

# Country of Origin Effects in Capital Structure Decisions: Evidence from Foreign Direct Investments in China\*

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## Abstract

We investigate the role of investors' country of origin in corporate finance decisions using the leverage decisions of foreign joint ventures in China. By focusing on foreign ventures in a single country, we are able to hold constant the financing environment, eliminate the effects of formal institutions in the foreign investors' home country, and consequently reveal the effects of informal institutions such as national culture on corporate finance decisions. Using cultural values of *embeddedness*, *mastery*, and *uncertainty avoidance* to explain country of origin effects, we find that national culture has significant explanatory power in the financial leverage decisions of foreign joint ventures in China. Country-level variation is evident in capital structure and appears to work through choices of firm characteristics, industry affiliation, ownership structure, and region of investment.

**Keywords:** corporate tax rate; country of origin; distance; embeddedness; foreign direct investments; leverage; long-term debt; mastery; regional development; uncertainty avoidance

**JEL Classification:** G15 International Financial Markets; G32 Financing Policies

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We investigate the role of investors' country of origin in corporate finance decisions using the leverage decisions of foreign joint ventures in China. By focusing on foreign ventures in a single country, we are able to hold constant the financing environment, eliminate the effects of formal institutions in the foreign investors' home country, and consequently reveal the effects of informal institutions such as national culture on corporate finance decisions. Using cultural values of *embeddedness*, *mastery*, and *uncertainty avoidance* to explain country of origin effects, we find that national culture has significant explanatory power in the financial leverage decisions of foreign joint ventures in China. Country-level variation is evident in capital structure and appears to work through choices of firm characteristics, industry affiliation, ownership structure, and region of investment.

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## 1. Introduction

Are capital structure decisions affected by the cultural background of investors and managers? Standard finance theories suggest that financing decisions should be determined only by rational considerations such as profit maximization and transactions costs. Cultural theorists, in contrast, have suggested that cultural background may have inescapable influences on decisions of every kind, including capital structure (e.g., House, Hanges, Javidan, Dorfman, and Gupta (2004)). Indeed, Chui, Lloyd, and Kwok (2002) identify cross-country differences in capital structure that are consistent with the predictions of cultural theories and these differences remain significant even when micro- and macro-economic factors are accounted for.

Cultural theorists agree, however, that it is difficult to completely separate cultural factors from economic settings (Hofstede (2001)). Economic pressures give rise to specific cultural solutions and culturally preferred ways of conduct give rise to formal and informal economic and legal institutions. This makes it difficult, if not impossible, to separate the economic and cultural determinants of capital structure. However, the context of foreign direct investments (FDIs) in a single country (China) provides an almost ideal setting for studying the role of cultural background in financial decision making. In this case, the formal institutions in the foreign investors' home country are largely irrelevant, allowing us to isolate the impact of foreign investors' cultural background on their decision making about firms operating in China. A further advantage of studying cultural influences in FDIs is that foreign direct investments are small relative to the investors' home country economy. Investing abroad is clearly irrelevant to the formation of cultural values among nations. This means that we have a setting where concerns about endogeneity are minimized: Between-country cultural differences can affect foreign investors' behavior in a destination country (i.e., China), but these investments do not have a reverse causal effect on their national culture.

Why should cultural background matter in capital structure decisions of foreign investors in China? North (1993) argues that individuals embody the informal institutional constraints of their culture of origin as reflected in their customs, traditions, and codes of conduct. When foreign investors enter into China, they move away from their own formal institutional environment but may maintain the informal institutional constraints of the culture of their upbringing. FDI into China allow us to study the financial decision-making of sophisticated professionals in a different and new institutional environment while holding their social values from their country of origin fixed.

Financial decision-making inevitably involves tradeoffs, and some of these are related to cultural background. In particular, debt financing provides a source of capital but reduces the independence of the firm. Our overall hypothesis is that cultural background affects the way that foreign investors perceive and weigh the benefits and costs associated with debt financing, and hence affects capital structure decisions. This implies that investors from different cultural backgrounds (proxied by country of origin) will differ in their preferences for the use of debt financing. Using cultural dimensions developed by Schwartz (1994) and by Hofstede (1980) to explain country of origin effects, we hypothesize that there is a positive relation between the cultural value embeddedness and leverage, a negative relation between the cultural value mastery and leverage, and a negative relation between the cultural value uncertainty avoidance and leverage. Furthermore, we expect cultural values to affect leverage decisions both directly and indirectly via nationally shared preferences.

Using FDI in China's manufacturing sector, we find support for the importance of country of origin effects in leverage decisions, and also find evidence of intervening effects that link variation in country characteristics to the choice of firm characteristics, industry affiliation, ownership structure, and investment location at the firm level. We

demonstrate that the influence of cultural background is of economic importance even after controlling for formal institutions and firm characteristics. Thus, our study provides strong evidence on the importance of informal cultural institutions in corporate finance decisions in a setting that allows for a clean separation of economic and cultural determinants.

Our work contributes to the literature on the interaction between culture and economic outcomes (see Guiso, Sapienza, and Zingales (2006) for an excellent survey) in three ways. First, we provide a novel demonstration of how informal institutions from within a country can affect capital structure decisions of FDI's outside that country. Second, our work helps establish boundary conditions on the role of informal institutions in financial decisions by testing whether cultural effects are most apparent for high uncertainty and high-risk foreign investment decisions. Finally, we link the effects of culture to intervening corporate decisions, such as the choices of firm size and industry affiliation, and demonstrate that culture affects leverage decisions both directly and indirectly.

The remainder of the paper is structured as follows. We review the related literature and develop our hypotheses in the next section. Section 3 discusses the sample and variable construction. Section 4 describes the empirical model. Section 5 presents our main results and provides some interpretation, and Section 6 conducts additional investigation. Section 7 concludes.

## **2. Literature Review and Hypothesis Development**

### *Prior Literature*

Cultural norms and beliefs are important forces shaping people's perception, disposition, and behaviors (Markus and Kitayama (1991)). Financial economists have

recently started to employ the concept of culture to help understand international investment and corporate decisions. Grinblatt and Keloharju (2001) show that investor stock trading decisions are affected by culture as proxied by common language and cultural background. Pagano, Röell, and Zechner (2002) and Sarkissian and Schill (2004) present evidence showing that cross-listing firms seek prospective investors in culturally proximate markets to ensure the smooth flow of information between home and destination markets. Guiso, Sapienza, and Zingales (2007) show that for a sample of European countries, a lower level of trust between two countries leads to a lower level of economic exchange in terms of cross-border portfolio and direct investments, and trade. Bottazzi, Da Rin, and Hellmann (2007) find that trust among nations has a significant effect on the likelihood that a venture capitalist invests in a company. Siegel, Licht, and Schwartz (2007a, 2007b) find robust evidence that cross-country investment flows of equity, debt, mergers and acquisitions, and FDIs are greatest when countries match on the cultural dimension of egalitarianism. Chui, Titman, and Wei (2008) suggest that individualism is likely to be positively associated with overconfidence and self-attribution bias and show that individualism indeed is strongly correlated with the magnitude of momentum profits.

Cultural background also appears to be important in within-country investment behavior. Using Italian data, Guiso, Sapienza, and Zingales (2004) show that households in high-social-capital areas are more likely to use checks, invest less in cash and more in stock, have higher access to institutional credit, and make less use of informal credit. Important to our arguments in this paper about the moderating role of variables such as institutional development, the effect of social capital is stronger where legal environment is weaker and among less educated people. Guiso, Sapienza, and Zingales (2007) further show that less trusting individuals are less likely to buy stock and this problem might account for the lack of stock market participation in the US and for differences in the rate of participation across countries. Consistent with this, Osili and Paulson (2005) find that

immigrants to the US from countries with institutions that more effectively protect private properties and provide incentives for investment are more likely to participate in US financial markets.

Our work is most closely related to Chui et al. (2002) who show that firms in countries with high scores on the cultural dimensions of embeddedness and mastery tend to have lower corporate debt ratios. To investigate whether cultural values can explain cross-country differences in capital structure, they regress country-level corporate debt ratios on the cultural values of embeddedness and mastery and show that both embeddedness and mastery are negatively associated with debt ratios. They also regress firm-level debt ratios on those two cultural values, both cultural values still are negatively associated with leverage, although the adjusted R square falls from 44 percent to less than six percent. Their results are robust after controlling for industry effects, and differences in legal systems and economic development (La Porta et al. (1997)).

Different from their work, we focus on the leverage decision of foreign-owned ventures in China; thus our setting is free of the effect of cross-country differences in institutional frameworks (for example, accounting rules) on leverage as in Chiu et al. (2002). Second, we decompose the relation between firm characteristics and leverage, as well as regional characteristics and leverage, into country-level and individual firm-level components, allowing us to more appropriately explore the role of cultural values and the role of country of origin effects. Put differently, we distinguish variation among firms within a country from variation between countries, as only the pattern of country-level variation reflects national culture effects. Third, we examine intermediary processes through which the country-level variables such as culture may influence capital structure decisions, and fourth, we include interaction terms between foreign ownership, regional institutional development and cultural values that are not considered in Chiu et al. (2002).

Finally, our analysis takes an important additional step, examining not only the level of financial leverage but also the maturity structure of debt.

### Measures of Cultural Values

For our measure of cultural values, we use the Schwartz Value Survey (SVS) instrument (1994, 1999, 2004). The three Schwartz bipolar cultural value dimensions are: conservatism (now labeled embeddedness) versus autonomy, hierarchy versus egalitarianism, and mastery versus harmony. We also use value dimensions from Hofstede (1980, 2001).<sup>1</sup> Our preliminary analysis of cultural variables across countries shows a high degree of correlation between and within the Schwartz and Hofstede measures. As a result, we focus on three relevant cultural values: *embeddedness* and *mastery* as defined by Schwartz (1994, 1999, 2004) and *uncertainty avoidance* as defined by Hofstede (1980, 2001). These moderately correlated measures capture most of the variance in the whole set of cultural measures.

Cultures high on embeddedness emphasize the importance of tradition and the role of an individual's responsibility and relationship to the shared group goal whereas cultures low on embeddedness emphasize an individual's self-directedness and autonomy from the larger society. Cultures high on mastery emphasize the importance of controlling the natural and social environment to attain goals, whereas cultures low on mastery emphasize a harmonious fit to the world as it is. Finally, cultures high on uncertainty avoidance are characterized by concerns about stability and social risk.

### Our Conceptual Framework

How might cultural values and country of origin affect corporate financing decisions? Figure 1 presents our conceptual framework distinguishing the influences on

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<sup>1</sup> Hofstede (1980) identifies four primary dimensions to differentiate cultures: power distance, individualism, masculinity, and uncertainty avoidance.

leverage decisions at the national culture level from those at the individual firm level.<sup>2</sup> Influences that operate at the national culture level are conceptualized as shared preferences within a country and are assumed to affect all investors from the same country. These influences are measured as mean differences between countries and thus are identified as between-country effects. Fundamental causes for these nationally shared preferences include shared history, geography, and formal economic institutions, which give rise to cultural values such as embeddedness and mastery. These common values within a country give rise to shared investment choices—such as the tendency to choose to invest in a large or small firm. The direct influence of cultural values, plus the influence of shared intermediary preferences for characteristics such as firm size in turn lead to between-country differences in leverage decisions. Influences that operate at the individual firm level are conceptualized as preferences that differentiate among foreign investors from a common home country. As opposed to country-level effects that are captured by relations between country means, individual firm-level effects are measured within the country of origin. For example, some foreign investors from a given country prefer to invest in larger firms as compared to other investors from the same country.

### *Our Hypotheses*

Following the conceptual framework presented in Figure 1, our primary hypothesis is that capital structure decisions of FDI in China are influenced by both country-level (between-country) and firm-level (within-country) preferences. Put more concretely, the primary hypothesis implies that country-level means of explanatory variables such as firm size and industry concentration will predict country-level means of our outcome variable, leverage, and that within-country deviations from the country-level means of explanatory variables will predict within-country deviations of the outcome variable. Our secondary hypothesis is that country-level preferences are ultimately

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<sup>2</sup> These decisions may be made directly by the foreign investors at the time of making the FDI decision or by their appointed managers who are likely to reflect the investors' preferences.

influenced by cultural values of embeddedness, mastery, and uncertainty avoidance. That is, we expect not only that cultural values of a country predict the country-level mean of leverage by investors from a given country of origin (a direct effect of culture) but also that the cultural values of a country predict the country-level means of other explanatory variables that in turn give rise to the leverage decision (an indirect effect of culture).

The cultural value of embeddedness describes cultures in which a person is looked upon as an entity embedded in the collectivity. Emphasis is given to maintenance of the *status quo*, propriety, and restraint of actions that might disrupt the solidarity of a group or the existing order. The polar opposite of embeddedness is autonomy where a person is encouraged to express his own preferences with minimum constraints. In the context of FDI's leverage decisions, we expect that foreign investors (and managers) from countries high in autonomy desire to act without the constraint of debt. Thus, investors from countries low in embeddedness prefer to avoid leverage resulting in a positive relation between embeddedness and leverage. Our prediction appears to be opposite to that of Chiu et al. (2002), who hypothesize that the desire to "save face" characteristic of high embeddedness countries leads to a negative relation between the national level of embeddedness and leverage decisions made within that country. However, this motivation to "save face" would be considerably reduced or even absent altogether in the context of FDI's in China, because the leverage decisions are made outside the investors' home country, and hence are not visible to members of the investors' home culture.

The cultural value of mastery could potentially affect firms' capital structure decisions because it encourages taking control of a person's environment, and emphasizes individual success. Foreign investors from a country with high scores on mastery value control and individual success, and may want to avoid the loss of control due to debt and its restrictive covenants. We thus expect a negative relation between the

level of mastery in the foreign investors' home country and the level of leverage used by their venture in China. Given that short-term debt is more restrictive than long-term debt, we expect the negative relation to be strengthened in the case of short-term debt.

The cultural value of uncertainty avoidance is defined as a society's shared degree of threat or discomfort with uncertain or unknown situations, and consequently a distaste for uncertainty and a preference for structured over unstructured situations. The uncertainty associated with debt financing should be least desirable for those investors from a high uncertainty-avoidance culture and hence we expect a negative relation between country-level uncertainty avoidance and leverage in the FDI setting.

