Culture and Economic Policy: Evidence from the Privatization Reform

Narjess Boubakri
American University of Sharjah, UAE
nboubakri@aus.edu

Omrane Guedhami
Moore School of Business, University of South Carolina, USA
omrane.guedhami@moore.sc.edu

Chuck C.Y. Kwok
Moore School of Business, University of South Carolina, USA
ckwok@moore.sc.edu

Walid Saffar
School of Accounting and Finance, The Hong Kong Polytechnic University
walid.saffar@polyu.edu.hk

Abstract

Using a large hand-collected database of 605 privatized firms from 48 countries, we provide the first evidence on the role of informal institutions in shaping privatization design. Specifically, we investigate the impact of culture (collectivism) on residual state ownership. We find that the continued role of the government in privatized firms is positively related to collectivism. This result is robust to using alternative measures of collectivism and government control, out-of-sample evidence, as well as when we address the endogeneity of collectivism. In additional analyses, we find that the relation between collectivism and residual state ownership is conditioned by the property rights institutions, providing support for Williamson's (2000) argument that the outcome of the privatization reform must take into consideration both formal and informal constraints to be successful.

January 2014

JEL classification: G32, G34
Key words: Privatization; collectivism; corporate governance

* We gratefully acknowledge the helpful comments from Najah Attig, Sabri Boubaker, Jean-Claude Cosset, Sadok El Ghoul, Mara Faccio, Irena Hutton, A Can Inci, Christo A. Pirinsky, and Ekaterina Turkina. We appreciate financial support from Canada's Social Sciences and Humanities Research Council as well as excellent research assistance from Heba Abu Ghazalah.

Culture and Economic Policy: Evidence from the Privatization Reform

Abstract

Using a large hand-collected database of 605 privatized firms from 48 countries, we provide the first evidence on the role of informal institutions in shaping privatization design. Specifically, we investigate the impact of culture (collectivism) on residual state ownership. We find that the continued role of the government in privatized firms is positively related to collectivism. This result is robust to using alternative measures of collectivism and government control, out-of-sample evidence, as well as when we address the endogeneity of collectivism. In additional analyses, we find that the relation between collectivism and residual state ownership is conditioned by the property rights institutions, providing support for Williamson's (2000) argument that the outcome of the privatization reform must take into consideration both formal and informal constraints to be successful.

January 2014

JEL classification: G32, G34
Key words: Privatization; collectivism; corporate governance

1. Introduction

Over the last three decades, privatization – the deliberate sale by a government of state-owned enterprises (SOEs hereafter) or assets to private economic agents – has reduced the role of the state in the economy in developed and developing countries alike, and has brought major changes in financial markets (Megginson, 2010). Prior theoretical and empirical studies argue that legal, political, and economic variables well explain privatization design, and in particular how much stake the government should relinquish and how this stake should be divested (e.g., Jones et al., 1999; Megginson et al., 2004; Bortolotti and Faccio, 2009; Boubakri et al., 2011).[1]

However, while previous privatization studies consider the impact of *formal* institutions (investor protection, political and legal environment), the role of *informal* institutions remains unexplored.[2] As Henrich (2000, p. 973) concludes after providing evidence that economic decisions are heavily influenced by cultural differences, "the assumption that humans share the same economic decision-making processes must be reconsidered." As a consequence, one cannot expect decision makers (i.e., politicians) to have the same cognitive machinery for making economic decisions across countries. In this study we contribute to the privatization literature by providing the first evidence on the role of informal institutions in determining an observed privatization design. We build on Williamson's (2000) "New Institutional Economics" framework to develop and motivate our hypotheses. Specifically, we consider whether, and how, the collectivism/individualism dimension of national culture affects residual state

[1] In the context of privatization, residual state ownership has been shown to affect firms' performance (Megginson et al., 1994; Boubakri et al., 2005; Gupta, 2005), financial reporting quality (Guedhami et al., 2009), cost of capital (Borisova and Megginson, 2011; Ben-Nasr et al., 2012), and risk-taking (Boubakri et al., 2013).

[2] North (1991, p. 111) notes the yet-to-be-explained "pervasive influence" of informal constraints "upon the long-run character of economies."

ownership in privatized firms. We focus on Hofstede's (2001) distinction between individualism and collectivism, as it is considered a fundamental driver of cultural differences across countries (Markus and Kitayama, 1991; Triandis, 2001; Heine, 2007) and has been shown to have important economic effects (e.g., Guiso et al., 2006; Gorodnichenko and Roland, 2011). Individualism refers to the belief that success is mostly determined by actions taken by individuals who do not internalize collective interests. In individualistic societies, resource allocation is determined by free competitive markets and government intervention is highly undesirable. By contrast, in collectivist societies "individuals internalize group interests to a greater degree and concerns over group welfare, equality and loyalty become aggregate interests that tend to prevail over autonomous ones" (Hofstede, 1991). In such societies, resource allocation is the task of the government (House et al., 2002). Consistent with this distinction, Hofstede (2001) finds that in collectivistic countries monopolies are more common, while in more individualistic countries competition goes hand-in-hand with greater economic freedom and better economic performance.

The importance of national culture in shaping economic choices and outcomes is documented in a growing number of studies (e.g., Guiso et al., 2006; Kwok and Tadesse, 2006; Chui et al., 2010). Guiso et al. (2006, p. 23) define culture as "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation." They argue (p. 40) that by affecting individuals' political preferences, that is, their expectations and preferences about the extent of government dominance in economic life and the role governments should play in promoting competition, regulating the market,

redistributing income, running social security programs, or nationalizing certain industries and businesses, these beliefs and values affect economic outcomes.[3]

Privatization offers a unique setting to investigate the impact of the collectivism dimension of culture on *policy design*. In his discussion of the Russian privatization experience, Williamson (2000) notes that the outcome of the reform could have been different if formal and informal constraints had been taken into consideration. In addition, not only is privatization a politically motivated policy that has obvious redistributive consequences, but it also leads to drastic changes along the different levels in Williamson's (2000) model including firms' ownership structure and corporate governance, and the degree of government intervention therein. Both privatization and state control are timely topics. During the recent financial crisis, government bailout programs aimed at rescuing firms in difficulty effectively increased state ownership in many countries, apparently reversing three decades of privatization that decreased the role of the state in the economy. However, although government ownership and "state capitalism" are now the new trend (The Economist, January 21st, 2012), privatization still remains on the reform agenda of several countries where governments continue to retain substantial stakes in fully and partially SOEs (Megginson, 2010). By focusing on privatization design, at the time of the drastic ownership change that characterizes the reform, we offer a direct test of how culture impacts such a decision.

[3] According to Gorodnichenko and Roland (2011), culture imposes constraints on individual behavior just as formal political or legal institutions do (where formal institutions are defined as in North, 1990). In fact this political-institutional environment as noted by Williamson (2000, p. 598) include formal rules of "executive, legislative, judicial and bureaucratic functions of governments as well as the distribution of powers across different levels of governments. The definition and enforcement of property rights and of contract laws are important features."

In this paper, we posit that a given privatization design reflects the prevailing culture through both direct and indirect mechanisms. On the one hand, culture may have a direct effect on residual state ownership in privatized SOEs through its impact on government officials' priority and decision-making processes. In high collectivist societies, the government is more likely to retain greater residual ownership to minimize wealth transfers as well as maintain its influence on firm decisions and hence on the country's overall direction. On the other hand, culture may have an indirect effect on residual state ownership through its impact on legal institutions, corporate governance, and financial disclosure (Gray, 1988; Coffee, 2001; Licht et al., 2005), factors that have previously been shown to impact privatization design (Megginson et al., 2004; Guedhami and Pittman, 2006; Boubakri et al., 2011). In our analysis, we seek to identify whether culture has a significant direct effect beyond the indirect "legal and political channels" effect documented in previous literature (Property Rights view). If the impact of culture on privatization is fully captured by (formal) legal and political institutions, we should find no significant explanatory power of culture once we account for these factors.

Using a large hand-collected database of 605 privatized firms from 48 countries over the 1995-2010 period, we conduct a multivariate analysis to investigate whether collectivism is reflected in the level of state ownership after privatization. We do find that it is indeed the case. This relation is robust to whether we conduct the analysis using firms as the unit of observation or whether we aggregate across firms within each country and use the country as the unit of observation. The effect is also economically significant. For example, in the firm-level regressions, an increase in the collectivism dimension of culture by one standard deviation from the mean results in an increase in the level of residual state ownership from 22% to 44%, while keeping the control variables at their means. Our results continue to hold when we use

alternative measures of collectivism and government control. In additional analyses, we find that the relation between collectivism and residual state ownership is conditioned by country-level property rights institutions. In fact, the relation between collectivism and state ownership is stronger when property rights are weakly defined or enforced, suggesting that informal institutions, in and of themselves, have an effect on economic outcomes that goes beyond the "embeddedness" in formal institutions as discussed in Williamson (2000). Taken together, our findings have important policy implications because international donor agencies usually pressure countries to privatize without accounting for their institutional and cultural constraints/environments.

One concern with our analysis is the endogeneity that might result from non-random sample selection. We attempt to partially mitigate this concern by showing that the link between collectivism and state ownership persists in out-of-sample analysis based on alternative data sources on government control. This leads to two complications. The first is reverse causality whereby residual state ownership in each privatized firm may collectively influence the level of collectivism at the country level. We believe that this is an unlikely concern in our paper, because culture changes very slowly over time. Indeed, the stability of culture is consistent with the theoretical framework of Williamson (2000) and is empirically validated by Licht et al. (2007). Other than "the unlikely" reverse causality, our analysis may suffer from potentially omitted variables that could affect residual state ownership while correlating with national culture, thus leading to a biased estimate of the effect of collectivism on state ownership.

To address this concern we perform the following: First, we control for various firm- and country-level characteristics across all regressions. Second, we include additional control

variables whose effects on state ownership might bias the coefficient estimate on collectivism if these variables contribute to the error term. Third, we employ the instrumental variables approach, which involves using an instrument for collectivism to isolate the exogenous component of culture and then examining its relationship with state ownership. As an instrument for collectivism we choose *Disease*, an index of the historical prevalence of disease within different geopolitical regions. The rationale is that in regions where infectious diseases have been prevalent, collectivist traits are more likely to have evolved to reduce contact with strangers and deviation from normal food (Fincher et al., 2008). Empirically, we show that this instrument is relevant and exogenous to collectivism (Roberts and Whited, 2011). Collectively, the results of these additional tests suggest that endogeneity is not responsible for the significant relationship between collectivism and residual state ownership in privatized firms.

In this paper we provide the first evidence of the role of national culture (specifically, collectivism), after controlling for legal and political determinants, in explaining governments' level of intervention. In doing so, we contribute to the growing literature on the importance of national culture in shaping a country's economic choices and outcomes (e.g., Guiso et al., 2006; Gorodnichenko and Roland, 2011; Siegel et al., 2011; Ahern et al., 2013). We also add to the literature on the political economy of privatization that focuses on governments' allocation of control decisions during the privatization process (e.g., Jones et al., 1999; Megginson et al., 2004; Bortolotti and Faccio, 2009; Boubakri et al., 2011).

The remainder of the paper is structured as follows. Section 2 discusses the paper's motivation and develops our hypotheses on the relation between privatization design and collectivism. Section 3 discusses the sample and variables, and provides descriptive statistics.

Section 4 presents the main empirical findings, while Section 5 presents interaction analysis. Finally, Section 6 summarizes and concludes the paper.

2. Motivation

2.1 Culture and Economic Outcomes

Hofstede (2001) defines culture as the collective mental programming that leads to patterned ways of thinking, feeling, and acting and that distinguishes one group or category of people from another. The essence of culture is systems of values that are enduring beliefs and attitudes concerning what are personally or socially preferable codes of conduct and end-states of existence (Hofstede, 2001). As noted by North (1990, p. 37), "culture provides a language-based conceptual framework for encoding and interpreting the information that the senses are presenting to the brain," and thereby shapes human actors' perceptions of the external world and influences their decisions and behaviors. This joins the bounded rationality idea held by the New Institutional Economics view.

The effect of culture on economic behavior can be seen through an analytical framework of social analysis suggested by Williamson (2000) and illustrated in Figure 1. Williamson's framework consists of four levels, with each level imposing constraints on the level immediately below. Level 1 (the top level) consists of informal institutions (e.g., norms, customs, mores, traditions, and so forth) that vary across countries and serve as informal constraints on credible contracting (Williamson, 1998). Culture is embedded in this level. According to Williamson (2000), "institutions at this level change very slowly— on the order of centuries or millennia." Level 2, located below Level 1, consists of the institutional environment or formal rules of the game (e.g., the executive, legislative, judicial, and bureaucratic functions of the government).

The definition and enforcement of property rights and contract law are important features of this level. Except for very rare abrupt changes owing to political or economic crises, major changes in the institutional environment occur rather slowly, on the order of decades or centuries.[4] Level 3 is where governance institutions are located. This level consists of the play of the game (especially contracts). According to Williamson, the possible alignment of transactions and governance structures is re-examined periodically, on the order of a year to a decade. Finally, Level 4 consists of resource allocation and employment (e.g., prices and quantities, incentive alignment). This is where optimality analysis, often neoclassical marginal analysis, is employed. Adjustments at this level typically occur more or less continuously.

