

JURNAL ILMIAH MANAJEMEN BISNIS DAN INOVASI
UNIVERSITAS SAM RATULANGI (JMBI UNSRAT)

THE EFFECT OF NATIONAL CULTURE ON LEVERAGE DECISIONS IN
EMERGING MARKETS

Felicia Julianti, Sung Suk Kim

Universitas Pelita Harapan

ARTICLE INFO

Keywords: *corporate leverage, cultural diversity, capital structure*

Kata Kunci: *leverage perusahaan, keragaman budaya, struktur modal*

Corresponding author:

Sung Suk Kim
sungsuk.kim@uph.edu

Abstract. This research investigates whether cultural variables explain diversity in corporate leverage in developing markets. Adaption in government borrowing, as well as macroeconomic uncertainty and financial sector expansion, play a larger effect. Individualism is highly positive connected with leverage except for short-term debt, while uncertainty-avoidance is negatively correlated with leverage except for long-term debt. We also investigate the buildup and dissipation of leverage by studying the relationship between company profitability, size, market to book, R&D, which all negatively connected while tangible assets remain positively related.

Abstrak. Penelitian ini menyelidiki apakah variabel budaya menjelaskan keragaman dalam leverage perusahaan di pasar berkembang. Adaptasi dalam pinjaman pemerintah, serta ketidakpastian makroekonomi dan ekspansi sektor keuangan, memainkan efek yang lebih besar. Individualisme berhubungan sangat positif dengan leverage kecuali untuk utang jangka pendek, sedangkan penghindaran ketidakpastian berkorelasi negatif dengan leverage kecuali untuk utang jangka panjang. Kami juga menyelidiki penumpukan dan disipasi leverage dengan mempelajari hubungan antara profitabilitas perusahaan, ukuran, market to book, R&D, yang semuanya terhubung negatif sementara aset berwujud tetap berhubungan positif.

INTRODUCTION

Given the costs of adaptation, dynamic capital structure trade-off models show that businesses relatively stable goals can be set, however, as long as the leverage ratio is within the target range, it will deviate from these targets. This behavior is expected to have a significant effect on debt dynamics over time, as well as the variations in these dynamics between firms. This growth is not due to changes in business characteristics. Despite this growth among the unregulated firms, the economy-wide leverage ratio remained largely stable during the twentieth century as a result of stable debt consumption among regulated firms and a decline in the share of total assets owned by regulated firms. In assessing the stability of the corporate capital mechanism, they examine the predictive power of the leverage cross-section for future leverage cross-sections at different time horizons (De Angelo; Roll, 2015). The adjustment of public debt, macroeconomic instability and the development of the financial sector play a greater role. In the previous literature that the debt ratio is stable, but they also find significant differences in corporate level leverage ratios over time. Cultural heterogeneity has a huge impact on foreign businesses' financial activities and practices (Shenkar, 2001). Similar cultural origins are frequently used as a natural proxy for familiarity and information accessibility. Cultural preferences have a major impact on investor decision-making, according to Grinblatt and Keloharju (2001). Overall, these findings demonstrate that cultural variability creates barriers and challenges for businesses when it comes to conducting financial transactions. As a result, the question is whether a company's financial decisions are influenced by its level of cultural exposure. Some corporations, for example, focus their operations in nations with similar cultures, while others may operate in countries with diverse cultures. The latter would have to deal with more unfamiliarity as a result of cultural differences, which might have a substantial impact on multinationals' financial decisions (Cao et al., 2011; Huberman, 2001). Because cultural heterogeneity may limit the viability of external financing sources, multinational corporations are likely to place a high value on internal cash reserves as a means of financing future growth potential. In terms of corporate risks, working in a different culture might exacerbate operating cash flow volatility and force a company to rely on its internal cash reserve (Cao et al., 2011; Grinblatt & Keloharju, 2001; Huberman, 2001; Shi & Tang, 2015).