Finally, we expect the influences of cultural values on leverage decisions to depend on the level of foreign ownership and the level of regional institutional development. In particular, as foreign ownership increases from majority (greater than 50 percent) to absolute control (100 percent), we expect the influence of foreign investors' cultural values to manifest itself more clearly. When regional institutional development is low and uncertainty faced by foreign investors is high, we expect cultural values or other informal norms are more likely to dominate in the absence of well-developed formal institutions (see for example, Guiso et al. (2004)).

### **3. Data and Sample Overview**

Our primary data sources are the foreign investment data collected by the National Bureau of Statistics (NBS) in 2002<sup>3</sup> and the Annual Survey of Manufacturers by the NBS. The first data set contains the level of foreign ownership at the time of the founding of the firm as well as the country of origin of the foreign investors. Close to 50 percent of the sample firms have foreign investors coming from Hong Kong. To avoid the

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<sup>3</sup> Huang, Jin, and Qian (2008) employ the same FDI data set as us to explore the role of ethnicity in FDIs and show that ethnic Chinese invested FDIs do not outperform non-ethnic firms.

ambiguity about the true country of origin behind foreign investments from Hong Kong, our sample excludes FDIs from Hong Kong. The second data set consists of all manufacturing firms in thirty 2-digit SIC industries. We utilize firm financial information in 2003 because our foreign ownership data is from 2002 and most of our multivariate analyses are implemented in lead-lag fashion. We drop observations with negative values of total assets, total liabilities, and sales. To deal with outliers and the most extremely mis-recorded data, we winsorize all firm-level variables at the one percent level in both tails of the distribution.

In our context, the foreign investors face a common set of formal institutional constraints in China, but vary in cultural values from their countries of origin. Hence our data offer a rare opportunity to explore the influences of cultural values on corporate finance decisions in a common environment.

#### *Variable Construction*

We calculate a firm's leverage ratio (LEV) as its total liabilities divided by total assets. Demirgüç-Kunt and Maksimovic (1999) show that firms in developing countries tend to employ more short-term financing, reflecting the greater dependence of these firms on short-term debt and trade credit. We compute a firm's short-term debt ratio (STD) as its short-term liabilities divided by total assets. Finally, we also construct an indicator variable, the LTD dummy, set equal to one if the firm has long-term liabilities in a specific year, and zero otherwise.<sup>4</sup>

We consider the following firm characteristics that are known to affect capital structure (Bradley, Jarrell, and Kim (1984), Rajan and Zingales (1995), and Frank and

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<sup>4</sup> The reason for us to employ a binary variable to capture firms' long-term leverage decision is due to the lack of variation for the majority of sample firms with zero amount of long-term debt.

Goyal (2007)).<sup>5</sup> Firm size is the log of annual sales in millions of RMB yuan.

Profitability is earnings before tax (ROA) divided by total assets, adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is  $(\text{current assets}/\text{total assets}) \times (\text{current assets}/\text{cost of goods sold}) + (\text{fixed assets}/\text{total assets}) \times (\text{fixed assets}/\text{depreciation})$ , divided by 100. Industry median is the median leverage measure for firms with the same 2-digit SIC code. Industry concentration is the Herfindahl index using sales of firms with the same 2-digit SIC code. All the firm-level explanatory variables are measured in the year before leverage decisions (i.e., 2002).

Most FDIs in China are greenfield investments (Graham and Wada (2001)). The locational distribution of foreign direct investment in China is highly uneven. The majority of FDIs is located in four coastal provinces (Guangdong, Jiangsu, Fujian, and Shanghai) and most of the rest FDIs is located in other coastal provinces. Of the residual, the majority is located in provinces immediately adjacent to the coastal provinces. So in our empirical specification, we control for the developmental discrepancies across provinces in China. Our data on institutional development across provinces in China comes from Fan and Wang (2004).<sup>6</sup> Higher scores suggest greater market development. We divide the raw score in 2002 by 10 to ensure that our regression analysis will have reasonably-sized coefficients. Guangdong, the province adjacent to Hong Kong, has the highest development score of 0.974, while Tibet has the lowest score of 0.205. We also control for the economic development of different provinces by including the growth rate of provincial GDP per capita.

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<sup>5</sup> China's accounting system began its reform in 1992. Thereafter, China's accounting standards for the listed firms have been moving gradually towards the North American Generally Accepted Accounting Principles (GAAP).

<sup>6</sup> Fan and Wang (2004) construct a comprehensive index to proxy for the market development of a province. It measures the following aspects: (1) the relationship between government and markets, such as the role of markets in allocating resources and enterprise burden in addition to normal taxes; (2) the development of non-state business, such as the ratio of industrial output by the private sector to total industrial outputs; (3) the development of product markets, such as regional trade barriers; (4) the development of factor markets such as FDIs and mobility of labor; (5) the development of market intermediaries and legal environment such as the protection of property rights.

Finally, as additional control, we include the physical distance between the foreign investors' home country and China, and the marginal corporate tax rate at the foreign investors' home country following Siegel, Licht, and Schwartz (2007a) who show that these measures are important factors in international investment decisions.<sup>7</sup> One may argue that in our setting, we need to control for the general level of capital structure in the foreign investors' home country. Including the marginal corporate tax rate from these investors' home country is our way to do it. Appendix I provides a more detailed description of our country-level control variables.

Our final sample includes 8,187 foreign joint ventures in China involving investors from 32 different countries and regions where foreign investors are the majority owner (i.e., foreign ownership is greater than 50 percent).<sup>8</sup> Figure 2 shows that close to 60 percent of our sample firms have 100 percent foreign ownership. Appendix II gives a detailed breakdown of the countries from which the foreign investors come, the number of observations from each country when the foreign investor is the majority owner or has absolute control, and key descriptives on leverage measures, firm size, foreign ownership, and the level of regional development.

Table 1 presents descriptive statistics of our sample. Panel A shows that our sample firms have an average (median) leverage of 0.466 (0.464). The sample average (median) short-term debt is 0.436 (0.429), suggesting that most of the debt in these firms is short-term. About a fifth of these foreign firms have access to long-term debt. Comparing these numbers to the statistics reported in Li, Yue, and Zhao (2008) where the mean (median) leverage of all manufacturing firms in China is 0.567 (0.589), and more

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<sup>7</sup> Grosse and Trevino (1996) show that the distance between the US and the home country, measured in either geographical or cultural terms (using four Hofstede measures), is consistently negatively associated with FDIs into the US. Pan (1996) finds that foreign investors to China want an effective control through a higher level of equity ownership when the culture distance developed by Kogut and Singh (1988) and applied to the Hofstede (1980) measures increases.

<sup>8</sup> Three countries are lost due to having only a single observation. Our main results are not affected if we include these three country-firm observations.

than a third of them employ long-term debt, it is clear that FDIs in China employ different capital structures from those of domestic firms.

Panel B shows that our sample firms make average annual sales of RMB78.26 million yuan with a median of RMB28.52 million yuan. The average industry-adjusted ROA is 3.2 percent with a lower median of 0.8 percent. About 35 percent of the total assets are tangible for an average firm in the sample, and the average asset maturity is 6.4 percent. The average Herfindahl index is 0.003. The average of industry median leverage is 60.1 percent, and the average of industry median short-term debt is 52.5 percent. The average frequency of having long-term debt is 32 percent. The average (median) level of foreign ownership in our sample firms is 91.4 (100) percent which is not surprising given that our sample is limited to foreign majority-owned firms.

Panel C presents descriptive statistics for the province-level variables. We show that the average level of marketization is 0.816, and the average per capita GDP growth is 9.8 percent with the median growth rate at 9.3 percent.

Panel D presents descriptive statistics for the country-level variables used in our study. We show that the average level of embeddedness is 3.783 and the median is 3.774. The average level of mastery is 3.873 and the median is 3.881. The average distance between the country of origin of foreign investors and China is 4,324 kilometers, and the average marginal corporate tax rates in the home country of foreign investors is 32.7 percent.

Panel E presents the correlation matrix using firm-level observations. There is extremely high correlation between our leverage and short-term debt ratios (0.921). On the other hand, there is moderate correlation among most of the firm-level explanatory variables. The exceptions are strong correlations between industry median leverage and industry median short-term debt (0.680), and between industry median leverage and industry average frequency of using long-term debt (0.504). Across country-level

measures, there is strong positive correlation between uncertainty avoidance and mastery (0.632), and between corporate tax rate and mastery (0.537). And there is strong negative correlation between corporate tax rate and embeddedness ( $-0.697$ ).

Panel F presents descriptive statistics for the country-level variables using country-level observations. Comparing Panels D and F, we show that some country-level variables tend to have very different means using the firm-level observations versus using the country-level observations. For example, the sample average level of embeddedness using firm-level observations in Panel D is 3.783, while the sample average level of embeddedness using country-level observations in Panel E is 3.640, suggesting that there are disproportionately more FDIs associated with investors from high embeddedness countries. Similarly, the sample average distance in Panel D is 4,324 kilometers, while the same measure in Panel F is 7,860 kilometers, suggesting that there are more FDIs made by foreign investors from close-by countries than from far-away countries.

#### **4. Our Empirical Specifications**

Our data structure is multilevel. At the country level, we have investors from 32 different countries investing in China. At the firm level, we have over 8,000 firms with a majority foreign ownership stake.<sup>9</sup> And there are 30 different provinces/regions in China with large developmental disparities and highly uneven distribution of foreign firms. From a modeling perspective, it is important to distinguish the effects that take place at the country level from those that take place at the individual firm level. We start with some diagnostic checks before deciding on the appropriate estimation methodology.

We first compare the correlation matrix of our country-level characteristics using country means against the same correlation computed at the firm-level. In a hierarchical

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<sup>9</sup> Note that using the level of foreign ownership as of the founding date of the joint venture does not change our main results. Results are available upon request.

data structure such as ours, the overall correlation  $r_{xy}$  across all firms and countries is a weighted average of  $r_{Bxy}$  (the correlation between country means) and  $r_{Wxy}$  (the average correlation computed across firms within a country). In particular,

$$r_{xy} \equiv \eta_x \eta_y r_{Bxy} + \sqrt{1 - \eta_x^2} \sqrt{1 - \eta_y^2} r_{Wxy} \quad (1)$$

where  $\eta_x^2$  ( $\eta_y^2$ ) refers to the ratio of between-country to total variance in X (Y) weighted by sample size (Robinson (1950)).

Table 1 Panel E gives the firm-level correlation matrix, while Panel G presents the correlation matrix at the country-level. We find that some correlations change markedly when we aggregate the data from a firm-level correlation to a country-level correlation. Some correlations even flip in sign. For example, the correlations between mastery and embeddedness, and between distance and uncertainty avoidance are negative and significant at the firm-level, while their country-level counterparts are positive but not significantly different from zero. From Equation (1), we see that the firm-level correlation ( $r_{xy}$ ) and the between-country correlation ( $r_{Bxy}$ ) are equal only in special cases, for example, when there is zero between-country variance in X and Y. Thus, the striking difference between the two correlation matrices in Panels E and G of Table 1 serves as a diagnostic indicator that it is necessary to differentiate the between- and within-country relationships.

A second and related indicator of the need for multilevel or hierarchical analysis is to implement an Analysis of Variance (ANOVA) to determine the extent of between- and within-country variation in our outcome variables. Table 2 presents the result. When we look at the partition of variance between-country versus within-country (between-firm) we see that there is a small and modestly significant level of variance between countries on our leverage measures while a much larger and highly significant level of variance within countries. For example, in the case of leverage shown in Panel A, the

variance between-country is 11, while the variance within-country is 449. As both sources of variance are significant, this test supports the need for a multilevel approach. However, because the amount of variance between countries is modest, this suggests that the larger effects will be found at the within-country firm level. Nonetheless, as we detail below, it is still possible that the country-level effects such as cultural values may modify the within-country firm-level relations.

To further motivate our multilevel analysis, Figure 3 presents the raw data for leverage and foreign ownership and a set of regression lines using within-country firm-level data. The slope of each line represents the within-country relationship between leverage and foreign ownership. The difference in the intercepts of those lines represents between-country variation in leverage. In a multilevel analysis such as Hierarchical Linear Modeling, these slopes and intercepts will serve as building blocks to relate country-level characteristics (such as cultural values) to firm-level decisions (such as leverage). The multilevel modeling approach allows us to ask questions such as: What are the defining characteristics of a country such that it has the most positive relationship between leverage and foreign ownership?

A number of solutions to the problems posed by multilevel data exist in the finance literature. Most of these solutions focus on correcting significance levels for clustered or non-independent observations. Most typically, researchers employ clustered standard errors to correct the significance tests run on the overall data set. However, this procedure provides no information as to the relative effects at the country- and firm-level. Another way to correct the statistical problem of multilevel data is to add a set of country dummy variables to remove the mean differences between countries. A more sophisticated version of the dummy-variable approach is to include both the country dummy variables and interactions between the country dummies and the continuous within-country firm-level characteristics; this controls for the country-level effects,

reveals the within-country effects, and provides tests for interactions between country- and firm-level characteristics. However, this approach hides the country-level main effects in the set of dummy variable coefficients, and provides a simple omnibus test of whether the firm-level slopes differ by country, whereas our interest is in whether the slope differences across countries can be explained by more primitive country-level variables such as cultural values.

We employ a hierarchical nested form of the general linear model to explore our multilevel data (see Raudenbush and Bryk (2002) or Goldstein (2003) for an introduction to Hierarchical Linear Models) and use the maximum likelihood estimator available in the MLWin program for estimation. Multilevel data are empirical observations that have a distinguishable hierarchy to them. In our specific application, we have foreign investors investing in different companies in China; these base-level observations are termed level-1 units and the higher-level observations, the countries from which these investors come, are called level-2 units. Multilevel models are essentially a method to estimate, test, and explain the nature of the level-1 relationship across different higher-level units.