The top-down relationship as one moves from Level 1 to Level 4 captures the influence of culture on the formal institutional environment, contract enforcement, and incentive alignment. We summarize these influences of culture on economic activities as operating through one of two channels. *First*, culture (Level 1) shapes formal institutions (Level 2) and hence indirectly affects economic outcomes. *Second*, culture exerts a direct impact on economic activities through its role as an informal constraint on opportunistic behavior and its influence on human actors' actions and decisions by shaping their incentives and subjective perceptions of the external world.[5]

Based on Williamson's (2000) model, Licht et al. (2005) confirm that legal rules are systematically related to a country's prevailing cultural orientation, suggesting that formal rules partially reflect the dominant culture in a society. Stulz and Williamson (2003) also note that French writers view Common law, in contrast to civil law, as having an ''individualist spirit''

[4] Using the European Union (EU) as an example, Williamson describes the slow and gradual changes in the EU over a span of more than 50 years.

[5] Including politicians and policy decision-makers.

(David, 1980, p. 26). However, the impact of culture on economic activities goes beyond its influence through legal institutions as these cannot constrain opportunistic behavior entirely owing to incomplete contracts (Aggarwal and Goodell, 2009). North (1990) argues that despite the great importance of formal rules, they make up only a small proportion of the constraints that shape choices. He emphasizes that informal constraints are not merely appendages of formal institutions, but rather are important in and of themselves, given evidence that the same formal rules (e.g., constitutions) lead to different outcomes in different countries. Culture also influences how individuals process information and shapes their subjective mental constructs used to interpret the problems they face, which in turn affects their decisions. The complexity of human motivations and subjective perceptions of the world further points to the critical role of culture in determining economic activities.

Recent empirical research supports the fundamental role played by culture in influencing economic outcomes at different levels. First, at the societal level, Gorodnichenko and Roland (2011) present evidence that Hofstede's (2001) individualism-collectivism dimension has a significant and robust effect on a country's long-run economic growth. They argue that relative to a collectivist culture, an individualist culture is associated with more innovation, a higher level of total factor productivity, and higher long-term growth. Kwok and Tadesse (2006) present evidence that, even after controlling for legal institutions as well as factors related to the economic and political environment, a nation's attitude towards risk and uncertainty affects the nation's choice between banks and stock markets as the predominant financial system.

Second, at the corporate level, Chui et al. (2002) find a significant relationship between national culture and the corporate debt ratio even when considering differences in economic

performance, legal systems, and financial development. Shao et al. (2010) argue that culture helps explain different corporate dividend policies through its effect on shareholders' subjective perceptions towards agency and asymmetric information problems within a firm. They further present evidence on the role of culture in explaining cross-country variation in corporate dividend policies after controlling for legal protection and economic development. Regarding the choice of corporate debt maturity, Zheng et al. (2012) find that firms located in countries with high uncertainty avoidance, high collectivism, high power distance, and high masculinity tend to use more short-term debt. More recently, after controlling for various measures of formal institutions, Li et al. (2013) show that corporate risk taking is positively (negatively) related to individualism (uncertainty avoidance), and Ahern et al. (2013) find strong evidence that national culture, specifically the dimensions trust, hierarchy, and individualism, affects merger volume and synergy gains.

Third, at the individual level, Chui and Kwok (2008) document that people in individualist countries are more inclined to purchase life insurance than people in collectivist countries. They explain this difference by arguing that collectivist countries provide more social network support and therefore have less need for market-based life insurance. Focusing on individual investment, Grinblatt and Keloharju (2001) show that distance, language, and cultural background influence the buying, selling, and holding of stocks, leading to a home bias in portfolio structure. In the same vein, Guiso et al. (2006) find that culture is a significant factor in explaining cross-country variation in stock market participation. Recently, Chui et al. (2010) examine the influence of individualism on momentum trading in stock markets around the world, and find that individualism is positively related to trading volume and volatility, as well as to the magnitude of momentum profits. In this study, we extend the literature on the

economic outcomes of culture by examining how the individualism-collectivism dimension of culture influences privatization policy.

2.2 Culture and Privatization

In their summary on the individualism-collectivism dimension, Chui et al. (2010, p. 364) state that the distinction between individualist and collectivist cultures "pertains to the degree to which people in a country tend to have an independent rather than an interdependent self-construct." Citing Markus and Kitayama (1991), Chui et al. explain: "In individualist cultures, individuals tend to view themselves as 'an autonomous, independent person,' while in collectivist cultures, individuals view themselves 'not as separate from the social context but as more connected and less differentiated from others.'" Moreover, in his discussion of the Russian privatization experience, Williamson (2000) notes that the outcome of the reform could have been different if formal and informal constraints had been taken into consideration. Based on these facts, we argue that the individualism-collectivism dimension directly influences residual state ownership in privatized firms via wealth transfer concerns (through the priority-setting process) and strategic concerns (through the decision-making process).[6] In addition, the individualism-collectivism dimension influences privatization design indirectly through various channels as discussed below.

2.2.1 Direct Channels of Influence

Wealth Transfer Concerns and the Priority-Setting Process

In collectivist cultures, the primary focus of social behavior is on fulfilling duties and obligations to others (Davidson et al., 1976; Bontempo and Rivero, 1992; Miller, 1994). Personal

[6] These two channels are not mutually exclusive.

interest is subsumed under collective interest. Though economic incentives may be provided to motivate individuals to be diligent and creative, the ultimate goal of the economic system is to maximize the collective interest (Gelfand et al., 2004, p. 464). In a collectivist country, the government is likely to retain a higher level of residual ownership than the government of an individualist country, the rationale being as follows. When the enterprise is first sold to the public, the economic potential of the enterprise may not be fully revealed and hence the firm may be undervalued by the market. If the government were to relinquish all of its shares, it would effectively transfer public assets (i.e., public wealth) to private ownership at an initially depressed price. Indeed, in an international study of the underpricing of Share Issue Privatizations (SIPs hereafter), Jones et al. (1999) find that SIPs are heavily underpriced. One consequence is that, as Boubakri et al. (2005) show, in most countries governments choose to sell SOEs in tranches in order to signal the government's commitment to the privatization process. In related work, Boubakri and Bouslimi (2011) show that investors who are relatively pessimistic about the prospects of newly privatized firms (NPFs) at the time of divestiture gain confidence and become more optimistic over the three years following the first issue. By totally relinquishing its shares, the government could be perceived as sacrificing a substantial amount of public wealth to enrich a small group of private individuals.

In this context, retaining residual ownership has at least two additional advantages. First, the government may wait to sell shares after the firm's profitability improves, which would increase firm value and in turn interest among investors. In this vein, privatization studies show that NPFs generally improve their performance over the three-year period

following divestiture and generate positive long-run abnormal returns (Choi et al., 2010).[7] In early privatizations, investors do not have a previous track record to rely on about the company being divested. Following performance improvements, one would expect the government to sell its remaining shares at higher prices, thus raising more revenues. Second, the government may decide to hold its shares in a lucrative firm to share in future profits.

In contrast, in individualist cultures the emphasis is less on fulfilling social obligations and more on meeting individual preferences and needs (Triandis, 1994, 1995). Individual goals typically are not correlated with collective goals (Schwartz, 1992, 1994). The economic system is designed to maximize individual interests rather than the collective interest (Gelfand et al., 2004, p. 464). With such a value orientation, a government privatizing SOEs does not have a particularly strong preference for retaining residual ownership and would rather let the new private owners profit from an increase in the value of the privatized firm. The rationale is that if it is the effort of the new owners that makes the enterprise more efficient, productive, and profitable, the new owners deserve to reap the economic benefits of their effort.

Strategic Concerns and the Decision-Making Process

In collectivist societies, individuals are viewed as interdependent; people tend to emphasize relatedness within groups (Triandis, 1994, 1995). Decisions are viewed as better made collectively than individually, with group decision-making benefiting from collective wisdom and a larger information set shared by group members. Since decisions are reached through a group process, they tend to embed the interests of multiple parties simultaneously and consensus is usually obtained before implementation, making implementation smoother

[7] This latter issue remains inconclusive as the results tend to depend on the way abnormal returns are computed. For a discussion of stock market performance of NPFs, please refer to Choi et al. (2010).

and faster (Triandis, 1994, 1995). Applying this rationale to the privatization process, a collectivist government may be concerned that if all of its shares in the firm are sold, it would lose its influence over an SOE and thus the possibility of influencing firm decisions in line with policy objectives. Put differently, private owners may make decisions that are optimal from the firm's perspective but not necessarily from a collective perspective. Retaining a significant amount of residual ownership allows the government to influence a firm's decision-making process and minimize potential conflicts between firm and public interests. This argument finds support in several studies that show that residual government ownership is highest in strategic sectors. For example, Boubakri et al. (2009) show that following privatization, the government continues to be the controlling shareholder in 28% of their sample firms from strategic industries. They also find that privatizing governments maintain close oversight over strategic industries through the use of golden shares or the appointment of politicians/bureaucrats on the boards of NPFs.

In contrast, Gelfand et al. (2004, p. 439) note that the conception of individualism is close to liberalism, including the idea of maximum freedom to individuals. Individuals may join or leave a group as they please (Encyclopedia Britannica, 1953, p. 256a). In individualist cultures, the self is generally viewed as autonomous and independent of groups, and decisions are made individually (Markus and Kitayama, 1991). In a group decision-making process, it is not clear who bears ultimate responsibility. Members are less motivated to provide creative solutions and tend to avoid making bold decisions. It is therefore believed that "decisions made by individuals are usually of higher quality than decisions made by groups" (Hofstede, 2001, p. 219). Applying this rationale to the privatization context, the government of an individualist country puts less emphasis on retaining residual ownership to influence firm decision-making.

Rather, the government trusts that a firm's private owners will exercise their due diligence in making decisions since they will bear the consequences of such decisions. If a good decision is made, the firm will prosper; if bad decisions are made, the market will punish the firm and the owners will suffer a loss. In such societies, it is the market rather than the government that ensures the optimal allocation of resources. Thus, through competition and elimination of inefficient firms, the country advances over time. Put differently, the long-term collective interest is served by allowing individuals to make and bear the consequences of their decisions.

2.2.2 Indirect Channels of Influence

Culture may affect privatization indirectly through several channels. First, by affecting formal legal institutions (Level 2), culture (Level 1) may affect privatization design. Licht et al. (2005) provide important insight in this regard when they build on Shleifer's (2000) claim that legal rules are just a reflection of a broader societal stance and investigate the link between cultural values and formal legal institutions. The authors show that a classification of countries by legal origin does not fully capture the universe of corporate governance regimes. They also find that investor rights are stronger in individualistic societies (based on Hofstede's (1991, 2001) cultural values). In addition, several authors document less corruption in individualistic societies and better rule of law (Erez and Earley, 1993). According to the Property Rights theory and as reported in Williamson (2000, p. 598) "once property rights have been defined and their enforcement assured," the government intervention in resource allocation and the economy should be minimized. This conjecture is echoed in the privatization literature that reports a higher residual state ownership in environments with lower investor protection (Bortolotti and Faccio, 2009; Boubakri et al., 2011). Given that higher investor protection characterizes

individualistic societies, we expect the level of residual government ownership to be higher in collectivist societies (i.e., those with lower investor protection).

Second, corporate governance studies suggest that one potential firm-level outcome of lower investor protection in a country is concentrated ownership (La Porta et al., 1999) (from Level 2 to Level 3). Since weaker investor rights characterize collectivist societies (Licht et al., 2005), we expect the government to be more reluctant to relinquish control rights of NPFs (that is, to retain greater residual ownership) in countries tilted towards collectivism. Boubakri et al. (2011) argue that in weak legal environments, the demand for the shares of NPFs by investors is low, which reduces the government's incentives to relinquish control.[8] Consistent with this argument, Bortolotti and Faccio (2009) show that governments tend to retain large ownership stakes in civil law countries.

Third, some studies in the accounting literature suggest that culture affects accounting systems and financial disclosure (e.g., Gray, 1988; Hope, 2003). Individualistic societies encourage competitive environments, suggesting that they are less secretive and hence have higher levels of financial disclosure (Gray, 1988). Megginson et al. (2004) and Guedhami and Pittman (2006), among others, show that residual state ownership is higher when accounting standards are lower. We therefore expect collectivism to lead to higher government residual ownership.

Based on the above arguments, we expect individualism-collectivism to have a significant effect on residual ownership. In particular, we expect residual state ownership to be increasing in a country's collectivism. More formally:

[8] A governance structure as noted by Williamson (2000, p. 599) "reshapes incentives."

H_1: Residual state ownership is higher in collectivist countries than in individualist countries.

Formal institutions and culture have been shown to work both independently and complementarily in determining financial and accounting decisions. For instance, as shown by Hope (2003), firm-disclosure policies are affected by Hofstede's cultural values differently depending on the legal system in place (i.e., Common or civil law regimes). Similarly, in their study on venture capital activity, Li and Zahra (2012) find that the collectivism dimension of national cultural works in interaction with the formal institutions to determine the magnitude of such activities. We build on these previous studies and focus on the way formal institutions and culture operate on residual state ownership.

