

The effect of national culture on corporate policies: evidence from the U.S.
corporations

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Abstract

The effect of national culture on corporate policies: evidence from the U.S. multinationals

Mingyu Zhang

In this paper, we use data from the U.S. multinational corporations to test the relationship between national culture and corporate policies. We find that measures of national culture—such as power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence—have a significant decision-making impact on corporate policies such as the level of cash holding, leverage, and dividend payout ratio. Our results indicate that cultural differences matter and offer a fresh social perspective in explaining variations in major corporate policies.

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1.Introduction

Though many theories of corporate behavior assume that managers and firms are rational, the truth of the matter is that any corporate decision must fall on a group of individual humans whose decisions may be influenced by the culture in which they were raised. In this thesis we explore how culture influences corporate decision making, specifically in the areas of cash-holding, leverage, and dividend policy.

Prior research (Jensen et al., 1986) has established that managers can pursue personal benefits through a variety of corporate policies, which includes holding more liquidity, changing the level of debt, and shifting the dividend payout ratio. Some cultures (e.g. the U.S.) encourage personal achievement, while others consider shareholder interest to be more important. In some societies, people seek harmony and carefully consider outside opinions, while in others, people confidently make decisions independently. Thus, our thesis explores the behavior of the U.S. multinationals, under the influence of both national and regional culture.

Given the prominence of the United States, both in terms of its developed and advanced markets and its share of global GDP (over 15% in 2019), we focus our attention on the American multinationals. It is also important to note that U.S. corporations were the origin of many modern financial theories, and thus, American multinationals are often cited as models for corporations around the world. Therefore, our data were obtained from the U.S. multinational corporations that have subsidiaries both in and outside of the United States.

In the past few decades, researchers have begun to consider the relationship between national culture and various corporate issues. Newman and Nollen (1996) documented the correlation between management practices and national culture through the use of Hofstede's cultural dimensions and analogous management practices, finding that a work unit's financial performance is higher when

management practices in the unit are congruent with the national culture. Kwok and Tadesse (2006) argued that national culture plays a significant role, and countries characterized by higher uncertainty avoidance are more likely to have a bank-based system. These studies have already shown that national culture can substantially influence financial policies, which justifies our interest in how culture may influence firm-level decisions as well.

While the corporations in our study vary substantially in terms of market capitalization, size of operations, industries, and the home state of their headquarters, they all have international subsidiaries. As a result, all of the firms in our sample must contend with the institutional environment, cultural characteristics, and legal frameworks of both their home country as well as the countries or regions in which their subsidiaries are located. Importantly, because all of the corporations in this thesis have headquarters in the United States, they should be similarly affected by cultural and legal changes in the United States. We therefore argue that our sample offers a relatively clean test of the relationship between the cash holdings, debt level and dividend ratio of multinational corporations and the cultural characteristics of the regions in which they operate.

Our findings indicate that cultural differences matter and offer a fresh perspective in explaining the determinants of major corporate policies, including payout policy, capital structure, and cash holdings. In the following sections we provide a review of the relevant literature, our hypotheses, a summary description of our data, our results and robustness tests, and finally our conclusions.

2. Literature Review

2.1 National culture and corporate finance

Prior studies (Bae et al., 2012) have documented the relationship between national culture and finance, and these studies mostly use corporate data around the world. Therefore, the findings in prior research offer some guidance regarding where to begin our analysis. Herein, both domestic and international

cultural features were studied, especially with respect to how they influence particular leading corporate indicators. Several prior studies have examined the influence of national culture on corporation decisions to explain this relationship. For example, Li et al. (2013) reported that culture influences corporate risk-taking through managerial decision-making, which has an impact on formal national institutions. Kwok et al. (2006) indicated that countries differ in how their financial activities are organized. Some countries, such as the United Kingdom and the United States have financial systems that are dominated by stock markets, while in Japan and Europe, banks often play an essential role. They also argued that this difference comes from different national cultures. Countries characterized by higher uncertainty avoidance are more likely to have a bank-based system. Goodell et al. (2013) demonstrated that national differences in access to finance are partly determined by national culture. Based on data collected through the World Economic Forum for over 80 countries and examining certain determinants, including access to equity financing, access to loan financing, access to venture capital, and overall access to capital, they reported that reduced access to funding is related to culture proxies, such as uncertainty avoidance and masculinity. Conversely, greater access to funding was found to be positively associated with national wealth and better investor protection. These results are consistent with their earlier findings, namely that greater access to finance is also associated with higher government favoritism shown to particular companies.

2.2 National culture and cash holding

Chang and Noorbakhsh (2009) asserted that “national culture influences corporate managers’ cash holding behavior beyond the effects of corporate governance and financial market developments in each country through the perception of agency costs and the value of financial flexibility”. They employed Hofstede’s cultural dimension indices and found that corporations hold larger amounts of cash and liquid balances in countries where the people are more likely to avoid uncertainty, are more culturally masculine, or have more long-term orientation. Chen et al. (2015) also established four significant findings regarding the relationship between the level of cash holdings and national culture. Their results were robust even after controlling for governance factors, firm attributes, and the home

country's characteristics. Furthermore, Fernandes, Halit and Gonenc (2016) studied the relationship between cash holdings and the level of multinationalism for a large sample of international companies from 40 countries. More specifically, they considered both geographical and industrial diversification, which revealed a negative relationship between diversification level and cash holding. Their results were consistent with the diversification argument that multinationals' headquarters plan their investment and cash needs in an efficient way across geographically diverse operations. Ramirez et al. (2009) examined the relationship between national cultures, the multinational nature of the company and its cash holdings. They used data collected from 40 countries to test whether higher uncertainty avoidance levels result in higher levels of cash holdings and the degree to which the multinational nature of the company is positively related to their level of cash holdings.

2.3 National culture and dividend policy

Some researchers have focused on the relationship between national culture and a company's dividend payout policy. Shao, Kowk and Guedhami (2010) demonstrated this relationship using Schwartz's national cultural dimensions. They found that conservatism is positively related, and mastery is negatively related to dividend payouts. After controlling for investor protection, stock market performance, tax advantages, economic development, their results were still significant. Bae et al. (2012) documented similar results. Hofstede's cultural dimensions (i.e., uncertainty avoidance, masculinity, and long-term-orientation) remain relevant in the determination of a firm's dividend policies. They also found that national culture and investor protection independently affect a firm's dividend payouts, while they also interact with each other such that durable investor protection induces higher dividend payouts in cases with high uncertainty avoidance and very masculine cultures. The results provided strong evidence that cultural differences matter, and they offered a partial explanation for the variations in dividend policies.

2.4 Agency theory and national culture

According to previous studies, it is possible for corporate managers to obtain personal benefits by manipulating the level of cash holdings. From the seminal paper by Jensen (1986), different levels of corporate liquidity can cause agency problems between managers and shareholders. In some cases, the free cash flow may increase managers' discretion, which has the potential to harm the interests of shareholders. Nikolov et al. (2011) also modeled an agency problem directly related to corporate cash holdings. They demonstrated that there is always a desire to divert a fraction of corporate cash flow and stock as private benefits.

Although, to our knowledge, there is very little direct evidence on the relationship between leverage and national culture, there is a plethora of evidence indicating a link between leverage and agency problems. De Jong (2007) explained that the relationship between leverage and agency comes from the use of debt reduces the conflict associated with having outside equity. Smith and Warner (1979), Jensen and Meckling (1976), and Myers (1977) similarly indicated that leverage could aggravate agency conflicts, such as those associated with wealth-transfer, asset substitution, and underinvestment.

3. Hypothesis Construction

3.1 National culture and cash holdings

According to Hofstede (Hofstede, 1988) 'power distance' arises when not all individuals in a society are equal, and it expresses the attitude of culture to these power inequalities among the people. It is defined as the extent to which the less powerful members of institutions and organizations within a country accept that power is distributed unequally. In countries with high power distance scores, managers can expropriate more easily, and people in charge of power may change the rules to suit their interests and benefits, especially with cash. This leads us to our first hypothesis A1:

Hypothesis A1: Power distance (PDI) has a significant positive effect on corporation cash holding.

According to Hofstede's culture theory, "Individualism is the degree to which people tend to hold an independent rather than an interdependent self-image or sense of self-esteem". Countries with higher individualism scores focus on individual freedom, while countries with less focus on individualism tend to emphasize strong group cohesion. Based on the type of social system, people in individualistic cultures tend to distinguish themselves from others, and they are more likely to showcase their overconfidence and self-attribution biases. According to Fry and Ghosh (1980), a higher degree of individualism is associated with Western cultures, while a higher degree of collectivism is associated with Eastern cultures. Given this evidence, we assumed that there is a difference in the use of cash between individualistic cultures and non-individualistic cultures. Managers in countries with higher degrees of individualism tend to be very confident about corporation situations and tend to underestimate their need for cash compared to managers from more collectivism-based cultures. By contrast, we also noticed that managers in countries with higher degrees of collectivism tend to be more careful about public image. Holding a high level of cash and liquidity assets (short-term investments) shows the public that their corporations are in good financial shape. Accordingly, we have hypothesis A2 below:

Hypothesis A2. Individualism (IDV) has a significant negative effect on corporation cash holding.

Masculinity measures the degree of cultural toughness versus tenderness in a society. According to Hofstede (Hofstede, 1988), in more masculine countries, corporations pay more attention to results and reward individuals based on their "performance" and less on "equality", and jobs "should give more opportunities for recognition, advancement, and challenge" as compared to "more opportunities for mutual help and social contacts" in less masculine countries. Thus, in more masculine countries, we expect corporate management to be "assertive", "decisive", and/or "aggressive". It is natural to assume that managers in masculine countries are more performance oriented. When managers face new investment opportunities, they conduct studies and draw conclusions on their own. The risks they take

may be compensated by a huge reward. Therefore, these managers are more likely to hold enough liquidity at their disposal to pursue opportunities should they arise. At the same time, they do not have to submit themselves to outside scrutiny by raising external funds. Thus, hypothesis A3 was developed:

Hypothesis A3: Masculinity (MAS) has a significant positive effect on corporate cash holding.

Uncertainty avoidance (UAI) is related to the level of stress in societies when confronted with an uncertain future. Managers in countries with high levels of uncertainty avoidance tend to take less risks and perceive cash as an instrument to hedge against future undesirable states of operation. Thus, risk-averse managers should hold higher levels of liquid assets, including cash. Accordingly, hypothesis A4 was developed:

Hypothesis A4: Uncertainty avoidance (UAI) has a significant positive effect on corporation cash holding.

Long-term orientation (LTO) is related to typical values, such as persistence, ordering relationships, thrift, and having a sense of shame. We expect that investment opportunities are generally evaluated on a long-term basis. Investors have a preference for long-term profitability and value-enhancement instead of short-term rates of return. Therefore, managers do not consistently pursue short-term positive gains, and instead, they tend to focus on longer-term strategic investment opportunities to create a more stable stream of value that would last for an extended period. Furthermore, the sense of shame when they face failure or bankruptcy forces corporate managers to become more cautious and avoid risky opportunities that do not bring stable opportunities. It is clear that if managers want to offer long-term securities in every aspect, maintaining a large balance and liquid assets is always necessary. Thus, hypothesis A5 was developed:

Hypothesis A5: Long-term orientation (LTO) has a significant positive effect on corporation cash holding.

In more indulgent countries, managers are more willing to show their opinions in comparison to restrained societies. Thus, their managers have the willingness to experience, think, and behave outside of the box. Previous studies (Chudzikowski et al. 2011) also indicated that in more indulgent societies, managers are more willing to proceed with new policies and strategies, rather than just following general policies and norms existing in societies. In this way, saving money and holding a higher level of cash at hand is always necessary for further investment opportunities. Therefore, hypothesis A6 was developed:

Hypothesis A6: Indulgence (IND) has a significant positive effect on corporation cash holding.