To proceed, we need to process the raw data in the following way. First, we center every right-hand-side variable by its grand mean (averaged across firms and countries), so that every transformed variable has a mean of zero. Second, we create country-level mean values (averaged within a country) on those grand-mean-centered variables that vary by firm and we give a suffix to each of these variables as “*\_ctrymean*.” Here we treat the regional institutional and economic developmental measures in the same way as variables that vary by firm. Finally, we create within-country residuals by taking the grand-mean adjusted variables in step 1 and subtracting the corresponding within-country means in step 2. We name these firm-level deviations from their corresponding country-level means as “*\_firmdev*.” By centering the within-country variables (varying by firm), and adding the country-level means to the set of predictors, we completely separate the

covariances between- and within-country. Furthermore, the decomposition allows us to explore the potentially differential effects of firm-level characteristics such as foreign ownership at the firm- and country-level. Finally, using mean-centered variables on the right-hand-side makes estimation of the interactions more efficient and also makes interpretation of the intercept values natural: the expected value of the dependent variable when all right-hand-side variables are at their means. In the end, our model specification contains some variables that have only country-level values (cultural values, distance, and corporate tax rate), and others that have country-level and firm-level values (firm size, profitability, foreign ownership, etc) where the country-level values are all grand-mean centered and the firm-level values are deviations from the corresponding country-level means.

Table 3 presents descriptive statistics on the transformed variables. Panel A validates that the firm-level deviations from the grand mean have a sample average of zero. The corresponding median values are also not too far away from zero, confirming our effort of centering firm-level deviations to be zero. Panel B provides summary statistics of the country-level means. In theory, these country-level means also have an average centered around zero. Due to the different weighting scheme used here (based on the number of observations in each country) instead of the equal weight used in Panel A, there are some variables whose average across the country-level means deviates slightly from zero. Panel C gives the similar summary statistics for the country-level means of our country-level variables. Panels D and E present the correlation of all our right-hand-side variables after removing their corresponding country-level means (*\_firmdev* variables) and the correlation of the country-level means (*\_ctrymean* variables), respectively. It is important to compare the correlation matrix in Panel E with the correlation matrix in Table 1 Panel E where the raw values of all right-hand-side variables are used. Panel E of Table 1 effectively is the combination of correlations presented in Panels D and E of Table 3. Important to note, the correlations in Panel E of

Table 1 and Panel D of Table 3 are very similar in magnitude, suggesting that in our sample most of the variation occurs between firms not cross countries, consistent with our ANOVA analysis in Table 2.

### Alternative Models

To explore the relation between country-level factors and capital structure decisions, we employ five different model specifications. The first model takes the following form:

$$\begin{aligned}
 \text{Leverage Measure}_{i,j,t} = & \alpha + \beta_1 \text{Firm Size}_{i,j,t-1} + \beta_2 \text{Profitability}_{i,j,t-1} + \beta_3 \text{Asset Tangibility}_{i,j,t-1} \\
 & + \beta_4 \text{Asset Maturity}_{i,j,t-1} + \beta_5 \text{Industry Concentration}_{i,j,t-1} + \beta_6 \text{Industry Leverage}_{i,j,t-1} \\
 & + \beta_7 \text{Foreign Ownership}_{i,j,t-1} + \beta_8 \text{Marketization}_{i,j,t-1} + \beta_9 \text{Per Capita GDP Growth}_{i,j,t-1} \\
 & + \beta_{10} \text{Embeddedness}_j + \beta_{11} \text{Mastery}_j + \beta_{12} \text{Uncertainty Avoidance}_j + \beta_{13} \text{Distance}_j + e_{i,j,t}.
 \end{aligned} \tag{2}$$

For firm  $i$  invested by foreign investors from country  $j$  in year  $t$ , *Leverage Measure* can be total leverage ratio (LEV), short-term debt ratio (STD), or the likelihood of having long-term debt (LTD dummy).

Our Model 1 in Equation (2) is a cross-sectional regression with lagged right-hand-side variables. We expect that firms clustered within a province are more likely to have similar characteristics and thus show within-province correlations. This intra-province correlation has to be taken into account in parameter estimation. We adopt robust standard errors adjusted for clustering at the province level.

*A priori*, it is not clear the extent to which cultural values reflect macroeconomic characteristics of the country from which foreign investors come to invest in China, so our Model 2 adds one more country-level measure that has been found to be important in cross-country investment flows (Siegel et al. (2007a)), corporate tax rate, to Model 1.

Our Model 3 is a Hierarchical Linear Model (HLM) specified as follows:

$$\begin{aligned}
\text{Leverage Measure}_{i,j,t} = & \alpha + \beta_1 \text{Firm Size}_{-firmdev_{i,j,t-1}} + \beta_2 \text{Profitability}_{-firmdev_{i,j,t-1}} \\
& + \beta_3 \text{Asset Tangibility}_{-firmdev_{i,j,t-1}} + \beta_4 \text{Asset Maturity}_{-firmdev_{i,j,t-1}} \\
& + \beta_5 \text{Industry Concentration}_{-firmdev_{i,j,t-1}} + \beta_6 \text{Industry Leverage}_{-firmdev_{i,j,t-1}} \\
& + \beta_7 \text{Foreign Ownership}_{-firmdev_{i,j,t-1}} + \beta_8 \text{Marketization}_{-firmdev_{i,j,t-1}} \\
& + \beta_9 \text{Per Capita GDP Growth}_{-firmdev_{i,j,t-1}} \\
& + \gamma_1 \text{Firm Size}_{-ctrymean_{j,t-1}} + \gamma_2 \text{Profitability}_{-ctrymean_{j,t-1}} \\
& + \gamma_3 \text{Asset Tangibility}_{-ctrymean_{j,t-1}} + \gamma_4 \text{Asset Maturity}_{-ctrymean_{j,t-1}} \\
& + \gamma_5 \text{Industry Concentration}_{-ctrymean_{j,t-1}} + \gamma_6 \text{Industry Leverage}_{-ctrymean_{j,t-1}} \\
& + \gamma_7 \text{Foreign Ownership}_{-ctrymean_{j,t-1}} + \gamma_8 \text{Marketization}_{-ctrymean_{j,t-1}} \\
& + \gamma_9 \text{Per Capita GDP Growth}_{-ctrymean_{j,t-1}} \\
& + \gamma_{10} \text{Embeddedness}_{-ctry_j} + \gamma_{11} \text{Mastery}_{-ctry_j} + \gamma_{12} \text{Uncertainty Avoidance}_{-ctry_j} \\
& + \gamma_{13} \text{Distance}_{-ctry} + e_{i,j,t}.
\end{aligned} \tag{3}$$

Different from the standard cross-sectional regression with clustered standard errors as shown in Equation (2), we decompose firm- and province- characteristics into firm-level deviations and country-level means to try understand the differential firm- and country-level effects and more appropriately estimate the significance of the cultural value variables, which vary only across countries. This model is estimated using an iterative maximum likelihood fitting procedure.

Our Model 4 adds one additional country-level variable, corporate tax rate, to Model 3.

To explore the differential influences of cultural values on leverage decisions when the level of foreign ownership and regional institutional development vary, we introduce interaction terms between foreign ownership and marketization measured as firm-level deviations and our five country-level characteristics to Model 4 and it becomes our Model 5. We expect that the influences of country-level characteristics will be strengthened when foreign ownership is high and the level of regional institutional development is low.

## 5. Main Results

Table 4 Panel A presents the estimation results using four different model specifications when leverage is the dependent variable. Under Models 1 and 2, we show that firm size, asset maturity, and foreign ownership are positively associated with leverage, while profitability, asset tangibility, and industry concentration are negatively associated with leverage. Given that existing capital structure theories are developed to explain the financing choices of firms in the industrial world, it is striking that the same set of firm characteristics has reasonable explanatory power for leverage decisions of FDIs in China.

After decomposing total variation in firm- and province-level characteristics into firm-level deviations and country-level means under Models 3 and 4, we still find strong significant association between some of our *\_ctrymean* variables and leverage. For example, there is significantly negative association between firm-level leverage and country-mean profitability under Model 3. This implies that investors from countries with shared preferences for high profitability firms also tend to choose low levels of leverage. Thus even with our data that exhibits much larger within-country variation than between-country variation, the country-level variables still play some important roles in firm-level leverage decisions.

We note that the strength of association could be materially different for the *\_firmdev* variables vis-à-vis the *\_ctrymean* variables under Models 3 and 4. For example, in the case of asset maturity, the coefficient on the firm-level deviation measure is 0.118, while the coefficient on the corresponding country-level mean measure is 0.983 under Model 3. This finding suggests again that in our data, there is much more variation at the firm-level than at the country-level. As a result, the impact of a unit change in mean asset maturity at the country-level has a much larger effect on leverage than a unit change in asset maturity at the firm-level.

With respect to our two province-level environment variables, we show that marketization is negatively and GDP growth is positively associated with leverage using both the firm-level deviations and the country-level means. The above finding suggests that varying preferences of investors within a home country for firm environment characteristics have important influences on leverage decisions, as do nationally shared preferences for investing in different provinces in China.

Comparing Model 2 to Model 4, every cultural value measure is highly significant under Model 2 but becomes insignificant under Model 4, while distance and corporate tax rate are significant under both models. The above finding suggests that standard OLS models that aggregate across country- and firm-level variation might give a false impression of the true influences of cultural values on leverage decisions, as models that appropriately isolate country-level effects like ours show much weaker effects of cultural values than that which does not.

With respect to our three country-level cultural values, results from Model 3 suggest that there is significantly negative association between mastery and leverage, consistent with our prior conjecture: Investors from high mastery countries are less likely to employ debt. Interestingly, results from Model 4 show that once we include corporate tax rate to capture an aspect of the formal institutions in the foreign investor's home country, mastery loses its influence on leverage. We find that there is significantly positive association between distance and leverage, and significantly negative association between corporate tax rate and leverage. Recall that there is moderate positive correlation between mastery and corporate tax rate, and negative correlation between distance and uncertainty avoidance (Table 1 Panel G), suggesting that there are common forces that determine both the informal and formal institutions of a country. These significant correlations might very well be the reason behind the difference in results under our Models 3 and 4.

Finally, comparing the results on firm characteristics measured at country-level means between Models 3 and 4 where the only difference in model specification is to add one new country-level measure, corporate tax rate, in Model 4, we find that fewer firm characteristics measured at the country-mean level are significant, suggesting that corporate tax rate by itself is an important direct determinant of leverage and shares important explanatory power with other country-level variables.

Table 4 Panel B presents our regression results using the short-term debt variable as the dependent variables. Given the very high correlation between our total leverage and short-term debt variables (Table 1 Panel E), it is not surprising that most of the findings in Panel A apply here. The exceptions are that marketization is not significantly associated with short-term debt using firm-level deviations, but significantly negatively associated with short-term debt using country-level means under both Models 3 and 4, and GDP growth is not significantly associated with short-term debt using country-level means under Model 4.

Table 4 Panel C presents our regression results using the LTD dummy as the dependent variable. We show that firm characteristics measured at firm-level deviations (*\_firmdev*) are meaningfully associated with the firm's decision to take on long-term debt. For example, firm size, asset tangibility, and asset maturity are positively associated with firms' likelihood of using long-term debt. In contrast to results in Panels A and B, firm characteristics measured at country-level means (*\_ctrymean*) appear to have much stronger influences on firms' decisions regarding the use of long-term debt. In particular, firm size and asset tangibility measured at country-level means are positively associated with firms' likelihood of using long-term debt, while asset maturity and foreign ownership measured at country-level means are negatively associated with the use of long-term debt. The opposite signs of coefficients on the firm-level deviation and country-level mean measures of asset maturity and foreign ownership imply that

individual foreign investors within a home country who prefer assets with longer maturity and higher ownership are more likely to employ long-term debt, but countries whose investors share preferences for assets with longer maturity and higher ownership are characterized by low usage of long-term debt. Two province-level environment variables measured at country-level means are not significantly associated with firms' likelihood of using long-term debt.

Further, mastery is significantly positively associated with firms' likelihood of using long-term debt, while neither distance nor corporate tax rate has any association with the long-term debt dummy. This is a striking result, suggesting that investors from high mastery countries actually prefer the use of long-term debt given its less restrictive nature than short-term debt. Consistent with this interpretation, we find that mastery is negatively and significantly associated with the use of short-term debt (Panel B).

Finally, we show that the firm characteristics generally have similar signs in predicting both short- and long-term debt when measured at firm-level deviations (the exception being asset tangibility which is negatively associated with short-term debt, while positively associated with the likelihood of using long-term debt), but opposite signs when measured at country-level means, see for example, asset maturity and foreign ownership. This is another demonstration of how a country-level analysis can reveal a distinctly different pattern of effects from a firm-level analysis. The implication is that whereas a firm's leverage decisions tend to be similar for short- and long-term debt, country of origin effects operate differently for these two types of debt.

Overall, the firm-, province-, and country-level characteristics exert very different influences on short- and long-term debt decisions, justifying our choice of modeling the short- and long-term leverage decisions separately.

### *Interaction Effects*

Cultural influences may be more evident in some business environments than others. For example, *a priori*, we expect that foreign investors' cultural values might have more scope for influences when the foreign investor has a high level of ownership in the firm. A natural extension to our Model 4 is to introduce interaction terms between the level of foreign ownership and our various cultural value measures. Similarly, firm environment characteristics could serve as moderators to attenuate or exacerbate the influences of cultural values. Recall that marketization captures stability and (low) risk of a firm operating environment, and we expect that cultural values or other informal norms are more likely to dominate in the absence of well-developed formal institutions. So we also include interaction terms between marketization and measures of cultural values in our encompassing Model 5.

Table 5 presents results on the interaction terms.<sup>10</sup> When the dependent variable is leverage, the coefficient on the interaction term between foreign ownership and embeddedness is negative and statistically significant. Thus, it seems that the weak positive effect of embeddedness on leverage becomes weaker when foreign ownership is high, contrary to our conjecture.