The impact of culture (collectivism) – embedded in Level 1 – on governance (state ownership) – embedded in Level 3 – may not be uniform. Indeed, as argued by Williamson (2000) many public policy issues, including privatization, turn jointly on the combined use of the Level 2 and Level 3 reasoning. Reviewing the Russian privatization experience, the author argues that more attention should have been focused on the strength of the prevailing formal institutions to ensure the success of the reform. Indeed, he suggests (p. 610) that "the nature of privatization turn[s] critically on the condition and quality of judicial independence, the division of powers between executive and legislative, the competence of the regulatory bureaucracy, and contractual safeguards." In addition, Williamson conjectures (p. 598) that "Once property rights have been defined and their enforcement assured, the government steps aside." Hence, since government intervention in resource allocation is minimized once property rights have been defined and enforcement assured, one would expect a low level of residual ownership in countries with strong property rights institutions (i.e., legal rules).

Combined with evidence that the legal rules are systematically related to the country's cultural orientation (Licht et al., 2005; Stulz and Williamson, 2003) and North's (1990) argument that formal rules and institutions make up only a small fraction of the set of constraints, we argue, building on Williamson's (2000) framework, that the impact of collectivism, embedded in Level 1, on the residual state ownership in privatized firms (governance), embedded in Level 3, is conditioned by the property rights institutions in the country, which are embedded in Level 2. More specifically, under weak property rights' definition and enforcement, collectivism should be more strongly related to (reflected in) the level of residual state ownership after privatization. Hence our second hypothesis:

H_2: The relation between collectivism and residual state ownership is stronger when property rights are poor.

3. Sample, Variables, and Descriptive Statistics

In this section, we first describe our sample of privatized firms. We then present our measures of collectivism and government control along with the standard control variables used in the literature to explain residual state ownership. In a third subsection, we report sample descriptive statistics.

3.1 Sample

To investigate the impact of collectivism on residual state ownership in newly privatized firms, we compile a large sample of 605 firms privatized in 48 countries over the 1995-2010 period. To the best of our knowledge, our sample covers the largest number of firms and

observations to date in the multinational studies on privatized firms.[9] We first identify the list of privatized firms in *Compustat Global*, we then collect their financial and ownership structure. Information on privatizations comes from the *World Bank* privatization database for developing countries and *Privatization Barometer* for developed countries. The financial information comes from *Compustat*. We hand collect the ownership structure from different sources outlined later in the paper.

Table 1 displays descriptive statistics by country for the privatized firms considered in this study. China represents almost one-sixth of our sample, with 108 firms, followed by Brazil, with 38 firms, and Poland and India, with 37 firms each. The other countries in our sample each have fewer than 30 firms.[10] Our sample of 605 firms corresponds to 4,318 firm-year observations. The table shows that the 605 privatized firms are spread across different geographical regions as categorized by the World Bank (Africa and the Middle East, East and South Asia and the Pacific, Latin America and the Caribbean, Europe and Central Asia). Diversification across regions is important because it suggests our sample countries have different development levels and legal, political, and institutional environments. Table 2 reveals that our sample is fairly well diversified across Campbell's (1996) industries, with 25.29% in utilities, 16.53% in the financial sector, 14.38% in "basic" industries, and 10.41% in transportation. The remaining industries represent less than 10% of our sample firms.

[9] This sample compares favorably with samples used in recent multinational studies on privatized firms: Guedhami and Pittman (2006) with a sample of 190 firms from 31 countries, Bortolotti and Faccio (2009) with a sample of 141 firms from 22 countries, Borisova and Megginson (2011) with a sample of 60 firms from 14 countries, Ben-Nasr et al. (2012) with a sample of 236 firms from 38 countries, and Boubakri et al. (2013) with a sample of 385 firms from 57 countries.

[10] In robustness tests, we drop China from the sample and we find similar results. In the regression analysis, and because the number of firms varies across countries, the individual observations are weighted with the inverse of the number of firms from the corresponding country.

[Insert Tables 1 & 2 about here]

3.2 Variables

The Appendix provides definitions and data sources for the variables used in our study. These variables can be classified into four categories: government control variables, national culture variables, political and legal variables, and firm- and country-level controls.

3.2.1 Government Control Variables

To investigate the control structure of our sample of privatized firms, we focus on post-privatization ownership structure. We hand-collect ownership data primarily from two sources, namely, the offering prospectus and annual reports. We also use additional sources such as *Worldscope*; the Asian, Brazilian, Egyptian, and Mexican Company Handbooks; the Guide to Asian Companies; *Bankscope;* and *Orbis*.

We construct the following variables. (1) *STATEOWN* is the residual state ownership stake following privatization. (2) *CONTROL* is a dummy variable that takes the value of 1 if the residual state ownership stake is greater than 50%, and 0 otherwise. (3) *PARTIALPRIV* is a dummy variable that takes the value of 1 if the residual state ownership stake is greater than zero (partial privatization), and 0 otherwise. (4) *CONNECTED* is a dummy variable (constructed for privatized firms as in Faccio (2006) by Boubakri et al. (2008) and updated here) that is equal to 1 if the firm is politically connected, that is, "if at least one member of its board of directors (BOD) or its supervisory board is or was a politician," for example, "a member of parliament, a minister or any other top appointed-bureaucrat" (Boubakri et al., 2008, p. 657).

3.2.2 Collectivism Variables

Following Chui and Kwok (2008) and Chui et al. (2010), in our main analysis we employ the individualism-collectivism index constructed by Hofstede (2001). Hofstede's (1983) culture dimensions, which have arguably had the greatest influence among various cultural classifications in cross-cultural research (Schwartz, 1994; Sivakumar and Nakata, 2001; Kirkman et al., 2006), are based on information collected from the international staff of a large corporation and comprise four measures: individualism-collectivism, uncertainty avoidance (*UAI*), power distance (*PDI*), and masculinity-femininity (*MAS*). Hofstede's individualism index captures the extent to which individuals emphasize their goals over those of their group, with a higher value indicating a higher degree of individualism. For ease of interpretation, in this paper we reverse this index by subtracting it from 100 to construct an index of collectivism, where higher values imply a higher degree of collectivism (*CLT_HF*).

Although we agree with Hofstede (1983) that culture is extremely stable over time and that his culture dimensions indicate the relative position of one country compared to another that rarely shifts even if culture changes, we test whether our findings are robust to Tang and Koveos' (2008) updated Hofstede index on collectivism (*CLT_TK*) that is based on economic mutation within a country. We also consider other proxies for collectivism to assess the robustness of our results. In particular, following Chui and Kwok (2008), we employ the individualism-collectivism index (*CLT_INST*) constructed by House et al. (2002) to capture a country's institutional collectivism. This dimension reflects the degree to which societal institutions encourage collective distribution of resources and collective action (House et al., 2002). In addition, we consider Schwartz's (1994) culture values dimensions, which are condensed into the widely used dimensions conservatism (*CONS*) and mastery (Schwartz, 1994;

Chui et al., 2002; Shao et al., 2010). The conservatism dimension consists of values important to societies based on close-knit harmonious relations (Schwartz, 1994), similar to the collectivism-individualism dimension of Hofstede. Finally, we consider the In Group collectivism practice value (*CLT_GROUP*) of House et al. (2002).

3.2.3 Political and Legal Variables

We capture a county's political-economic institutions using variables that come from Beck et al.'s (2001) *Database of Political Institutions* DPI (the World Bank).[11] These variables have been shown to impact residual state ownership by Bortolotti and Faccio (2009) and Boubakri et al. (2011). First, we consider the ideology of the executive as measured by *RIGHT,* a dummy variable equal to 1 if the executive branch is right-wing and 0 otherwise. Prior literature shows that right-wing governments are more committed to market-oriented reforms and to relinquishing control compared to left-wing governments (Biais and Perotti, 2002). Second, we consider the political constraints within the government, as measured by *CHECKS*. The higher the number of political constraints, the less likely political actors are to reach a consensus. This will increase the level of uncertainty regarding policy outcomes, in our case the privatization of SOEs. *CHECKS* is calculated as the number of veto players in a political system, adjusting for whether these veto players are independent of each other as determined by the level of electoral competitiveness in the system, the veto players' respective party affiliations, and the electoral rules. *CHECKS* ranges from 1 to 18, with higher values indicating more political constraints.

We include two legal variables in our analysis, namely, the International Country Risk Guide's assessment of a country's level of corruption, *CORR*, and rule of law, *LAW*. Prior

[11] We employ this database because it covers a wide range of political variables and allows us to use observations that date back to the 1980s.

research shows that legal variables are key to explaining privatization design and post-privatization performance (Megginson et al., 2004; Boubakri et al., 2005; Guedhami and Pittman, 2006). *LAW* ranges from 0 to 6, with higher values indicating higher quality legal institutions. La Porta et al. (1998) argue that a good proxy for legal environment should capture the extent of law enforcement in addition to the laws on the books. The variable *LAW* includes both of these dimensions, covers our sample countries, and varies over the sample period. *CORR* ranges from 0 to 6, with higher scores reflecting higher corruption. This proxy assesses the corruption of government officials and the likelihood of bribes being connected to firms' activities.

3.2.4 Firm- and Country-Level Controls

At the firm level, we control for firm size *(SIZE),* profitability *(ROA),* leverage *(DTA),* and growth in sales *(GROWTH).* These controls are used in prior studies to explain post-privatization ownership structures (e.g., Boubakri et al., 2005; Guedhami and Pittman, 2006). Residual state ownership is expected to be higher in larger firms, in more profitable firms, in high-growth firms, and in low-leverage firms. At the country level we control for the level of government debt (*DEBT)*, measured as the ratio of total public debt to GDP. This variable captures the idea that the extent of government ownership is likely to be affected by the level of government debt. The literature shows that highly indebted governments are generally under greater pressure to effect privatization and restructuring reforms (La Porta et al., 1999; Roland, 2000). In the same vein, fiscal distress has often been considered a primary trigger of privatization in several Latin American countries.

3.3 Descriptive Statistics

Panel A of Table 3 reports descriptive statistics for the variables used in the analysis. Included are the mean, median, standard deviation, minimum, and maximum value for *STATEOWN, CLT_HF*, the legal and political variables, and the firm- and country-level control variables. The dependent variable *STATEOWN* has a mean, median, and standard deviation of 25.63%, 10.57%, and 28.85%, respectively. Our proxy for collectivism (*CLT_HF*) has a mean (median) value of 55.69 (62), with a standard deviation of 22.91. Our sample comprises countries with strong and weak political and legal institutions. Indeed, *CHECKS* varies from 1 to 18 with a mean value of 3.72 and a standard deviation of 2.76, *LAW* varies from 1 to 6 with a mean of 4.33 and standard deviation of 1.19, and *CORR* varies from 0 to 5 with a mean of 2.96 and standard deviation of 1.29. Also, 31.8% of our sample is ruled by right-wing governments. These statistics indicate that political and legal institutions are not homogenous across our sample countries, and thus confirm that cross-country analysis is appropriate for our investigation. The countries in our sample seem to have relatively high leverage. The mean (median) level of *DEBT* is 49.38% (45.75%).

In terms of firm-specific characteristics, our sample includes small and large firms, as well as high- and low-leverage firms. For our sample firms, the mean (median) size is 8.14 (7.94), and the mean (median) leverage is 0.58 (0.59). Sample companies appear to be relatively profitable, with a mean (median) *ROA* of 0.04 (0.04), and exhibit a relatively high level of growth, with a mean (median) sales growth rate of 0.11 (0.07).

Panel B of Table 3 provides correlation coefficients between collectivism, *STATEOWN*, and various control variables. *STATEOWN* is positively correlated with the collectivism proxy,

the political constraint variable, *LAW, CORR,* firm size, and firm sales growth, and is negatively related to *RIGHT*, *DEBT*, firm profitability, and firm leverage. Consistent with our expectations, these results provide preliminary evidence that firms with high residual state ownership come from countries with a high level of collectivism.

[Insert Table 3 about here]

4. Empirical Results

4.1. Regression Analysis

In this section, we report results on the impact of collectivism on residual state ownership using a pooled multivariate regression framework where we control for firm and country characteristics. We cluster the observation at the firm-level. Panel observations help shed light on how government control responds to collectivism over time. Because the number of firms varies across countries, the individual observations are weighted with the inverse of the number of firms from the corresponding country. Specifically, we estimate the following model (subscripts are suppressed for notational convenience):

$$STATEOWN = \alpha + \beta\, CLT\_HF + \gamma\, LEGAL\ \&POLITICAL + \delta\, FCLV + \nu + \varepsilon, \qquad (1)$$

where *STATEOWN* is the percentage ownership stake held by the government, *CLT_HF* is Hofstede's (2001) collectivism measure, *LEGAL&POLITICAL* is the set of legal and political variables described above, *FCLV* is a vector of firm- and country-specific control variables (e.g., leverage, size, profitability, sales growth, and country indebtedness), ν is a vector of year and industry fixed effects, and ε is the error term. Our focus in this analysis is on the coefficient β, which measures the sensitivity of residual state ownership to collectivism prevalent in the

country. A positive value indicates that residual state ownership is higher in countries where collectivism is dominant.