LITERATURE REVIEW

This paper complements the empirical literature to understand how cultural differences affect corporate leverage, we examine whether national culture is a factor. Cultural heterogeneity can hinder externalization. We use the cultural characteristics of Hofstede (2010) to examine whether the degree of individuality and avoidance of uncertainty in a country may explain differences in the firm's influence in developing countries. Individualism-Determining use the individual and group dimension to select if there is a relationship for both country-level culture and corporate leverage in developing markets.

Cultural Diversity and Capital Structure

According to Chen (2015), for multinationals operating globally, national culture has less impact on cash holdings, and national cultures specific to a particular country have less impact on multinationals. Means. "Cultural motives" are incorporated into the literature of finance and cross-cultural psychology, and corporate financial inferences are often influenced by individuals as well as objective assessments of corporate profits and risks. It also shows that it is influenced by the subjective beliefs of cultural heritage.

Culture plays a role in capital structure according to a growing body of financial studies (Gleason et al., 2000). In the cultural aspects of Schwartz, Chui et al(2002) Evidence that national cultural influences the capital structure of companies, particularly in firms based in more conservative countries. Moreover, discovered that national culture had an impact on corporate capital structure. Wang (2013) also claims that higher company leverage is connected with a value discount. We offer useful insights on the performance and capital structure of cross-listed companies, stressing the significance of national cultural characteristics. Our findings have real-world consequences for portfolio managers looking to invest in emerging markets. Investors can also assess the often overlooked impact of cultural values on corporate performance.

Why are corporations' policies driven by their country's cultural environment? This is a vital subject to solve. There are at least two channels that could be used. Managers' ideas and preferences are influenced by country culture in the first channel. National culture has been utilized in the past to explain a variety of corporate actions. Risk at work depends on impact in culture of administrative decision-making and official institutions in the country (Lee et al, 2013). Further, they show individualism has a positively significant relationship with willingness to take risks in business, while uncertainty avoidance has a negative impact.

The second channel is, national culture influences investors' attitudes and preferences, and as a result, corporate choices are made in conformity with investor preferences. Religion-induced gambling preferences have already been shown to impact institutional investors' portfolio selections. According to Kumar et al., religious beliefs influence portfolio selection and stock performance (2011). Money in low-Protestant or high-Catholic regions has greater volatility in money returns, according to Shu et al (2012). They show local religious opinions have significantly impact on investment trust decisions. Individuality is positively related to trading volume, volatility, and profit momentum, according to Chui et al. (2010), highlights a key component of the influence of culture on portfolio decisions. People in an individualistic society are more prone to self-ascription bias and overconfidence. They noted that the effect of momentum is much stronger in countries with high individual indicators.

Both of the above paths are useful for studying the influence of culture on economic achievement, but the first one is better suited for our research because we are interested in business decision-making. In this regard, our findings are comparable, they believe that national culture influences business decisions (Li et al, 2013). Their core claim is even in a globalized environment, cultural heterogeneity directly influences business risk taking through business decision-making and indirectly through corporate and national characteristics.

Developing Hypothesis

Individualism and Corporate Leverage

Individual freedom is emphasized in cultures with strong individualism, while strong group cohesion is emphasized in civilizations with weak individualism (Griffin et al., 2009). Individualist cultures encourage self-actualization and invest in the person's personality (De Mooij and Hofstede, 2010). People in collectivist societies are aware of "we" and it is important to remain calm. In addition, the identity of people is determined by social structure which they belong. Moreover, people in individualistic society pay more attention to how the talents differ from those of their peers, which leads to overconfidence and self-bias.

Individual societies encourage people to overestimate their capabilities and overestimate the accuracy of their expectations (Van Den Steen, 2004). On the other hand, people from collectivist societies have better self-monitoring skills, which reduces cognitive bias caused by overconfidence (Bias et al, 2005). The associated self-overestimation with individual societies is similar to that which has been extensively researched in behavioral finance. In other words, national culture is the driving force behind the accumulation and dissipation of influence.