When the dependent variable is either leverage or short-term debt, the coefficient on the interaction term between marketization and embeddedness is negative and statistically significant, suggesting that the role of embeddedness in leverage is also weaker in more developed provinces. Interpreting these interaction terms is more complex than usual, because under our modeling framework, both foreign ownership and marketization are conceptualized as intervening variables between cultural values and leverage and also interact with cultural values in determining leverage. For a better

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<sup>10</sup> In unreported analysis, we find that the results on individual firm-, province-, and country-level variables remain the same under Model 5 as those under Model 4 (Table 4). For space considerations, we opt not to report them in Table 5 (results available upon request).

understanding of the complexity and possible non-linearity involved in our set-up, we repeat our analysis using a sub-sample of wholly-foreign-owned FDIs in Section 6.

Table 5 last column presents the interaction effects when the dependent variable is the long-term debt dummy. We find that there is no significant interaction effect.

#### *Indirect Effects of Cultural Values*

The evidence from Tables 4 and 5 thus far captures only the direct effects of culture variables on leverage. Following our modeling framework illustrated in Figure 1 it is also of interest to investigate the specific channels through which country-level variables might affect leverage. Table 6 presents results from this investigation. In Panel A, we present summary statistics of additional country-level economic development variables. In Panel B, we present the regression results where the three culture variables (along with the control variable of distance) are used to jointly predict the firm- and province-level characteristics measured at country-level means. Embeddedness is significantly and negatively related to four firm-level characteristics: size, profitability, industry concentration, and the use of long-term debt, and significantly and positively related to marketization, implying that investors from countries high on embeddedness have a shared preference for investing in smaller firms, less profitable firms, less concentrated industries, industries with low usage of long-term debt, and in provinces with better institutional development. Mastery is significantly and negatively related to firm size, industry concentration, industry median leverage, industry median short-term debt, and per capita GDP growth, and significantly and positively related to profitability and asset maturity. Uncertainty avoidance has significant association with all but one firm-level characteristic: industry median leverage. Uncertainty avoidance is not

significantly associated with either of our two regional development measures: marketization and per capita GDP growth. Finally, the distance between a foreign investor's home country and China is significantly negatively associated with firm size, asset tangibility, and foreign ownership, and significantly positively associated with marketization. It is worth noting that there is some evidence from Panel B that cultural values affect the shared choices of firm environment in terms of marketization and/or per capita GDP growth.

Panels C and D illustrate how the influences of cultural values on firm choices change with additional economic variables such as stock and credit market development (Panel C) and creditor protection and corporate tax rate (Panel D) being controlled for. Not surprisingly, the effects of cultural values diminish in most cases as we would expect that cultural values are associated with variables such as rule of law and economic stability.

Panel E presents correlations among country-level variables to illustrate the extent to which cultural values and economic indicators co-vary. There is strong negative association between distance and embeddedness, between stock market development and embeddedness, between stock market development and mastery, and between creditor protection and uncertainty avoidance. There is strong positive association between creditor protection and embeddedness, between corporate tax rate and mastery, and between corporate tax rate and uncertainty avoidance. These strong correlations explain our findings in Panels C and D that the intervening effects of cultural values are weakened when other correlated macroeconomic variables are added to our model specification.

In summary, we present evidence suggesting that national cultural values directly affect leverage decisions, but their stronger effects seem to operate primarily through

their indirect effects via national preferences for certain firm characteristics and investment environment.

## **6. Additional Investigation**

For a robustness check, we also re-run most of our analysis focusing on a sub-sample where the level of foreign ownership is 100 percent. This sub-sample has 5,763 FDIs coming from 30 different countries and regions (see Appendix II for the sample distribution across countries). Table 7 presents the regression results under Model 4. Most of our main results stay unchanged with the following exceptions.

First, in the regression where the dependent variable is leverage, many more country-level variables are significantly associated with leverage, including firm size, profitability, embeddedness, and uncertainty avoidance. Consistent with our conjecture, there is strong positive association between embeddedness and leverage, while contrary to our conjecture, there is also strong positive association between uncertainty avoidance and leverage. It is worth pointing out that uncertainty avoidance is not significant under Model 3 where we exclude corporate tax rate (unreported). Recall that there is significant positive correlation between uncertainty avoidance and corporate tax rate (Table 1 Panel G), suggesting that there are common forces that determine both the informal and formal institutions of a country. The significant correlation might very well be the reason behind the difference in results under our Models 3 and 4.

When the dependent variable is short-term debt, one additional variable, asset maturity measured at the country-level mean, is positively associated with short-term debt.

Second, in the regression where the dependent variable is the long-term debt dummy, four country-level variables become insignificantly associated with firms' use of

long-term debt: asset tangibility, asset maturity, industry frequency of using long-term debt, and mastery. On the other hand, there is significantly positive association between embeddedness and firms' likelihood of using long-term debt, and between uncertainty avoidance and firms' likelihood of using long-term debt. The former result is consistent with our conjecture, while the latter suggests that the sole foreign owner perceives long-term debt to be less uncertain and risky than short-term debt.

Finally, we find no significant interaction effects using the wholly-foreign-owned sub-sample (results available upon request). Further, the indirect effects of cultural values on firm characteristics are weaker compared to those using the full sample (results available upon request). For example, mastery is only significantly negatively associated with industry concentration.

In summary, our analysis of the wholly-foreign-owned sub-sample reveals stronger direct effects and weaker indirect effects of cultural variables in leverage decisions at the country-level as compared to our full sample results.<sup>11</sup>

## **7. Conclusions**

In this paper, we present consistent evidence supporting the important role of country of origin influences in corporate leverage decisions. In particular, nationally shared preferences for certain firm characteristics and ownership settings help predict leverage decisions above and beyond the individual firm-level effects. There is some evidence that three specific cultural values—embeddedness, mastery, and uncertainty avoidance—directly affect leverage decisions, but these variables seem to operate

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<sup>11</sup> In unreported analysis using the sub-sample where the foreign investor is the majority but not absolute owner (i.e., 50% < foreign ownership < 100%), we find that there is total absence of any direct effects of cultural variables in leverage decisions at the country-level.

primarily through their indirect effects via national preferences for certain firm characteristics and investment environments.

Comparing the coefficients from our hierarchical models with the OLS estimates from the standard approach reveal that the firm-level coefficients are generally comparable but the coefficients for the country-level variables, in particular culture, can be completely different, both in terms of significance and sign. Furthermore, the differential impact of the firm- and country-level variables cannot be assessed by the standard approach. Our paper contributes to the existing literature in two important ways. First, the results in our paper support the growing awareness among finance researchers that informal institutions such as culture, level of trust, and social capital matter in financial decisions even when those decisions are made by sophisticated investors and outside of those investors' home countries. Second, the evidence in our paper draws attention to the fact that accounting for the "levels of analysis" problem is not simply a statistical nicety about correcting for correlated and clustered responses but a conceptually rich endeavor to help understand why investors who share the same background act in similar ways even when there is no economic justification for that behavior. We hope our research stimulate more studies on the important role of cultural values in corporate finance decisions.

## **Appendix I: Definitions of the country-level variables**

### ***Schwartz Cultural Value Measures***

The following gives the list of items in the Schwartz Value Survey that form the basis to compute embeddedness and mastery.

Embeddedness:

- Social order (stability of society)
- Politeness (courtesy, good manners)
- National security (protection of my nation from enemies)
- Reciprocation of favors (avoidance of indebtedness)
- Respect for tradition (preservation of time honored customs)
- Self-discipline (self restraint, resistance to temptation)
- Wisdom (a mature understanding of life)
- Moderate (avoiding extremes of feeling and action)
- Honoring parents and elders (showing respect)
- Preserving public image (protecting my 'face')
- Obedient (dutiful, meeting obligations)
- Devout (holding to religious faith and belief)
- Forgiving (willing to pardon others)
- Clean (neat, tidy)

Mastery:

- Social recognition (respect, approval by others)
- Independent (self reliant, self sufficient)
- Ambitious (hard working, aspiring)
- Daring (seeking adventure, risk)
- Influential (having an impact on people and events)
- Choosing own goals (selecting own purposes)
- Capable (competent, effective, efficient)
- Successful (achieving goals)

### ***Hofstede Cultural Dimension***

Uncertainty avoidance is the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. This feeling leads them to beliefs promising certainty and to maintaining institutions protecting conformity. Strong uncertainty avoidance societies maintain rigid codes of belief and behavior and are intolerant towards deviant persons and ideas. Weak uncertainty avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated. The fundamental issue addressed by this dimension is how a society reacts on the fact that time only runs one way and that the future is unknown: Whether it tries to control the future or to let it happen.

***Distance***

Geographic distance from China. *Source: Gleditsch-Ward Data Set on Great Circle Distance between Capital Cities, available at <http://dss.ucsd.edu/~kgledits/capdist.html>; distance data for any missing country pairs were retrieved from <http://www.airportaccommodation.co.uk/worlddistances.php>*

***Corporate Tax Rate***

A country's top corporate statutory tax rate is from KPMG's corporate tax rate survey in 2004 and 2006.

***GDP Per Capita***

From World Development Indicator (WDI).

***Stock Market Capitalization***

As an indicator of the size of stock markets, we use the stock market capitalization to GDP ratio. Data available from WDI.

***Credit Market Capitalization***

This variable is defined as the ratio of bond market capitalization to GDP. Data available from the World Bank at <http://go.worldbank.org/X23UD9QUX0>

***Creditor Protection***

The index is formed by adding 1 when: (1) the country imposes restrictions, such as creditors' consent or minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm; and (4) the debtor does not retain the administration of its property pending the resolution of the reorganization. The index ranges from 0 to 4 and obtained from La Porta et al. (1998).

## Appendix II: Sample overview

This table presents the country distribution of FDIs in the data. N gives the number of FDIs where the foreign investor is the majority owner by country of origin. N<sub>100</sub> gives the number of FDIs where the foreign investor has absolute control by country of origin. LEV is measured as the ratio of total liabilities over total assets. STA is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004).

Country	N	N <sub>100</sub>	LEV		STA		LTD		Size (in Millions)		Foreign ownership		Marketization	
			Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Argentina	7	4	0.55	0.52	0.54	0.52	0.29	0.00	33.3	23.0	0.82	1.00	0.78	0.81
Australia	111	75	0.51	0.51	0.48	0.47	0.16	0.00	49.8	26.9	0.90	1.00	0.81	0.85
Austria	15	5	0.41	0.43	0.37	0.43	0.13	0.00	54.4	26.2	0.81	0.88	0.77	0.81
Belgium	20	10	0.49	0.40	0.48	0.40	0.05	0.00	74.4	61.0	0.84	1.00	0.80	0.81
Brazil	7	6	0.48	0.59	0.43	0.52	0.29	0.00	58.1	15.4	0.94	1.00	0.88	0.91
Canada	75	44	0.53	0.50	0.52	0.49	0.16	0.00	45.8	20.2	0.88	1.00	0.80	0.85
Denmark	16	14	0.46	0.44	0.42	0.36	0.13	0.00	234.5	119.6	0.97	1.00	0.76	0.71
Finland	20	12	0.51	0.54	0.46	0.47	0.20	0.00	254.8	143.3	0.87	1.00	0.81	0.81
France	127	71	0.44	0.43	0.42	0.41	0.16	0.00	86.8	45.7	0.85	1.00	0.81	0.85
Germany	258	139	0.43	0.40	0.40	0.37	0.21	0.00	106.4	52.4	0.85	1.00	0.80	0.81
Greece	2		0.58	0.58	0.55	0.55	0.50	0.50	17.9	17.9	0.83	0.83	0.86	0.86
India	3	2	0.48	0.58	0.48	0.58	0.00	0.00	116.6	55.0	0.94	1.00	0.82	0.81
Indonesia	37	25	0.54	0.48	0.47	0.47	0.35	0.00	112.3	39.7	0.91	1.00	0.86	0.87
Italy	50	22	0.50	0.50	0.48	0.49	0.16	0.00	66.5	25.9	0.82	0.90	0.82	0.85
Japan	1881	1135	0.41	0.39	0.37	0.35	0.24	0.00	85.5	30.7	0.89	1.00	0.80	0.81
Malaysia	102	61	0.46	0.45	0.42	0.39	0.22	0.00	80.8	25.8	0.87	1.00	0.82	0.85
Netherlands	110	57	0.50	0.52	0.46	0.47	0.23	0.00	167.0	63.7	0.86	1.00	0.83	0.81
New Zealand	13	8	0.50	0.53	0.47	0.53	0.23	0.00	126.2	21.5	0.92	1.00	0.85	0.91
Norway	7	2	0.59	0.59	0.38	0.45	0.57	1.00	112.0	90.9	0.74	0.70	0.82	0.81
Peru	4	2	0.47	0.51	0.47	0.51	0.00	0.00	16.4	17.0	0.85	0.86	0.83	0.85
Philippines	69	49	0.39	0.37	0.38	0.33	0.09	0.00	57.8	29.7	0.92	1.00	0.85	0.87
Portugal	3	2	0.74	0.79	0.62	0.59	0.67	1.00	251.7	43.7	0.86	1.00	0.77	0.85
Singapore	598	439	0.47	0.47	0.43	0.43	0.25	0.00	107.0	44.8	0.93	1.00	0.83	0.85
South Africa	3		0.51	0.53	0.51	0.53	0.33	0.00	20.3	21.5	0.84	0.87	0.88	0.87
South Korea	828	679	0.50	0.52	0.47	0.47	0.16	0.00	77.1	25.6	0.95	1.00	0.73	0.71
Spain	21	10	0.53	0.55	0.48	0.44	0.14	0.00	46.2	30.3	0.82	0.97	0.81	0.81
Sweden	44	28	0.50	0.51	0.47	0.45	0.11	0.00	155.8	64.6	0.87	1.00	0.79	0.81
Switzerland	67	33	0.51	0.50	0.48	0.47	0.21	0.00	169.1	79.2	0.88	0.98	0.80	0.81
Taiwan	2168	1843	0.49	0.49	0.47	0.47	0.14	0.00	40.7	19.9	0.96	1.00	0.86	0.87
Thailand	73	42	0.49	0.52	0.45	0.42	0.26	0.00	84.9	35.5	0.87	1.00	0.74	0.81
UK	339	227	0.46	0.45	0.41	0.41	0.27	0.00	119.2	47.8	0.91	1.00	0.82	0.85
US	1109	717	0.48	0.48	0.45	0.44	0.17	0.00	87.5	31.5	0.89	1.00	0.82	0.85
Total	8187	5763	0.47	0.46	0.44	0.43	0.19	0.00	78.2	28.5	0.91	1.00	0.82	0.85