3.2 National culture and Leverage

Chui et al. (2002) suggested that national culture affects corporate capital structures. Empirical hypotheses drawn from financial models and cross-cultural psychology were tested against a sample of over 5,000 firms across 22 countries. Their results showed that countries that place a high value on “conservative” and “mastery” tend to have lower corporate debt ratios. The results remain strong after accounting for differences in economic performance, the legal system, financial institutions, and some other well-known determinants of debt ratios. Ringov et al. (2007) investigated the effect of differences in national cultures on the social and environmental performance of corporations around the world. These researchers assumed that companies in countries with higher levels of power distance, individualism, masculinity, and uncertainty avoidance exhibit lower levels of social and environmental performance. They tested their hypotheses with data on 463 companies based in 23 North American, European, and Asian countries. The results indicated that power distance and masculinity have a significant adverse effect on corporate social and environmental performance, while cultural differences have no significant influence on individualism and uncertainty avoidance. Chui et al. (2016) documented how Schwartz’s cultural dimensions of embeddedness and mastery affect corporate cost of debt through bankruptcy risk and sensitivity to agency activity channels. They used data from

33 countries and found a robust negative relation between embeddedness and the cost of debt. The estimated relationship between mastery and the corporate cost of debt is negative and significant.

Further analyses have shown that the development of financial intermediation and the enforcement of insider trading law moderates the relationship between culture and the cost of debt. They also found that mastery is positively related to bankruptcy risk across countries as well, though it is a weak relationship. Furthermore, mastery is positively related to sensitivity to agency activity among countries with highly leveraged firms.

We anticipate that companies with higher power distance (PDI) tend to carry less debt, holding other country and firm-level factors constant. Previous evidence (Dahlstrom and Nygaard, 1995) indicated that power distance influences performance. Therefore, power distance should influence capital structure as well. Furthermore, Bjornskov (2008) declared that people on one side of the social distribution of status, wealth, and authority find it difficult to comprehend and develop trust in people at the other end, which causes a lower level of trust. In this way, we concluded that many corporations would feel uneasy about using higher amounts of leverage. Accordingly, hypothesis B1 was developed:

Hypothesis B1: Power distance (PDI) has a significant negative effect on the corporation's degree of leverage.

Some researchers have argued that individualism (IDV) is positively associated with overconfidence and self-attribution, and thus, it facilitates risk-taking, with companies in more individualistic countries adopting and employing more debt. Griffin et al. (2009) documented evidence to confirm this theory, which is that individualism is positively correlated to leverage because this culture activates independent action of individual and personal challenges. According to this theory, hypothesis B2 was developed:

Hypothesis B2. Individualism (IDV) has a significant positive effect on the corporation's degree of leverage.

Since in more masculine societies, management teams are very confident about their investment decisions, and they prefer to avoid the scrutiny of external shareholders. Thus, managers in these countries are more likely to hold a lower level of debt. Accordingly, hypothesis B3 was developed:

Hypothesis B3. Masculinity (MAS) has a significant negative effect on the corporation's degree of leverage.

The national culture 'uncertainty avoidance' relates to the extent to which a culture is comfortable with uncertainty (Hofstede, 1980a). Since financing debt increases the corporation's exposure to the risk of bankruptcy, this dimension suggests that capital structures will include relatively lower levels of debt in cultures with strong uncertainty avoidance. Accordingly, hypothesis B4 was developed:

Hypothesis B4: Uncertainty avoidance (UAI) has a significant negative effect on the corporation's degree of leverage.

Countries with higher long-term orientation (LTO) scores demonstrate their resilience in working towards long-term goals, thrift. Zheng et al. (2012) documented that companies with high LTO scores care less about adaptability. The result is that corporations avoid getting tied up with excess debt. To provide long-term security by reducing the risks, corporations should be less leveraged in societies with long-term orientation. Therefore, we anticipate that leverage decreases with long-term orientation, and hypothesis B5 was developed:

Hypothesis B5. Long-Term Orientation (LTO) has a significant negative effect on a corporation's degree of leverage.

We anticipate that corporations in countries with high indulgence scores, should employ higher levels of leverage. National culture as measured by indulgence indicates relatively free gratification of general human desires, such as enjoying life and having fun. People in such societies place a higher degree of importance on their leisure time, acting as they please, and spending money in a more frivolous manner. Using the framework above, we argue that people in countries with higher indulgence scores are more likely to have less self-control, and thus, are more likely to take on more debt to satisfy themselves in the short-term under the circumstances when their existing financial condition cannot support their extra wants. This positive relationship could be explained by the lenient regulations that are expected in societies that have a higher degree of indulgence. Hence, hypothesis B6 was developed:

Hypothesis B6: Indulgence (IND) has a significant positive effect on the corporation's degree of leverage.

3.3 National culture and dividend policy

According to previous studies, we assumed that there is a negative relationship between power distance (PDI) and dividends. Low power distance countries indicates the situation that these countries, such as Austria (38) and Sweden (31), regard equality as the basis of social order. Hence, we propose that firms in regions with more power distance should have a lower degree of dividend payout. This situation could be explained by the fact that, in higher power distance countries, there are fewer concerns about the severity of agency conflicts as people tend to be more content with their situation compared to people in other regions, thus, reducing investors' preference for dividends as a discipline mechanism. Accordingly, hypothesis C1 was developed:

Hypothesis C1: Power distance has a significant negative effect on the corporation's degree of dividend payout level.

Chui et al. (2002) found that the Hofstede's individualism index is positively related to trading volume. Van de Steen (2004) argues that when individuals are overoptimistic about their abilities, they tend to overestimate the precision of their predictions. Here we argue that such overconfident investors would be indifferent between capital gains and dividends, while less confident investors would have a preference for dividend payments. Thus, hypothesis C2 was developed:

Hypothesis C2: Individualism (IDV) has a significant negative effect on the corporation's degree of dividend payout level.

In more masculine countries, people care about their independence. Chui et al. (2002) documented that companies with more masculinity traits are reluctant to use higher amounts of debt. Instead, shareholders and managers in more masculinity countries would choose a lower dividend payout ratio and retain more cash reserves in the company. With more cash at hand, shareholders and managers enjoy greater independence. Higher cash holdings enable them to make their own decisions when new investment opportunities become available. On the other hand, managers and shareholders must turn to banks or financial markets for money when they face excellent investment opportunities but are short of cash, which is another reason for having more cash at hand. Intuitively, it is natural to feel that managers from masculine regions may require more independence and flexibility as a part of job satisfaction, which means that having more cash and liquid assets on hand allows managers to enjoy more freedom when dealing with all various unexpected operational issues and independently make non-strategic decisions. Thus, hypothesis C3 was developed:

Hypothesis C3: Masculinity has a significant negative effect on the corporation's degree of dividend payout level.

A higher level of uncertainty avoidance indicates countries have a low tolerance for chaotic situations, uncertainty, and ambiguity. Since lower level of dividends is more predictable and offers a higher level of security, shareholders and corporate insiders in higher uncertainty avoidance cultures would prefer

lower dividend payouts because it is a more accessible level to maintain. This concept works as uncertainty avoidance, which is expressed by the need for predictability (Hofstede, 1991). Furthermore, in countries with higher degrees of uncertainty avoidance, investors and corporate insiders share a culturally rooted need for certainty in the form of corporate financial stability. Lastly, as substantial cash dividend distributions reduce a firm's financial slack and flexibility, people in countries that exhibit uncertainty avoidance may regard high dividend payouts as less favorable. Accordingly, hypothesis C4 was developed:

Hypothesis C4: Uncertainty avoidance has a significant negative effect on the corporation's degree of dividend payout level.

It is conceivable that the size of dividends is low in long-term orientated countries because situations where people focus on patience, thrift, and self-reliance, managers leads to the accumulation of earnings and the payment of fewer (and smaller) dividends in favor of longer-term results.

Accordingly, hypothesis C5 was developed:

Hypothesis C5: Long-term orientation has a significant negative effect on a corporation's degree of dividend payout.

We assumed that countries with a higher level of indulgence have a higher dividend payout ratio.

However, this relationship differs when dealing with emerging or developed countries. According to Hofstede's culture theory, countries with higher levels of indulgence allow relatively free fulfillment of basic human desires. In higher indulgence countries, managers would likely regard dividends as rewards given to investors for their investment. Managers also proceed with a short-term perspective and retain lower cash for unexpected losses and financial difficulties in the future. Thus, we expect a positive relationship between the level of indulgence and dividends payout, and we developed hypothesis C6:

Hypothesis C6: Indulgence has a significant positive relationship on the corporation's level of dividend payout.

4. Data and methodology

Our dataset consisted of three major parts: (1) Hofstede culture data bank; (2) country-level control variables; and (3) firm-level control variables. Our data extends from 2000 to 2017. The reason we started from the year of 2000 is because with the introduction of SFAS 131, the reporting of segment data changed in 1997 and therefore the combining of data from prior years would bias our tests.

Moreover, since SFAS 131 allowed management greater discretion in the reporting of segments, it is possible that firms changed their reporting over time after 1997. In summary, we believe the data from 2000 onwards allow us to obtain a clean sample for segment disclosure across international segments.

Hofstede national culture index was obtained from his website (<https://www.hofstede-insights.com/product/compare-countries/>). Dependent variables and firm-level control variables were obtained from the Compustat dataset. Country-level control variables were obtained from various sources, mainly from prior studies.

4.1 Historical perspective

Hofstede's national cultural theory was born in the 1960s, and the culture scores were derived from a comprehensive research report, which involved the administration of 116,000 questionnaires. At the time of its creation most studies rarely covered more than a handful of countries which delayed the development of a truly universal theory of culture and organization. Hofstede's approach was therefore to invest in a large-scale effort that included responses from individual employees spread across 67 countries. Each such response covered about 150 questions and the questionnaires were administered in 20 different languages.

The resultant HERMES databank represents a multilevel, multi-criteria database, as responses can be analyzed across countries, between genders, among different age groups, and over time (1968 to 1972). Because Hofstede intended to focus on the analysis across many different countries, for each relevant question, a score could be assigned to each country. Their scores were (1) determined either on scale means or agreement percentages, depending on the nature of the question; (2) composed for a constant mix of seven clerical, technical, professional, and managerial occupations, identical for all countries; and (3) averaged for the 1968 and 1972 survey rounds. Of the 67 countries in the dataset, 27 countries were originally omitted from the analysis because more than half of the necessary occupational data was from fewer than eight respondents and was therefore considered 'missing.' Thus, the bulk of the data summarized is associated with 40 countries (Hofstede, 1980a). Later, Hofstede (1982) added countries for which sufficient data were available for at least two occupational groups, which increased the database to 50 countries. Finally, the data were also included from three multi-country regions (i.e., Arab speaking countries, East Africa, and West Africa) for which the number of available responses from the individual countries was insufficient.

From the first 40 countries, the relationships among the country scores on the 32 questions were studied, which represents an ecological analysis, namely the data from cases in 40 countries instead of 116,000 individuals (Hofstede, 1984). As noted by Robinson (1950), ecological correlations among variables are mathematically different from individual associations and thus should be interpreted differently.

In 1992, a new variable (Long-term orientation) was added, which is based on answers to the Chinese Value Survey (CVS) obtained from student samples in 23 societies around 1985 and developed by Michael H. Bond based on suggestions by Chinese scholars. Michael Minkov coined the term "culture perspective indulgence" for identifying specific societal differences revealed by the World Values Survey (WVS). At the same time, it is not covered by Hofstede's other dimensions. The data is based on 1995-2004 WVS for representative samples of populations in 93 countries. In the initial phase of the

research, most of the variance in the countries' mean scores can be explained by four basic cultural dimensions, including power distance, uncertainty avoidance, individualism and masculinity.

4.2 National culture data

At present, the Hofstede national culture index has six perspectives to measure national culture 1) Power Distance; 2) Individualism; 3) Masculinity; 4) Uncertainty Avoidance; 5) Long-term orientation and 6) Indulgence. Power distance expresses the degree to which less powerful members of a society accept the unequal distribution of power. The fundamental issue is determining how a society handles inequalities among people. Individualism explores the degree to which people in a society are integrated into groups. Countries with high scores in individualism have loose ties among people and groups. Masculinity is defined as “a preference in society for achievement, heroism, assertiveness, and material rewards for success”, while its contrasting counterpart represents “a preference for cooperation, modesty, caring for the weak and quality for life”. Uncertainty avoidance expresses the degree to which members of a society do not feel comfortable with uncertainty and ambiguity. Long-term orientation associates “the connection of the past with the current and future actions”. Societies with a high degree in this measurement view adaption and circumstantial, pragmatic problem-solving as a necessity. Indulgence is defined as “a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun”, which is an indication of the degree of freedom that societal norms give to citizens to fulfill their human desires.

