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Credit Risk Management and Risk Taking: An International Study

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Abstract:

This article examines the effects of national culture on banking risk taking using a sample of 75 countries around the world for the period (2003-2013). More specifically, we study the effect of the national culture dimensions namely individualism, hierarchical distance, masculinity and tolerance for uncertainty on financial difficulties in banks using the z-score.

Our results show that banks belonging to countries characterized by collectivism, masculinity, a low degree of aversion take more risk.

Keywords: risk taking, national culture, national cultural values, financial difficulties, z-score

1 Introduction:

Bank risk-taking is essential in order to guarantee the performance of banks and also to compete with other financial institutions. However, it could undermine the sustainability and stability of a bank or the financial system as a whole. If banks engage in risky and hazardous activities this leads to financial crises which will have a negative effect on the national economy and in particular on the country's GDP (European Commission Report, 2014). As the banking sector transmits financial instability between sovereign countries, identifying new factors associated with banking risk is not only academically relevant, but also helps safeguard the global financial system. This article contributes to this important line of research by examining the role of national culture as a determining factor in risk-taking within banks. The banking sector is highly regulated. Important legislation is usually found at a transnational level (the Basel Accords). Therefore, it is reasonable to expect that country-specific characteristics, such as national cultural values, will have little or no effect on the risk to banks. However, regulation is unable to fully grasp the complex dynamics that affect management decision-making, leaving banks flexibility in terms of lending and deposit accumulation strategies (Dothan and Williams , 1980). In addition, managerial perception of risk and predisposition to risk taking vary between individuals and companies (Delerue and Simon, 2009). Previous work emphasizes that national cultural values primarily influence risk preferences and attitudes towards risk (Weber & Hsee, 1998). This is because culture defines the decision making of individuals (Husted & Allen, 2008), hence their risk appetite. We assume the hypothesis that; National culture directly influences the risk appetite of bank managers, and it also has an indirect effect since bankers must respond to the needs and risk preferences of their clients who must themselves be influenced by national characteristics, (and this in particular for national banks). Referring to previous studies, we identify three national cultural values, including individualism, trust and hierarchy, and seek to associate them with risk taking in banks.

Our study is relevant given the recent banking crisis which placed particular emphasis on excessive risk-taking. Recent massive cuts in banking around the world have led some to argue for increased regulation, while others claim that the failure of existing regulations to

prevent these events indicates that additional regulation may be futile (Altamuro and Beatty 2010).

The rest of this article is structured as follows:

Section 2 analyzes the relevant context and provides an overview of previous empirical work on bank risk taking. Section 3 presents our data sources, variables and sample. Section 4 describes the methodology we apply to establish the results presented in section 5. Section 6 concludes the document.

2 Literature review:

Several studies of financial, accounting and management literatures have explored the importance of cultural values in decision making. These studies reveal that culture can explain a country's institutional, legal, and economic environments at the macroeconomic level that can influence companies' risk-taking decisions and provide evidence for the impact of culture on financial decision-making. by individuals at the microeconomic level. At the microeconomic level, culture has been shown to affect individual risk-taking behaviors. Breuer et al. (2011) find that individualism is linked to over-confidence and over-optimism and has a significantly positive effect on individual financial risk-taking and the decision to own stocks.

Tse et al. (1988) show that family culture has predictable and significant effects on managerial decision-making. Two decades later, Graham et al. (2010), using survey data from the United States, also show that CEOs are not immune to the effects of culture. They find that CEOs “decision-making is heavily influenced by cultural values such as uncertainty-aversion. At the macro level, cultural heritage has been linked to corporate governance, investor protection, creditors' rights, bankruptcy protection, judicial efficiency, accounting transparency and corruption. Doidge et al. (2007) find that intercultural differences explain the variance in corporate governance much more than observable firm characteristics. Hope (2003) shows that legal origin and culture (as defined by Hofstede's cultural dimensions) are important in explaining corporate disclosure practices and investor protection. In fact, he finds that although legal origin is a key determinant of disclosure levels, its importance decreases with the richness of a company's information environment, while culture remains an important determinant. Licht et al. (2005) find that social norms of governance correlate strongly and systematically with high individualism and low power distance. Stulz et al. (2003) find that cultural heritage, by religion and by language, predicts cross-sectional

variation in creditors' rights better than trade openness, economic development, legal origin or a country's language. Other studies show that culture predicts judicial efficiency and the transparency of accounting systems. Radenbaugh et al. (2006) find that the countries of the Anglo cluster have a more transparent and less conservative accounting system than the Germanic or Latin accounting systems. Beraho et al. (2010) show that intercultural variables have a direct influence on the propensity to declare bankruptcy and on insolvency laws. Furthermore, Getz and Volkema (2001) and Robertson and Watson (2004) link cultural differences to levels of corruption. In addition, recent research has also linked cultural variables to economic development and the market, although the data is mixed.