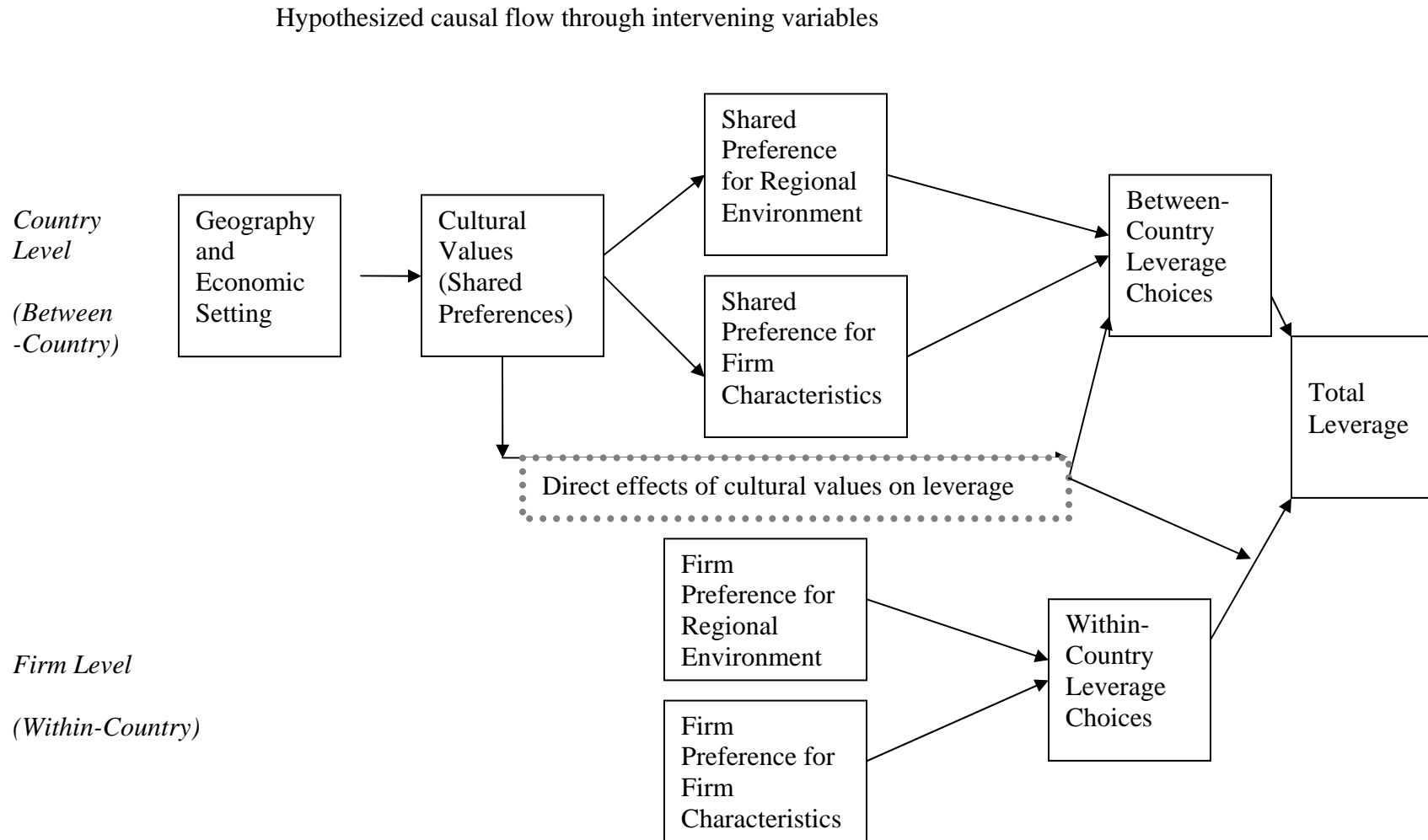
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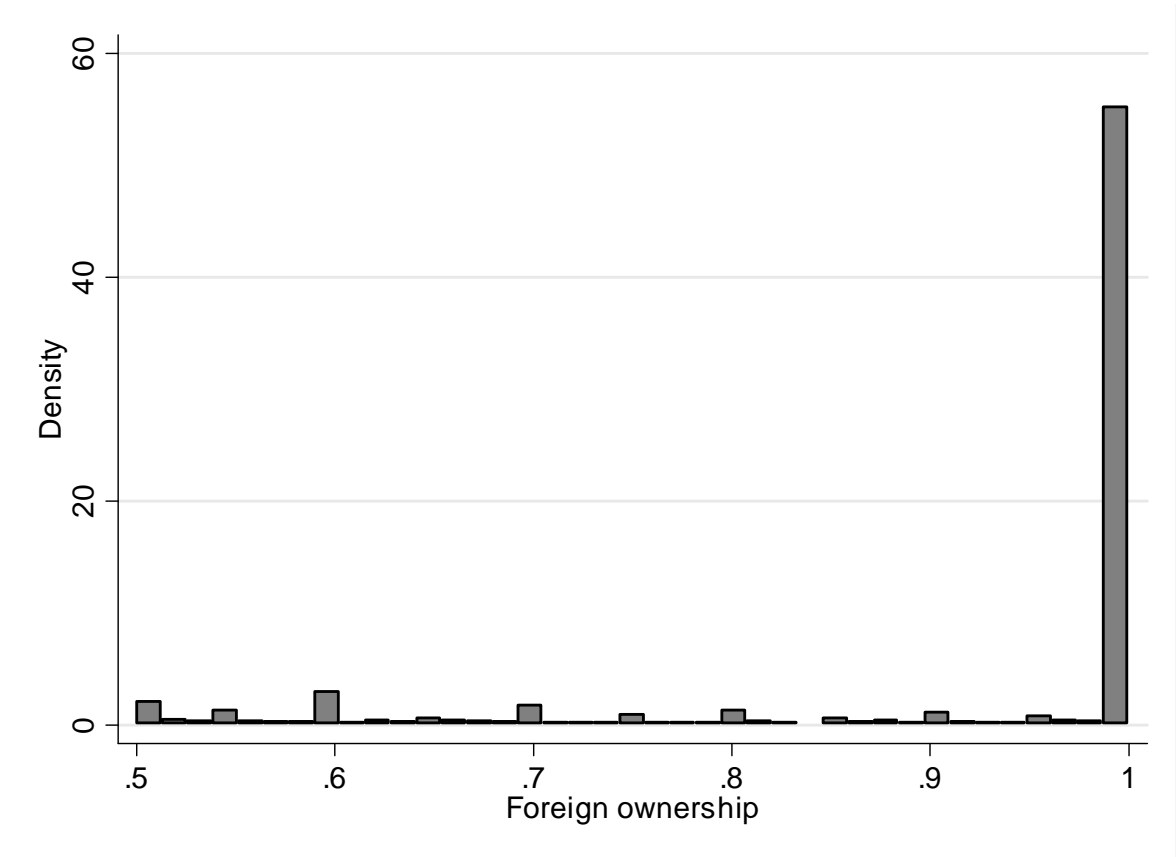
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**Figure 1: A conceptual framework separating country-level and firm-level determinants of capital structure decisions**



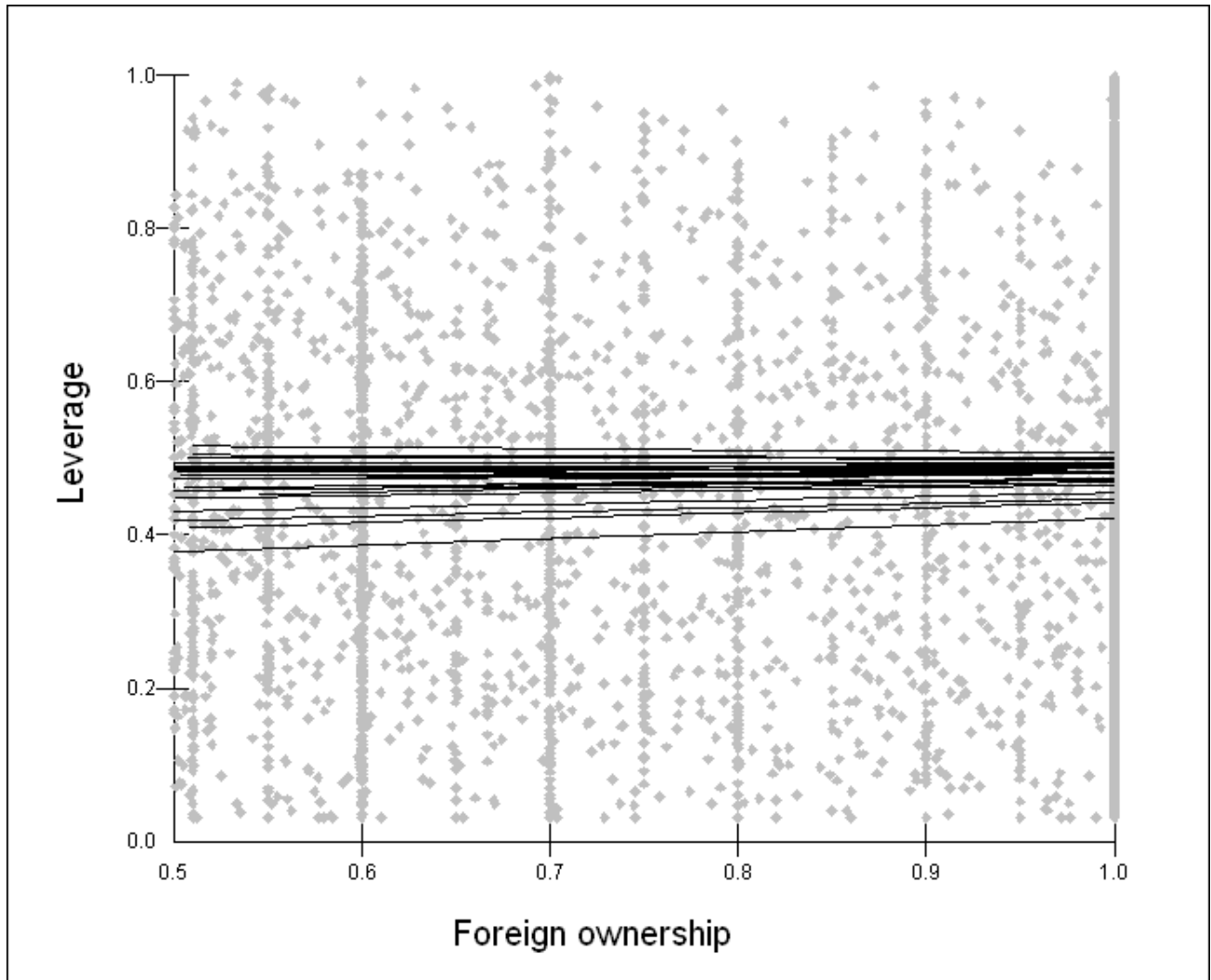
**Figure 2: Histogram of foreign ownership**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors as of 2002.



**Figure 3: A plot of leverage and foreign ownership**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations, where the foreign investor is the majority owner (i.e., foreign ownership > 50%). Leverage is measured as the ratio of total liabilities over total assets in 2003. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors as of 2002. The dots represent raw data on leverage and foreign ownership, while the slope of each line represents the within-country relationship between leverage and foreign ownership.



**Table 1: Summary statistics**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Profitability is earnings before tax divided by total assets adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is the sum of (current assets/total assets)  $\times$  (current assets/cost of goods sold) and (fixed assets/total assets)  $\times$  (fixed assets/depreciation), divided by 100. Industry concentration is the Herfindahl index using sales. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004). Per capita GDP growth is the annual rate of growth in per capita GDP for different provinces and regions. Embeddedness and mastery are from Schwartz (2004), and uncertainty avoidance is from Hofstede (2001). Distance measures the physical distance from the foreign investor's home country and China. Corporate tax rate measures the highest marginal corporate tax rate in the foreign investor's home country. Panel A presents descriptive statistics of capital structure variables. Panel B presents descriptive statistics of firm characteristics. Panel C presents descriptive statistics of province-level variables. Panel D presents descriptive statistics of various cultural values and country-level controls. Panel E presents the correlation matrix using firm-level observations with P-values in brackets. Panel F presents descriptive statistics of country-level variables using country-level observations. Panel G presents the correlation matrix for country-level variables using country-level observations with P-values in brackets.