Hofstede's academic website was used to obtain our national culture scores.¹ It is important to note that by definition culture is set of behaviors that are slow to change over time or conditions. Thus national cultures remain largely time-invariant. In cases where there was some time variation we elect to use the most recent culture score for our analysis.

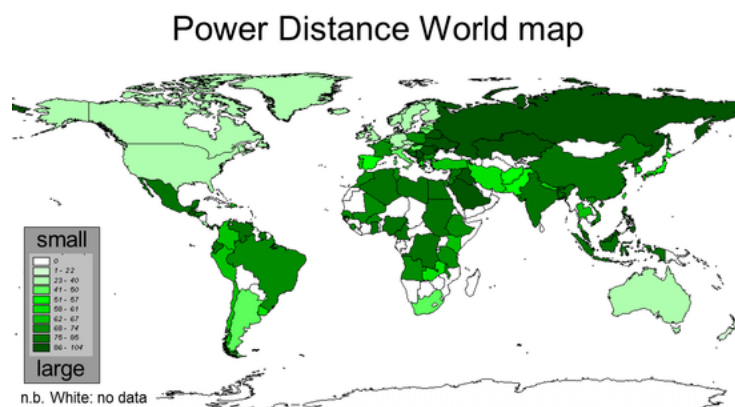
We summarize the distributional properties of these cross sectional measures in Section A of Table 3. For example, power distance included 93,920 observations, and the mean was 47.78; individualism

¹ <https://geerthofstede.com/>

included 93,920 observations, and the mean was 65.54; masculinity included 93,920 observations, and the mean was 56.44; uncertainty avoidance included 93,920 observations, and the mean was 52.81; long-term orientation included 93,753 observations, and the mean was 41.58; and indulgence included 93,753 observations, and the mean was 54.22.

Though the Hofstede national culture scores were collected decades ago, we do not regard this as a weakness since national culture tend to be stable over times. From another perspective, the use of Hofstede's national culture by prior studies (Kwok & Tadesse, 2006; Geiger et al., 2006) proved the reasonability of Hofstede culture theory.

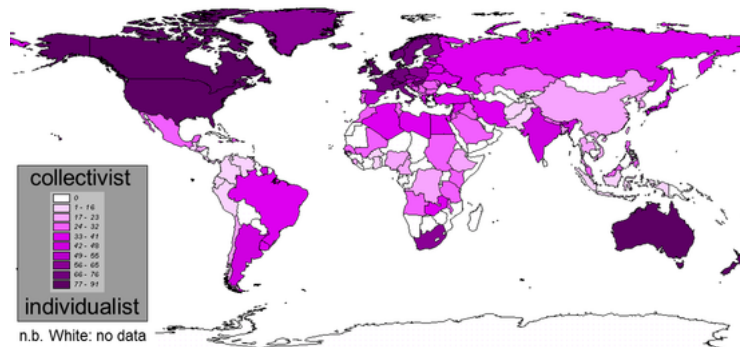
The following six maps illustrate the culture score distribution around the world. In each case the darker colors on the global maps indicate a higher measurement of the appropriate cultural dimension. (<https://geerthofstede.com/culture-geert-hofstede-gert-jan-hofstede/6d-model-of-national-culture/>)



(Map 1)

In the power distance world map, Europe and North America, the power distance is smaller. While in regions near Russia, China, and India, the power distance is larger.

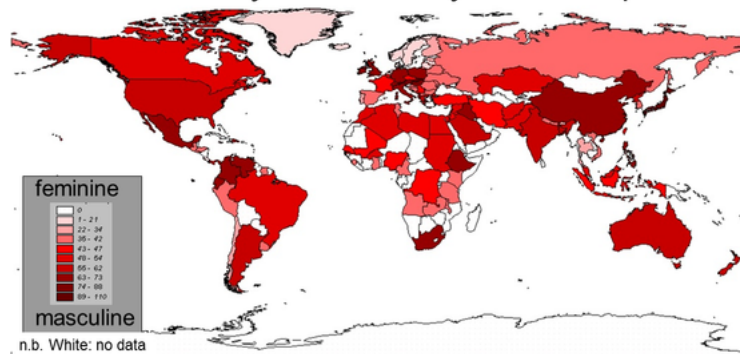
Collectivism – Individualism World map



(Map 2)

As shown in Map 2, the dominance of individualism in western countries including Australia, the United Kingdom, the United States, and Canada is evident. By contrast, the individualism score is relatively lower in eastern countries, such as China, South Korea, these societies are more prone to be collectivism oriented. Other regions, such as India, Russia, and parts of Africa and South America have individualism scores that are in the middle of the range.

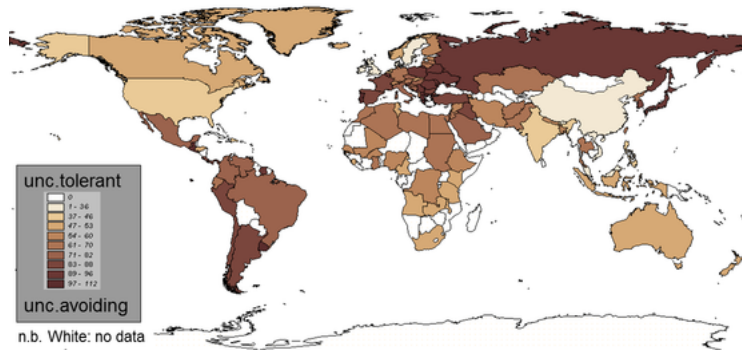
Femininity - Masculinity World map



(Map 3)

As shown in Map 3, the distribution of femininity and masculinity also varies throughout the world. China, the United Kingdom, and eastern Europe have higher masculinity scores. While in North American, the masculinity score is relatively higher.

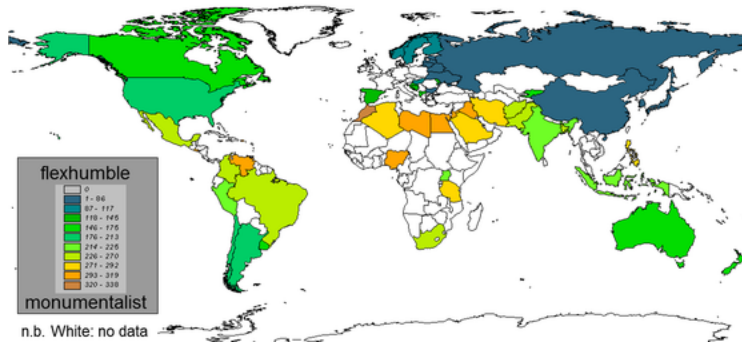
Uncertainty Avoidance World map



(Map 4)

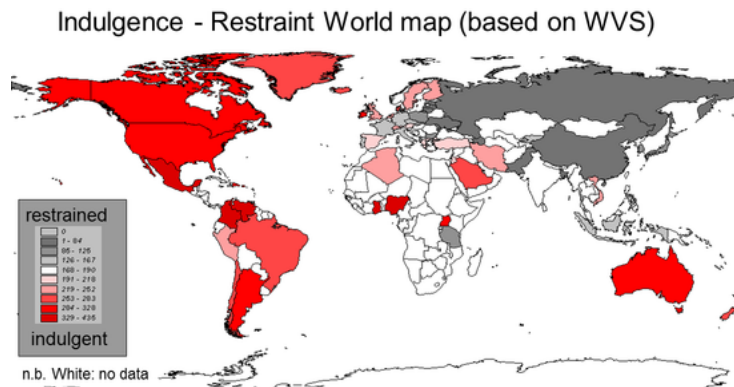
As shown in Map 4, uncertainty avoidance scores in regions such as Russia, Europe and most of the South America are relatively high, while in other parts of the world, the uncertainty avoidance scores are lower.

Short-term orientation (Monumentalism) – Long-term orientation (Flexhumility) World map (based on WVS)



(Map 5)

As shown in Map 5, China and Russia have the highest scores among significant economies with respect to long-term orientation, while traditional western countries have higher scores in short-term orientations.



(Map 6)

As shown in Map 6, levels of indulgence and restrained cultures vary around the world. All countries in North America, large parts of South America, Australia, and New Zealand have higher indulgence culture scores. In most of Europe, Russia, China, Korea, and Japan, indulgence culture is lower.

4.3 Country-level data

Given prior evidence that has indicated country-level governance institutions affect corporate policies (Carleton, Nelson & Weisbach, 1998), in our models, we controlled for various aspects of the institutional environment to estimate the explanatory power of social culture. We controlled for the rights of investors with the anti-director score (ADS) as defined by La Porta et al. (1998) as a proxy for investor protection. It measures how strongly the legal systems favor minority shareholders against managers or dominant shareholders in the corporate decision-making process. The tax evasion (TAXEV) score measures the violation of tax law, as noted by Sandmo (2005), whereby the taxpayer refrains from reporting income which is, in principle, taxable. Tax evasion (TAXEV) involves hiding the real value of a legal transaction to avoid fiscal liability, while corruption involves a transaction in which one agent typically pays a sum of money or performs a service in exchange for an illicit act by a public official (Andreoni, Erard, & Feinstein, 1998). The corruption perception index (COR) is an index published annually, which is defined as “the misuse of public power for private benefit”. Researchers have found a correlation between a higher COR (indicating lower corruption) and higher long-term economic growth and also a power-law dependence linking higher COR scores to higher

rates of foreign investment in a country. Xu and Li (2018) used the corruption perception index (COR) to investigate the impact of corruption on corporate cash holding in China, and they concluded that companies located in more corrupt regions hold less cash in general. Expropriation risk (EXP) includes all discriminatory measures taken by a host government that deprive investors of their investment without providing adequate compensation. GDP per capita (GDPC) is obtained by dividing a country's total GDP by the total national population. According to Pinkowitz et al. (2006), in countries with better economic development, cash holdings are valued more, while in less developed countries, cash is valued less. Thus, we added GDP per capita as our country-level control variable to control for the uneven development of observations in our data.

4.4 Firm-level data

Firm-level data were retrieved from the 'COMPUSTAT' database provided by the Wharton Research Data Service (WRDS). Observations in the financial industry were excluded from our dataset. In summary, we used observations by companies located in over 1,200 countries and regions.

As we established in the introduction, managers would like to pursue their self-interests by manipulating the amounts of corporate cash holdings, degree of leverage, and dividends. These actions might be affected by social or cultural factors depending on their locations. Thus, we used the amount of cash holding, degree of leverage, and dividend payout ratio to present our dependent variables. Cash (CASH) holdings are calculated by the sum of cash and short-term investments over total assets. The degree of leverage (LEV) is presented by leverage ratio, which is calculated by total liabilities over total assets. The dividend payout ratio (DVT) is calculated by scaling dividends by dividend plus retained earnings. Other control variables include: Firm size (SIZE) is calculated as the natural logarithm of the dollar value of total assets. Profitability (ROA) is calculated by net income divided over total assets. Growth (GROWTH) is calculated by the logarithm of sales growth over of its value from the previous year. Tangibility (TANGI) is an index measured by the tangibility over total assets. We used 'EMP' to represent the original number of corporate employees.

4.5 Data process

Segments are reported by firms on the basis of geographical areas. Sometimes these are countries but at times they are regions that include multiple countries. In order to make such regional data compatible with country-level cultural scores, we have first computed regional cultural scores as follows.

If the region in which a segment operates equals a single country, we use the country score directly. If the region includes several (N) countries, we compute the implied scores as follows. In practice we use a regional GDP weighted average of culture. The specific computation function (1) to calculate the share of a specific country's GDP to the sum of the GDP of all countries in that region.

$$f(x) = \frac{\text{GDP}(\text{country } i)}{\sum_i^N \text{GDP}} \quad (1)$$

Then, we use function (2) to compute the regional component's scores.

$$g(f(x)) = f(x) * \text{country cultural score} \quad (2)$$

Finally, we compute the regional culture scores that can be applied to specific firm segments by aggregating these values across all countries in that region:

$$\text{Regional culture score} = \sum g(f(x)) \quad (3)$$

Once we have country or regional measures of culture we next compute the culture of the firm as our analysis will be done at the firm level. To do this we follow a similar methodology as computing weighted regional culture but instead compute sales-weighted corporate culture. Our logic is that segments of firms that produce an outsized share of corporate sales would likely have a dominating influence on corporate decision making and likely involve more corporate employees. To the degree that this measure is not well specified it will work against us finding support for our alternative hypotheses and bias against significant results. Thus, any results we do find are likely to be understated

rather than overstated in light of our somewhat crude measurement of corporate culture. Therefore, we computed firm observations using sales weights of each segment in a similar manner.

$$y(x) = \frac{\text{segment sales}}{\sum \text{segment sales}} \quad (4)$$

$$t(y(x)) = y(x) * \text{Regional culture score} \quad (5)$$

Finally, the cultural score applicable to a specific firm is the sum of all such component score summed across all segments:

$$\text{Firm – level score} = \sum t(y(x)) \quad (6)$$

4.6 Summary statistics

Table 3 provides descriptive statistics for our main regression. As shown in Section A of table 3, the mean for national culture power distance was found to be 41.37, for individualism it was 63.56, for masculinity it was 52.31, for uncertainty avoidance it was 43.69, for long-term orientation it was 34.47, and for indulgence is 50.38.