H1 : Firm in an individualistic culture has positive (negative) effects on leverage ratio

Ambiguity Aversion and Corporate Leverage

People in a culture of low uncertainty avoidance has lower urgency in ambiguous situations, while people in a culture of avoidance with high uncertainty have a lower level of urgency in such situations. (Hofstede, 2001). The situation is more anxious and immediate action is taken to lower the ambiguity's level. Simply put, civilizations with high uncertainty avoid confusing environments and favor clear norms of behavior, while cultures with low uncertainty encourage novelty and change (Griffin et al, 2009). Uncertainty avoidance associated with desires such as regularity, stability, and consistency, as well as psychological qualities such as risk aversion and conservatism, which are often studied in behavioral financial economics.

Cultural determinants like individualism and uncertainty avoidance influence risk attitudes, while prospect theory reflects the behavioral qualities of risk aversion in wins and risk-taking in losses (Rieger et al, 2014). People who are less tolerant are more cautious. The essential element of uncertainty avoidance is the individual's tolerance of uncertainty-ambiguity, that means that some people in comparable situations feel more compelled to act than others. In contrast, people in cultures with high uncertainty avoidance are more concerned more about future uncertainties and therefore, even with the same level of uncertainty, we act more cautiously than people in cultures with low uncertainty avoidance.

Uncertainty avoidance is negatively correlated with business risk, according to Li et al. (2013). Given the previous explanation, we would expect that people who are averse to uncertainty will use the precautionary principle as a way to compensate for having to deal with ambiguity. Besides, managers from cultures of low uncertainty feel more easily shunned in ambiguous and uncertain circumstances, and thus need less cash to cover any potential financial shortfalls.

H2 : Ambiguity aversion has positive (negative) effects on leverage ratio.

DATA AND METHODOLOGY

S&P Capital IQ compiled the emerging market data. The sample spans the years 2011 to 2020. We omit financial enterprises because they are subject to regulatory capital requirements that may influence cash holdings, according to Bates et al. (2009). Financial subsidiaries are also excluded since they are more likely to serve as special purpose vehicles for isolating multinationals from bad debts than as actual commercial organizations (O'Donovan et al., 2019). The final sample meets the following criteria and includes 20,349 firm-year observations based on Fama-French from 22 countries: Argentina, Brazil, Chile, China, Colombia, Czech, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand, Turkey. The financial sector is not included.

This section describes how to gather data and generate variables. The Index of Individualism and Uncertainty Avoidance were derived from Hofstede's psychological assessment of IBM Employee Values. Hofstede (1980, 2001) created and extended the Individualism Index, which is based on a national average of 14 questions about IBM score employees' perceptions of work and personal life. The index is determined from the average score, or percentage, for each country's three survey questions: Stress, Job Security, and Rule Orientation. A country's individualism is assessed by its Individualism Index, and people who live in highly individualistic cultures more likely to be optimistic and overconfident (Titman et al, 2010).

In this investigation, three distinct leverage proxies were employed. Short-Term Debt Ratios are calculated by dividing total liabilities minus long-term liabilities by total assets. The Long-Term Debt Ratio is calculated by adding long-term debt to total assets. To find the Total Debt Ratio, divide the total debt by the total assets.

The effect of cultura heterogeneity on corporate leverage

The purpose of this study is to test the effect of national culture on institutional influence decisions. We present the results of our basic regression analysis model, defined as:

$$\text{Leverage}_{it} = \alpha_i + \beta_1 \text{IDV}_{it} + \beta_2 \text{UAI}_{it} + \text{Y Controls}_{it} + \varepsilon_{it}$$

The dependent variable is fixed leverage, while the independent variables of significance are two cultural traits, individuality (IDV) and uncertainty avoidance (UAI). Driving factors include market-to-book, company size, profitability, tangible assets and R&D.

We winsorize the observations to reduce the impact of outliers. Perform regression using combined *ordinary least squares* (OLS), with the statistics obtained Use robust standard error for enterprise-level clustering.