Panel A: Leverage measures

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
LEV	8187	0.466	0.237	0.086	0.464	0.863
STD	8187	0.436	0.238	0.068	0.429	0.843
LTD dummy	8187	0.190	0.393	0.000	0.000	1.000

Panel B: Firm-level characteristics

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Firm size (in millions)	8187	78.26	134.8	6.225	28.52	378.8
Log(Firm size)	8187	10.43	1.213	8.736	10.26	12.84
Profitability	8187	0.032	0.113	-0.121	0.008	0.256
Asset tangibility	8187	0.347	0.193	0.061	0.333	0.691
Asset maturity	8187	0.064	0.103	0.010	0.038	0.173
Industry concentration	8187	0.003	0.003	0.001	0.002	0.011
Industry median LEV	8187	0.601	0.029	0.556	0.601	0.651
Industry median STD	8187	0.525	0.031	0.470	0.522	0.563
Industry median LTD	8187	0.317	0.081	0.186	0.307	0.462
Foreign ownership	8187	0.914	0.155	0.550	1.000	1.000

Panel C: Province-level characteristics

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Marketization	8187	0.816	0.114	0.603	0.854	0.974
Per capita GDP growth	8187	0.098	0.015	0.080	0.093	0.131

Panel D: Country-level characteristics

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Embeddedness	8187	3.783	0.293	3.188	3.774	4.212
Mastery	8187	3.873	0.109	3.631	3.881	3.973
Uncertainty avoidance	8187	0.654	0.241	0.080	0.690	0.920
Distance (in km)	8187	4324	3686	959	2125	11236
Log(Distance)	8187	8.026	0.819	6.866	7.662	9.327
Corporate tax rate	8187	0.327	0.075	0.220	0.300	0.420

Panel E: The correlation matrix using firm-level observations

	LEV	STA	LTD	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization	Per capita GDP growth	Embeddedness	Mastery	Uncertainty avoidance	Log(Distance)
STA	0.921																	
	[0.000]																	
LTD	0.119	-0.095																
	[0.000]	[0.000]																
Log(Firm size)	0.052	0.038	0.101															
	[0.000]	[0.001]	[0.000]															
Profitability	-0.234	-0.198	-0.053	0.237														
	[0.000]	[0.000]	[0.000]	[0.000]														
Asset tangibility	-0.177	-0.240	0.158	0.012	-0.198													
	[0.000]	[0.000]	[0.000]	[0.279]	[0.000]													
Asset maturity	-0.021	-0.065	0.086	-0.027	-0.066	0.373												
	[0.056]	[0.000]	[0.000]	[0.016]	[0.000]	[0.000]												
Industry concentration	-0.007	-0.002	0.002	0.199	0.066	-0.053	-0.025											
	[0.501]	[0.893]	[0.849]	[0.000]	[0.000]	[0.000]	[0.022]											
Industry median LEV	-0.030	-0.040	0.036	0.059	0.042	0.026	-0.006	-0.021										
	[0.007]	[0.000]	[0.001]	[0.000]	[0.000]	[0.017]	[0.597]	[0.055]										
Industry median STD	-0.004	0.015	-0.032	0.029	0.065	-0.090	-0.058	-0.038	0.680									
	[0.697]	[0.177]	[0.004]	[0.009]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]									
Industry median LTD	-0.047	-0.075	0.078	0.083	0.015	0.098	0.043	0.164	0.504	-0.216								
	[0.000]	[0.000]	[0.000]	[0.000]	[0.189]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]								
Foreign ownership	0.041	0.036	0.004	-0.081	-0.040	0.050	0.017	-0.035	-0.089	-0.008	-0.123							
	[0.000]	[0.001]	[0.704]	[0.000]	[0.000]	[0.000]	[0.122]	[0.002]	[0.000]	[0.499]	[0.000]							
Marketization	0.011	0.038	-0.063	0.011	-0.027	-0.068	-0.031	-0.006	-0.048	0.048	-0.106	0.150						
	[0.313]	[0.001]	[0.000]	[0.314]	[0.016]	[0.000]	[0.005]	[0.582]	[0.000]	[0.000]	[0.000]	[0.000]						
Per capita GDP growth	0.062	0.064	0.048	-0.015	0.067	-0.004	-0.001	-0.023	0.047	0.080	-0.051	-0.018	0.003					
	[0.000]	[0.000]	[0.000]	[0.185]	[0.000]	[0.699]	[0.907]	[0.037]	[0.000]	[0.000]	[0.000]	[0.104]	[0.771]					
Embeddedness	0.074	0.080	-0.037	-0.144	-0.078	0.020	0.042	-0.050	-0.095	-0.100	-0.034	0.167	0.171	-0.024				
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.065]	[0.000]	[0.000]	[0.000]	[0.000]	[0.002]	[0.000]	[0.000]	[0.027]				
Mastery	-0.044	-0.040	0.000	-0.081	-0.024	0.010	-0.006	-0.047	-0.017	0.046	-0.103	0.002	-0.104	0.012	-0.215			
	[0.000]	[0.000]	[0.980]	[0.000]	[0.031]	[0.350]	[0.562]	[0.000]	[0.120]	[0.000]	[0.000]	[0.830]	[0.000]	[0.296]	[0.000]			
Uncertainty avoidance	-0.059	-0.050	-0.007	-0.086	-0.027	0.014	-0.035	-0.060	0.001	0.089	-0.135	-0.014	-0.121	0.036	-0.418	0.632		
	[0.000]	[0.000]	[0.546]	[0.000]	[0.016]	[0.208]	[0.001]	[0.000]	[0.897]	[0.000]	[0.000]	[0.201]	[0.000]	[0.001]	[0.000]	[0.000]		
Log(Distance)	0.008	-0.002	0.024	0.151	0.091	-0.066	0.009	0.082	0.078	-0.002	0.156	-0.144	0.048	-0.026	-0.303	-0.314	-0.592	
	[0.452]	[0.851]	[0.033]	[0.000]	[0.000]	[0.000]	[0.436]	[0.000]	[0.000]	[0.879]	[0.000]	[0.000]	[0.000]	[0.017]	[0.000]	[0.000]	[0.000]	[0.000]
Corporate tax rate	-0.102	-0.110	0.048	0.089	0.064	-0.001	-0.028	0.015	0.076	0.088	0.007	-0.174	-0.140	0.010	-0.697	0.537	0.428	0.313
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.962]	[0.011]	[0.176]	[0.000]	[0.000]	[0.549]	[0.000]	[0.000]	[0.387]	[0.000]	[0.000]	[0.000]	[0.000]

Panel F: Country-level characteristics using the country-level observations

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Embeddedness	32	3.640	0.376	3.081	3.561	4.349
Mastery	32	3.810	0.182	3.569	3.793	4.162
Uncertainty avoidance	32	0.618	0.245	0.230	0.585	1.040
Distance (in km)	32	7860	4273	1645	7785	16911
Log(Distance)	32	8.793	0.668	7.405	8.960	9.736
Corporate tax rate	32	0.324	0.048	0.241	0.330	0.400

Panel G: The correlation matrix using the country-level observations

	Embeddedness	Mastery	Uncertainty avoidance	Log(Distance)
Mastery	0.089 [0.629]			
Uncertainty avoidance	-0.263 [0.147]	0.226 [0.213]		
Log(Distance)	-0.341 [0.056]	-0.095 [0.604]	0.092 [0.618]	
Corporate tax rate	-0.309 [0.085]	0.376 [0.034]	0.362 [0.042]	0.224 [0.218]

## Table 2: Analysis of Variance (ANOVA)

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. In this table, we partition the total sum of squares of LEV, STD, and LTD dummy into between-country and within-country components, and report the results in Panels A, B, and C, respectively.

Panel A: ANOVA analysis of LEV

Source	SS	df	MS	F	Prob > F
Between-country	10.881	31	0.351	6.370	0.000
Within-country	449.39	8155	0.055		
Total	460.27	8186	0.056		

Panel B: ANOVA analysis of STD

Source	SS	df	MS	F	Prob > F
Between-country	12.799	31	0.413	7.470	0.000
Within-country	450.45	8155	0.055		
Total	463.24	8186	0.057		

Panel C: ANOVA analysis of LTD dummy

Source	SS	df	MS	F	Prob > F
Between-country	21.332	31	0.688	4.520	0.000
Within-country	1240.18	8155	0.152		
Total	1261.51	8186	0.154		

**Table 3: Summary statistics on transformed variables**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). We process each right-hand-side variable in the following way before implementing the regression analysis. First, we center every right-hand-side variable by its grand mean (averaged across firms and countries), so that every transformed variable has a mean of zero. Second, we create country-level mean values (averaged within a country) on those centered variables that vary by firm and we give a suffix to each of these variables as “\_ctrymean.” These means are deviations from the overall grand mean of zero. We treat the regional institutional and economic developmental measures in the same way as variables that vary by firm. Finally, we create within-country residuals by taking the grand-mean adjusted variables in step 1 and subtracting the corresponding within-country means in step 2. We name these firm-level deviations from their corresponding country means as “\_firmdev.” Panel A presents descriptive statistics of firm-level deviations for firm-level and province-level variables. Panel B presents descriptive statistics of country-level means for firm-level and province-level variables. Panel C presents descriptive statistics of country-level means for country-level variables. Panel D presents the correlation matrix for firm-level and province-level variables measured as firm-level deviations with P-values in brackets. Panel E presents the correlation matrix for all variables measured as country-level means with P-values in brackets.

**Panel A: Firm-level and province-level characteristics: *\_firmdev***

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Log(Firm Size)	8187	0.000	1.172	-1.675	-0.131	2.243
Profitability	8187	0.000	0.112	-0.155	-0.021	0.218
Asset tangibility	8187	0.000	0.190	-0.280	-0.016	0.339
Asset maturity	8187	0.000	0.102	-0.056	-0.024	0.110
Industry concentration	8187	0.000	0.003	-0.003	-0.001	0.007
Industry median LEV	8187	0.000	0.029	-0.046	-0.001	0.048
Industry median STD	8187	0.000	0.031	-0.056	0.001	0.040
Industry median LTD	8187	0.000	0.079	-0.125	-0.001	0.127
Foreign ownership	8187	0.000	0.150	-0.345	0.043	0.133
Marketization	8187	0.000	0.107	-0.208	0.004	0.153
Per capita GDP growth	8187	0.000	0.015	-0.018	-0.007	0.033

**Panel B: Firm-level and province-level characteristics: *\_ctrymean***

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Log(Firm Size)	32	0.185	0.557	-0.777	0.083	1.175
Profitability	32	0.012	0.034	-0.036	0.011	0.078
Asset tangibility	32	-0.020	0.063	-0.115	-0.020	0.082
Asset maturity	32	0.003	0.029	-0.035	0.001	0.052
Industry concentration	32	0.000	0.001	-0.002	0.000	0.001
Industry median LEV	32	0.001	0.008	-0.017	0.002	0.011
Industry median STD	32	-0.001	0.009	-0.020	0.000	0.012
Industry median LTD	32	0.010	0.029	-0.041	0.016	0.068
Foreign ownership	32	-0.037	0.050	-0.102	-0.045	0.044
Marketization	32	-0.003	0.036	-0.072	-0.003	0.065
Per capita GDP growth	32	0.000	0.003	-0.005	0.000	0.007

Panel C: Province-level and country-level characteristics: *\_ctrymean*

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Embeddedness	32	-0.144	0.376	-0.702	-0.223	0.565
Mastery	32	-0.063	0.182	-0.304	-0.079	0.289
Uncertainty avoidance	32	-0.036	0.245	-0.424	-0.069	0.386
Distance (in km)	32	0.767	0.668	-0.621	0.934	1.710
Log(Distance)	32	-0.003	0.048	-0.086	0.003	0.073
Corporate tax rate	32	-0.144	0.376	-0.702	-0.223	0.565

Panel D: The correlation matrix for firm-level and province-level characteristics: *\_firmdev*

	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization
Profitability	0.225 [0.000]									
Asset tangibility	0.007 [0.535]	-0.190 [0.000]								
Asset maturity	-0.023 [0.041]	-0.062 [0.000]	0.376 [0.000]							
Industry concentration	0.184 [0.000]	0.057 [0.000]	-0.049 [0.000]	-0.023 [0.038]						
Industry median LEV	0.036 [0.001]	0.031 [0.005]	0.031 [0.006]	-0.002 [0.892]	-0.030 [0.007]					
Industry median STD	0.023 [0.036]	0.056 [0.000]	-0.084 [0.000]	-0.049 [0.000]	-0.039 [0.000]	0.683 [0.000]				
Industry median LTD	0.052 [0.000]	0.004 [0.728]	0.104 [0.000]	0.042 [0.000]	0.152 [0.000]	0.503 [0.000]	-0.214 [0.000]			
Foreign ownership	-0.043 [0.000]	-0.022 [0.043]	0.051 [0.000]	0.014 [0.208]	-0.023 [0.037]	-0.066 [0.000]	0.005 [0.683]	-0.104 [0.000]		
Marketization	0.051 [0.000]	-0.013 [0.250]	-0.055 [0.000]	-0.041 [0.000]	-0.001 [0.906]	-0.042 [0.000]	0.071 [0.000]	-0.133 [0.000]	0.136 [0.000]	
Per capita GDP growth	-0.019 [0.094]	0.064 [0.000]	-0.002 [0.860]	0.003 [0.778]	-0.024 [0.032]	0.047 [0.000]	0.073 [0.000]	-0.043 [0.000]	-0.018 [0.097]	0.034 [0.002]

Panel E: The correlation matrix for all variables: *\_ctrymean*

	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization	Per capita GDP growth	Embeddedness	Mastery	Uncertainty avoidance	Log(Distance)
Profitability	0.162 [0.376]														
Asset tangibility	0.043 [0.814]	-0.410 [0.020]													
Asset maturity	-0.280 [0.121]	-0.136 [0.457]	0.467 [0.007]												
Industry concentration	0.470 [0.007]	0.047 [0.799]	0.010 [0.958]	-0.202 [0.267]											
Industry median LEV	0.538 [0.002]	0.016 [0.929]	-0.071 [0.698]	-0.541 [0.001]	0.229 [0.209]										
Industry median STD	0.202 [0.267]	0.172 [0.346]	-0.491 [0.004]	-0.487 [0.005]	0.415 [0.018]	0.563 [0.001]									
Industry median LTD	0.534 [0.002]	0.039 [0.834]	0.445 [0.011]	-0.037 [0.842]	0.064 [0.729]	0.405 [0.022]	-0.413 [0.019]								
Foreign ownership	0.025 [0.891]	0.198 [0.277]	0.176 [0.337]	-0.090 [0.623]	0.153 [0.405]	-0.159 [0.386]	-0.096 [0.602]	-0.084 [0.646]							
Marketization	-0.387 [0.029]	0.152 [0.406]	-0.039 [0.833]	0.131 [0.476]	-0.145 [0.427]	-0.201 [0.271]	-0.087 [0.638]	-0.064 [0.726]	0.085 [0.642]						
Per capita GDP growth	-0.005 [0.977]	0.072 [0.694]	-0.296 [0.100]	-0.232 [0.201]	0.353 [0.047]	0.223 [0.220]	0.588 [0.000]	-0.283 [0.117]	-0.061 [0.739]	0.030 [0.871]					
Embeddedness	-0.341 [0.056]	-0.334 [0.062]	0.279 [0.122]	0.195 [0.286]	-0.374 [0.035]	-0.244 [0.178]	-0.315 [0.079]	-0.139 [0.450]	0.358 [0.045]	0.330 [0.065]	0.007 [0.969]				
Mastery	-0.412 [0.019]	0.208 [0.254]	-0.113 [0.540]	0.232 [0.202]	-0.521 [0.002]	-0.418 [0.017]	-0.465 [0.007]	-0.062 [0.735]	0.142 [0.438]	0.094 [0.610]	-0.327 [0.068]	0.089 [0.629]			
Uncertainty avoidance	-0.335 [0.061]	-0.148 [0.419]	-0.408 [0.021]	-0.309 [0.085]	-0.307 [0.088]	0.027 [0.884]	0.302 [0.093]	-0.467 [0.007]	-0.372 [0.036]	-0.128 [0.484]	0.029 [0.876]	-0.263 [0.147]	0.226 [0.213]		
Log(Distance)	-0.094 [0.607]	0.191 [0.295]	-0.542 [0.001]	-0.092 [0.615]	0.081 [0.658]	-0.029 [0.874]	0.221 [0.225]	-0.157 [0.392]	-0.402 [0.023]	0.227 [0.211]	0.187 [0.306]	-0.341 [0.056]	-0.095 [0.604]	0.092 [0.618]	
Corporate tax rate	-0.191 [0.295]	0.193 [0.291]	-0.137 [0.456]	0.059 [0.750]	-0.134 [0.466]	-0.136 [0.458]	0.025 [0.893]	-0.106 [0.566]	-0.220 [0.225]	0.026 [0.886]	0.004 [0.983]	-0.309 [0.085]	0.376 [0.034]	0.362 [0.042]	0.224 [0.218]