As shown in Section B of table 3, anti-director score (ADS), there are 21,619 observation and the mean were 2.93. For tax evasion (TAXEV) had 23,204 observations and the mean were 4.56 For corruption (COR), there are 23,204 observations and the mean for the corruption was 5.45. For expropriation (EXP), there are 23,204 observations in the dataset, the mean for expropriation was 1.33. For GDP per capita (GDPC), there are 23,204 observations in the dataset and the mean for GDP per capita was 4.12.

Section C of Table 3 demonstrates the firm-level data variables. There were 23,204 observations for variable GROWTH and the mean value was found to be 1.05. Firm size (SIZE) included 23.204

observations in the dataset, and the mean value was 11.49. The variable ROA, there were 23,204 observations, and the mean value was -0.04. For variable tangibility (TANGI), there were 23,204 observations and the average value was 1,970.84. For the variable number of employees (EMP), there were 23,204 observations and the mean value is 19.76. For Dividend/EBIT (DIV), it has 23,204 observations with a mean value of 0.15.

[Table 3 insert here]

Table 4 shows that the manufacturing industry and service industries are the two biggest components of our data, while certain industries, such as ‘culture, forestry and fisheries’, ‘construction and retail trade’, do not play a significant role in the dataset.

[Table 4 insert here]

The correlation matrix is presented in Table 5, which indicates that the Hofstede culture indices are correlated with each other, indicating the potential existence of multicollinearity.

[Table 5 insert here]

4.7 Methodology

The final dataset was in the form of panel data and industry fixed effects (2-digit SIC code) were included for all presented regression results. OLS regression models were used to establish relationships between the variables. In all cases our regressions were processed at the firm level.

In our main test section, we have baseline regression and interaction regression for each dependent variable and all of them are regressed on firm-level. In these regressions, all the corporations have at least subsidiaries in the United States and abroad. In regression 7, 9 and 11, where they are interactions,

the control variable ‘anti-director score’ is replaced by a dummy variable defined as follows: it equals 1 if the corporation’s anti-director score is higher than 2.75 (the median) and equals 0 otherwise.

$$\begin{aligned}
\text{CASH} = & \alpha + \beta_1 * \text{POWER DISTANCE} + \beta_2 * \text{INDIVIDUALISM} + \beta_3 * \text{MASCULINITY} + \beta_4 \\
& * \text{UNCERTAINTY AVOIDANCE} + \beta_5 * \text{LONG TERM ORIENTATION} + \beta_6 \\
& * \text{INDULGENCE} + \beta_7 * \text{ADS} + \beta_8 * \text{TAXEV} + \beta_9 * \text{COR} + \beta_{10} * \text{EXP} + \beta_{11} \\
& * \text{SIZE}(\ln \text{TOTAL ASSETS}) + \beta_{12} * \text{ROA} + \beta_{13} * \text{GROWTH} \left(\frac{\text{SALE}_t}{\text{SALE}_{t-1}} \right) + \beta_{14} \\
& * \text{LEV} \left(\frac{\text{DEBT}}{\text{ASSETS}} \right) + \beta_{15} * \text{TANGI} \left(\frac{\text{TANGIBLE}}{\text{TOTAL ASSETS}} \right) + \beta_{16} * \text{EMP} + \beta_{17} * \text{DIV} + \beta_{18} \\
& * \text{GDPC} + \varepsilon.
\end{aligned}
\tag{7}$$

$$\begin{aligned}
\text{LEVERAGE} = & \alpha + \beta_1 * \text{POWER DISTANCE} + \beta_2 * \text{INDIVIDUALISM} + \beta_3 * \text{MASCULINITY} + \beta_4 \\
& * \text{UNCERTAINTY AVOIDANCE} + \beta_5 * \text{LONG TERM ORIENTATION} + \beta_6 \\
& * \text{INDULGENCE} + \beta_7 * \text{CASH} \left(\frac{\text{CASH \& ST INVESTMENTS}}{\text{TOTAL ASSETS}} \right) + \beta_8 * \text{ADS} + \beta_9 \\
& * \text{TAXEV} + \beta_{10} * \text{COR} + \beta_{11} * \text{EXP} + \beta_{12} * \text{SIZE}(\ln \text{TOTAL ASSETS}) + \beta_{13} * \text{ROA} \\
& + \beta_{14} * \text{GROWTH} \left(\frac{\text{SALE}_t}{\text{SALE}_{t-1}} \right) + \beta_{15} * \text{TANGI} \left(\frac{\text{TANGIBLE}}{\text{TOTAL ASSETS}} \right) + \beta_{16} * \text{EMP} + \beta_{17} \\
& * \text{DIV} + \beta_{18} * \text{GDPC} + \varepsilon
\end{aligned}
\tag{8}$$

$$\begin{aligned}
\text{DIVIDEND} = & \alpha + \beta_1 * \text{POWER DISTANCE} + \beta_2 * \text{INDIVIDUALISM} + \beta_3 * \text{MASCULINITY} + \beta_4 \\
& * \text{UNCERTAINTY AVOIDANCE} + \beta_5 * \text{LONG TERM ORIENTATION} + \beta_6 \\
& * \text{INDULGENCE} + \beta_7 * \text{CASH} \left(\frac{\text{CASH \& ST INVESTMENTS}}{\text{TOTAL ASSETS}} \right) + \beta_8 * \text{ADS} + \beta_9 \\
& * \text{TAXEV} + \beta_{10} * \text{COR} + \beta_{11} * \text{EXP} + \beta_{12} * \text{SIZE}(\ln \text{TOTAL ASSETS}) + \beta_{13} * \text{ROA} \\
& + \beta_{14} * \text{GROWTH} \left(\frac{\text{SALE}_t}{\text{SALE}_{t-1}} \right) + \beta_{15} * \text{LEV}(\text{DEBT}) + \beta_{16} * \text{TANGI} \left(\frac{\text{TANGIBLE}}{\text{TOTAL ASSETS}} \right) \\
& + \beta_{17} * \text{EMP} + \beta_{18} * \text{GDPC} + \varepsilon
\end{aligned}
\tag{9}$$

5. Results

5.1 National culture and cash holdings

5.1.1 Baseline regression

Table 6 presents the relationship between national culture (i.e., power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) and the level of corporate cash holdings.

As shown in column (1), a positive relationship was found between power distance and the dependent variable, level of cash holdings. The coefficient estimate was found to be 0.249, with a significance level of 1%. This result is line with our hypothesis expectation, which can be explained using the theory that managers may change the rules to suit their own interests in countries with more power distance countries. Column (2) presents the relationship between individualism and a corporations' level of cash holdings, the coefficient estimate is -0.204 and it is significant at 1% level. This result is consistent with our expectation in hypothesis A2, as managers in more individualistic countries have more confidence about current corporation situations, and they are more likely to underestimate their needs for cash compared to managers in more collectivist countries. From another perspective, in more individualistic countries, managers do not feel high pressure to hold an excellent public image compared to their colleagues in collectivist societies. Thus, holding more cash is not particularly attractive to managers in individualistic country. In column (3), we look at the relationship between masculinity and the amount of cash holdings, the coefficient estimate of this relationship is 0.112 and significant at the 1% level. This result also confirms our hypothesis regarding being compensated by huge awards. Besides, masculine country managers believe that with their own talents and judgments, they have enough resources to lead to excellent investment and reinvestment opportunities. Thus, holding more cash and high liquidity on hand will help them to achieve their targets better. Column (4)

shows a significantly positive relationship (with the coefficient estimate 0.0795) between national culture uncertainty avoidance and cash holdings. This relationship is only significant at 10%. As in societies that exhibit more uncertainty avoidance, managers are generally not risk-takers, and they hold more cash and maintain higher levels of liquidity by using hedging instruments. In column (5), we look at the relationship between long-term orientation and cash holdings. There is a positive relationship, with a significance level of 1% and a coefficient estimate of 0.198. People in more long-term oriented countries have a preference for long-term profitability, and management in these areas is more likely to pursue value-enhancing projects rather than a higher short-term rate of return compared to management in countries that are not as long-term-oriented. Therefore, we concluded that managers in long-term oriented countries look at longer-term strategic investment opportunities to create a more robust value stream. Besides, running corporations in the long-term, managers have to pay attention to their public image and maintaining more cash on hand shows that their companies are in excellent condition. Column (6) shows a significant negative relationship between national culture indulgence and corporate cash holdings. The coefficient estimate is -0.153. This result does not agree with our hypothesis, indicating that in indulgent country subsidiaries, the level of cash holding is actually lower.

In column (7), we put all six Hofstede national cultural dimensions in the same regression model. The results remain consistent for most of the national culture measurements with those cooperated above.

[Table 6 insert here]

5.1.2 The interaction with shareholder protection (cash holding)

In addition to examining the main effects, we also analyze the interaction effects between the national culture dimensions and shareholder protection levels. We use anti-director score (ADS) as measure of a shareholder protection. The purpose of this analysis is to check if certain cultures affect a firm's agency costs for holding cash. This is because a country with a strong protection of investors, expected agency costs between outsiders and insiders will be lower and external finance will be easier to attain. Dittmar

et al. (2007) focus on shareholder protection, found a negative relation between shareholder protection and cash holdings.

We present the results in Table 7. The positive influence of masculinity is pronounced in countries with lower shareholder protection level. The positive influence of uncertainty avoidance is more pronounced in countries with lower shareholder protection level. The positive influence of long-term orientation is more pronounced in countries with higher shareholder protection level. And the negative influence of indulgence is more pronounced in countries with better shareholder protection. The coefficient estimate for power distance and individualism are not significant.

[Table 7 insert here]

5.2 National culture and Leverage

5.2.1 Baseline regression

In Table 8, we study the relationship between national culture (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) and leverage level. In column (1), the relationship between power distance and the degree of leverage is significantly negative (-0.127 at the 1% level). This result indicates that with higher power distance, fewer liabilities would be necessary. This is caused by the fact that in more power distance countries, there is a lower degree of trust between the parties, which results in a lower level of leverage. In column (2), the coefficient estimate is 0.0844 and it is significant at the 1% level. In our earlier sections, we provided evidence to support this hypothesis. From the nature of national culture individualism, it is the factor that encourages management to borrow more debt and create more value through investing more in projects. In column (3), we include national culture masculinity to test its effect on the leverage of corporations. There is a negative (-0.0956) relationship between them, and the reason for this relationship comes from the fact that in more masculine societies, managers are very careful about their

public image, and they seek to maintain a good public image, while the influence of national culture-masculinity results in a preference to maintain lower leverage. In column (4), the coefficient estimate between uncertainty avoidance and leverage is -0.0856 and it is significant only at 1%, which is in consistent with that financing assets with debt increasing the firm's exposure to the risk of bankruptcy. In column (5), we observe that there is a significant negative relationship (-0.0517) between long-term orientation and leverage. In a society with a preference for short-term returns, people can achieve short-term goals by using external financing. On the other hand, in long-term oriented countries, managers do not prefer to engage in more hedging activities. They are not encouraged to borrow more from external resources to achieve higher short-term returns, though a stable and consistent reasonable leverage level is always welcomed. In column (6), we observe a negative (-0.0483) relationship between national culture indulgence. This relationship, however, is not significant. As indicated previously, managers in countries with high indulgence scores tend to have less self-control and therefore, taking on more liabilities or debt is more helpful to achieve their personal or corporate goals. By contrast, in those countries with a more lenient regulation can also explain the positive relationship.

[Table 8 insert here]

5.2.2 The interaction with shareholder protection (leverage)

We still use interact national culture measurements with shareholder protection (ADS). The purpose of this section is to check with the influence of shareholder protection, will national culture play a different role in deciding the leverage level.