For all firm-years in which the state's ownership stake is zero (one hundred), the dependent variable *STATEOWN* is left- (right-) censored. Because usual regression methods that do not account for the presence of truncated variables can produce biased coefficient estimates, we use a pooled tobit regression procedure designed to address censored data. The results are reported in Table 4.

In Model 1, we do not include the collectivism variable. We find several significant relations documented in prior studies. First, *CHECKS* loads positive and is statistically significant at the 1% level, which implies that governments tend to retain a high stake in privatized firms when they face higher constraints. This finding is consistent with evidence reported in Boubakri et al. (2011). We further find that state ownership is positively related to corruption. Indeed, because investors in highly corrupt countries are not effectively protected from bureaucrats' abuse of power, they demand fewer shares of NPFs. Next, we find that *DEBT* is negatively related to *STATEOWN*, in line with prior evidence that highly indebted governments are generally under more pressure to effect privatization and restructuring reforms (La Porta et al., 1999; Roland, 2000), and that state ownership is positively related to the rule of law, in line with evidence in Boubakri et al. (2005) and Megginson et al. (2004). Turning to the firm-level variables, we find that state ownership is positively related to firm size.

In Model 2, our primary specification, we estimate Equation (1). In this specification we include our main proxy for collectivism (*CLT_HF*) along with the control variables used in Model 1. We find that the results reported in Model 1 are not affected by the inclusion of

CLT_HF. More important for our purposes, we find that *CLT_HF* is positively related to residual state ownership in an international setting. Indeed, *CLT_HF* loads positive and is statistically significant at the 1% level. This result is also economically material: increasing *CLT_HF* by one standard deviation from its mean value results in a 22% increase (from 22% to 44%) in residual state ownership, while keeping the control variables at their means. Thus, the more collectivist a country is, the more control the government retains over NPFs. This finding provides support for *H1* and is consistent with our earlier arguments. First, a collectivist government is more likely to retain a higher level of residual ownership in a privatized enterprise for wealth transfer concerns. In other words, the government tries to avoid sacrificing a substantial amount of public wealth to enrich a small group of private individuals, especially given that the initial privatization share issues are underpriced (Jones et al., 1999). Second, a collectivist government may also retain a larger stake for strategic purposes. If a firm is completely privatized, the new private owners may make decisions without consideration of the overall strategic goals of the country. For example, to improve firm efficiency, the new private owners may lay off a vast number of employees. The surge in unemployment, however, causes social instability and is socially costly. Retaining a significant amount of residual ownership allows the government to maintain its influence over the firm's decision-making process and minimize potential conflicts between the firm and public interests.

In Models 3 through 6 of Table 4, we consider alternative proxies for collectivism. In Model 3, we replace *CLT_HF* with Tang and Koveos' updated Hofstede's (2001) measure of collectivism (*CLT_TK*). In Model 4, we consider the institutional collectivism proxy (*CLT_INST*) while in Model 5 we consider the In Group measure of collectivism (*CLT_GROUP*), both from House et al. (2002). To further test whether our main results are sensitive to the choice of proxy

for collectivism, in Model 6 we replace Hofstede's (2001) measure of collectivism with Schwartz's conservatism measure (*CONS*). In all models, collectivism continues to be positively and significantly associated with residual state ownership at the 5% level or better, alleviating concerns of measurement error in *CLT_HF*.

In Model 7 of Table 4, we extend our analysis to Hofstede's (2001) three other cultural dimensions. In addition to the collectivism dimension, we also include the uncertainty avoidance (*UAI*) dimension, masculinity (*MAS*), and power distance (*PDI*). We find that *UAI* exhibit significant and negative relationships with residual state ownership. These results seem to suggest that citizens – potential buyers – living in high UAI countries may be concerned about the uncertainty related to the government's commitment to let private investors have a free hand in making decisions and enjoying profits. To allay these concerns, the government may be driven to sell higher stakes in privatized firms. More important for our purpose, introducing these cultural dimensions does not alter our evidence as *CLT_HF* remains positive and is significant at the 1% level.

[Insert Table 4 about here]

4.2. Endogeneity Concerns

Our earlier evidence may suffer from endogeneity issues. First, there is a concern that privatized firms operating in countries with distinct characteristics may also play an active role in shaping their institutional and cultural environments. The most obvious response to this concern is that national culture is established over a long period, and changes very slowly – on the order of centuries or millennia (e.g., Hofstede, 2001; Williamson, 2000). We therefore

consider reverse causality of less concern in our study, as it is unlikely that individual firms' state ownership influences the level of collectivism in a given country.

Second, there is a concern that the multivariate regression omits some factors that might influence state ownership while correlating with collectivism. This could lead to an endogeneity problem, and result in a biased and inconsistent estimate of the effect of collectivism on state ownership. We tackle this concern in two ways: First, we include additional control variables whose effects on state ownership might bias the coefficient estimate on collectivism if these variables correlate with the error term in section 4.2.1. Second, we apply the instrumental variables approach, which involves using an instrument for collectivism to isolate the exogenous component of culture and then examine its relationship with state ownership in section 4.2.2.

4.2.1. Additional Control Variables

Table 5 presents specifications that control for additional omitted variables to ensure that their omission is not driving our results. We include these variables separately in Models 1 through 5 and we include them together in Model 6. In Model 1, we control for the method of privatization, as it influences post-privatization ownership structure. SIPs are characterized by dispersed ownership and are implemented more gradually through a small transfer of ownership compared to private sales (Boubakri et al., 2005). To assess the impact of the privatization method on the level of residual state ownership, in Model 1 of Table 5 we include the variable *PRIVATESALE,* which takes the value of 1 if privatization is implemented through a private sale and 0 otherwise. We do not find that residual state ownership (*STATEOWN*) is significantly related to *PRIVATESALE*. More importantly for our purposes, including the

privatization method in our main regression does not affect our previous findings on the importance of collectivism for residual state ownership. Indeed, *CLT_HF* loads positive and is statistically significant at the 1% level.

In Model 2 of Table 5, we control for freedom of the press (*PRESSFREE*) using the Press Freedom Index from Freedom House (2011). A higher index value denotes greater freedom of the press and closer public scrutiny of government behavior, which is likely to lead the government to retain lower levels of participation in NPFs. As expected, the coefficient on *PRESSFREE* is negative and significant at the 1% level, while the collectivism variable shows the expected sign and significance.

In Model 3, we follow Bortolotti and Faccio (2009) and Boubakri et al. (2011) and include as a control variable *FEDERAL*, which is equal to 1 if the state/provincial governments are locally elected and 0 otherwise. This variable comes from DPI. Beck et al. (2001, p. 170) state that "subnational political structure affects national-level policymaking in numerous ways. First, subnational units may have veto power over national-level policy decisions. Second, they may exert pressure for greater (or at least different) levels of redistribution than would otherwise be the case. Third, subnational units may affect the cohesiveness of national parties..." We therefore expect *FEDERAL* to impact privatization design. We find a positive and significant relation between *FEDERAL* and *STATEOWN*. More importantly, our collectivism measure *CLT_HF* continues to take a positive sign and is statistically significant at the 1% level.

In Model 4 of Table 5, we include the ratio of stock value traded to total market capitalization (*TURNOVER*). This variable captures the level of the country's stock market development. Prior research suggests that a privatizing country's level of capital market

development can affect its privatization design. For example, it is difficult to find buyers in SIPs if the domestic capital market is relatively primitive (Megginson et al., 2004). We thus expect *TURNOVER* to be related to residual state ownership. We find that *TURNOVER* is positive and significant at the 1% level. More important for our purposes, we continue to find that *CLT_HF* is positive and statistically significant at the 1% level.

In Model 5, we control for the country's political system using *SYSTEM*, an index of the type of political system in the country: direct presidential (0), strong president elected by assembly (1), and parliamentary (2). A presidential system faces fewer constraints with a strong separation of power and is generally expected to be less inclined to conduct market-oriented reforms. A parliamentary system, in contrast, exhibits no clear-cut separation of power between the legislature and executive (Boubakri et al., 2011). In line with the view that more authoritarian governments need to signal their commitment through gradual sales, and consistent with Boubakri et al. (2011), we find a positive and significant relation between state ownership and *SYSTEM*. In addition, the positive impact of collectivism on residual state ownership continues to hold in this model, with *CLT_HF* loading positive and statistically significant at the 1% level.

In Model 5, where all the additional control variables are included together, we continue to find support for our main results: *CLT_HF* loads positive and is statistically significant at the 1% level. These results suggest that omitted variables are not likely to be behind our evidence.

[Insert Table 5 about here]

4.2.2. Instrumental Variable Regression

To further address the issue of endogeneity, we use an instrumental variable regression framework. The instrument must satisfy the conditions of exogeneity and relevance (Roberts and Whited, 2011). We instrument collectivism using Murray and Schaller's (2010) overall index of the *historical* prevalence of nine diseases (i.e., constructed with data before the epidemiological revolution in treating pathogenic disease) across different geopolitical regions around the world. We use this instrument because: (1) it is unlikely to have a direct effect on residual state ownership in privatized firms over our sample period (1995-2010), and thus it satisfies the exogeneity requirement of an instrument; and (2) it is correlated with collectivism/individualism, and thus satisfies the relevance requirement of an instrument. Fogli and Veldkamp (2012, p. 25) state that "more collectivist society, with its greater propensity for network collectives, would be a more effective structure for inhibiting the spread of disease." In addition, Fincher et al. (2008) explain that collectivists are more wary of contact with outgroup members (strangers), and are less likely to eat unusual foods. They suggest that collectivism serves an antipathogen defense function, and is more likely to emerge in societies that historically suffered a greater prevalence of pathogens.

The results of the first stage regression presented in Model 1 of Table 6 confirm that the historical prevalence of diseases is positively related to the collectivism dimension of national culture. The second stage regression in Model 2 of Table 6 shows that the fitted values of collectivism are positively related to residual state ownership, dispelling concerns that endogeneity is behind our main findings. For the different specifications presented above, we conduct two tests to assess the appropriateness of the instrument. First, we conduct the Kleibergen–Paap under-identification test to check the rank condition. In each model, the

Kleibergen–Paap rk LM statistic rejects the null hypothesis at the 1% level, indicating that the excluded instrument is correlated with *CLT_HF*, and hence the model is well identified. Second, using an instrument that is weakly associated with endogenous explanatory variable can result in large inconsistencies in the coefficient estimates. We examine the relevance of our instrument by conducting an *F*-test of the excluded exogenous variable in the first regression, in which the null hypothesis is that the instrument does not explain the variation in *CLT_HF*. We reject this null hypothesis at the 1% level.

4.3. Additional Tests

Table 6 presents also results of several additional tests. Because the number of firms is not constant across countries such that the estimated coefficients could be largely determined by a few countries with the largest number of firms, we estimate a country-level regression. This conservative approach gives each country an equal weight by using only the country-level average of the firm-level observations. We construct in Model 1 a country-level measure of the extent of government ownership by taking the mean of residual state ownership for all sample firms in a given country. We do the same for our firm-level variables. The results for Model 3 of Table 6 show that *CLT_HF* loads positive and is statistically significant at the 5% level. Hence, the choice between a country measure or a firm-year measure of state ownership does not affect our results.

The descriptive statistics in Table 1 indicate that the majority of privatizations come from China. To mitigate concerns that our results are driven by Chinese firms, we drop China from the analysis. The results reported in Model 4 of Table 6 show that our evidence is unaffected.

Indeed, we continue to find that collectivism is positively related to state ownership at the 1% level.

In Models 5 through 7 of Table 6 we consider *CONTROL*, *PARTIALPRIV*, and *CONNECTED*, respectively, as alternative proxies for government control (please refer to the definitions in Section 3.2). We run logit estimation in these models given the binary nature of our dependent variables, and continue to find that *CLT_HF* is positively and statistically significantly related to government control at the 1% level. Hence, our results do not appear to be driven by our choice of proxy for government control.

[Insert Table 6 about here]

4.4 Out-of-Sample Evidence

In Table 7, we consider out-of-sample evidence to reduce concerns that our findings are driven by the sample considered in our main analysis. In Model 1, we consider as an alternative proxy for government control the level of government ownership (*GOVOWN*) in 47 countries over the period 1994-2009, which comes from the Economic Intelligence Unit (EIU). *GOVOWN* takes values from 0 to 5, with a higher value indicating greater government control. Regressing this variable on the different country-level variables, we find that *CLT_HF* continues to load positive and is statistically significant the 1% level. Thus, the level of government ownership as measured by the EIU is positively related to collectivism.

In Model 2, we consider another proxy for government control, namely, government size (*GOVSIZE*) in 47 countries over the period 1995-2009, which comes from the Economic Freedom database by Gwartney et al. (2010). This composite variable ranges from 0 to 100 and includes government consumption expenditures (as a percentage of total consumption), transfers and

subsidies (as a percentage of GDP), the underlying tax system (proxied by top marginal tax rates), and the number of government enterprises. When we regress *GOVSIZE* on the different country-level variables, the results show that *CLT_HF* is positively related to *GOVSIZE* and is statistically significant at the 1% level. This evidence supports our main findings as well as the results in Model 1 of Table 7.