#### **Table 4: Regressions without interactions**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Profitability is earnings before tax divided by total assets adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is the sum of (current assets/total assets)  $\times$  (current assets/cost of goods sold) and (fixed assets/total assets)  $\times$  (fixed assets/depreciation), divided by 100. Industry concentration is the Herfindahl index using sales. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004). Per capita GDP growth is the annual rate of growth in per capita GDP for different provinces and regions. Embeddedness and mastery are from Schwartz (2004), and uncertainty avoidance is from Hofstede (2001). Distance measures the physical distance from the foreign investor's home country and China. Corporate tax rate measures the highest marginal corporate tax rate in the foreign investor's home country. Model 1 employs standard OLS regression with robust standard errors clustering at the province-level, and the right-hand-side variables include firm-level, province-level, and country-level characteristics except corporate tax rate. Model 2 is similar to Model 1 but by including corporate tax rate as the right-hand-side variable. Models 3 and 4 employ the Hierarchical Linear Model specification using right-hand-side variables that are decomposed into firm-level deviations and country-level means. Model 3 excludes corporate tax rate, while Model 4 includes corporate tax rate. Standard errors are in parentheses. Panel A reports the regression results when the dependent variable is leverage (LEV). Panel B reports the regression results when the dependent variable is short-term debt (STD). Panel C reports the regression results when the dependent variable is the LTD dummy.

Panel A: Leverage

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>		<i>Model 4</i>	
			<i>_firmdev</i>	<i>_ctrymean</i>	<i>_firmdev</i>	<i>_ctrymean</i>
<b><u>Firm Characteristics</u></b>						
Firm size	0.029*** (0.003)	0.030*** (0.002)	0.030*** (0.002)	0.027 (0.026)	0.030*** (0.002)	0.023 (0.026)
Profitability	-0.667*** (0.032)	-0.664*** (0.031)	-0.670*** (0.023)	-1.125*** (0.294)	-0.670*** (0.023)	-0.506 (0.343)
Asset tangibility	-0.329*** (0.017)	-0.319*** (0.018)	-0.314*** (0.014)	-1.037*** (0.179)	-0.314*** (0.014)	-0.658*** (0.209)
Asset maturity	0.127*** (0.021)	0.119*** (0.019)	0.118*** (0.025)	0.983** (0.425)	0.118*** (0.025)	0.426 (0.453)
Industry concentration	-1.948* (1.091)	-2.037* (1.085)	-2.041** (0.826)	-9.135 (17.950)	-2.041** (0.825)	-13.940 (17.985)
Industry median	-0.126 (0.136)	-0.120 (0.132)	-0.112 (0.085)	0.370 (1.591)	-0.112 (0.085)	0.008 (1.593)
Foreign ownership	0.076*** (0.025)	0.067*** (0.024)	0.063*** (0.016)	0.399** (0.180)	0.063*** (0.016)	0.053 (0.205)
<b><u>Province Characteristics</u></b>						
Marketization	-0.086*** (0.023)	-0.096*** (0.022)	-0.071*** (0.023)	-0.378** (0.160)	-0.071*** (0.023)	-0.276* (0.163)
Per capita GDP growth	1.357*** (0.201)	1.354*** (0.224)	1.262*** (0.158)	4.570* (2.576)	1.262*** (0.158)	5.044** (2.578)
<b><u>Country Characteristics</u></b>						
Embeddedness	0.069*** (0.016)	0.043*** (0.015)		0.033 (0.028)		0.043 (0.028)
Mastery	-0.046 (0.031)	0.095*** (0.020)		-0.075** (0.035)		0.065 (0.053)
Uncertainty avoidance	0.013 (0.023)	0.092*** (0.024)		-0.015 (0.046)		0.040 (0.048)
Distance	0.011* (0.006)	0.043*** (0.007)		0.009 (0.011)		0.029** (0.013)
Corporate tax rate		-0.523*** (0.058)				-0.424*** (0.121)
Intercept	0.057 (0.153)	-0.525*** (0.152)		0.466*** (0.002)		0.466*** (0.002)
Number of Observations	8187	8187		8187		8187
Adjusted/Pseudo R <sup>2</sup>	0.14	0.15				

Panel B: Short-term debt

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>		<i>Model 4</i>	
			<i>_firmdev</i>	<i>_ctrymean</i>	<i>_firmdev</i>	<i>_ctrymean</i>
<b><u>Firm Characteristics</u></b>						
Firm size	0.025*** (0.002)	0.026*** (0.002)	0.027*** (0.002)	0.011 (0.023)	0.027*** (0.002)	-0.009 (0.024)
Profitability	-0.602*** (0.034)	-0.599*** (0.033)	-0.608*** (0.023)	-0.606* (0.312)	-0.608*** (0.023)	-0.215 (0.342)
Asset tangibility	-0.387*** (0.020)	-0.377*** (0.020)	-0.370*** (0.014)	-1.121*** (0.180)	-0.370*** (0.014)	-0.701*** (0.234)
Asset maturity	0.074*** (0.020)	0.065*** (0.019)	0.061** (0.025)	0.999** (0.439)	0.061** (0.025)	0.729 (0.449)
Industry concentration	-1.377 (1.048)	-1.479 (1.067)	-1.508** (0.825)	-11.092 (17.714)	-1.508** (0.824)	-6.989 (17.766)
Industry median	0.040 (0.111)	0.055 (0.114)	0.032 (0.078)	-2.138 (1.386)	0.032 (0.078)	0.469 (1.667)
Foreign ownership	0.066*** (0.022)	0.056** (0.022)	0.050*** (0.016)	0.541*** (0.180)	0.050*** (0.016)	0.140 (0.230)
<b><u>Province Characteristics</u></b>						
Marketization	-0.031 (0.024)	-0.044 (0.027)	-0.018 (0.023)	-0.308* (0.159)	-0.018 (0.023)	-0.280* (0.159)
Per capita GDP growth	1.326*** (0.184)	1.322*** (0.215)	1.242*** (0.158)	4.713* (2.664)	1.242*** (0.158)	3.810 (2.682)
<b><u>Country Characteristics</u></b>						
Embeddedness	0.074*** (0.014)	0.045*** (0.013)		0.009 (0.028)		0.028 (0.029)
Mastery	-0.047* (0.026)	0.110*** (0.016)		-0.091*** (0.035)		0.040 (0.058)
Uncertainty avoidance	0.021 (0.021)	0.108*** (0.019)		0.015 (0.048)		0.035 (0.049)
Distance	0.008 (0.006)	0.043*** (0.006)		0.008 (0.011)		0.025** (0.012)
Corporate tax rate		-0.583*** (0.037)				-0.407*** (0.145)
Intercept	-0.031 (0.142)	-0.683*** (0.116)		0.436*** (0.002)		0.436*** (0.002)
Number of Observations	8187	8187		8190		8190
Adjusted/Pseudo R <sup>2</sup>	0.15	0.16				

Panel C: Probability of having long-term debt

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>		<i>Model 4</i>	
			<i>_firmdev</i>	<i>_ctrymean</i>	<i>_firmdev</i>	<i>_ctrymean</i>
<b><u>Firm Characteristics</u></b>						
Firm size	0.134*** (0.018)	0.131*** (0.018)	0.127*** (0.014)	0.292* (0.174)	0.127*** (0.014)	0.287* (0.174)
Profitability	-0.837*** (0.147)	-0.846*** (0.148)	-0.788*** (0.160)	-4.263* (2.218)	-0.788*** (0.160)	-3.657 (2.500)
Asset tangibility	0.927*** (0.085)	0.897*** (0.090)	0.911*** (0.094)	2.358* (1.255)	0.911*** (0.094)	2.744* (1.491)
Asset maturity	0.423*** (0.110)	0.451*** (0.115)	0.485*** (0.156)	-7.670*** (2.991)	0.485*** (0.156)	-8.259*** (3.147)
Industry concentration	-8.486* (4.859)	-8.346* (4.768)	-3.885 (5.590)	-120.1 (123.9)	-3.879 (5.590)	-124.7 (123.4)
Industry median	1.027*** (0.173)	1.042*** (0.177)	0.991* (0.577)	8.571 (11.264)	0.992* (0.577)	8.359 (11.28)
Foreign ownership	0.223 (0.144)	0.249* (0.139)	0.246** (0.112)	-2.302* (1.202)	0.246** (0.112)	-2.623* (1.361)
<b><u>Province Characteristics</u></b>						
Marketization	-0.661** (0.276)	-0.630** (0.271)	-0.788*** (0.154)	0.538 (1.175)	-0.787*** (0.154)	0.644 (1.200)
Per capita GDP growth	5.671*** (2.144)	5.721*** (2.076)	5.689*** (1.063)	7.648 (18.042)	5.690*** (1.063)	8.272 (18.07)
<b><u>Country Characteristics</u></b>						
Embeddedness	-0.108 (0.105)	-0.037 (0.103)		0.049 (0.191)		0.061 (0.191)
Mastery	0.164 (0.151)	-0.280 (0.269)		0.541** (0.245)		0.678* (0.370)
Uncertainty Avoidance	-0.061 (0.132)	-0.336* (0.190)		-0.342 (0.314)		-0.287 (0.333)
Distance	0.019 (0.038)	-0.085 (0.061)		-0.007 (0.076)		0.014 (0.086)
Corporate tax rate		1.706** (0.795)				-0.412 (0.818)
Intercept	-3.499*** (0.739)	-1.604 (1.347)		-0.924*** (0.017)		-0.924*** (0.017)
Number of Observations	8187	8187		8187		8187
Adjusted/Pseudo R <sup>2</sup>	0.0493	0.0511				

## Table 5: Regressions with interactions

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations (i.e., foreign ownership > 50%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Profitability is earnings before tax divided by total assets adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is the sum of  $(\text{current assets}/\text{total assets}) \times (\text{current assets}/\text{cost of goods sold})$  and  $(\text{fixed assets}/\text{total assets}) \times (\text{fixed assets}/\text{depreciation})$ , divided by 100. Industry concentration is the Herfindahl index using sales. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004). Per capita GDP growth is the annual rate of growth in per capita GDP for different provinces and regions. Embeddedness and mastery are from Schwartz (2004), and uncertainty avoidance is from Hofstede (2001). Distance measures the physical distance from the foreign investor's home country and China. Corporate tax rate measures the highest marginal corporate tax rate in the foreign investor's home country. Based on Model 4, we add interaction terms between foreign ownership, marketization, and five country-level variables: embeddedness, mastery, uncertainty avoidance,  $\log(\text{distance})$ , and corporate tax rate to Model 5. For simplicity, we only report results on the interaction terms. Standard errors are in parentheses.

	<i>LEV</i>	<i>STD</i>	<i>LTD Dummy</i>
Foreign ownership* Embeddedness	-0.181** (0.092)	-0.041 (0.092)	-0.904 (0.629)
Foreign ownership* Mastery	0.018 (0.212)	0.022 (0.212)	-2.077 (1.459)
Foreign ownership* Uncertainty avoidance	-0.239 (0.162)	-0.176 (0.162)	-0.773 (1.107)
Foreign ownership*Log(Distance)	-0.044 (0.044)	-0.048 (0.044)	-0.314 (0.300)
Foreign ownership*Corporate tax rate	0.225 (0.448)	0.350 (0.448)	3.861 (3.042)
Marketization*Embeddedness	-0.239* (0.133)	-0.274** (0.132)	-0.235 (0.878)
Marketization*Mastery	0.131 (0.301)	-0.015 (0.301)	2.285 (1.987)
Marketization*Uncertainty avoidance	0.010 (0.237)	-0.164 (0.236)	0.632 (1.583)
Marketization*Log(Distance)	0.032 (0.066)	-0.013 (0.066)	0.309 (0.443)
Marketization*Corporate tax rate	-0.037 (0.627)	0.456 (0.626)	-5.486 (4.136)

**Table 6: Indirect effects of country-level variables**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 8,187 firm observations where the foreign investor is the majority owner (i.e., foreign ownership > 50%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Profitability is earnings before tax divided by total assets adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is the sum of (current assets/total assets) × (current assets/cost of goods sold) and (fixed assets/total assets) × (fixed assets/depreciation), divided by 100. Industry concentration is the Herfindahl index using sales. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004). Per capita GDP growth is the annual rate of growth in per capita GDP for different provinces and regions. Embeddedness and mastery are from Schwartz (2004), and uncertainty avoidance is from Hofstede (2001). Distance measures the physical distance from the foreign investor’s home country and China. GDP per Capita is from World Development Indicator (WDI). Stock market capitalization captures the size of stock markets measured as the ratio of stock market capitalization to GDP, available from WDI. Credit market capitalization captures the size of debt markets measured as the ratio of bond market capitalization to GDP, available from the World Bank. Creditor protection is an index aggregating different creditor rights, obtained from La Porta et al. (1998). Corporate tax rate measures the highest marginal corporate tax rate in the foreign investor’s home country. Standard errors are in parentheses. Panel A presents descriptive statistics of some new country-level variables. Panel B presents regressions of firm-level and province-level characteristics on country-level variables: embeddedness, mastery, uncertainty avoidance, and log(distance). Panel C presents regressions of firm-level and province-level characteristics on country-level variables: embeddedness, mastery, uncertainty avoidance, log(distance), stock market capitalization, and credit market capitalization. Panel D presents regressions of firm-level and province-level characteristics on country-level variables: embeddedness, mastery, uncertainty avoidance, log(distance), stock market capitalization, credit market capitalization, creditor protection, and corporate tax rate. Panel E presents the correlation matrix for all country-level variables with P-values in brackets.