The positive influence of power distance is more pronounced in countries with lower shareholder protection. The negative influence of uncertainty avoidance is more pronounced in countries with better shareholder protection. The positive influence of long-term orientation is more pronounced in countries with lower shareholder protection. And the negative influence of indulgence is more pronounced in countries with positive shareholder protection. Results for individualism and masculinity are not significant.

[Table 9 insert here]

5.3 National culture and dividend policy

5.3.1 Baseline regression

Table 10 shows the relationship between national culture (i.e., power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) and a company's dividend payout ratio. Column (1) depicts a negative relationship between PDI and the dependent variable. The coefficient estimate for this relationship is -0.00294, although the coefficient estimate is not significant. This could be explained by the fact that, for a society with a higher level of power distance, there are fewer concerns about the severity of agency conflicts and thus reduces investors' preference for dividends as a discipline mechanism. In column (2), we tested the relationship between IDV and dividend payout ratio and the relation is negative (-0.0195 at 1%) according to the result. In column (3), the coefficient estimate between masculinity and dividend payout ratio is -0.0365 and it is significant at a 1% level. This result is beyond our previous expectations well. In column (4), we observe a positive relation, which is not assumed. In column (5), the coefficient estimate is 0.00591 with the significance level at 5%. In column (6), the result shows that the coefficient estimate between indulgence and dividend payout ratio is positive (0.00182) and not significant, as managers in more indulgent countries would regard dividends to reward investors for their investment. They often prefer a higher level of dividend payout.

[Table 10 insert here]

5.3.2 The interaction with shareholder protection (dividend policy)

According to the outcome model of dividends. Corporate governed quality should be positively related to dividend since better governed firms offer stronger protection to their shareholders. Shareholders will pressure managers rather than using the excess cash for their own private benefits.

The results are represented in Table 11. The positive influence of power distance is more pronounced with lower share holder protection. The negative effect of individualism is more pronounced with better shareholder protection. The negative effect of masculinity is more pronounced with better shareholder protection. The positive effect of long-term orientation is more pronounced with lower shareholder protection level. The negative effect of indulgence is more pronounced with better shareholder protection level. the coefficient estimate for uncertainty avoidance interactive variables is not significant.

[Table 11 insert here]

In conclusion, from our baseline regression result, the national culture score indeed plays a role in determining some corporate policies for the U.S. multinationals. More specific, the relationship between national culture and cash holding level and leverage is more stable, on the contrary, most of national culture variables does not have an expected relationship with dividend payout ratio. As the national culture is very important in determining the cash holding and leverage, and does have an effect on agency problem, more attention should be put on to the national culture when considering cash holding and leverage. Furthermore, for national culture variables PDI, IDV, MAS, and LTO, they all have expected results across all three regressions models. LTO does not show a preferred result in dividend payout ratio regression. IND does not have preferred results across all three regression models. Therefore, when looking at the national cultures' influence on corporate policies, we should focus more on the first five culture variables.

From the interactive regression model results (Table 7, 9, 11), we observed anti-director score (ADS) play a different role in the relationship between national culture and corporate policies. For the relationship between national culture variables and cash holding level, after we consider the effect of shareholder protection, the evidence points out that the national culture variables are more or less

effected by different level of shareholder protection, which suggests that we should put attention on shareholder protection and regard it another important factor for further study.

In summary, we conclude that national culture does affect corporate policies for U.S. corporations, however, for different dependent variables, the influence varies, for example, the national culture variables contribute a more stable influence on cash holding and leverage policies according to our hypotheses. When we put shareholder protection into consideration, different level of shareholder protection also influences the power of different national culture variables.

6. Robustness test

In this section, we also include corporations with only one U.S. segment to test the robustness of the relationship between national culture and corporate policies. The dataset includes 11,597 observations from 2000 to 2017.

In Table 12, we studied the relationship between national culture and cash holding with the U.S. corporations. For national culture variables, PDI has a positive coefficient estimate on the relationship between PDI and cash holding, however, this relationship is not significant. IDV also has a desired result, it has a negative coefficient estimate and significant at 1% level. UAI and LTO have desired positive results, they have positive effect on the level of cash holding. MAS and IND do not have desired results.

In Table 13, the relationship between national culture and leverage was studied. For PDI, IDV, LTO, and IND, they all have preferred results as we have hypothesized earlier. While for MAS and UAI, the results are not in line with our earlier hypotheses.

In Table 14, we study the relationship between national culture and dividend payout ratio with the U.S. corporations. The national culture variables IDV, UAI, and IND have preferred results, for IDV and UAI, the results are significant at 1% level, while not significant for IND. For PDI, MAS, and LTO, the results are not preferred.

From the robustness results above, we concluded that compared to the U.S. multinational corporations, single segment U.S. corporations are less affected by different national culture variables. Furthermore, the relationships are not stable for many variables.

7. Summary and conclusion

Our article provides new insights regarding corporate policies by introducing Hofstede's six cultural dimensions (i.e., power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) to the analysis of corporate cash holdings, level of leverage, and the dividend payout ratio. The influence of culture must be acknowledged in all aspects of human life, and our results revealed that culture's role reaches into the realm of corporate cash holdings, leverage, and dividends. Though previous authors have focused on the relationship between corporate governance and corporate policies, we contribute by investigating the role of a country's cultural differences to determine their effect on corporate policies across U.S. multinational firms.

Employing Hofstede's six cultural dimensions, the following results were found. First, level of cash holding was found to be positively affected by power distance, masculinity, uncertainty avoidance, and long-term orientation. Furthermore, it was negatively related to individualism and indulgence. We also found that shareholder protection also plays an important role in affecting the relationship between national culture and cash holding.

Secondly, the degree of leverage was found to be positively affected by individualism, and indulgence, while negatively affected by power distance, masculinity, uncertainty avoidance, and long-term orientation. From the interaction regression model, the variable shareholder protection together with national culture affect the leverage in a different way.

Thirdly, the dividend payout ratio was found to be positively affected by individualism, uncertainty avoidance, and indulgence, and, it negatively related by power distance, masculinity, and long-term orientation. Shareholder protection with national culture also effect the dividend policy.

Finally, after we controlled for another governance factor and other firm- and country-specific factors, most of our cultural values continued to have a statistically significant non-zero relation to corporate policies. Our findings support the notion that cultural differences across countries are important, and they provide an explanation for variation in different policies in companies across the country. Our results are subject to certain caveats. Other country-level factors could affect the results as well. For example, an unstable banking system can lead to higher cash holdings and this could be a confounding factor. However, an exploration of such a wide range of factors is beyond the scope of this study. Further research may be warranted into considering the interaction between banking and legal systems and the contribution of culture beyond those considerations.

Overall, our results provide significant evidence regarding the important role that cultural dimensions play in determining a company's level of cash holdings, leverage, and dividend payout ratio, thus emphasizing the need to incorporate culture into the analyses of corporate policy decisions.

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Table 1 Variable Definitions

PDI	Power distance: the extent to which the less powerful members of organizations and institutions assept and expect that power is distributed unequally
IDV	Individualism: the degree to which people in a society are integrated into groups
MAS	Masculinity: a preference in a society for achievement, heroism, assertiveness and material rewards for success
UAI	Uncertainty avoidance: a society's tolerance for ambiguity
LTO	Long-term-orientation: it associates with the connection of the past with the current and future actions and challenges
IND	Indulgence: the dimension refers to the degree of freedom that societal norms give to citizens in fulfilling their human desires
TAXEV	Assessment of the prevalence of tax evasion. Higher scores indicate higher tax evasion. World Economic Forum (2003)
ADS	An index aggregating to the shareholder rights (La Porta et al., 2003)
GDPC	The GDP per capita in a country or region
COR	The misuse of public power for private benefit
EXP	Encompasses all discriminatory measures taken by a host government which deprive the investor of its investment without any adequate compensation; for the purpose of analyzing the expropriation risk, events of embargo, change of regime and denial of justice are included
IPO	The accumulated years from IPO year until 2017
SIZE	Logarithm to the base of total assets
ROA	Return on Assets: profits over total assets
GROWTH	Percentages changes of sales of observation year to the previous one
EMP	Total number of employees
DIV	Dividend over EBIT of observation year
TANGI	Tangible assets over total assets
CASH	Total cash and liquidity assets over total assets
LEV	Total debt over total assets

Note: firm-level financial data are from Compustat. Country-level data are from various sources, including previous papers.

Table 2 Major Region Components

Africa	Egypt, Ghana, Kenya, Malawi, Morocco, Nigeria, South Africa
Middle East	Egypt, Israel, Jordan, Lebanon, Turkey, U.A.E.
Med.	Portugal, Spain, France, Italy, Slovenia, Croatia, Greece, Turkey, Lebanon, Israel, Egypt, Morocco
Asia	China, India, Indonesia, Pakistan, Bangladesh, Japan, Philippines, Viet Nam, Turkey, Thailand, South Korea, Malaysia, Sri Lanka, U.A.E., Israel, Kong (P.R. China), Jordan, Singapore, Lebanon
Latin America	Brazil, Mexico, Colombia, Argentina, Peru, Venezuela, Chile, Ecuador
Asia Pacific	Bangladesh, China, India, Indonesia, Japan, Malaysia, South Korea, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam, Australia, New Zealand,
Oceania	Australia, New Zealand
South America	Brazil, Colombia, Argentina, Peru, Venezuela, Chile, Ecuador
Europe	Austria, Belgium, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom
Indian Subcontinent	India, Pakistan, Bangladesh, Sri Lanka,
Americas	United States, Brazil, Mexico, Colombia, Argentina, Canada, Peru, Venezuela, Chile, Ecuador,
Far East	Russia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam, China, Hong Kong (P.R. China), Japan, South Korea
Pacific Rim	Australia, New Zealand, Canada, United States, Mexico, Chile, Colombia, Ecuador, Peru, China, Japan, Indonesia, South Korea, Malaysia, Russia, Philippines, Singapore, Viet Nam
South East Asia	Indonesia, Philippines, Singapore, Thailand, Viet Nam
Central Europe	Switzerland, Germany, Austria, Slovenia, Czech, Poland, Hungary, Croatia
East Europe	Russia, Lithuania, Latvia, Estonia, Romania, Ukraine
Commonwealth	Malawi, Nigeria, Zambia, India, Malaysia, Pakistan, Singapore, Sri Lanka, Canada, Jamaica, Trinidad and Tobago, United Kingdom, Australia
Scandinavia	Denmark, Norway, Sweden, Finland, Iceland
East Asia	China, Japan, South Korea, Hong Kong (P.R. China)
Eurozone	Austria, Belgium, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Slovakia, Spain
Europe Union	Austria, Belgium, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden, United Kingdom

Table 3 Data Description

All firm-level and country-level variables with their important statistical summaries, including number of observations (N), mean, standard deviation (SD), min and max.

VARIABLES	(1) N	(2) Mean	(3) Variance	(4) Min	(5) Max
SECTION A					
PDI	23,204	41.37	13.93	0	100
IDV	23,204	63.56	21.61	0	99.31
MAS	23,204	52.31	11.24	0	95
UAI	23,204	43.69	12.72	0	99
LTO	23,204	34.47	17.93	0	100
IND	23,204	50.38	15.06	0	100
SECTION B					
TEXEV	23,204	4.56	1.26	0	8
ADS	21,619	2.93	.76	1	8
COR	23,204	5.45	1.44	0	9
EXP	23,204	1.33	1.04	0	5
GDPC	23,204	4.12	1.04	0	12.12
SECTION C					
GROWTH	23,204	1.05	0.85	0	29.04
SIZE	23,204	11.49	.96	1.95	12.42
ROA	23,204	-.04	.89	-75.86	10.24
TANGI	23,204	1970.84	7978.51	0	225,278
EMP	23,204	19.76	62.58	0	2,327
DIV	23,204	.15	.53	0	20.26

All national culture index are from Hofstede dataset. Financial data is from Compustat. And country-level variables are from various sources.

