.020)
UNC*EBIT				-0.0002
				(-0.089)
UNC*TANG				-0.0001
				(-0.077)
R^2	0.094	0.097	0.075	0.100

The endogenous variable is the Market debt ratio. The sample includes 7233 observations. The results are robust to the problem of heteroscedasticity. Values in parentheses are t-student. * Significant at 10%, ** significant at 5% and *** significant at 1%.

Table 10. Summary of the results of the equations of Zellner 1962 for the European region.

Specific Variables				
Constante	0.313***	-0.028	0.250***	0.438***
	(5.655)	(-0.226)	(4.396)	(5.271)
MTB	0.018***	-0.051***	0.023***	0.032***
	(3.151)	(-7.123)	(4.265)	(3.791)
SIZE	-0.057***	0.245***	-0.001	-0.133***
	(-4.607)	(13.116)	(-0.111)	(-8.008)
EBIT	-0.393***	-0.540*	-0.049	-0.527*
	(-2.520)	(-1.784)	(-0.334)	(-1.817)
TANG	-0.041	-0.050	-0.125	-0.020
	(-0.521)	(-0.488)	(-1.574)	(-0.189)
Cultural variables : principal effect				
DIS	-0.005***			
	(-5.739)			
IND		0.0002		
		(0.162)		
MAS			-0.004***	
			(-4.438)	
UNC				-0.005***
				(-5.385)
Cultural variables: interaction effect				
DIS*MTB	-0.0004***			
	(-4.253)			
DIS*SIZE	0.002***			
	(12.164)			
DIS*EBIT	0.003			
	(1.287)			
DIS*TANG	-0.0004			
	(-0.305)			
IND*MTB		0.0005***		
		(5.910)		
IND*SIZE		-0.001***		
		(-7.372)		
IND*EBIT		0.004		
		(1.136)		

Table 10. continue

IND*TANG		-0.0004		
		(-0.288)		
MAS*MTB			-0.0005***	
			(-5.650)	
MAS*SIZE			0.001***	
			(6.621)	
MAS*EBIT			-0.002	
			(-1.036)	
MAS*TANG			0.001	
			(0.654)	
UNC*MTB				-0.0004***
				(-4.614)
UNC*SIZE				0.002***
				(13.711)
UNC*EBIT				0.004
				(1.146)
UNC*TANG				-0.0005
				(-0.403)
R^2	0.149	0.157	0.164	0.154

The endogenous variable is the Market debt ratio. The sample includes 3027 observations. The results are robust to the problem of heteroscedasticity. Values in parentheses are t-student. * Significant at 10%, ** significant at 5% and *** significant at 1%.

explanatory capacity of the cultural variables in Asian region. Indeed, the variable masculinity becomes non-significant. Although this area is with affirmed masculinity, the Asian managers are not influenced by the sex of the actors for the finance decision.

For the European region, the cultural variables all are significant except for the variable individualism which becomes non-significant. Taking into account the future prospects and potential added-value of the firm from optical market minimizes the impact of individualism on the debt.

CONCLUSION

Within the framework of this study, we tried to analyze the determinants of the debt of the companies through the cultural context specific to each framework. While being based on a sample of 14.594 firms belonging to three geographical areas, our principal results show that culture, through its various dimensions, affects the decision of financing of the firms. In particular, the hierarchical distance, the masculinity of a group and the avoidance of uncertainty affect the recourse to debt negatively. According to a purely behavioral approach, our results are explained by considerations of achievement of oneself “Locus off control” and of personal “Own Success” and collective “reputation Greater importance off Saving Face”. However, our results show that the individualistic ideology “individualist ideology” encourages, for its part, the individual initiative and militates in favor of remunerations leaned with the individual performances. This cognitive skew affects the recourse to the debt positively.

Moreover, the results of the independent equations (SUR Model: Zellner, 1962) confirm total heterogeneity between the geographical areas retained in our study. Catches individually, we showed that the impact of the various cultural variables on the debt changes an area to another in terms of sign and significance. Clinical studies and possible longitudinal studies studying the behavior of financing of the firms in each country, consequently, are recommended.

In the light of the found results, we can deduce that it becomes little convincing to treat the question of the structure of capital except institutional context, in particular the cultural context. The extent of our results requires, then, the taking into account of the cultural and cognitive considerations to treat the problems of the behavior of financing of the firm. In addition, these results are entirely consistent with the theoretical developments which postulate that the differential environmental frameworks explains the diversity of firms' financing behavior, or, any analysis of these behaviors must begin with geographic contextualization of the firm.

Our study shows that the cultural identities of the countries prohibit any attempt at “tracing” of interpretations appropriate to the Anglo-Saxon context which built the framework of reference of the majority of work relating to the study of the structure of the capital.

However, our work is not free from some limit. Indeed, our results would have been more robust if we had introduced into our models of the variables of control of an institutional nature such as the level of development of the financial system, the legal origin and physical distance (Siegel et al., 2010a).

In spite of the found results our work can be enriched mainly through two axes:

- different regressions are estimated in cross-sectional (static framework) ; taking into account the temporal dimension (time series) we will conduct a dynamic study;

- We suggest that theory of trade-off based on tax benefits and bankruptcy costs can be enriched by the combination of behavioral arguments given that cultural values affect the way that managers perceive and weigh costs associated with debt financing**.**

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Appendix 1. Variable definitions and data sources.