In Model 3, we employ a firm-level database that captures the level of state ownership in private firms, namely, the World Bank Enterprise Survey (WBES). The WBES was conducted between 2002 and 2009 to determine the constraints that businesses confront worldwide and has been used in several studies (e.g., Martin et al., 2007; Barth et al., 2009). We take the state ownership variable and firm size as measured by the logarithm of the number of employees from this database along with the firm's industry. The regression reported in Model 3 for 37,519 firm observations from 30 countries continues to support the view that collectivism is positively related to state ownership in private firms: *CLT_HF* loads positive and is statistically significant the 1% level.

Taken together, the results reported in Table 7 mitigate concerns that our main findings are sample specific and provide evidence supporting the view that the tendency of the government to retain control is affected by the prevalence of a collectivist culture in the country.

[Insert Table 7 about here]

5. The impact of Property Rights Institutions

With our main evidence, we establish that there is a positive and significant relation between collectivism and residual state ownership. In our discussion in Section 2.2, however, we conjecture that collectivism may have direct effects on state ownership as a result of both

wealth transfer concerns (public wealth may be transferred to a small group of private individuals), and strategic concerns (private owners may make suboptimal decisions that do not benefit society). We extend our analyses above to study the impact of property rights institutions on the relationship between government ownership and collectivism (H_2). To test this hypothesis and capture the definition and the enforcement of property rights at the country-level, we rely on six different measures namely, *CHECKS*, *CORR*, *PUBENF*, *JUDEFF*, *RULELAW,* and *ACC*. These variables capture the strength of the institutions embedded in Level 2 of Williamson's (2000) framework. *CHECKS* and *CORR* are described in Section 3.2.3. *PUBENF* is an index of public enforcement and *JUDEFF* is an index of judicial efficiency, both are derived from La Porta et al. (2006). *RULELAW* is defined by Kaufmann et al. (2009, p.6) as "[t]he extent to which agents have confidence in and abide by the rules of society, including the quality of contract enforcement and property rights, the police, and the courts, as well as the likelihood of crime and violence." Finally, *ACC* driven from Kurtzman et al. (2004) captures the country-level accounting transparency and is one of the subindices of their opacity index. Except for corruption (*CORR*), the indices are designed such that higher scores reflect better property rights institutions. Building on Williamson's (2000) framework discussed above, we expect that the impact of collectivism on residual state ownership in privatized firms is minimized once property rights have been defined and enforcement assured.

To study the effect of these different variables on the association between state ownership and collectivism, we include them in our baseline regression of Table 4 as well as their interactions with collectivism. We expect that the interaction terms will enter the regressions negatively, except for corruption for which we expect a positive interaction term. In Models 1, 3, 4, 5 and 6 of Table 8, when we include the interaction terms between collectivism

and checks and balances, public enforcement, judicial efficiency, rule of law, and accounting transparency, respectively, we find that the interaction terms load negative and are statistically significant at the 5% level or better. In Model 2, when we introduce the interaction between collectivism and corruption, we find a positive interaction term that is significant at the 1% level. Our results suggest that the weaker the property rights institutions in the country, the higher the impact of the collectivism dimension of national culture on residual state ownership in privatized firms. Property rights institutions are thus likely to condition the association between collectivism and state ownership.

[Insert Table 8 about here]

In summary, the results of this section suggest that although collectivism tends to impact the residual state ownership in privatized firms, all things being equal, this relation is stronger in countries with weak property rights institutions.

6. Conclusion

While previous studies on privatization underscore the role of *formal* institutions (investor protection, political and legal environment) on privatization design and outcomes, the role of *informal* institutions has yet to be assessed. The privatization setting offers a unique opportunity to investigate the impact of culture on economic policy design: not only is privatization a politically motivated policy with obvious redistributive consequences, but it also leads to drastic changes in firms' ownership structure. Culture is likely to constrain the post-privatization ownership structure through the legal and political determinants of the privatization process. However, we argue that it is also likely to *directly* influence how government officials process the information that they use to interpret a privatization program.

In this study, we examine how a key cultural dimension developed by Hofstede (2001), namely, individualism-collectivism, affects residual state ownership in privatized firms. We focus on the individualism-collectivism dimension as it is "considered by cross-cultural psychologists to be the most significant and fundamental driver of cultural differences across societies" (Markus and Kitayama, 1991; Triandis, 2001; Heine, 2007). Additionally, this dimension has been shown to have important economic effects in several recent studies (e.g., Guiso et al., 2006; Gorodnichenko and Roland, 2011).

Using a hand-collected database of 605 privatized firms from 48 countries over the 1995-2010 period, we investigate the impact of collectivism on residual state ownership. We find that collectivism as measured by Hofstede (2001) is positively related to residual state ownership. Our evidence is robust to using a cross-country average, different measures of collectivism and government control, and out-of-sample evidence. Our results also continue to hold in tests that address potential endogeneity stemming from omitted variable bias and potential reverse causality. We additionally find that the positive relationship between collectivism and residual state ownership is stronger for countries with weak property rights institutions.

Our main results highlight that in the case of privatization, which is on the reform agenda of many countries, the impact of culture may lead to different outcomes across countries. As Williamson (2000) notes, the outcome of the privatization reform in some countries could have been different if formal and informal constraints had been taken into consideration. Thus, contrary to what international donor agencies usually claim, a success story in one country may not necessarily lead to a panacea elsewhere if one accounts for cross-country differences in culture. This result is consistent with the view that politicians across

countries should not be expected to have the same cognitive machinery for making economic decisions.

APPENDIX

Variables, Definitions, and Sources

Variable	Definition	Source
Privatization and state control variables		
STATEOWN	The percentage of shares held by the government.	Mainly from firms' annual reports and offering prospectuses
CONTROL	A dummy variable equal to 1 if the residual state ownership is greater than 50%, and 0 otherwise.	Same as above
PARTIALPRIV	A dummy variable equal to 1 if the residual state ownership is greater than zero, and 0 otherwise.	Same as above
PRIVATESALE	A dummy variable equal to 1 if privatization is effected through a private sale, and 0 otherwise.	World Bank Privatization Database and Megginson (2003)
CONNECTED	A dummy variable equal to 1 if the firm is politically connected, and 0 otherwise.	Boubakri et al. (2008)
National culture variables		
CLT_INST	Institutional Collectivism practice value.	House et al. (2002)
CLT_GROUP	In Group Collectivism practice value.	Same as above
CLT_HF	100 minus Hofstede's cultural index on Individualism.	Hofstede (2001)
UAI	Hofstede's cultural index on Uncertainty Avoidance.	Same as above
PDI	Hofstede's cultural index on Power Distance.	Same as above
MAS	Hofstede's cultural index on Masculinity.	Same as above
CONS	Schwartz's cultural index on Conservatism.	Schwartz (1994)
CLT_TK	100 minus Tang & Koveos' updated cultural index on Individualism.	Tang and Koveos (2008)
Political variables		
RIGHT	A dummy variable equal to 1 for a right-oriented government, and 0 otherwise.	Beck et al. (2001)
SYSTEM	An index of the system in the country: direct presidential (0); strong president elected by assembly (1); and parliamentary (2).	Same as above
CHECKS	Number of checks and balances in the country.	Same as above
FEDERAL	A dummy variable equal to 1 if there are states or provinces in the country.	Same as above
Legal and extra-legal variables		
LAW	ICRG assessment of a country's rule of law.	International Country Risk Guide
CORR	ICRG assessment of a country's corruption, rescaled (0 for low corruption and 6 for high corruption).	Same as above
PRESSFREE	An index of freedom of the press. Higher scores mean greater freedom of the print and broadcast media in a country. The index is time-varying and ranges from 0 (not free) to 10 (free).	Freedom House (2011)

Variable	Definition	Source
RULELAW	The extent to which agents have confidence in and abide by the rules of society, including the quality of contract enforcement and property rights, the police, and the courts, as well as the likelihood of crime and violence.	Kaufmann et al. (2009)
JUDEFF	An index of the country's judicial efficiency	La Porta et al. (2006)
PUBENF	Index of public enforcement. Equals the arithmetic mean of: (1) Supervisor characteristics index; (2) rule-making power index; (3) investigative powers index; (4) orders index; and (5) criminal index.	Same as above
ACC	An assessment of the quality of countries' corporate accounting standards.	Kurtzman et al. (2004)
Firm and country-level variables		
ROA	The ratio of net income to total assets.	Mainly from firms' annual reports and offering prospectuses, and *Worldscope*
DTA	The ratio of long-term debt to total assets.	Same as above
SIZE	The natural logarithm of total sales in US$.	Same as above
GROWTH	Real sales (nominal sales normalized by the consumer price index) growth in the past year.	Same as above
LNEMPLOYEES	The natural logarithm of the number of employees.	WBES (2009)
STATEOWN_WBES	The level of state ownership.	Same as above
DISEASES	An overall index of the historical prevalence of nine diseases within different geopolitical regions worldwide. The nine diseases coded include leishmanias, schistosomes, trypanosomes, leprosy, malaria, typhus, filariae, dengue, and tuberculosis. A 4-point coding scheme was employed: 0 = completely absent or never reported, 1 = rarely reported, 2 = sporadically or moderately reported, 3 = present at severe levels or epidemic levels at least once. All nine disease prevalence ratings were standardized by converting them to z scores. The overall index was computed as the mean of z scores for nine diseases. The mean of the overall index is approximately 0; positive scores indicate disease prevalence that is higher than the mean, and negative scores indicate disease prevalence that is lower than the mean.	Murray and Schaller (2010)
GOVOWN	The level of state ownership (0 Low, 5 High).	EIU (2009)
GOVSIZE	A composite variable that ranges from 0 to 100 and includes government consumption expenditures (as a percentage of total consumption), transfers and subsidies (as a percentage of GDP), the underlying tax system (proxied by top marginal tax rates), and the number of government enterprises.	Gwartney et al. (2010) Economic Freedom of the World
DEBT	The ratio of central government debt to GDP.	World Development Indicators
TURNOVER	The ratio of total value traded on the stock market to market capitalization.	Same as above

References

Ahern, K. R., Daminelli, D., Fracassi, C., 2013. Lost in translation? The effect of cultural values on mergers around the world. *Journal of Financial Economics*, forthcoming.

Aggarwal, R., Goodell, J.W., 2009. Markets and institutions in financial intermediation: National characteristics as determinants. *Journal of Banking & Finance* 33, 1770-1780.

Barth, J. R., Lin, C., Lin, P., Song, F. M. 2009. Corruption in bank lending to firms: Cross-country micro evidence on the beneficial role of competition and information sharing. *Journal of Financial Economics* 91, 361-388.

Beck, T., Clarke, G., Groff, A., Keefer, P., Walsh, P., 2001. New tools in comparative political economy: The database of political institutions. *World Bank Economic Review* 15, 165-176.

Ben-Nasr, H., Boubakri, N., Cosset, J.-C., 2012. The political determinants of the cost of equity: Evidence from newly privatized firms. *Journal of Accounting Research* 50, 605-646.

Biais, B., Perotti, E. C., 2002. Machiavellian privatization. *American Economic Review* 92, 240-258.

Bontempo, R., Rivero, J. C. 1992. Cultural variation in cognition: The role of self-concept in the attitude-behavior link. Paper presented at the Academy of Management meeting, Las Vegas, Nevada, August.

Borisova, G., Megginson, W. L., 2011. Does government ownership affect the cost of debt: Evidence from privatization? *Review of Financial Studies* 24, 2693-2737.

Bortolotti, B., Faccio, M., 2009. Government control of privatized firms. *Review of Financial Studies* 22, 2907-2939.

Boubakri, N., Bouslimi, L., 2011. Analyst following of privatized firms around the world: The role of institutions and ownership structure. *International Journal of Accounting* 45, 413-442

Boubakri, N., Cosset, J.-C., Guedhami, O., 2005. Post-privatization corporate governance: The role of ownership structure and investor protection. *Journal of Financial Economics* 76, 369-399.

Boubakri, N., Cosset, J.-C., Guedhami, O., 2009. From state to private ownership: Issues from strategic industries. *Journal of Banking and Finance* 33, 367-397.

Boubakri, N., Cosset, J.-C., Guedhami, O., Saffar, W., 2011. The political economy of residual state ownership in privatized firms: Evidence from emerging markets? *Journal of Corporate Finance* 17, 244-258.

Boubakri, N., Cosset, J.-C., Saffar, W., 2008. Political connections of newly privatized firms. *Journal of Corporate Finance* 14, 654-673.

Boubakri, N., Cosset, J.-C., Saffar, W., 2013. The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics* 108, 641-658.

Campbell, J., 1996. Understanding risk and return. *Journal of Political Economy* 104, 298-345.

Choi, S. S., Lee, I., Megginson, W., 2010. Do privatization IPO firms outperform in the long-run? *Financial Management* 39, 153-185.

Chui, A., Kwok, C., 2008. National culture and life insurance consumption. *Journal of International Business Studies* 39, 88-101.

Chui, A., Lloyd, A. E., Kwok, C., 2002. The determination of capital structure: Is national culture a missing piece to the puzzle? *Journal of International Business Studies* 33, 99-127.