Table 1 summarizes variable's data across nations. According to the table, China, India, and South Korea have the most representation in the sample. The table also shows considerable variances in Hofstede's Index's individualism and uncertainty-avoidance. The individuality rating goes from 13 in Colombia to 80 in Hungary, whereas the uncertainty-avoidance index spans from 30 in China to 100 in Hungary (Greece). In our sample, the correlation of two cultural dimensions was 0.0174. Low associations suggest Individualism and Avoidance of Uncertainty reflect various characteristics of a country's culture.

Table 2 summarizes the national means for leverage and control variables. Short-Term Debt Ratio is 0.137, Long-Term Debt Ratio is 0.090, and overall for Total Debt Ratio is 0.230, according to the sample mean. Firm size has a sample mean of 11.647, whereas market-to-book has a mean of 8.376. The mean value of physical assets to assets is 0.232, while R&D assets to assets is 0.012.

Table 1 Summary Statistics

	Number of obs.	Number of firms	Individualism	Uncertainty Avoidance
Argentina	740	74	46	86
Brazil	4540	454	38	76
Chile	1550	155	23	86
China	59590	5959	20	30
Colombia	560	56	13	80
Czech	210	21	58	74
Greece	2080	208	35	100
Hungary	360	36	80	82
India	39580	3958	48	40
Indonesia	6800	680	14	48
Malaysia	10750	1075	26	36
Mexico	1290	129	30	82
Pakistan	3830	383	14	70
Peru	960	96	16	87
Philippines	2520	252	32	44
Poland	6960	696	60	93
Russia	2190	219	39	95
South Africa	2880	288	65	49
South Korea	24520	2452	18	85
Taiwan	19830	1983	17	69
Thailand	7860	786	20	64
Turkey	3890	389	37	85
Total	203490	20349		

This table reports summary statistics for all the countries in our sample. Individualism and Uncertainty Avoidance are Hofstede's Index

Table 3 shows the regression results and the complete set of control variables. According to data in column 1, short-term debt is positively related with Individualism and inversely related with Avoidance of Uncertainty. Individualism and Uncertainty-Avoidance factors are statistically significant at 5%. In addition, the second column results that long-term debt ratio is actively associated with individualism and avoidance of uncertainty (2). As can be seen in the second column, the total debt ratio is in favor of individualism and is negatively related to avoiding uncertainty (3). Borrowing has a strong personality. Companies in more collectivist countries have lower total debt ratios.

These findings align that businesses in conservative areas perceive greater bankruptcy costs and, as a result, employ less debt (Chui et al, 2002). Because firms place a high value on certainty, avoiding uncertainty lowers leverage and supports equity financing. Managers are still reticent to increase leverage since it has an expiry date and requires interest payments, as opposed to equity issuance, which have no obligatory duties and are permanent in nature.