Guiso et al. (2006) find that national culture influences economic performance, influencing national savings rates and income redistribution. Kwok and Tadesse (2006) find that culture explains inter-country variations in financial systems, with uncertainty avoidance countries dominated by banking financial systems rather than stock markets. Kirca et al. (2009) show that national culture influences the implementation of market-oriented practices. Lee and Peterson (2000) show that only countries with specific cultural tendencies (i.e. countries which emphasize individualism) tend to generate a strong entrepreneurial orientation and, therefore, more entrepreneurship and global competitiveness. On the other hand, Pryor (2005) argues that cultural variables do not appear to be related to the level of economic development and are not useful for understanding economic growth or differences in levels of economic performance between countries. In addition, Herger et al. (2008) also argue that cultural beliefs do not appear to support or hinder financial development. This evidence suggests that national culture can indirectly influence economic and commercial development only through its effects on the legal and institutional context. Institutional and economic environments have been shown to affect business risk-taking decisions. There is a small strand of literature that has explored corporate risk-taking around the world that reflects countries' institutional and economic environments.

Laeven and Levine (2009) show that risk-taking by banks varies positively with the comparative power of shareholders within each bank. In addition, they show that the relationships between bank risk taking and capital regulation, deposit insurance mechanisms and the restrictiveness of banking activities critically depend on the ownership structure of the bank. Claessens et al. (2000) show that companies in common law countries and market-based financial systems have less risky financing schemes and that enhanced protection of equity and creditors' rights is equally important.

Overall, while the literature is relatively small, the national culture has been indirectly linked to the risk-taking decisions of companies in formal studies, although most of them only analyze the banking sector. Culture has also been directly linked to corporate risk-taking, although most studies have looked at the financial or manufacturing sectors separately.

Kanagaretnam et al. (2011) show that banks in large uncertainty avoidance companies tend to take less risk, while banks in high individualistic companies take more risk. However, they do not control for institutional variables such as corporate governance, bankruptcy protection, judicial efficiency, transparency and corruption, which have been shown to be affected by national cultural norms and which may in their view be affected. turn affect business risk taking.

Griffin et al. (2012) study the impact of culture on firms in the manufacturing sector over the period 1997-2006. To our knowledge, they are the only ones to use a mixed linear hierarchical model to analyze the impact of culture on companies' risk taking. They show that individualism has direct positive and significant effects, while avoiding uncertainty has direct negative and significant effects on corporate risk-taking. This article contributes to the literature on the impact of culture on business risk taking in several ways. While previous studies have investigated the direct or indirect effects of culture on risk taking, this article attempts to reconcile the two strands of the literature and assess them simultaneously using a mixed linear hierarchical model. This makes it possible to test whether cultural norms remain important in determining the risk-taking behaviors of companies, even after taking into account their impact on the institutional, economic and industrial environment. In addition, this article extends the analyzes of Griffin et al. (2012) and Kanagaretnam et al. (2011) to identify inter-industry differences in risk taking.

Given the importance for national and global economies of the highly leveraged finance sector or for the highly innovative IT sector or for the high risk commodity industries1 and given that firms in these industries are markedly different from firms manufacturing and more disadvantaged By the recent global economic crisis, it is very important to understand the role of culture in the inter-industrial variation of risk taking.

3 Presentation of the hypotheses:

Uncertainty in financial contracts has important implications for financing and investment decisions (Aggarwalet Goodell 2014). Hofstede (2001) explains that members with a high UAI level do not accept the uncertainty of the future and try to avoid uncertain situations.

Ambiguous situations are new, unknown, surprising and different from usual ones (Mihel, 2013). The risk avoidance culture involves avoiding ambiguous situations, but paradoxically, it might prefer risky situations to those which are uncertain.