Table 4 Industry Classification

SIC industry definition	Two-digit SIC	N
Mineral industries	10-14	1,204
Construction industries	15-17	215
Manufacturing	20-39	13,597
Transportation, communications	40-48	1,388
Electric, gas and sanitary services	49	435
Wholesale trade	50-51	913
Retail trade	52-59	655
Service industries	>70	4,797

All data are classified by the first two digits of SIC

Table 5 Correlation Matrix

	PDI	IDV	MAS	UAI	LTO	IND	TAXEV	ADS	COR	EXP	GDPC	SIZE	ROA	GROWTH	TANGI	EMP	DIV
PDI	1																
IDV	-0.58	1															
MAS	0.46	0.25	1														
UAI	0.23	0.08	0.23	1													
LTO	0.79	-0.63	0.34	0.13	1												
IND	-0.31	0.80	0.32	0.26	-0.57	1											
TAXEV	-0.34	0.81	0.40	0.09	-0.31	0.63	1										
ADS	-0.40	0.31	-0.20	0.31	-0.38	0.33	0.33	1									
COR	-0.27	0.78	0.41	0.10	-0.22	0.65	0.83	0.21	1								
EXP	0.83	-0.63	0.29	-0.01	0.74	-0.49	-0.49	-0.57	-0.41	1							
GDPC	0.59	-0.16	0.54	-0.17	0.39	0.04	-0.05	-0.40	-0.03	0.55	1						
SIZE	0.16	-0.14	0.05	0.02	0.16	-0.09	-0.10	-0.06	-0.08	0.16	0.09	1					
ROA	-0.02	-0.01	-0.03	-0.03	-0.01	-0.01	-0.00	0.01	-0.02	-0.00	0.01	-0.05	1				
GROWTH	0.05	-0.03	0.02	-0.01	0.04	-0.01	-0.02	-0.04	-0.02	0.05	0.04	0.03	0.02	1			
TANGI	-0.06	-0.02	-0.10	-0.01	-0.02	-0.05	-0.06	0.02	-0.03	-0.06	-0.09	-0.08	0.03	-0.00	1		
EMP	-0.03	-0.06	-0.09	-0.03	0.00	-0.08	-0.09	0.01	-0.06	-0.02	-0.07	-0.11	0.03	-0.01	0.35	1	
DIV	-0.01	-0.01	-0.02	0.01	0.00	-0.00	0.01	0.01	0.01	-0.00	-0.02	-0.04	0.03	-0.01	0.05	0.05	1

Table 6

The table represents the regression results of cash holdings on national culture. The dependent variable is cash ratio, defined as cash and short-term investments divided by total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.

The dependent variable is cash holding level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	0.249*** (0.0161)						0.0475* (0.0246)
IDV		-0.204*** (0.0114)					-0.0992*** (0.0187)
MAS			0.112*** (0.0194)				0.0373 (0.0237)
UAI				0.0795*** (0.0108)			0.0563*** (0.0143)
LTO					0.198*** (0.00936)		0.102*** (0.0162)
IND						-0.153*** (0.0126)	-0.0396* (0.0207)
TAXEV	1.432*** (0.201)	2.830*** (0.219)	0.823*** (0.213)	1.211*** (0.201)	1.494*** (0.200)	1.419*** (0.201)	2.093*** (0.235)
ADS	-0.421** (0.181)	-0.350* (0.179)	0.207 (0.178)	-0.326* (0.190)	-0.210 (0.177)	0.434** (0.179)	-0.643*** (0.196)
COR	-1.176*** (0.165)	0.0836 (0.172)	-1.073*** (0.167)	-1.048*** (0.166)	-1.386*** (0.165)	-0.208 (0.174)	-0.712*** (0.201)
EXP	-0.251 (0.222)	0.743*** (0.176)	1.790*** (0.170)	1.781*** (0.167)	-0.552*** (0.203)	1.354*** (0.172)	-0.952*** (0.235)
GDPC	-0.929*** (0.112)	-0.382*** (0.107)	-0.683*** (0.117)	-0.260** (0.110)	-0.439*** (0.107)	0.0411 (0.114)	-0.350** (0.142)
SIZE	1.871*** (0.116)	1.845*** (0.116)	1.949*** (0.117)	1.933*** (0.117)	1.822*** (0.116)	1.937*** (0.116)	1.791*** (0.116)
ROA	-2.296*** (0.159)	-2.372*** (0.159)	-2.321*** (0.160)	-2.315*** (0.160)	-2.313*** (0.158)	-2.378*** (0.159)	-2.286*** (0.158)
GROWTH	0.968*** (0.122)	0.981*** (0.121)	1.008*** (0.122)	0.999*** (0.122)	0.970*** (0.121)	1.012*** (0.122)	0.967*** (0.121)
LEV	-1.602*** (0.0960)	-1.595*** (0.0958)	-1.593*** (0.0965)	-1.585*** (0.0964)	-1.568*** (0.0956)	-1.590*** (0.0962)	-1.567*** (0.0955)
TANGI	-0.164*** (0.0154)	-0.164*** (0.0153)	-0.162*** (0.0154)	-0.161*** (0.0154)	-0.169*** (0.0153)	-0.172*** (0.0154)	-0.167*** (0.0153)
EMP	-0.0136*** (0.00204)	-0.0155*** (0.00204)	-0.0136*** (0.00205)	-0.0131*** (0.00205)	-0.0159*** (0.00203)	-0.0153*** (0.00205)	-0.0159*** (0.00203)
DIV	-0.307 (0.198)	-0.430** (0.198)	-0.279 (0.199)	-0.309 (0.199)	-0.366* (0.197)	-0.337* (0.199)	-0.397** (0.197)
Constant	-8.026*** (1.634)	-1.256 (1.649)	-7.824*** (1.663)	-7.356*** (1.645)	-5.243*** (1.622)	-4.491*** (1.639)	-4.652*** (1.674)
Observations	21,619	21,619	21,619	21,619	21,619	21,619	21,619
R-squared	0.073	0.076	0.064	0.065	0.082	0.069	0.085
SIC NO.	59	59	59	59	59	59	59

Table 7

The table represents the regression results of the interaction between national culture and shareholder protection. The dependent variable is cash ratio, defined as cash and short-term investments divided by total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance index. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. ADS is the anti-director score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively. The dependent variable is cash holding level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI*ADS	0.0103 (0.0233)						-0.0443 (0.0447)
PDI	0.195*** (0.0174)						0.135*** (0.0349)
IDV*ADS		0.00651 (0.0116)					-0.00814 (0.0294)
IDV		-0.201*** (0.0128)					-0.0624** (0.0261)
MAS*ADS			0.134*** (0.0284)				0.286*** (0.0452)
MAS			0.0219 (0.0199)				-0.126*** (0.0340)
UAI*ADS				0.162*** (0.0227)			-0.000378 (0.0295)
UAI				-0.0139 (0.0137)			0.0552*** (0.0201)
LTO*ADS					0.0728*** (0.0177)		0.0787*** (0.0290)
LTO					0.153*** (0.0131)		0.0695*** (0.0217)
IND*ADS						-0.0534*** (0.0178)	0.0501 (0.0351)
IND						-0.122*** (0.0134)	-0.0745*** (0.0263)
TAXEV	1.312*** (0.200)	2.643*** (0.216)	1.066*** (0.207)	1.315*** (0.199)	1.449*** (0.196)	1.128*** (0.203)	2.452*** (0.238)
ADS.D	-1.212 (1.063)	-0.290 (0.816)	-7.197*** (1.573)	-8.135*** (1.136)	-3.014*** (0.687)	3.746*** (0.983)	-19.73*** (2.391)
COR	-1.266*** (0.158)	0.0201 (0.166)	-1.180*** (0.160)	-0.891*** (0.162)	-1.471*** (0.158)	-0.333** (0.166)	-0.995*** (0.200)
EXP	0.153 (0.210)	0.847*** (0.156)	2.080*** (0.168)	1.938*** (0.150)	-0.210 (0.203)	1.225*** (0.156)	-0.496** (0.235)
GDPC	-0.882*** (0.110)	-0.414*** (0.105)	-0.683*** (0.112)	-0.483*** (0.108)	-0.307*** (0.112)	-0.0164 (0.112)	-0.233 (0.149)
SIZE	1.800*** (0.112)	1.755*** (0.111)	1.865*** (0.112)	1.850*** (0.112)	1.743*** (0.111)	1.823*** (0.112)	1.740*** (0.111)
ROA	-2.405*** (0.152)	-2.435*** (0.152)	-2.401*** (0.153)	-2.423*** (0.153)	-2.401*** (0.151)	-2.438*** (0.152)	-2.357*** (0.151)
GROWTH	0.969*** (0.119)	0.973*** (0.118)	0.997*** (0.119)	0.986*** (0.119)	0.958*** (0.118)	0.993*** (0.119)	0.956*** (0.118)
LEV	-1.630*** (0.0932)	-1.622*** (0.0929)	-1.616*** (0.0935)	-1.607*** (0.0934)	-1.595*** (0.0927)	-1.619*** (0.0932)	-1.584*** (0.0924)
TANGI	-0.162*** (0.0144)	-0.162*** (0.0144)	-0.161*** (0.0145)	-0.159*** (0.0145)	-0.164*** (0.0144)	-0.168*** (0.0145)	-0.166*** (0.0143)
EMP	-0.0148*** (0.00193)	-0.0161*** (0.00192)	-0.0146*** (0.00193)	-0.0151*** (0.00193)	-0.0168*** (0.00192)	-0.0160*** (0.00193)	-0.0170*** (0.00192)
DIV	-0.351* (0.191)	-0.455** (0.190)	-0.315* (0.191)	-0.353* (0.191)	-0.407** (0.190)	-0.353* (0.191)	-0.424** (0.189)
Constant	-5.297*** (1.421)	-0.306 (1.436)	-2.548* (1.446)	-3.681** (1.444)	-3.365** (1.402)	-1.290 (1.446)	-1.324 (1.445)
Observations	23,204	23,204	23,204	23,204	23,204	23,204	23,204
R-squared	0.069	0.075	0.064	0.065	0.080	0.069	0.087
SIC NO.	59	59	59	59	59	59	59

Table 8

The table represents the regression results of leverage level on national culture. The dependent variable is leverage, defined as debt divided by total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.

The dependent variable is degree of leverage and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	-0.127*** (0.0237)						0.0695* (0.0362)
IDV		0.0844*** (0.0168)					0.185*** (0.0275)
MAS			-0.0956*** (0.0283)				-0.0698** (0.0349)
UAI				-0.0856*** (0.0158)			-0.0566*** (0.0210)
LTO					-0.0517*** (0.0139)		-0.0247 (0.0239)
IND						-0.0483*** (0.0185)	-0.156*** (0.0304)
CASH	-0.478*** (0.00990)	-0.478*** (0.00992)	-0.483*** (0.00986)	-0.481*** (0.00986)	-0.479*** (0.00995)	-0.486*** (0.00988)	-0.475*** (0.00995)
ADS	1.319*** (0.265)	1.233*** (0.262)	0.982*** (0.259)	1.545*** (0.276)	1.119*** (0.260)	1.112*** (0.261)	1.963*** (0.288)
TAXEV	-0.190 (0.294)	-0.747** (0.322)	0.261 (0.310)	-0.0676 (0.293)	-0.153 (0.294)	-0.0108 (0.294)	-1.060*** (0.346)
COR	-0.729*** (0.241)	-1.276*** (0.253)	-0.725*** (0.244)	-0.711*** (0.242)	-0.744*** (0.242)	-0.660*** (0.254)	-0.851*** (0.295)
EXP	-0.670** (0.324)	-1.314*** (0.259)	-1.582*** (0.249)	-1.496*** (0.243)	-1.188*** (0.298)	-2.122*** (0.251)	-1.295*** (0.346)
SIZE	6.431*** (0.171)	6.433*** (0.171)	6.402*** (0.171)	6.419*** (0.171)	6.423*** (0.171)	6.395*** (0.171)	6.478*** (0.171)
ROA	-3.843*** (0.175)	-3.802*** (0.175)	-3.841*** (0.176)	-3.844*** (0.175)	-3.812*** (0.175)	-3.821*** (0.175)	-3.847*** (0.175)
GROWTH	-0.333* (0.178)	-0.343* (0.178)	-0.350** (0.178)	-0.343* (0.178)	-0.343* (0.178)	-0.342* (0.178)	-0.330* (0.178)
TANGI	0.00367 (0.0225)	0.00380 (0.0225)	0.00179 (0.0225)	0.000483 (0.0225)	0.00483 (0.0225)	-0.000532 (0.0226)	-0.00575 (0.0225)
EMP	0.0194*** (0.00299)	0.0202*** (0.00299)	0.0193*** (0.00299)	0.0188*** (0.00299)	0.0199*** (0.00299)	0.0187*** (0.00300)	0.0194*** (0.00299)
DIV	0.146 (0.290)	0.197 (0.290)	0.121 (0.290)	0.147 (0.290)	0.161 (0.290)	0.134 (0.290)	0.219 (0.290)
GDPC	-0.123 (0.164)	-0.397** (0.157)	-0.164 (0.170)	-0.561*** (0.161)	-0.375** (0.157)	-0.233 (0.167)	-0.0390 (0.208)
Constant	-7.128*** (2.390)	-10.10*** (2.415)	-6.690*** (2.421)	-6.810*** (2.395)	-8.328*** (2.384)	-7.616*** (2.392)	-9.536*** (2.459)
Observations	21,619	21,619	21,619	21,619	21,619	21,619	21,619
R-squared	0.168	0.167	0.167	0.168	0.167	0.167	0.170
SIC NO.	59	59	59	59	59	59	59

Table 9

The table represents the regression results of the interaction between national culture and shareholder protection. The dependent variable is the level of cash holding, defined as cash and short-term investments over total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. ADS is the anti-director score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.