Table 2 Summary of leverage and control variables

	ST Debt Ratio	LT Debt Ratio	Total Debt Ratio	Firm Size	Profit abilit y	Market to Book	Tangible Assets	R& D	GDP	GDP growth	Inflation
Argentina	.094	.116	.208	12.266	.13	7.676	.32	.002	13.46	-.356	.266
Brazil	.125	.193	.321	13.201	.081	4.707	.17	.002	7.081	.758	.057
Chile	.087	.149	.236	12.72	.076	5.426	.392	0	10.692	6.11	.026
China	.121	.055	.178	12.785	.08	10.996	.195	.022	11.867	2.133	.027
Colombia	.08	.142	.229	12.837	.082	4.266	.41	.002	11.167	6.548	.02
Czech	.114	.132	.244	11.333	.109	2.835	.137	.006	13.582	2.594	.036
Greece	.202	.171	.39	11.722	.037	2.085	.318	.007	8.454	.984	-6.917
Hungary	.082	.147	.23	11.042	.085	4.389	.212	.003	12.094	-2.166	-4.93
India	.168	.125	.301	9.921	.069	8.721	.251	.002	10.479	2.161	18.246
Indonesia	.152	.139	.294	11.697	.09	7.01	.291	0	11.657	5.083	.06
Malaysia	.108	.078	.189	11.348	.067	6.758	.251	.003	16.025	4.587	-.353
Mexico	.073	.213	.291	14.024	.097	7.172	.286	.001	14.331	2.567	-7.429
Pakistan	.201	.105	.308	10.676	.097	6.534	.41	0	7.797	4.037	-2.804
Peru	.087	.107	.194	12.603	.105	5.358	.477	.001	9.749	1.431	.037
Philippines	.106	.109	.22	11.917	.067	12.012	.239	0	9.295	3.618	.068
Poland	.108	.074	.187	9.633	.063	5.625	.193	.003	13.083	2.93	.025
Russia	.142	.172	.318	13.322	.109	3.486	.328	.002	9.634	4.949	-1.623
South Africa	.092	.129	.223	12.737	.108	3.278	.181	.002	7.522	3.019	17.748
South Korea	.153	.073	.227	12.063	.061	5.863	.215	.015	11.372	1.352	.067
Taiwan	.122	.07	.193	11.613	.061	8.897	.236	.031	8.383	.778	.051
Thailand	.145	.094	.24	11.553	.084	8.491	.311	0	9.766	2.891	5.936
Turkey	.149	.104	.254	11.594	.085	6.847	.244	.005	9.177	2.286	-3.338
Total	.137	.090	.230	11.647	.074	8.376	.232	.012	10.986	2.280	3.783

This table reports mean leverage ratios and control variables from 22 emerging markets during 2011-2020. Short-term debt ratio is total debt minus long term debt divided by total assets. Long-term debt ratio is long-term debt divided by total assets. Total debt ratio is total debt divided by total assets. Firm Size is the natural logarithm of total assets. Profitability is EBITDA divided by total assets (Castro, 2016) Market-to-book is market capitalization divided by total equity. Tangible Assets is PPE divided by total assets. R&D is research and development expenses divided by total assets.

Table 3 Regressions of leverage on national culture

	(1)	(2)	(3)
	ST Debt Ratio	LT Debt Ratio	Total Debt Ratio
Individualism	.00006 (.364)***	.00184 (0.000)***	.00176 (0.000)***
Uncertainty-Avoidance	-.00026 (0.000)***	.00013 (0.000)***	-.00015 (.016)***
Firm Size	-.00500 (0.000)***	.01011 (0.000)***	-.00015 (.667)***
Profitability	-.20728 (0.000)***	-.08189 (0.000)***	-.32478 (0.000)***
Market-to-Book	-.00069 (0.000)***	-.00044 (0.000)***	-.00103 (0.000)***
Tangible Assets	.10014 (0.000)***	.12907 (0.000)***	.23488 (0.000)***
R&D	-.28280 (0.000)***	-.14190 (0.000)***	-.42405 (0.000)***
GDP	-.00418 (0.000)***	-.00505 (0.000)***	-.00839 (0.000)***
GDP growth	.00040 (0.000)***	.00036 (0.000)***	-.00024 (.057)***
Inflation	.00001 (.143)***	.00003 (.001)***	.00003 (.030)***
_cons	.25135 (0.000)***	-.05577 (0.000)***	.26107 (0)
Observations	152308	152308	152308
r2_w	.z	.z	.z

*Robust standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

This table reports the regression results of leverage on national culture. The dependent variable is Short-term debt ratio, Long-term debt ratio and Total debt ratio. Short-term debt ratio is total debt minus long term debt divided by total assets. Long-term debt ratio is long-term debt divided by total assets. Total debt ratio is total debt divided by total assets. Firm Size is the natural logarithm of total assets. Profitability is EBITDA divided by total assets (Castro, 2016) Market-to-book is market capitalization divided by total equity. Tangible Assets is PPE divided by total assets. R&D is research and development expenses divided by total assets. We run pooled OLS regression, with t-statistics (in parentheses) computed using standard errors robust to both clustering at the firm level and heteroscedasticity.