Chui, A., Titman, S., Wei, J., 2010. Individualism and momentum around the World. *Journal of Finance* 361–392.

Coffee, J., 2001. The rise of dispersed ownership: The roles of law and the state in the separation of ownership and control. *Yale Law Journal* 111, 1–82.

David, R., 1980. *English Law and French Law*. London: Steven & Sons.

Davidson, A., Jacaard, J., Triandis, H., Morales, M., Diaz-Guerrero, R. 1976. Cross-cultural model testing: Toward a solution of the etic-emic dilemma. *International Journal of Psychology* 11, 1-3.

Erez, M., Earley, P. C., 1993. *Culture, Self-Identity and Work*. Oxford University Press.

Faccio, M., 2006. Politically-connected firms. *American Economic Review* 96, 369-386.

Fincher, C. L., Thornhill, R., Murray, D. R., Schaller, M., 2008. Pathogen prevalence predicts human cross-cultural variability in individualism/collectivism. *Proceedings of the Royal Society B: Biological Sciences* 275, 1279–1285.

Fogli, A., Veldkamp, L., 2012. Germs, social networks and growth. Unpublished working paper. New York University.

Gelfand, M., Bhawuk, D., Nishii, L., Bechtold, D., 2004. Individualism and collectivism. In House, R., Hanges, P, Javidan, M., Dorfman, P., Gupta, V., (eds.) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, CA: Sage, 437-512.

Gray, S. J., 1988. Towards a theory of cultural influence on the development of accounting systems internationally. *Abacus* 3, 1–15.

Grinblatt, M., Keloharju, M., 2001. How distance, language, and culture influence stockholdings and trades. *Journal of Finance* 56, 1053-1073.

Guedhami, O., Pittman, J.A., 2006. Ownership concentration in privatized firms: The role of disclosure standards, auditor choice, and auditing infrastructure. *Journal of Accounting Research* 44, 889-929.

Guedhami, O., Pittman, J. A., Saffar, W., 2009. Auditor choice in privatized firms: Empirical evidence on the role of state and foreign owners. *Journal of Accounting and Economics* 48, 151-171.

Guiso, L., Sapienza, P., Zingales, L., 2006. Does culture affect economic outcomes? *Journal of Economic Perspectives* 20, 23-48.

Gupta, N., 2005. Partial privatization and firm performance. *Journal of Finance* 60, 987–1015.

Gorodnichenko, Y., Roland, G., 2011. Which dimensions of culture matter for long-run growth? *American Economic Review* 101, 492–498.

Gwartney, J. D., Lawson, R., Norton, S., 2010. Economic freedom of the world: 2010 annual report. www.freetheworld.com

Heine, S. J., 2007. *Cultural Psychology*. New York: W. W. Norton & Company.

Henrich, J., 2000. Does culture matter in economic behavior? Ultimatum game bargaining among the Machiguenga in Peruvian Amazon. *American Economic Review* 90, 973-979.

Hofstede, G., 1983. The cultural relativity of organizational practices and theories. *Journal of International Business Studies* 14, 75-89.

Hofstede, G., 1991. *Culture and Organizations: Software of the Mind*. London: McGraw-Hill.

Hofstede, G., 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. 2nd edition. Thousand Oaks, CA: Sage Publications.

Hope, O. K., 2003. Disclosure practices, enforcement of accounting standards and analysts' forecast accuracy: An international study. *Journal of Accounting Research* 41, 235-272.

House, R. J., Javidan, M., Hanges, P. J., Dorfman, P. W., 2002. Understanding cultures and implicit leadership theories across the globe: An introduction to project GLOBE. *Journal of World Business* 37, 3–10.

Jones, S., Megginson, W. L., Nash, R., Netter, J., 1999. Share issue privatizations as financial means to political and economic ends. *Journal of Financial Economics* 53, 217-253.

Kaufmann, D., Kraay, A., Mastruzzi, M., 2009. Governance matters VI: Aggregate and individual governance indicators 1996–2008. Policy Research Working Paper 4978, World Bank.

Kirkman, B. L., Lowe, K. B., Gibson, C. B., 2006. A quarter century of cultures consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of International Business Studies* 37, 285-320.

Kurtzman, J., Yago, G., Phumiwasana, T., 2004. The global costs of opacity. *MIT Sloan Management Review* 46, 38–44.

Kwok, C., Tadesse, S., 2006. National culture and financial systems. *Journal of International Business Studies* 37, 227-247.

La Porta, R., López-de-Silanes, F., Shleifer, A., 2006. What works in securities laws? *Journal of Finance* 61, 1-32.

La Porta, R., López-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. *Journal of Finance* 54, 471-518.

La Porta, R., López-de-Silanes, F., Shleifer, A., Vishny, R. W., 1998. Law and finance. *Journal of Political Economy* 106, 1113-1150.

Li, K., Griffin, D., Yue, H., Zhao, L., 2013. How does culture influence corporate risk-taking? *Journal of Corporate Finance* 23, 1-22.

Li, Y., Zahra, S. A., 2012. Formal institutions, culture, and venture capital activity: A cross-country analysis. *Journal of Business Venturing* 27, 95–111.

Licht, A., Goldschmidt, C., Schwartz, S., 2005. Culture law and corporate governance. *International Review of Law and Economics* 25, 229–255.

Licht, A., Goldschmidt, C., Schwartz, S., 2007. Culture rules: The foundations of the rule of law and other norms of governance. *Journal of Comparative Economics* 35, 659-688.

Markus, H. R., Kitayama, S., 1991. Culture and the self: Implications for cognition, emotion, and motivation, *Psychological Review* 98, 224–253.

Martin, K. D., Cullen, J. B., Johnson, J. L., Parboteeah, K. P., 2007. Deciding the bribe: A cross-level analysis of firm and home country influences on bribery activity. *Academy of Management Journal* 50, 1401-1422.

Megginson, W., 2003. Appendix 1: Details of share issue privatizations, 1961-2002. *Financial Economics of Privatization.* New York: Oxford University Press.

Megginson, W. L., 2010. Privatization and finance. *Annual Review of Financial Economics* 2, 6.1-6.30.

Megginson, W. L., Nash, R., Netter, J. N., Poulsen, A. B., 2004. The choice of private versus public capital markets: Evidence from privatization. *Journal of Finance* 59, 2835-2870.

Megginson, W. L., Nash, R., Van Randenborgh, M., 1994. The financial and operating performance of newly privatized firms: An international empirical analysis. *Journal of Finance* 49, 403-452.

Miller, J., 1994. Cultural diversity in the morality of caring: Individually-oriented versus duty-oriented interpersonal codes. *Cross-Cultural Research* 28, 3-29.

Murray, D., Schaller, M. 2010. Historical prevalence of infectious diseases within 230 geopolitical regions: A tool for investing origins of culture. *Journal of Cross-Cultural Psychology* 41, 99-108.

North, D., 1990. *Institutions, Institutional Change, and Economic Performance*. New York: Cambridge University Press.

North, D., 1991. Institutions. *Journal of Economic Perspectives* 5, 97-112.

Roberts, M. R., Whited, T. M., 2011. Endogeneity in empirical corporate finance. Unpublished working paper. University of Pennsylvania.

Roland, G., 2000. *Transition and Economics: Politics, Firms, Markets*. Cambridge, MA: MIT Press.

Schwartz, S. H., 1992. Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Zanna, M. (ed.), *Advances in Experimental Social Psychology,* Vol. 25, 1-66. New York: Academic Press.

Schwartz, S. H., 1994. Beyond individualism/collectivism: New cultural dimensions of values. In Uichol, K. et al. (eds.), *Individualism and Collectivism: Theory, Method, and Applications*. Thousand Oaks, CA: Sage.

Shao, L., Kwok, C., Guedhami, O., 2010. National culture and dividend policy. *Journal of International Business Studies* 41, 1391-1414.

Shleifer, A., 2000. *Inefficient Markets: An Introduction to Behavioral Finance*. Oxford University Press.

Siegel, J. I., Licht, A. N., Schwartz, S. H., 201. Egalitarianism and international investment. *Journal of Financial Economics* 102, 621-642.

Sivakumar, K., Nakata, C., 2001. The stampede toward Hofstede's framework: Avoiding the sample design pit in cross-cultural research. *Journal of International Business Studies* 32, 555-574.

Stulz, R., Williamson, R., 2003. Culture, openness and finance. *Journal of Financial Economics* 70, 313-349.

Tang, L., Koveos, P. E., 2008. A framework to update Hofstede's cultural value indices: Economic dynamics and institutional stability. *Journal of International Business Studies* 39, 1045-1063.

Triandis, H. C., 2001. Individualism-collectivism and personality. *Journal of Personality* 69, 907-924.

Triandis, H. C., 1994. *Culture and Social Behavior*. New York: McGraw Hill.

Triandis, H. C., 1995. *Individualism & Collectivism*. Boulder, CO: Westview Press.

Williamson, O. E., 1998. The institutions of governance. *American Economic Review* 88, 75-79.

Williamson, O. E., 2000. The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature* 38, 595-613.

Zheng, X., El Ghoul, S., Guedhami, O., Kwok, C. C. Y., 2012. National culture and corporate debt maturity. *Journal of Banking and Finance* 36, 468-488.

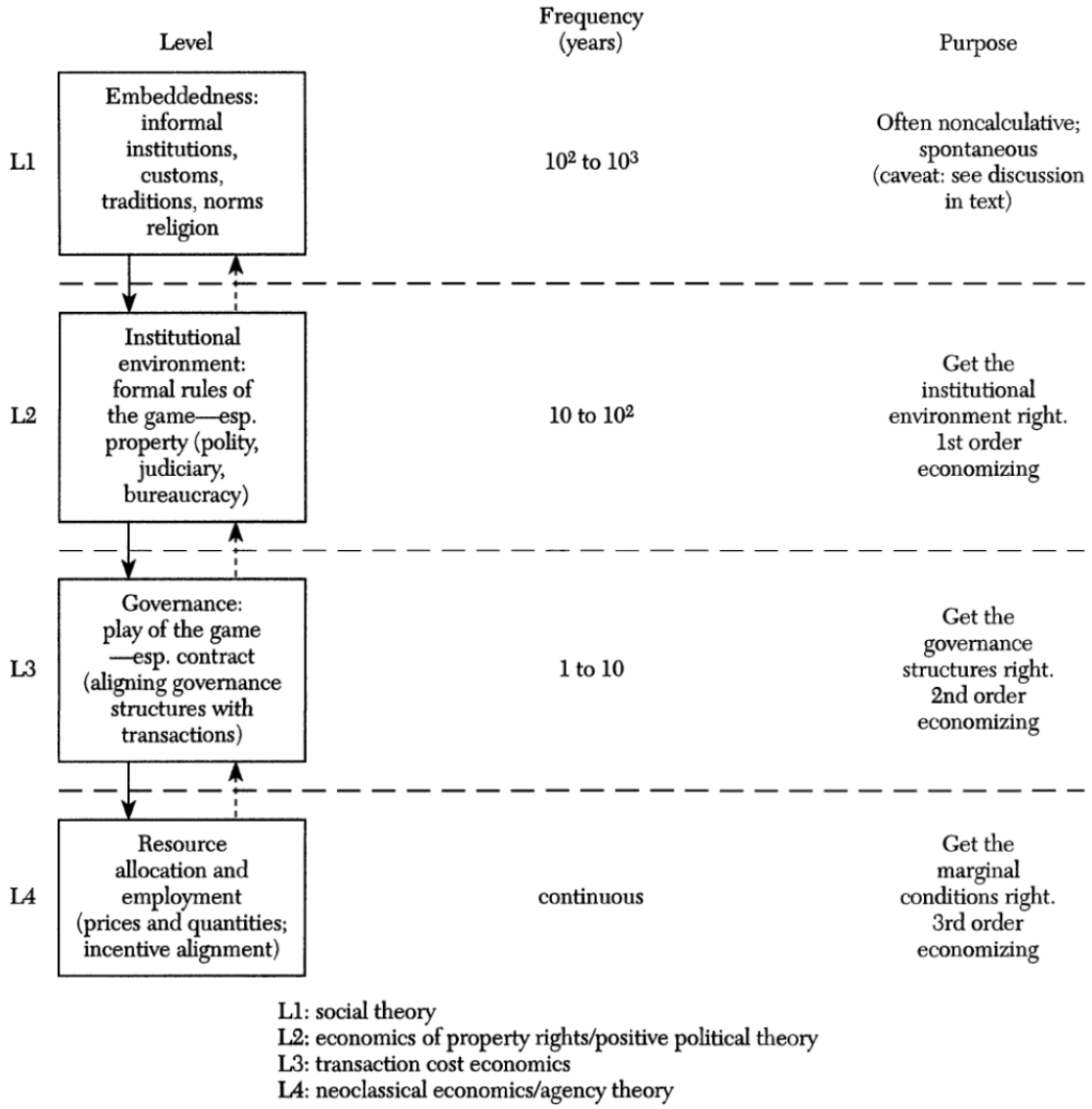

FIGURE 1: Economics of Institutions

From Oliver E. Williamson, "The New Institutional Economics: Taking Stock, Looking Ahead", **Journal of Economic Literature** Vol. 38 (September 2000) p. 597.