The dependent variable is dividend payout level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI*ADS	0.0948*** (0.0342)						0.191*** (0.0660)
PDI	-0.101*** (0.0256)						-0.0257 (0.0516)
IDV*ADS		-0.0175 (0.0171)					0.107** (0.0434)
IDV		0.0641*** (0.0190)					0.0771** (0.0385)
MAS*ADS			0.0275 (0.0415)				0.0683 (0.0668)
MAS			-0.0949*** (0.0290)				-0.135*** (0.0502)
UAI*ADS				-0.0815** (0.0333)			-0.201*** (0.0436)
UAI				0.0127 (0.0200)			0.0959*** (0.0296)
LTO*ADS					0.0921*** (0.0261)		0.109** (0.0428)
LTO					-0.0911*** (0.0193)		-0.0752** (0.0321)
IND*ADS						-0.0823*** (0.0260)	-0.185*** (0.0519)
IND						0.000786 (0.0197)	-0.0523 (0.0388)
CASH	-0.486*** (0.00958)	-0.484*** (0.00961)	-0.487*** (0.00955)	-0.486*** (0.00956)	-0.485*** (0.00963)	-0.490*** (0.00957)	-0.483*** (0.00965)
ADS.D	-4.497*** (1.559)	0.567 (1.200)	-1.934 (2.300)	3.546** (1.664)	-3.805*** (1.014)	3.878*** (1.441)	-3.740 (3.536)
TAXEV	0.545* (0.294)	-0.0168 (0.319)	0.760** (0.303)	0.354 (0.292)	0.426 (0.289)	0.257 (0.298)	-0.107 (0.353)
COR	-0.629*** (0.232)	-1.011*** (0.245)	-0.570** (0.235)	-0.802*** (0.237)	-0.572** (0.233)	-0.487** (0.244)	-0.712** (0.295)
EXP	-1.111*** (0.308)	-1.646*** (0.230)	-1.605*** (0.247)	-1.956*** (0.220)	-1.000*** (0.300)	-2.188*** (0.229)	-0.933*** (0.347)
SIZE	6.165*** (0.165)	6.154*** (0.165)	6.138*** (0.165)	6.131*** (0.164)	6.166*** (0.165)	6.127*** (0.164)	6.212*** (0.165)
ROA	-3.886*** (0.168)	-3.854*** (0.168)	-3.873*** (0.168)	-3.846*** (0.168)	-3.861*** (0.168)	-3.866*** (0.168)	-3.880*** (0.168)
GROWTH	-0.375** (0.174)	-0.377** (0.174)	-0.381** (0.174)	-0.377** (0.174)	-0.378** (0.174)	-0.376** (0.174)	-0.374** (0.174)
TANGI	0.00204 (0.0212)	0.000689 (0.0212)	-0.000914 (0.0212)	-0.00151 (0.0212)	0.00454 (0.0212)	-0.000939 (0.0212)	-0.00125 (0.0212)
EMP	0.0222*** (0.00283)	0.0227*** (0.00283)	0.0224*** (0.00283)	0.0226*** (0.00283)	0.0226*** (0.00283)	0.0217*** (0.00284)	0.0225*** (0.00283)
DIV	0.146 (0.280)	0.179 (0.280)	0.132 (0.280)	0.154 (0.280)	0.163 (0.280)	0.148 (0.280)	0.216 (0.279)
GDPC	-0.0827 (0.162)	-0.313** (0.154)	-0.106 (0.163)	-0.312** (0.157)	-0.0933 (0.165)	-0.106 (0.164)	0.869*** (0.221)
Constant	-4.633** (2.084)	-6.311*** (2.112)	-4.048* (2.114)	-5.006** (2.113)	-5.488*** (2.067)	-5.976*** (2.118)	-5.747*** (2.134)
Observations	23,204	23,204	23,204	23,204	23,204	23,204	23,204
R-squared	0.165	0.165	0.165	0.164	0.165	0.165	0.168
SIC NO.	59	59	59	59	59	59	59

Table 10

The table represents the regression results of the interaction between national culture and shareholder protection. The dependent variable is dividend payout ratio, defined as dividend/(dividend+retained earnings). PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. ADS is the anti-director score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively. The dependent variable is dividend payout level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	-0.00294 (0.00513)						-0.0400*** (0.00780)
IDV		-0.0195*** (0.00361)					-0.0396*** (0.00590)
MAS			-0.0365*** (0.00607)				-0.0412*** (0.00748)
UAI				0.00959*** (0.00340)			0.0230*** (0.00453)
LTO					0.00591** (0.00299)		0.0120** (0.00513)
IND						0.00182 (0.00398)	0.0335*** (0.00654)
TAXEV	-0.261*** (0.0633)	-0.103 (0.0694)	-0.128* (0.0667)	-0.260*** (0.0632)	-0.249*** (0.0633)	-0.261*** (0.0634)	0.136* (0.0744)
ADS	0.308*** (0.0571)	0.252*** (0.0565)	0.285*** (0.0559)	0.243*** (0.0596)	0.290*** (0.0561)	0.298*** (0.0563)	0.0533 (0.0621)
COR	-0.0762 (0.0520)	0.0124 (0.0543)	-0.0224 (0.0525)	-0.0974* (0.0520)	-0.0946* (0.0522)	-0.0877 (0.0546)	-0.00358 (0.0634)
EXP	0.0190 (0.0704)	-0.140** (0.0559)	0.104* (0.0538)	-0.0518 (0.0527)	-0.0882 (0.0644)	9.68e-05 (0.0544)	0.144* (0.0749)
GDPC	-0.212*** (0.0355)	-0.214*** (0.0340)	-0.136*** (0.0367)	-0.198*** (0.0348)	-0.218*** (0.0340)	-0.224*** (0.0362)	-0.0918** (0.0450)
CASH	-0.0192*** (0.00225)	-0.0206*** (0.00225)	-0.0189*** (0.00224)	-0.0195*** (0.00224)	-0.0199*** (0.00226)	-0.0192*** (0.00225)	-0.0200*** (0.00225)
SIZE	-0.356*** (0.0380)	-0.367*** (0.0379)	-0.353*** (0.0379)	-0.360*** (0.0379)	-0.360*** (0.0380)	-0.357*** (0.0379)	-0.373*** (0.0379)
ROA	0.315*** (0.0381)	0.314*** (0.0380)	0.303*** (0.0381)	0.320*** (0.0381)	0.316*** (0.0380)	0.316*** (0.0380)	0.306*** (0.0380)
GROWTH	-0.0656* (0.0386)	-0.0663* (0.0386)	-0.0670* (0.0386)	-0.0665* (0.0386)	-0.0663* (0.0386)	-0.0661* (0.0386)	-0.0691* (0.0385)
LEV	-0.000805 (0.00147)	-0.000494 (0.00147)	-0.000976 (0.00147)	-0.000619 (0.00147)	-0.000695 (0.00147)	-0.000763 (0.00147)	-0.000121 (0.00147)
TANGI	0.0849*** (0.00484)	0.0846*** (0.00483)	0.0846*** (0.00483)	0.0851*** (0.00484)	0.0846*** (0.00484)	0.0850*** (0.00484)	0.0863*** (0.00483)
EMP	0.00890*** (0.000642)	0.00868*** (0.000643)	0.00891*** (0.000641)	0.00894*** (0.000642)	0.00882*** (0.000643)	0.00892*** (0.000644)	0.00885*** (0.000642)
Constant	8.918*** (0.514)	9.356*** (0.519)	9.435*** (0.519)	8.752*** (0.515)	8.920*** (0.512)	8.877*** (0.514)	10.09*** (0.527)
Observations	21,306	21,306	21,306	21,306	21,306	21,306	21,306
R-squared	0.070	0.071	0.071	0.070	0.070	0.070	0.076
SIC NO.	58	58	58	58	58	58	58

Table 11

The table represents the regression results of the interaction between national culture and shareholder protection. The dependent variable is dividend payout ratio, defined as dividend divided by (dividend+retained earnings). PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. ADS is the anti-director score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7). For ease of interpretation, we scale up the coefficients of cash by multiplying the coefficients by 100, we scale down the coefficients of growth and tangibility by 1000. *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.

The dependent variable is cash holding level and it is winsorized at 5%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI*ADS	0.0305*** (0.00739)						-0.00402 (0.0142)
PDI	0.00610 (0.00557)						-0.0294*** (0.0112)
IDV*ADS		-0.0345*** (0.00368)					-0.0147 (0.00934)
IDV		0.0001 (0.00409)					-0.0267*** (0.00827)
MAS*ADS			-0.0851*** (0.00892)				-0.0677*** (0.0144)
MAS			0.00613 (0.00625)				-0.0114 (0.0108)
UAI*ADS				0.00253 (0.00718)			-0.0355*** (0.00938)
UAI				0.0243*** (0.00432)			0.0402*** (0.00641)
LTO*ADS					0.0323*** (0.00563)		0.0300*** (0.00921)
LTO					-0.00667 (0.00417)		0.000837 (0.00690)
IND*ADS						-0.0327*** (0.00562)	0.0368*** (0.0112)
IND						0.0232*** (0.00425)	0.0161* (0.00835)
TAXEV	-0.0439 (0.0636)	-0.0731 (0.0689)	-0.136** (0.0656)	-0.116* (0.0631)	-0.0757 (0.0626)	-0.213*** (0.0646)	0.159** (0.0761)
ADS.D	-1.496*** (0.337)	2.234*** (0.259)	4.664*** (0.495)	-0.465 (0.359)	-1.255*** (0.219)	1.647*** (0.311)	3.229*** (0.762)
COR	-0.0275 (0.0500)	0.0819 (0.0527)	0.0493 (0.0506)	-0.0562 (0.0512)	-0.0223 (0.0503)	-0.0163 (0.0526)	-0.0278 (0.0635)
EXP	-0.0861 (0.0672)	-0.0816 (0.0499)	-0.105* (0.0536)	-0.0976** (0.0478)	0.0129 (0.0649)	0.0399 (0.0498)	0.0358 (0.0751)
GDPC	-0.209*** (0.0352)	-0.147*** (0.0335)	-0.151*** (0.0354)	-0.149*** (0.0342)	-0.130*** (0.0357)	-0.197*** (0.0357)	-0.0138 (0.0477)
CASH	-0.0206*** (0.00218)	-0.0212*** (0.00218)	-0.0190*** (0.00217)	-0.0204*** (0.00218)	-0.0212*** (0.00219)	-0.0197*** (0.00218)	-0.0205*** (0.00219)
SIZE	-0.346*** (0.0366)	-0.356*** (0.0365)	-0.358*** (0.0365)	-0.350*** (0.0365)	-0.347*** (0.0365)	-0.348*** (0.0365)	-0.365*** (0.0364)
ROA	0.315*** (0.0366)	0.307*** (0.0365)	0.313*** (0.0365)	0.324*** (0.0366)	0.316*** (0.0366)	0.317*** (0.0366)	0.313*** (0.0365)
GROWTH	-0.0811** (0.0378)	-0.0770** (0.0378)	-0.0822** (0.0378)	-0.0788** (0.0378)	-0.0807** (0.0378)	-0.0789** (0.0378)	-0.0813** (0.0377)
LEV	0.000525 (0.00142)	0.000616 (0.00142)	0.000455 (0.00142)	0.000658 (0.00142)	0.000455 (0.00142)	0.000404 (0.00142)	0.000821 (0.00142)
TANGI	0.0849*** (0.00457)	0.0851*** (0.00456)	0.0845*** (0.00456)	0.0849*** (0.00457)	0.0853*** (0.00458)	0.0856*** (0.00458)	0.0861*** (0.00456)
EMP	0.00879*** (0.000611)	0.00855*** (0.000610)	0.00895*** (0.000609)	0.00889*** (0.000611)	0.00868*** (0.000612)	0.00887*** (0.000612)	0.00891*** (0.000610)
Constant	8.203*** (0.449)	7.920*** (0.454)	8.061*** (0.454)	7.759*** (0.455)	8.355*** (0.445)	7.827*** (0.456)	7.840*** (0.458)
Observations	22,871	22,871	22,871	22,871	22,871	22,871	22,871
R-squared	0.068	0.072	0.071	0.069	0.069	0.069	0.078
SIC NO.	58	58	58	58	58	58	58