The main difference between countries with high UAI and countries with low UAI level that countries with high UAI level could take risks, but these are limited to known risks while countries with low UAI take risks. known and unknown risks and are more tolerant of both risks. countries with a high UAI level have 'a fear of failure', while countries with low UAI have a 'hope of success' (Mihel, 2013).

Kwok and Tadesse (2006) and Aggarwal and Goodell (2009) show that countries with high UAI levels are characterized by a relatively more risk averse banking financial system, while countries with low UAI rates are characterized by by a relatively less risk averse financial system (Ashraf, Zheng, and Arshad, 2016). In sum, these arguments suggest that the likelihood of risk taking will be lower in countries with high IAUs than in countries with low IAUs. Members in countries with low UAI will take more risks because they hope to succeed, while members in countries with a high level of UAI will take less risks because they fear the lack of success and the consequences that may arise. could arise in case of failure (Mihel, 2013). From these arguments we can propose the following hypothesis:

H1: Aversion to uncertainty will negatively influence risk taking

Individualism has been consistently linked in the psychological literature to overconfidence and over-optimism. In more individualistic societies, decisions are the product of an individual rather than of the group, and these decisions are more likely to be driven by overconfidence and optimism (Chui et al., 2010). Pan and Statman (2009) find that highly overconfident individuals tend to be more risk tolerant than less confident individuals, exaggerating their ability to control results and overestimate their knowledge. When people are overconfident in their abilities, they tend to overestimate the accuracy of their predictions and be overly confident in their estimates of parameters, such as the future performance of a stock (Van der Steen 2004, Grinblatt and Keloharju 2009). We predict that individualism, which is correlated with overconfidence and over-optimism, will have a significant positive effect on risk taking. On the other hand, individualism could also have the opposite effect because of the cushion hypothesis. In collectivist countries, everyone takes responsibility for helping in the event of a significant and possibly catastrophic loss as a result of a risky option, while in individualist countries, everyone is responsible and will bear the consequences of their own actions.

Collectivism therefore acts as a cushion against possible losses (Hsee and Weber, 1999). To account for this discrepancy, our model will take into account and monitor the mechanisms for protecting creditors and shareholders, as well as the costs of bankruptcy.

H2: Individualism will positively influence risk taking.

A high PDI (power distance) index means that national elites hold relatively authoritarian views, and authority is based on tradition rather than secular arguments. High PDI scores also characterize highly stratified societies that value compliance more than independence. According to Mihel (2013) a large hierarchical distance tends to negatively affect national economic performance, as it hinders mobility, innovation, entrepreneurship and proactivity while emphasizing compliance. PDI could also be negatively correlated with wealth because wealth goes hand in hand with the growth of the middle class, which connects the powerful with the powerless.

Hierarchical distance deals with issues of equality and ultimately trust. In countries with high IDPs, superiors and subordinates are differentiated in ways other than hierarchical and those in power are entitled to privileges denied to the powerless. Because of these frictions, countries with great hierarchical distance present latent conflicts between the powerful and the powerless, and the latter are perceived as a threat to their power and should rarely be trusted (Hofstede, 2001).

On the other hand, in countries with a short hierarchical distance there is a latent harmony between the different actors: In such a society, power is distributed in a rather democratic way and its members are perceived as equal. Stakeholders at different levels of power feel less threatened and are more willing to trust each other. We suggest that people in countries with lower hierarchical distance will take more risks because they are more confident. Indeed, a long strand of psychological research has found a strong link between confidence and risk taking. The more confident an individual is, the more likely he is to take (Growiec and Growiec 2011 and Das and Teng 2004). We postulate that the same will be true at the enterprise level and that enterprises in low IDP countries will be more confident and therefore take more risks.

H 3: The hierarchical distance will negatively influence risk taking

We also predict that countries that score higher on the masculinity index will take more risks. Because typical male society emphasizes achievement and competitiveness, money and asset

orientation, and sympathy for the strong and successful, it might also encourage riskier behavior. Meier-Pesti and Penz (2008) find that superior male characteristics promote higher financial risk-taking, regardless of whether the decision-maker is male or female.

H 4: masculinity will positively influence risk taking in banks.

4- Presentation of the sample and model

4.1 presentation of the sample

Our sample is made up of 75 countries for the period 2003-2013. Culture data is taken from the Hofsted database. The macroeconomic variables have been downloaded from the World Bank database: WDI World Development Indicators. The other variables were obtained from the database of Djankov et al. (2007).