TABLE 1

Descriptive Statistics by Country

Country	Firms	%	*STATEOWN*	*CLT_HF*	*CHECKS*	*RIGHT*	*CORR*	*LAW*	*DEBT*	*ROA*	*DTA*	*SIZE*	*GROWTH*
Argentina	9	1.49	0.64	54.00	3.78	0.47	3.48	3.26	73.36	0.04	0.46	7.05	0.10
Australia	6	0.99	10.89	10.00	4.66	0.80	1.25	5.86	22.40	0.06	0.66	9.42	0.14
Austria	13	2.15	32.35	45.00	4.26	0.55	1.33	6.00	63.36	0.03	0.64	9.06	0.00
Belgium	5	0.83	21.35	25.00	4.36	1.00	2.18	5.00	90.63	0.08	0.61	8.14	0.08
Brazil	38	6.28	10.46	62.00	4.50	0.00	3.44	2.08	48.90	0.04	0.59	7.39	0.11
Bulgaria	1	0.17	82.08	70.00	4.00	0.00	4.00	3.25	20.43	0.04	0.75	7.26	0.57
Chile	3	0.5	0.00	77.00	2.50	1.00	2.08	5.00	9.57	0.04	0.49	5.62	0.02
China	108	17.85	47.50	80.00	1.00	0.00	4.04	4.54	21.05	0.03	0.52	7.10	0.14
Colombia	6	0.99	29.72	87.00	4.11	0.22	3.35	1.43	56.72	0.05	0.60	8.44	0.23
Czech Rep.	12	1.98	14.86	42.00	5.25	0.07	2.90	5.00	20.48	0.03	0.66	7.77	0.10
Denmark	2	0.33	21.02	26.00	5.67	0.67	0.36	6.00	43.59	0.06	0.60	8.58	0.06
Egypt	5	0.83	35.30	62.00	2.00	0.00	4.14	3.96	111.14	0.11	0.39	6.28	0.13
Finland	14	2.31	37.52	37.00	4.07	0.62	0.00	6.00	41.86	0.05	0.58	7.87	0.02
France	22	3.64	15.46	29.00	4.38	0.68	2.22	4.95	62.23	0.03	0.75	10.55	0.03
Germany	16	2.64	24.16	33.00	4.46	0.46	1.38	5.22	62.60	0.03	0.71	9.50	0.03
Greece	13	2.15	42.05	65.00	3.00	0.55	3.19	3.86	94.96	0.06	0.59	9.16	0.03
Hungary	16	2.64	6.19	20.00	3.69	0.00	2.50	4.32	60.32	0.06	0.46	6.27	0.10
India	37	6.12	62.99	52.00	12.84	0.36	3.69	4.00	60.77	0.06	0.61	7.91	0.17
Indonesia	14	2.31	43.53	86.00	2.79	0.00	3.97	2.73	42.36	0.07	0.59	7.83	0.17
Ireland	3	0.5	3.36	30.00	5.80	1.00	2.82	6.00	36.07	0.05	0.52	6.50	0.09
Israel	6	0.99	23.06	46.00	4.15	0.97	2.84	5.00	90.14	0.02	0.80	9.08	0.05
Italy	23	3.8	17.37	24.00	3.28	0.78	3.40	4.27	105.83	0.02	0.69	9.85	0.06
Japan	3	0.5	39.39	54.00	3.50	0.94	2.65	5.17	150.97	0.04	0.46	10.90	0.05
Malaysia	16	2.64	20.64	74.00	4.00	0.00	3.18	3.66	42.56	0.04	0.45	6.91	0.07
Mexico	4	0.66	0.00	70.00	4.81	0.74	3.69	2.45	21.71	0.06	0.39	7.95	0.05
Netherlands	3	0.5	16.08	20.00	5.59	0.35	0.65	6.00	50.33	0.02	0.75	9.30	-0.04
New Zealand	5	0.83	10.15	21.00	3.55	0.33	0.59	5.83	29.70	0.05	0.57	7.77	0.10
Nigeria	7	1.16	3.95	80.00	4.00	1.00	4.72	1.81	42.34	0.04	0.82	7.26	0.25
Norway	6	0.99	55.03	31.00	4.86	0.58	0.99	6.00	55.18	0.04	0.71	9.27	0.14
Pakistan	25	4.13	26.08	86.00	1.47	0.00	4.17	3.00	54.66	0.04	0.67	6.14	0.18
Peru	7	1.16	0.00	84.00	3.60	0.68	3.32	3.02	36.84	0.04	0.55	6.88	0.03

Country	Firms	%	*STATEOWN*	*CLT_HF*	*CHECKS*	*RIGHT*	*CORR*	*LAW*	*DEBT*	*ROA*	*DTA*	*SIZE*	*GROWTH*
Philippines	7	1.16	14.71	68.00	4.00	0.96	4.05	2.29	66.37	0.01	0.64	6.17	0.08
Poland	37	6.12	10.87	40.00	4.25	0.39	3.48	4.32	42.24	0.03	0.53	6.43	0.15
Portugal	10	1.65	4.59	73.00	2.47	0.27	1.85	5.01	59.14	0.03	0.76	10.49	0.04
Romania	3	0.5	15.60	70.00	5.43	0.00	3.54	4.00	16.62	0.06	0.62	10.29	0.00
Russia	13	2.15	17.55	61.00	3.83	0.13	4.16	3.86	20.29	0.09	0.41	7.80	0.32
South Africa	2	0.33	20.10	35.00	2.00	0.00	3.37	2.29	37.53	0.12	0.48	9.06	0.15
South Korea	6	0.99	22.47	82.00	3.22	1.00	3.07	4.63	20.81	0.06	0.50	9.59	0.11
Singapore	6	0.99	2.57	80.00	2.00	0.00	1.64	5.36	94.63	0.07	0.55	8.34	0.06
Slovakia	4	0.66	0.38	48.00	4.38	0.00	3.21	4.24	36.71	0.04	0.54	7.30	0.02
Spain	12	1.98	7.25	49.00	3.67	0.60	1.94	4.66	49.74	0.06	0.64	9.83	0.05
Sweden	8	1.32	7.13	29.00	4.11	0.26	0.57	6.00	51.98	0.04	0.61	7.97	0.10
Taiwan	5	0.83	37.48	83.00	3.92	1.00	3.24	4.56	29.19	0.09	0.39	8.58	0.14
Thailand	9	1.49	30.64	80.00	4.64	0.42	4.15	4.18	49.70	0.05	0.72	7.48	0.12
Turkey	16	2.64	23.26	63.00	3.20	0.17	3.54	4.20	47.95	0.08	0.51	13.55	0.35
United Kingdom	17	2.81	0.43	11.00	3.05	0.05	1.38	5.84	42.22	0.03	0.62	8.54	0.07
Venezuela	1	0.17	0.00	88.00	2.75	0.00	3.75	3.13	35.75	0.02	0.35	15.42	0.13
Vietnam	1	0.17	6.05	80.00	1.00	0.00	2.67	4.00	39.57	0.06	0.23	5.18	0.37
Total	605	100.00	25.63	55.69	3.72	0.32	2.96	4.33	49.38	0.04	0.58	8.14	0.11

Note: This table reports summary descriptive statistics by country for the key variables used to investigate the impact of collectivism on residual state ownership. The sample comprises 4,318 firm-year observations and 605 privatized firms in 48 countries. The definitions and data sources for the variables are provided in the Appendix.

TABLE 2
Sample Industry Classifications

Industry Classifications	Two-digit SIC codes	Number of Firms	Percentage (%)
Basic industries	10, 12, 14, 24, 26, 28, 33	87	14.38
Capital goods	34, 35, 38	23	3.80
Construction	15–17, 32, 52	38	6.28
Consumer durables	25, 30, 36, 37, 50, 55, 57	37	6.12
Finance	60-69	100	16.53
Food/tobacco	1, 9, 20, 21, 54	25	4.13
Leisure	27, 58, 70, 78, 79	11	1.82
Petroleum	13, 29	38	6.28
Services	72, 73, 75, 80, 82, 87, 89	12	1.98
Textiles/trade	22, 23, 31, 51, 53, 56, 59	13	2.15
Transportation	40–42, 44, 45, 47	63	10.41
Utilities	46, 48, 49	153	25.29
Other	The remaining two-digit SIC codes	5	0.83
Total		605	100%

Note: Table 2 provides industry classification as in Campbell (1996) for a sample of 605 privatized firms from 48 countries over the period 1995-2010.

TABLE 3

Regression Variables: Summary Statistics

Panel A: Descriptive Statistics

Variable	Mean	Median	Std. Deviation	Min	Max
STATEOWN	25.634	10.565	28.854	0.000	99.990
CLT_HF	55.687	62.000	22.908	10.000	88.000
CHECKS	3.723	4.000	2.759	1.000	18.000
RIGHT	0.318	0.000	0.466	0.000	1.000
CORR	2.958	3.500	1.285	0.000	5.000
LAW	4.333	4.500	1.192	1.000	6.000
DEBT	49.377	45.752	26.376	3.200	175.274
ROA	0.042	0.036	0.067	-0.195	0.268
DTA	0.584	0.587	0.224	0.084	1.010
SIZE	8.144	7.936	2.714	-0.018	22.041
GROWTH	0.110	0.071	0.309	-0.994	1.883

Panel B: Correlations between the Regression Variables

	STATEOWN	*CLT_HF*	*CHECKS*	*RIGHT*	*CORR*	*LAW*	*DEBT*	*ROA*	*DTA*	*SIZE*
CLT_HF	**0.258**									
CHECKS	**0.052**	**-0.300**								
RIGHT	**-0.088**	**-0.278**	**0.085**							
CORR	**0.175**	**0.603**	**-0.147**	**-0.214**						
LAW	**0.044**	**-0.469**	-0.027	**0.209**	**-0.606**					
DEBT	**-0.084**	**-0.310**	**0.186**	**0.272**	**-0.127**	**-0.043**				
ROA	-0.001	0.009	**0.071**	0.013	-0.026	-0.012	0.021			
DTA	**-0.076**	**-0.143**	**0.072**	**0.119**	**-0.106**	**0.050**	**0.134**	**-0.422**		
SIZE	**0.053**	**-0.149**	**0.093**	**0.155**	**-0.191**	**0.144**	**0.196**	-0.024	**0.344**	
GROWTH	0.026	**0.082**	0.024	-0.014	**0.106**	**-0.081**	**-0.068**	**0.155**	-0.007	**0.157**

Notes: Panel A reports summary descriptive statistics for the regression variables used to examine the impact of collectivism on residual state ownership for a maximum sample of 605 privatized firms from 48 countries. Panel B reports Pearson correlations for the regression variables. Boldface indicates statistical significance at the 1% level. Definitions and data sources for the variables are provided in the Appendix.

TABLE 4

Residual State Ownership and Collectivism

Variable	No Control	Basic Model	*CLT_TK*	*CLT_INST*	*CLT_GROUP*	*CONS*	Culture Dimensions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CLT_HF		0.965***					0.778***
		(9.619)					(7.048)
CLT_TK			1.006***				
			(6.341)				
CLT_ INST				30.442***			
				(5.760)			
CLT_ GROUP					21.658***		
					(5.317)		
CONS						15.371**	
						(1.992)	
UAI							-0.398***
							(-4.867)
MAS							0.143
							(1.206)
PDI							-0.072
							(-0.589)
CHECKS	1.569***	2.922***	2.426***	1.453***	1.175***	1.269***	2.632***
	(3.271)	(6.442)	(4.301)	(3.106)	(2.602)	(2.640)	(6.018)
RIGHT	-3.437	3.485	13.519***	-2.606	-1.443	-3.038	8.430***
	(-1.189)	(1.215)	(3.977)	(-0.870)	(-0.503)	(-1.054)	(3.049)
CORR	14.174***	6.745***	-1.190	11.296***	6.538***	12.556***	5.335***
	(9.074)	(4.298)	(-0.542)	(7.411)	(3.956)	(7.912)	(3.383)
LAW	11.930***	14.729***	10.288***	6.634***	11.739***	13.070***	9.483***
	(6.184)	(7.887)	(3.901)	(3.395)	(6.056)	(6.114)	(4.647)
DEBT	-0.325***	-0.035	0.328***	-0.015	-0.227***	-0.284***	0.049
	(-4.815)	(-0.471)	(3.399)	(-0.182)	(-2.992)	(-4.033)	(0.574)
ROA	-0.350	-6.675	-5.248	-0.508	-1.945	-5.363	-4.498
	(-0.021)	(-0.436)	(-0.168)	(-0.030)	(-0.116)	(-0.313)	(-0.299)
DTA	-6.001	-2.579	3.840	-4.497	-2.263	-5.506	-3.224
	(-0.692)	(-0.308)	(0.281)	(-0.514)	(-0.257)	(-0.627)	(-0.389)
SIZE	2.531***	2.198***	1.329	2.706***	2.268***	2.549***	2.495***
	(3.420)	(3.064)	(1.369)	(3.654)	(3.001)	(3.336)	(3.617)
GROWTH	-1.306	-0.866	-7.437**	-2.445	-2.356	-1.270	-1.588
	(-0.567)	(-0.399)	(-2.266)	(-1.063)	(-1.027)	(-0.550)	(-0.742)
Intercept	-77.243***	-146.134***	-7.488	-194.088***	-175.281***	-135.189***	-96.155***
	(-3.242)	(-5.564)	(-0.178)	(-5.585)	(-4.996)	(-3.122)	(-3.071)
IND EFFECTS	YES	YES	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.04	0.06	0.05	0.05	0.05	0.04	0.06
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	4318	4318	2985	3980	3980	4200	4318