Variables	Mesures
ENDOGENOUS VARIABLES	
BOOK DEBT RATIO	Total debts/Total assets
MARKET DEBT RATIO	Book Debt / (Total Assets – Book Equity + Market Equity)
EXOGENOUS VARIABLES	
PROFITABILITY (EBIT)	Earnings before interest and tax scaled by total assets
TANGIBILITY (TANG)	Total fixed assets scaled by total assets
MAKET TO BOOK (MTB)	Market To Book ratio
SIZE (SIZE)	The logarithm of total assets
HIERARCHICAL DISTANCE : DIS	« Hofsted Cultural Dimesions » base http://www.geert-hofstede.com/
MASCULINITY : MASC	« Hofsted Cultural Dimesions » base http://www.geert-hofstede.com/
INDIVIDUALISME : INDV	« Hofsted Cultural Dimesions » base http://www.geert-hofstede.com/
UNCERTAINLY: UNC	« Hofsted Cultural Dimesions » base http://www.geert-hofstede.com/

Appendix 2. Cultural indicators for the countries of our sample (sources: Hofstede's cultural dimension).

Countries	DIS	INDIV	MASC	UNC
Bulgaria	70	30	40	85
Brazil	69	38	49	76
Colambia	67	13	64	80
Indonesia	78	14	46	48
Malaysia	104	26	50	36
Peru	64	16	42	87
Romania	90	30	42	90
Singapore	74	20	48	8
Turky	66	37	45	85
Vietnam	70	20	40	30

Appendix 3. This table provides descriptive statistics for all variables considered in our sample (endogenous and exogenous). Statistics are presented by region, although the numbers of observations differ from one region to another.

	$BDEBT_{USA}$	$MDEBT_{USA}$	$EBIT_{USA}$	$SIZE_{USA}$	$TANG_{USA}$	MTB_{USA}
Mean	0.272111	0.211759	0.054926	4.802259	0.471426	2.649140
Median	0.217571	0.116656	0.076800	4.942752	0.481367	1.603000
Maximum	0.999215	0.999976	1.155556	11.33700	1.172195	61.92000
Minimum	0.000000	0.000000	-1.617508	0.000000	-5.871830	0.000000
Std. Dev.	0.259787	0.249244	0.214238	1.247623	0.208361	2.979157
Skewness	0.700306	1.335651	-1.353529	-0.225571	-3.874353	2.720240
Kurtosis	2.458914	4.039011	10.03531	2.731909	120.9728	31.54875
Jarque-Bera	679.1647	2476.257	17127.64	83.01057	4212504.	254585.5
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	1967.363	1531.868	397.3327	34739.54	3409.825	19163.88
Sum Sq. Dev.	487.8804	449.3342	331.9802	11258.61	313.9713	64195.59

Appendix 3 continue

Observations	3027	3027	3027	3027	3027	3027
	$BDEBT_{ASIA}$	$MDEBT_{ASIA}$	$EBIT_{ASIA}$	$SIZE_{ASIA}$	$TANG_{ASIA}$	MTB_{ASIA}
Mean	0.319798	0.264412	0.076034	4.727159	0.448053	2.821860
Median	0.251020	0.201363	0.072321	4.583903	0.478100	1.877298
Maximum	1.000000	1.000000	0.804382	11.99370	1.005556	53.42006
Minimum	0.000000	0.000000	-1.132025	0.694200	0.000000	0.000000
Std. Dev.	0.289524	0.247783	0.073315	0.874800	0.166678	2.584225
Skewness	0.637918	0.752711	-1.179050	0.794240	-0.722002	3.506745
Kurtosis	2.234902	2.554242	41.05167	8.140019	3.509588	51.55759
Jarque-Bera	279.1315	310.8975	183321.5	3650.444	295.7417	303586.5
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	968.0299	800.3749	230.1557	14309.11	1356.256	8541.770
Sum Sq. Dev.	253.6515	185.7861	16.26519	2315.721	84.06694	20208.29
Observations	7230	7234	7234	7234	7233	7234
	$BDEBT_{EUR}$	$MDEBT_{EUR}$	$EBIT_{EUR}$	$SIZE_{EUR}$	$TANG_{EUR}$	MTB_{EUR}
Mean	0.237217	0.208960	0.064298	2.776330	0.409373	2.885415
Median	0.143507	0.128234	0.055666	2.629202	0.394127	1.916246
Maximum	1.000000	0.999999	0.957009	6.786644	1.000000	51.75000
Minimum	0.000000	0.000000	-0.914774	0.178977	0.000600	0.000000
Std. Dev.	0.263618	0.236022	0.111527	0.916477	0.177584	2.836269
Skewness	1.064225	1.228933	0.880012	0.811906	0.432095	3.423564
Kurtosis	3.127067	3.776025	19.04081	3.410495	3.143304	39.78089
Jarque-Bera	573.4204	837.8887	32843.63	353.8150	96.78346	176539.3
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	718.0546	632.5218	194.6301	8403.951	1239.172	8734.151
Sum Sq. Dev.	210.2904	168.5682	37.63844	2541.627	95.42789	24342.41
Observations	3027	3027	3027	3027	3027	3027