Results from our control variable are consistent with results from three other proxies. The short-term debt ratio, the long-term debt ratio, and the total debt ratio are all negatively correlated with firm size, profitability, market-to-book, and R&D, while tangible assets have a positive correlation.

R&D of capital structure is closely related to prevention motivation, as companies with higher levels of R&D activity tend to be more uncertain about their future cash flows; As a result, multinational companies hold significant amounts of cash rather than borrow to protect against these risky cash flows.

Firm size has a negative relationship with leverage, implying that larger enterprises have more access to the capital market and are less hampered by financial limitations, resulting in lower leverage. Profitability reduces leverage, consistent with most previous findings. Pecking Order Theory (POT) would support leverage's profitability behavior across three stages of life analysis, implying that better profitability increases retained earnings and hence reduces leverage. We discover a positive relation between tangible assets and leverage ratio, implying that physical assets might be utilized as collateral to decrease distress costs and debt-related agency concerns. Despite the fact that Hofstede's cultural dimensions are well documented, they were the most influential compared to other competitive culture dimensions (Smith et al,2002). They argue the cultural norms should reflect both a country's institutional traditions and its economic circumstances. Individualism, long term orientation, and power distance all have a significant curved association with GDP, which fluctuates over time. Furthermore, religion and legal systems have a statistically greater impact on uncertainty avoidance than GDP (Tang and Koveos,2008). Our findings relate primarily to the neglected variable problem. To deal with this current problem, we used grouped least squares. Individuality and leverage have a positive correlation except for short-term debt ratio, but uncertainty avoidance and leverage have a negative relationship (except for long-term debt). As in the previous research, we incorporated GDP, GDP growth, and we also included inflation as an additional control variable for regression analysis. Using GDP and GDP growth as agents of economic development because industrialized and emerging nations may have different investment possibilities (Benkowitz et al. 2006; Eun et al. 2012). Moreover, holding money is more valuable in countries with higher levels of financial and economic development (Pinkowitz et al,2006).

Our sample period spans ten years, including the subprime mortgage crisis. Many emerging nations have experienced anomalous GDP dynamics as a result of such catastrophic shocks, and GDP growth has also had an impact on inflation. Furthermore, the volatility of global capital markets may have had a significant impact on emerging markets, limiting their cash flows. Furthermore, during financial crises, the leverage decision and business value may behave differently than during regular economic times.

Conclusion

This paper aims to assess the impact of cultural heterogeneity on firm leverage choices. We hypothesize a positive correlation between individuality and agency and a negative correlation between uncertainty and avoidance. We find that individuality is positively correlated with leverage, except for short-term debt, and that uncertainty avoidance is negatively correlated with leverage, except for long-term debt, using data from 20,349 companies from 22 nations from 2011 to 2020. We also examine the creation and removal of leverage by examining the relationship between company profitability, size, market to book, R&D, all of which are negatively related while tangible assets remain positively related.

Appendix A

Variable, data sources and definitions

Variable	Source	Definition
Firm Size	S&P Capital IQ	Natural logarithm of total assets
Tangible Assets	S&P Capital IQ	Net of Property, Plant & Equipment / total assets
GDP	IMF	GDP per capita
GDP Growth	IMF	The annual growth rate of GDP
Individualism	Hofstede's (1980, 2011)	A higher score indicates a higher degree of individualism
Inflation	IMF	Annual consumer price year-on-year changes
Long-term debt ratio	S&P Capital IQ	Long-term debt / total assets
Market-to-book	S&P Capital IQ	Market capitalization / Total equity
R&D	S&P Capital IQ	R&D expenses / total assets
Profitability	S&P Capital IQ	EBITDA / total assets
Short-term debt ratio	S&P Capital IQ	(Total debt – long-term debt) / total assets
Total debt ratio	S&P Capital IQ	Total debt / total assets
Uncertainty-avoidance	Hofstede's (1980, 2011)	A higher score indicates a higher degree of uncertainty-avoidance

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