Table 12

The table represents the regression results of cash holdings on single segment U.S. companies. The dependent variable is cash ratio, defined as cash and short-term investments divided by total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7).
 *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.
 The dependent variable is cash holding level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	0.0113 (0.0471)						-0.208*** (0.0674)
IDV		-0.0825*** (0.0285)					-0.142** (0.0551)
MAS			-0.0414 (0.0501)				0.0301 (0.0614)
UAI				0.0736** (0.0323)			0.212*** (0.0467)
LTO					0.126*** (0.0303)		0.0582 (0.0528)
IND						-0.0839*** (0.0292)	-0.0593 (0.0541)
TAXEV	2.592*** (0.574)	3.009*** (0.569)	2.659*** (0.562)	2.843*** (0.562)	1.886*** (0.570)	1.871*** (0.596)	2.542*** (0.840)
ADS	-1.006** (0.504)	-0.944** (0.469)	-0.952** (0.469)	-1.791*** (0.593)	-1.155** (0.471)	-0.639 (0.482)	-2.375*** (0.634)
COR	-0.557 (0.440)	-0.0270 (0.458)	-0.465 (0.431)	-0.533 (0.424)	-0.146 (0.434)	0.306 (0.514)	1.555** (0.627)
EXP	2.992*** (0.600)	2.636*** (0.481)	3.204*** (0.477)	3.043*** (0.456)	1.323** (0.623)	2.491*** (0.500)	2.593*** (0.746)
GDPC	0.214 (0.295)	0.235 (0.264)	0.353 (0.294)	0.275 (0.264)	0.170 (0.264)	0.522* (0.281)	0.976*** (0.353)
SIZE	2.045*** (0.194)	2.029*** (0.194)	2.042*** (0.194)	2.049*** (0.194)	2.022*** (0.194)	2.034*** (0.194)	2.005*** (0.194)
ROA	0.501*** (0.136)	0.495*** (0.136)	0.501*** (0.136)	0.505*** (0.136)	0.489*** (0.136)	0.497*** (0.136)	0.496*** (0.136)
GROWTH	0.213*** (0.0586)	0.210*** (0.0586)	0.213*** (0.0586)	0.214*** (0.0586)	0.211*** (0.0586)	0.211*** (0.0586)	0.211*** (0.0585)
LEV	-0.360*** (0.0594)	-0.359*** (0.0594)	-0.360*** (0.0594)	-0.360*** (0.0594)	-0.357*** (0.0594)	-0.358*** (0.0594)	-0.358*** (0.0594)
TANGI	-127.2*** (8.641)	-127.3*** (8.637)	-127.4*** (8.640)	-127.6*** (8.639)	-126.9*** (8.634)	-126.9*** (8.638)	-128.4*** (8.636)
EMP	-0.0148*** (0.00536)	-0.0142*** (0.00535)	-0.0147*** (0.00535)	-0.0150*** (0.00535)	-0.0149*** (0.00535)	-0.0142*** (0.00535)	-0.0130** (0.00538)
DIV	-0.0139 (0.0133)	-0.0137 (0.0133)	-0.0139 (0.0133)	-0.0138 (0.0133)	-0.0138 (0.0133)	-0.0138 (0.0133)	-0.0133 (0.0133)
Constant	-16.18*** (3.222)	-14.23*** (3.237)	-15.24*** (3.325)	-18.79*** (3.396)	-15.09*** (3.183)	-13.80*** (3.271)	-17.00*** (3.440)
Observations	11,597	11,597	11,597	11,597	11,597	11,597	11,597
R-squared	0.041	0.042	0.041	0.041	0.042	0.042	0.044
SIC NO.	55	55	55	55	55	55	55

Table 13

The table represents the regression results of degree of leverage on national culture on single segment U.S. companies. The dependent variable is cash leverage, defined as debt divided by total assets. PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7).
 *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.
 The dependent variable is degree of leverage level and it is winsorized at 5%.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	-0.0914 (0.0876)						0.0877 (0.125)
IDV		0.277*** (0.0529)					-0.0203 (0.102)
MAS			0.168* (0.0931)				-0.0931 (0.114)
UAI				0.315*** (0.0599)			0.427*** (0.0869)
LTO					-0.335*** (0.0564)		-0.503*** (0.0982)
IND						0.251*** (0.0543)	-0.226** (0.101)
CASH	-0.493*** (0.0173)	-0.491*** (0.0173)	-0.493*** (0.0173)	-0.495*** (0.0173)	-0.489*** (0.0173)	-0.491*** (0.0173)	-0.492*** (0.0173)
ADS	0.0376 (0.937)	-0.377 (0.871)	-0.361 (0.872)	-3.877*** (1.103)	0.199 (0.875)	-1.286 (0.896)	-3.812*** (1.178)
TAXEV	2.566** (1.068)	1.360 (1.059)	2.464** (1.047)	4.161*** (1.045)	4.667*** (1.059)	4.935*** (1.108)	6.109*** (1.561)
COR	2.179*** (0.817)	0.272 (0.851)	1.696** (0.801)	1.935** (0.788)	0.932 (0.806)	-0.548 (0.955)	2.697** (1.164)
EXP	-0.0650 (1.116)	0.677 (0.895)	-1.302 (0.889)	-1.001 (0.848)	3.871*** (1.158)	0.952 (0.930)	3.812*** (1.386)
SIZE	8.613*** (0.362)	8.666*** (0.362)	8.627*** (0.362)	8.637*** (0.362)	8.671*** (0.362)	8.644*** (0.362)	8.695*** (0.361)
ROA	-9.005*** (0.223)	-8.984*** (0.223)	-9.006*** (0.223)	-8.988*** (0.223)	-8.972*** (0.223)	-8.991*** (0.223)	-8.948*** (0.223)
GROWTH	0.0872 (0.109)	0.0954 (0.109)	0.0856 (0.109)	0.0909 (0.109)	0.0906 (0.109)	0.0917 (0.109)	0.0927 (0.109)
TANGI	-124.2*** (16.21)	-123.6*** (16.19)	-123.6*** (16.21)	-125.7*** (16.19)	-124.5*** (16.19)	-124.8*** (16.20)	-126.3*** (16.19)
EMP	0.0542*** (0.00997)	0.0520*** (0.00995)	0.0538*** (0.00995)	0.0523*** (0.00994)	0.0541*** (0.00994)	0.0523*** (0.00995)	0.0531*** (0.00999)
DIV	-0.0169 (0.0247)	-0.0176 (0.0247)	-0.0170 (0.0247)	-0.0165 (0.0247)	-0.0170 (0.0246)	-0.0170 (0.0247)	-0.0163 (0.0246)
GDPC	2.134*** (0.548)	1.914*** (0.490)	1.446*** (0.547)	2.010*** (0.491)	2.080*** (0.491)	1.052** (0.522)	3.097*** (0.657)
Constant	-69.88*** (5.998)	-76.99*** (6.019)	-74.21*** (6.187)	-82.71*** (6.317)	-73.43*** (5.919)	-77.64*** (6.083)	-83.35*** (6.397)
Observations	11,597	11,597	11,597	11,597	11,597	11,597	11,597
R-squared	0.230	0.231	0.230	0.231	0.232	0.231	0.234
SIC NO.	55	55	55	55	55	55	55

Table 14

The table represents the regression results of dividend payout ratio on single segment U.S. companies. The dependent variable is dividend payout ratio, defined as dividend divided by (dividend+retained earnings). PDI is Hofstede's power distance score. IDV is Hofstede's individualism score. MAS is Hofstede's masculinity score. UAI is Hofstede's uncertainty avoidance score. LTO is Hofstede's long-term orientation score. IND is Hofstede's indulgence score. Other country-level and firm-level variables listed below have been explained in data section. We run OLS regressions clustering at industry level, with standard error in the parentheses. The full result sample results are reported in column (7).
 *, **, and *** denotes significance at the 10%, 5%, and 1% level, respectively.
 The dependent variable is dividend payout ratio and it is winsorized at 5%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PDI	0.0339** (0.0172)						0.0183 (0.0245)
IDV		-0.0158 (0.0103)					0.0259 (0.0202)
MAS			0.00316 (0.0182)				-0.00228 (0.0224)
UAI				-0.0250** (0.0118)			-0.0856*** (0.0173)
LTO					0.0341*** (0.0112)		0.0985*** (0.0193)
IND						0.00347 (0.0107)	0.0887*** (0.0199)
TAXEV	-0.468** (0.209)	-0.502** (0.208)	-0.595*** (0.205)	-0.678*** (0.205)	-0.784*** (0.210)	-0.558** (0.220)	-0.782** (0.308)
ADS	0.267 (0.183)	0.403** (0.170)	0.399** (0.170)	0.683*** (0.217)	0.348** (0.171)	0.386** (0.175)	0.807*** (0.233)
COR	-0.00210 (0.161)	0.175 (0.168)	0.0721 (0.159)	0.0701 (0.156)	0.192 (0.160)	0.0417 (0.190)	-0.724*** (0.234)
EXP	-0.280 (0.219)	-0.0836 (0.175)	-0.00662 (0.173)	0.0198 (0.166)	-0.479** (0.229)	0.0272 (0.182)	-0.703** (0.275)
GDPC	0.244** (0.107)	0.336*** (0.0955)	0.330*** (0.106)	0.328*** (0.0956)	0.316*** (0.0957)	0.327*** (0.102)	-0.0908 (0.129)
CASH	-0.0133*** (0.00355)	-0.0134*** (0.00355)	-0.0133*** (0.00355)	-0.0131*** (0.00356)	-0.0135*** (0.00355)	-0.0133*** (0.00356)	-0.0127*** (0.00355)
SIZE	-0.491*** (0.0736)	-0.496*** (0.0736)	-0.492*** (0.0736)	-0.496*** (0.0736)	-0.500*** (0.0736)	-0.492*** (0.0736)	-0.505*** (0.0736)
ROA	0.167*** (0.0466)	0.168*** (0.0466)	0.168*** (0.0466)	0.168*** (0.0466)	0.167*** (0.0466)	0.168*** (0.0466)	0.165*** (0.0465)
GROWTH	-0.0143 (0.0217)	-0.0143 (0.0217)	-0.0138 (0.0217)	-0.0141 (0.0217)	-0.0144 (0.0217)	-0.0137 (0.0217)	-0.0138 (0.0216)
LEV	-0.00807*** (0.00185)	-0.00795*** (0.00185)	-0.00810*** (0.00185)	-0.00788*** (0.00185)	-0.00780*** (0.00185)	-0.00812*** (0.00185)	-0.00735*** (0.00185)
TANGI	7.128** (3.246)	7.029** (3.245)	7.035** (3.246)	7.205** (3.246)	7.122** (3.245)	7.013** (3.246)	7.548** (3.245)
EMP	0.00391* (0.00220)	0.00432** (0.00220)	0.00422* (0.00220)	0.00433** (0.00220)	0.00413* (0.00220)	0.00419* (0.00220)	0.00349 (0.00221)
Constant	10.09*** (1.185)	10.83*** (1.193)	10.41*** (1.224)	11.42*** (1.252)	10.77*** (1.173)	10.38*** (1.206)	11.36*** (1.267)
Observations	11,073	11,073	11,073	11,073	11,073	11,073	11,073
R-squared	0.018	0.017	0.017	0.018	0.018	0.017	0.021
SIC NO.	54	54	54	54	54	54	54