Panel A: Summary statistics

	N	Mean	Std. Dev	5 <sup>th</sup> Percentile	Median	95 <sup>th</sup> Percentile
Log(GDP per capita)	32	9.149	1.245	6.607	9.786	10.357
Stock market capitalization	32	0.807	0.664	0.127	0.716	2.500
Credit market capitalization	28	0.586	0.309	0.159	0.574	1.235
Creditor protection	32	2.063	1.243	0.000	2.000	4.000

Panel B: Explaining firm-level and province-level characteristics using cultural values and distance

	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization	Per capita GDP growth
Embeddedness	-0.741*** (0.235)	-0.038** (0.016)	0.004 (0.027)	0.006 (0.015)	-0.001*** (0.000)	-0.005 (0.004)	-0.003 (0.004)	-0.028** (0.013)	0.019 (0.023)	0.042** (0.018)	0.001 (0.002)
Mastery	-0.944** (0.457)	0.062* (0.032)	-0.030 (0.053)	0.049* (0.029)	-0.002*** (0.001)	-0.019** (0.008)	-0.027*** (0.008)	0.012 (0.026)	0.049 (0.045)	0.022 (0.035)	-0.007* (0.003)
Uncertainty avoidance	-0.845** (0.349)	-0.048* (0.024)	-0.086** (0.040)	-0.043* (0.022)	-0.001** (0.000)	0.002 (0.006)	0.014** (0.006)	-0.066*** (0.020)	-0.070* (0.034)	-0.011 (0.027)	0.002 (0.003)
Log(Distance)	-0.217* (0.127)	0.006 (0.009)	-0.048*** (0.015)	-0.000 (0.008)	-0.000 (0.000)	-0.002 (0.002)	0.001 (0.002)	-0.010 (0.007)	-0.023* (0.012)	0.021** (0.010)	0.001 (0.001)
Intercept	0.155 (0.123)	0.004 (0.009)	0.012 (0.014)	0.005 (0.008)	-0.000 (0.000)	0.001 (0.002)	-0.004* (0.002)	0.012 (0.007)	-0.016 (0.012)	-0.012 (0.009)	-0.001 (0.001)
Number of Observations	32	32	32	32	32	32	32	32	32	32	32
Adjusted R <sup>2</sup>	0.36	0.17	0.35	0.08	0.40	0.13	0.34	0.25	0.23	0.14	0.03

Panel C: Explaining firm-level and province-level characteristics using cultural values and country-level characteristics

	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization	Per capita GDP growth
Embeddedness	-0.821*** (0.286)	-0.028 (0.022)	-0.010 (0.033)	0.006 (0.015)	-0.001* (0.000)	-0.009** (0.004)	-0.003 (0.005)	-0.041** (0.015)	0.023 (0.028)	0.028 (0.020)	0.001 (0.002)
Mastery	-0.610 (0.554)	0.045 (0.042)	-0.063 (0.064)	-0.005 (0.030)	-0.002* (0.001)	-0.002 (0.008)	-0.023** (0.010)	0.043 (0.029)	0.091 (0.054)	-0.000 (0.040)	-0.006 (0.004)
Uncertainty avoidance	-0.850** (0.376)	-0.037 (0.029)	-0.062 (0.043)	-0.020 (0.020)	-0.001* (0.001)	-0.001 (0.005)	0.012* (0.007)	-0.067*** (0.020)	-0.099** (0.036)	-0.000 (0.027)	-0.000 (0.003)
Log(Distance)	-0.274 (0.176)	0.004 (0.013)	-0.072*** (0.020)	-0.013 (0.009)	0.000 (0.000)	-0.002 (0.003)	0.005 (0.003)	-0.019** (0.009)	0.008 (0.017)	0.013 (0.013)	0.003* (0.001)
Stock market capitalization	-0.086 (0.130)	0.012 (0.010)	-0.022 (0.015)	-0.002 (0.007)	0.000 (0.000)	0.001 (0.002)	0.003 (0.002)	-0.007 (0.007)	0.012 (0.013)	-0.006 (0.009)	0.000 (0.001)
Credit market capitalization	0.328 (0.294)	-0.000 (0.022)	0.015 (0.034)	-0.006 (0.016)	-0.000 (0.000)	-0.000 (0.004)	0.003 (0.005)	0.004 (0.015)	0.027 (0.028)	-0.001 (0.021)	-0.001 (0.002)
Intercept	0.127 (0.283)	-0.005 (0.022)	0.040 (0.033)	0.015 (0.015)	-0.000 (0.000)	0.001 (0.004)	-0.011** (0.005)	0.027* (0.015)	-0.068** (0.027)	-0.006 (0.020)	-0.002 (0.002)
Number of Observations	28	28	28	28	28	28	28	28	28	28	28
Adjusted R <sup>2</sup>	0.38	-0.02	0.42	-0.01	0.32	0.06	0.35	0.41	0.24	-0.08	0.09

Panel D: Explaining firm-level and province-level characteristics using an expanded set of country-level variables

	Log(Firm size)	Profitability	Asset tangibility	Asset maturity	Industry concentration	Industry median LEV	Industry median STD	Industry median LTD	Foreign ownership	Marketization	Per capita GDP growth
Embeddedness	-0.854** (0.310)	-0.027 (0.024)	-0.006 (0.037)	0.003 (0.016)	-0.001 (0.001)	-0.009* (0.005)	-0.002 (0.006)	-0.041** (0.016)	0.020 (0.030)	0.024 (0.022)	0.002 (0.002)
Mastery	-0.504 (0.634)	0.043 (0.050)	-0.075 (0.075)	0.003 (0.034)	-0.002* (0.001)	0.000 (0.009)	-0.025** (0.011)	0.043 (0.033)	0.098 (0.062)	0.008 (0.045)	-0.009* (0.005)
Uncertainty avoidance	-0.602 (0.488)	-0.039 (0.038)	-0.069 (0.058)	-0.038 (0.026)	-0.001 (0.001)	0.002 (0.007)	0.010 (0.009)	-0.053* (0.025)	-0.123** (0.048)	-0.028 (0.034)	0.001 (0.004)
Log(Distance)	-0.263 (0.190)	0.004 (0.015)	-0.071*** (0.022)	-0.016 (0.010)	0.000 (0.000)	-0.002 (0.003)	0.005 (0.003)	-0.018* (0.010)	0.004 (0.019)	0.009 (0.013)	0.003** (0.001)
Stock market capitalization	-0.056 (0.141)	0.012 (0.011)	-0.023 (0.017)	-0.005 (0.007)	0.000 (0.000)	0.002 (0.002)	0.003 (0.003)	-0.006 (0.007)	0.009 (0.014)	-0.010 (0.010)	0.001 (0.001)
Credit market capitalization	0.327 (0.301)	-0.000 (0.024)	0.015 (0.036)	-0.006 (0.016)	-0.000 (0.000)	-0.000 (0.004)	0.003 (0.005)	0.004 (0.016)	0.027 (0.029)	-0.001 (0.021)	-0.001 (0.002)
Creditor protection	0.046 (0.095)	-0.000 (0.007)	-0.000 (0.011)	-0.006 (0.005)	0.000 (0.000)	0.001 (0.001)	-0.000 (0.002)	0.003 (0.005)	-0.007 (0.009)	-0.008 (0.007)	0.001 (0.001)
Corporate tax rate	-2.006 (2.199)	0.025 (0.172)	0.118 (0.259)	0.033 (0.117)	0.002 (0.004)	-0.029 (0.032)	0.020 (0.040)	-0.076 (0.115)	0.070 (0.215)	0.082 (0.154)	0.017 (0.016)
Intercept	0.015 (0.390)	-0.004 (0.031)	0.040 (0.046)	0.031 (0.021)	-0.001 (0.001)	-0.000 (0.006)	-0.011 (0.007)	0.018 (0.020)	-0.049 (0.038)	0.015 (0.027)	-0.005 (0.003)
Number of Observations	28	28	28	28	28	28	28	28	28	28	28
Adjusted R <sup>2</sup>	0.35	-0.13	0.37	-0.05	0.27	0.01	0.29	0.38	0.19	-0.10	0.11

Panel E: The correlation matrix (pair-wise correlation)

	Embeddedness	Mastery	Uncertainty avoidance	Log(Distance)	Stock market capitalization	Credit market capitalization	Creditor protection
Mastery	0.092 [0.605]						
Uncertainty avoidance	-0.238 [0.176]	0.217 [0.218]					
Log(Distance)	-0.338 [0.050]	-0.090 [0.612]	0.080 [0.654]				
Stock market capitalization	-0.275 [0.116]	-0.285 [0.102]	-0.028 [0.876]	0.144 [0.416]			
Credit market capitalization	-0.129 [0.498]	0.196 [0.300]	-0.097 [0.611]	-0.186 [0.324]	-0.022 [0.909]		
Creditor protection	0.277 [0.112]	0.147 [0.407]	-0.385 [0.025]	-0.348 [0.044]	-0.223 [0.206]	0.137 [0.472]	
Corporate tax rate	-0.224 [0.203]	0.275 [0.116]	0.409 [0.016]	0.144 [0.418]	0.079 [0.656]	-0.168 [0.376]	0.033 [0.851]

### **Table 7: Regressions without interactions using the wholly-foreign-owned sub-sample**

Our sample contains the population of Chinese manufacturing firms that have foreign investors tracked by the NBS in 2002. We drop observations with negative values of total assets, total liabilities, and sales, and winsorize all firm-level variables at the one percent level in both tails of the distribution. Our final sample has 5,763 firm observations where the foreign investor is the sole owner (i.e., foreign ownership = 100%). LEV is measured as the ratio of total liabilities over total assets. STD is the ratio of short-term liabilities over total assets. LTD dummy is set equal to one if the firm has long-term debt, and zero otherwise. Firm size is annual sales measured in millions of RMB yuan. Profitability is earnings before tax divided by total assets adjusted by the industry median. Asset tangibility is total fixed assets divided by total assets. Asset maturity is the sum of (current assets/total assets)  $\times$  (current assets/cost of goods sold) and (fixed assets/total assets)  $\times$  (fixed assets/depreciation), divided by 100. Industry concentration is the Herfindahl index using sales. Foreign ownership is the fraction of paid-in-capital contributed by the foreign investors. The marketization index captures the regional institutional development and is from Fan and Wang (2004). Per capita GDP growth is the annual rate of growth in per capita GDP for different provinces and regions. Embeddedness and mastery are from Schwartz (2004), and uncertainty avoidance is from Hofstede (2001). Distance measures the physical distance from the foreign investor's home country and China. Corporate tax rate measures the highest marginal corporate tax rate in the foreign investor's home country. Standard errors are in parentheses.

	<i>LEV</i>		<i>STD</i>		<i>LTD Dummy</i>	
	<i>_firmdev</i>	<i>_ctrymean</i>	<i>_firmdev</i>	<i>_ctrymean</i>	<i>_firmdev</i>	<i>_ctrymean</i>
<b><u>Firm Characteristics</u></b>						
Firm size	0.028*** (0.003)	0.073*** (0.026)	0.025*** (0.003)	0.044* (0.026)	0.123*** (0.018)	0.568*** (0.182)
Profitability	-0.679*** (0.026)	-0.537* (0.325)	-0.616*** (0.027)	-0.634* (0.344)	-0.672*** (0.188)	-0.082 (2.243)
Asset tangibility	-0.329*** (0.016)	-0.763*** (0.237)	-0.384*** (0.016)	-0.851*** (0.236)	0.975*** (0.111)	2.030 (1.670)
Asset maturity	0.082*** (0.027)	0.670 (0.449)	0.036 (0.028)	0.817* (0.445)	0.298* (0.171)	-4.656 (3.351)
Industry concentration	-1.462 (0.998)	16.785 (22.358)	-0.949 (1.007)	16.442 (20.610)	-6.338 (6.839)	137.964 (167.399)
Industry median	-0.090 (0.100)	0.394 (1.548)	0.054 (0.096)	0.968 (1.352)	0.940*** (0.259)	5.441 (3.854)
Foreign ownership						
<b><u>Province Characteristics</u></b>						
Marketization	-0.104*** (0.029)	-0.460** (0.182)	-0.047 (0.030)	-0.501*** (0.169)	-0.542*** (0.198)	-0.235 (1.265)
Per capita GDP growth	1.043*** (0.195)	0.549 (2.554)	1.030*** (0.197)	-0.236 (2.508)	6.509*** (1.308)	-20.460 (16.359)
<b><u>Country Characteristics</u></b>						
Embeddedness		0.112*** (0.039)		0.110*** (0.037)		0.472*** (0.030)
Mastery		0.085 (0.053)		0.072 (0.055)		-0.212 (0.360)
Uncertainty avoidance		0.141** (0.059)		0.119** (0.060)		0.821** (0.410)
Distance		0.039** (0.017)		0.035** (0.017)		0.041 (0.127)
Corporate tax rate		-0.501*** (0.140)		-0.487*** (0.149)		0.711 (1.023)
Intercept		0.474*** (0.003)		0.443*** (0.003)		-0.938*** (0.020)
Number of Observations		5763		5763		5763
Adjusted/Pseudo R <sup>2</sup>						