4.2 presentation of variables

4.2.1 Dependent variable: Measurement of banking risk taking

Following the recent banking risk-taking literature across the country (Laeven & Levine 2009; Houston et al., 2010; Kanagaretnam et al., 2014), the bank's z-score is considered the main proxy banking risk-taking.

Z scores for each bank are calculated as z-score = (ROA + CAR) / σ (ROA), where ROA is equal to return on assets, CAR is equal to the ratio of equity to all assets, and σ (ROA) is equal to the standard deviation of the annual return on assets. Higher z-score values indicate greater banking stability.

4.2.2 Independent variable

The dimensions of national culture established by Hofstede (1980) are characterized by four groups that distinguish between cultures of nations. The four categories are: Power Distance (PDI), Individualism versus Collectivism (IND), Masculinity versus Femeninity, (MAS) and Uncertainty Avoidance (UAI).

In another research by Greet Hofstede and Michael Minkov (1991), a fifth dimension built on Confucian philosophy called Long Term Orientation (LTO), was developed and added in the

book “Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations across Nations ”(Hofstede 2001).

The sixth and final dimension, named Indulgence versus Restraint (IVR), has been appended in the same book based on the results of the World Values Survey for 93 nations by Michael Minkov (Hofstede center 2016).

- Uncertainty Avoidance

Hofstede defined Uncertainty Avoidance as "the extent to which the members of one culture feel threatened by uncertain or unkown situations" (Hofstede 1991, p.113).

Uncertainty Avoidance is a dimension related to the level of stress in a society facing an unknown future. She is interested in a society's tolerance for doubt and uncertainty. It points to the extent to which members of a culture either feel comfortable or uncomfortable in unfamiliar situations. Uncertain situations are unusual, unknown and unexpected. The culture of uncertainty avoidance tries to minimize the possibility of these situations with tough programs, laws and rules

- Individualism versus collectivism

Individualism is linked to the belonging of individuals to a main group. The high side of this dimension is individualism. Individuals are expected to take care of only themselves and their immediate families. Hofstede defined the individualist societies “ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family”. In contrast, the low side of the dimension, collectivism, represents a very united framework in society. In which individuals expect their loved ones and members of society to take care of them in exchange for unconditional loyalty. Hofstede defined a collectivist society as "people from birth onwards are integrated into strong, cohesive in-groups, which through all people’s life time continue to protect them in exchange for unquestioning loyalty". (Hofstede 1991, p. 51 Hofstede center 2016).

Power Distance Index (PDI)

“The extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally” (Hofstede 2001, p.98, the Hofstede center 2016). Power Distance Index (PDI) is linked to the inequality between human beings.

This dimension expresses the acceptance by less powerful members of society that power is distributed unevenly. In fact, in society there are leaders and followers and different

categories of people. The nature of the social structure is hierarchical. Some societies have a higher level of inequality among members than others.

- Masculinity versus femininity (MAS)

This dimension has shifted to the social role of men and women "the social, culturally determined roles masculine and feminine" (Hofstede 1991, p. 80).

There are, according to Hofstede, two different behaviors in a society: feminism and masculinization. According to him, men are supposed to be assertive, tough and focused on material success. But women are supposed to be more modest, tender and interested in the quality of life and the good life. Feminism means a society in which roles are overlapped. A high score for feminism in a society implies behavior according to the feminist forms of members, men and women, (and vice versa).

4.2.3 Control variables

We include variables to control the institutional environment at country level and the level of economic development.

The creditor rights variables are obtained from Djankov et al. (2007). The creditor rights index measures the legal protection afforded to a creditor if the debtor defaults or declares bankruptcy.

The Legal common law variable corresponds to 1 if a country has a British legal origin and 0 otherwise.

To measure the level of economic development of a country, we will use the GDP. Banks located in countries at different levels of economic development may have different behaviors towards risk taking. For example, Banks in high income countries can afford good risk management techniques, while this is not the case in low income countries. In addition, banks may have higher diversification opportunities in developed countries compared to those opportunities offered to banks in low income countries.