Notes: This table presents tobit panel estimation results from regressions of the following state ownership model:

$$STATEOWN_t = a + \beta\ CLT\_HF_t + \delta\ FCLV + \nu + \varepsilon,$$

where *STATEOWN* is the percentage held by the government at the end of year *t*; *CLT_HF* is our main measure of collectivism; *FCLV* is a set of firm- and country-specific control variables; and ν is a vector of year and industry fixed effects. Model 1 does not control for *CLT_HF*. Model 2 controls for *CLT_HF*. Models 3, 4, 5, and 6 separately control for *CLT_TK, CLT_INST, CLT_GROUP,* and *CONS,* respectively. Model 7 controls for *CLT_HF, UAI, MAS,* and *PDI.* Robust Z-statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 5

Additional Control Variables

Variable	*PRIVATE SALE*	*PRESS FREE*	*FEDERAL*	*TURNOVER*	*SYSTEM*	All
	(1)	(2)	(3)	(4)	(5)	(6)
CLT_HF	0.966***	0.800***	0.864***	0.932***	0.908***	0.739***
	(9.438)	(7.051)	(8.490)	(9.229)	(9.384)	(6.662)
CHECKS	2.979***	3.158***	3.799***	3.225***	2.524***	3.815***
	(6.812)	(7.358)	(8.407)	(7.398)	(5.752)	(9.233)
RIGHT	3.501	6.625**	4.856*	4.168	4.705*	7.514***
	(1.226)	(2.272)	(1.685)	(1.468)	(1.741)	(2.750)
CORR	6.297***	5.578***	5.926***	6.663***	7.473***	5.531***
	(3.997)	(3.473)	(4.108)	(4.280)	(4.750)	(3.719)
LAW	13.786***	14.136***	11.996***	13.910***	11.258***	8.539***
	(7.078)	(7.760)	(6.351)	(7.402)	(5.662)	(4.209)
DEBT	-0.036	0.019	-0.054	-0.020	-0.138*	-0.071
	(-0.486)	(0.238)	(-0.792)	(-0.268)	(-1.858)	(-0.961)
ROA	-2.434	-6.225	-6.902	-14.488	-9.576	-10.183
	(-0.157)	(-0.392)	(-0.456)	(-0.872)	(-0.631)	(-0.620)
DTA	-2.091	-2.722	-3.409	-5.527	-2.164	-4.778
	(-0.247)	(-0.326)	(-0.410)	(-0.666)	(-0.261)	(-0.574)
SIZE	1.945***	1.793**	2.097***	1.590**	1.849**	0.866
	(2.625)	(2.475)	(2.969)	(2.159)	(2.568)	(1.176)
GROWTH	-0.259	-2.073	-0.407	-2.322	-0.328	-1.386
	(-0.118)	(-0.917)	(-0.191)	(-1.006)	(-0.153)	(-0.616)
PRIVATESALE	5.141					3.175
	(1.243)					(0.759)
PRESSFREE		-7.850***				-4.597**
		(-3.219)				(-1.967)
FEDERAL			14.331***			12.489***
			(3.961)			(3.229)
TURNOVER				5.225***		3.117
				(2.851)		(1.428)
SYSTEM					7.853***	5.422**
					(3.029)	(1.980)
Intercept	-141.524***	-126.700***	-135.064***	-153.415***	-133.246***	-114.259***
	(-5.305)	(-4.777)	(-5.093)	(-5.063)	(-5.079)	(-3.911)
IND EFFECTS	YES	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.06	0.06	0.06	0.06	0.06	0.07
P-value	0.00	0.00	0.00	0.00	0.00	0.00
N	4231	3885	4310	4091	4318	3686

Notes: This table presents tobit panel estimation results from regressions of the following state ownership model:

$$STATEOWN_t = a + \beta\ CLT\_HF_t + \delta\ FCLV + \nu + \varepsilon,$$

where *STATEOWN* is the percentage held by the government at the end of year *t*; *CLT_HF* is our main measure of collectivism; *FCLV* is a set of firm- and country-specific control variables; and ν is a vector of year and industry fixed effects. Model 1 controls for *PRIVATE SALE*. Model 2 controls for *PRESSFREE*. Model 3 controls for *FEDERAL*. Models 4 controls for *TURNOVER* and Model 5 controls for *SYSTEM*. Model 6 controls for all of these additional variables. Robust *Z*-statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 6

Additional Tests

Variable	1st Stage *CLT_HF*	2nd Stage *STATEOWN*	Country Average	Drop China	*CONTROL*	*PARTIALPRIV*	*CONNECTED*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CLT_HF		1.447***	0.258**	0.822***	0.049***	0.057***	0.039***
		(9.133)	(2.033)	(5.931)	(6.896)	(7.452)	(5.079)
CHECKS	-1.410***	3.570***	3.361**	4.707***	0.168***	0.112***	0.157***
	(-13.814)	(7.318)	(2.538)	(9.650)	(5.376)	(3.704)	(5.135)
RIGHT	-2.630**	5.663**	-7.109	12.012***	0.100	0.129	0.066
	(-2.417)	(2.090)	(-1.148)	(3.649)	(0.491)	(0.706)	(0.323)
CORR	2.076***	2.758	1.384	2.445	0.484***	0.409***	0.595***
	(5.468)	(1.513)	(0.444)	(1.222)	(3.533)	(3.930)	(4.319)
LAW	-1.445***	16.359***	6.483**	8.245***	0.721***	0.932***	0.760***
	(-2.992)	(8.455)	(2.256)	(3.364)	(4.890)	(7.902)	(5.130)
DEBT	-0.176***	0.124	0.234***	0.253***	-0.004	-0.005	-0.006
	(-4.945)	(1.617)	(2.865)	(2.890)	(-0.734)	(-0.976)	(-1.105)
ROA	7.099*	-8.899	183.805*	-2.222	-0.630	-2.319*	-1.031
	(1.843)	(-0.569)	(1.730)	(-0.080)	(-0.421)	(-1.793)	(-0.675)
DTA	-2.395*	-0.629	56.172***	0.331	-0.681	0.510	-0.371
	(-1.811)	(-0.075)	(2.728)	(0.028)	(-0.915)	(0.762)	(-0.528)
SIZE	-0.063	2.105***	-0.733	1.101	0.136**	0.080	0.109**
	(-0.450)	(2.987)	(-0.584)	(1.212)	(2.406)	(1.286)	(1.980)
GROWTH	0.112	-0.762	87.139***	-6.269**	-0.015	-0.199	0.108
	(0.257)	(-0.353)	(3.811)	(-2.108)	(-0.075)	(-1.166)	(0.577)
DISEASES	15.947***						
	(23.502)						
Intercept	83.756***	-181.492***	-94.281***	-100.219**	-10.744***	-7.821***	-10.743***
	(18.441)	(-7.291)	(-3.462)	(-2.392)	(-4.927)	(-4.742)	(-4.748)
IND EFFECTS	YES	YES	NO	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	NO	YES	YES	YES	YES
Pseudo R^2	0.82	0.06	0.080	0.05	0.21	0.28	0.20
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	4318	4318	48	3570	4318	4318	3928

Notes: This table presents results from sensitivity tests. Models 1 and 2 address the endogeneity of the collectivism dimension of the national culture using an instrumental variable approach. Model 3 is a country average regression of the basic model. Model 4 drops China from the basic regression. Models 5, 6, and 7 use *CONTROL, PARTIALPRIV,* and *CONNECTED*, respectively, as the dependent variable. Robust *Z*-statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 7
Out-of-Sample Evidence

Variable	*GOVOWN*	*GOVSIZE*	*STATEOWN WBES*
	(1)	(2)	(3)
CLT_HF	0.009***	0.398***	0.013***
	(4.869)	(7.603)	(2.688)
CHECKS	-0.024	-0.475	0.010
	(-1.421)	(-1.291)	(0.420)
RIGHT	-0.350***	1.411	-1.259***
	(-6.259)	(1.007)	(-6.728)
CORR	0.222***	3.866***	0.453***
	(8.490)	(7.025)	(5.165)
LAW	-0.039	-2.889***	1.151***
	(-0.892)	(-3.723)	(14.124)
DEBT	0.000	-0.198***	0.003
	(0.314)	(-7.358)	(0.769)
LNEMPLOYEES			0.627***
			(16.342)
Intercept	1.997***	64.885***	-14.792***
	(6.341)	(8.912)	(-17.043)
IND EFFECTS	NO	NO	YES
YEAR EFFECTS	YES	YES	YES
N. of Countries	47	47	30
Period	1994-2009	1995-2009	2002-2009
R^2 / Pseudo R^2	0.50	0.61	0.25
P-value	0.00	0.00	0.00
N	733	684	37519

Notes: This table presents out-of-sample evidence. Model 1 presents evidence based on *GOVOWN* as dependent variable. Model 2 uses *GOVSIZE* as dependent variable. Model 3 considers the WBES database and uses *STATWOWN_WBES* as dependent variable. Robust *t/z*-statistics clustered at the country level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 8

The Mediation Role of the Property Rights Institutions

Variable	*CHECKS*	*CORR*	*PUBENF*	*JUDEFF*	*RULELAW*	*ACC*
	(1)	(2)	(3)	(4)	(5)	(6)
*CLT_HF*CHECKS*	-0.395***					
	(-7.389)					
*CLT_HF*CORR*		0.181***				
		(3.312)				
*CLT_HF*PUBENF*			-0.877***			
			(-4.282)			
*CLT_HF*JUDEFF*				-0.231***		
				(-3.332)		
*CLT_HF*RULELAW*					-0.349***	
					(-3.038)	
*CLT_HF*ACC*						-0.017**
						(-2.409)
CLT_HF	2.111***	0.427**	1.202***	2.679***	1.079***	1.949***
	(12.050)	(2.358)	(11.401)	(4.594)	(7.545)	(4.633)
CHECKS	24.604***	3.141***	3.389***	4.906***	3.491***	3.113***
	(8.399)	(6.888)	(7.601)	(9.680)	(7.557)	(6.668)
RIGHT	8.188***	3.857	3.373	18.168***	6.019**	6.079**
	(2.925)	(1.345)	(1.219)	(5.139)	(2.106)	(2.032)
CORR	3.426**	-2.921	3.527**	4.452*	4.999***	6.795***
	(2.245)	(-0.812)	(2.364)	(1.952)	(3.063)	(4.289)
LAW	8.240***	13.531***	11.872***	3.851	15.711***	11.742***
	(4.413)	(7.133)	(6.418)	(1.558)	(7.605)	(5.502)
DEBT	0.047	0.012	0.112	0.401***	0.059	0.053
	(0.638)	(0.162)	(1.630)	(3.935)	(0.793)	(0.704)
ROA	-3.368	-9.588	-1.955	-19.598	-8.371	-2.066
	(-0.221)	(-0.634)	(-0.128)	(-0.632)	(-0.555)	(-0.133)
DTA	-3.652	-3.438	-1.186	-6.888	-4.202	-2.221
	(-0.439)	(-0.414)	(-0.140)	(-0.491)	(-0.502)	(-0.265)
SIZE	2.410***	2.321***	1.811**	2.008**	2.288***	2.071***
	(3.509)	(3.245)	(2.524)	(2.020)	(3.214)	(2.841)
GROWTH	-1.639	-0.972	-1.339	-8.208**	-1.509	-1.268
	(-0.769)	(-0.448)	(-0.623)	(-2.412)	(-0.701)	(-0.585)
PUBEFF			31.194***			
			(2.822)			
JUDEFF				17.584***		
				(3.539)		
RULELAW					12.164	
					(1.480)	
ACC						0.842*
						(1.954)
Intercept	-184.794***	-116.283***	-138.628***	-240.842***	-159.256***	-188.757***
	(-6.845)	(-4.208)	(-5.305)	(-3.709)	(-5.730)	(-5.402)
IND EFFECTS	YES	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.06	0.06	0.06	0.05	0.06	0.06
P-value	0.00	0.00	0.00	0.00	0.00	0.00
N	4318	4318	4315	3078	4286	4136

Notes: This table reports results on the role of the property rights institutions in conditioning the impact of collectivism on residual state ownership. In all specifications, we use Model 2 in Table 4 as the baseline regression. In Model 1, *CHECKS* is interacted with *CLT_HF*. In Model 2, we interact *CORR* with *CLT_HF.* In Model 3, we interact *PUBENF* with *CLT_HF. CLT_HF* is interacted with *JUDEFF* in Model 4, with *RULELAW* in Model 5 and with *ACC* in Model 6. Robust *Z*-statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.