PCGDP (private credit to GDP)

5 Analysis and interpretation of results :

Table : descriptive statistics

Variable	Mean	Std.	Min	Max
zscore	16.6313	12.19436	-9.602997	57.90417
idv	43.48	22.73843	12	91
pdi	59.4	20.60181	11	100
mas	48.14667	17.93121	5	95
uai	65.32	22.13862	8	100
GDP	0.0944861	0.1133079	-0.3763332	0.778223
CPI	0.0473529	0.0458418	-0.0458341	0.3410292
CLAW	0.2933333	0.4555661	0	1
CR	1.971429	1.082652	0	4
PCGDP	0.6167647	0.4350472	0.05	1.64

*Notes: idv: individualism; pdi: **Power Distance Index**; mas**: Masculinity versus femininity**; uai: level of tolerance towards uncertainty (**Uncertainty Avoidance**); GDP; gdp growth rate; CLAW: **Legal common**; CR: creditor rights; PCGDP: private credit to GDP*

Table 2. Pearson correlation matrix

	idv	pdi	mas	uai	GDP	CPI	CLAW	CR	PCGDP
idv	1.0000								
pdi	-0.7018	1.0000							
mas	0.0007	0.0946	1.0000						
uai	-0.1450	0.2203	0.0303	1.0000					
GDP	0.3558	-0.0951	0.3114	0.0053	1.0000				
CPI	0.1565	-0.1200	-0.0152	0.0121	0.2546	1.0000			
CLAW	0.0702	-0.0381	0.2431	-0.4620	0.1171	-0.0425	1.0000		
CR	0.0920	-0.1046	-0.0218	-0.1747	0.0131	-0.0303	0.3307	1.0000	
PCGDP	0.4677	-0.4483	0.0716	-0.2656	0.4967	0.2295	0.2083	0.2688	1.0000

*Notes: idv: individualism; pdi: **Power Distance Index**; mas: **Masculinity versus femininity**; uai: level of tolerance towards uncertainty (**Uncertainty Avoidance**); GDP; GDP growth rate; CLAW: **Legal common**; CR: creditor rights; PCGDP: private credit to GDP*

From the pearson correlation matrix we can notice the presence of a negative correlation greater than 0.7 between hierarchical distance and individualism. This leads us to integrate each of the variables into two different equations.

Table 3. Estimation of the relationship between national culture and risk taking

	Coef.	Coef.
pdi	-0.0037033	
	(-1,21)	
Idv		0.0085499***
		(3.46)
Mas	-0.0079086*	-0.0094397**
	(-1.75)	(-2.12)
Uai	0.005942**	0.0042801*
	(2.18)	(1.76)
GDP	0.1015826***	0.0677569*
	(2.56)	(1.89)
CPI	0.1059972	.0488655
	(0.60)	(0.26)
CLAW	-0.1147844	-0.0838043
	(-0.84)	(-0.69)
CR	-0.0135814	-.0238211
	(-0.37)	(-0.63)
PCGDP	0.5174332***	0.4190536***
	(3.90)	(3.45)
_cons	-2.089188*	-1.28984
	-1.91	-1.22
chi2(8)	81.03	83.30

Notes: idv: individualism versus collectivism; pdi: Power Distance Index; mas: Masculinity versus femininity; uai: level of tolerance towards uncertainty (Uncertainty Avoidance); GDP; GDP growth rate; CLAW: Legal common; CR: creditor rights; PCGDP: private credit to GDP

Hierarchical distance deals with issues of equality and ultimately trust. In countries with high IDPs, superiors and subordinates are differentiated in ways other than hierarchical and those in power are entitled to privileges denied to the powerless. Because of these frictions, countries with great hierarchical distance present latent conflicts between the powerful and the powerless, and the latter are seen as a threat to their power and should rarely be trusted.

Collectivism therefore acts as a cushion against possible losses. To account for this discrepancy, our model took into account and controlled the mechanisms for protecting creditors and shareholders, as well as the costs of bankruptcy.

Conclusion:

The main research question addressed in this paper is whether the two important dimensions of national culture, the avoidance of uncertainty and individualism, influence banks' risk-taking. We address this question by analyzing a sample of banks from 75 countries over the period 2003-2013. We examine the relationship between the two dimensions of national culture and banking risk taking. Consistent with our predictions, we find that banks in high uncertainty avoidance societies take less risk while banks in high collectivist societies take more risk. The dimensions of national culture used are characterized by four groups that distinguish between cultures of nations. The four categories are: Power Distance (PDI), Individualism versus Collectivism (IND), Masculinity versus Femeninity, (MAS) and Uncertainty Avoidance (UAI).

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