

Government Ownership and Debt Choice: Evidence from Privatization

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Abstract

We analyze in this paper the link between government residual ownership and the choice of arm's length financing (i.e., public debt) versus private debt (i.e., bank debt) in an international context. Using a large sample of 453 privatized firms from 62 countries over the 2001 to 2014 period, we observe that residual state ownership is positively and significantly associated to bank debt financing, suggesting that NPFs capitalize on government support and the soft budget constraint therewith associated. Our findings are robust to endogeneity issues and several robustness checks. We also show that the positive relation between government ownership and bank debt reliance holds only in countries with high government ownership of banks, left oriented political systems and collectivist societies, further providing support for the soft budget constraint hypothesis.

January 2017

JEL classification: G18; G32; G38; P16

Key words: government ownership, debt choice

1. Introduction

Understanding the determinants and outcomes of corporate financial decisions undertaken by firms to finance their business has always been at the forefront of the corporate finance field, and has resulted in an extensive literature over the last half century on the capital structure of firms (i.e., mix between equity and debt) (e.g., Marsh, 1982). Other than the choice between debt and equity, firms have also a debt choice decision to make. They could either choose public financing by capital markets through debt issuance, or private financing by financial intermediaries through bank loans (Brealy et al., 2012). In this paper, we focus on this specific debt choice problem.¹

Both theoretical and empirical financial contracting literatures emphasize the role of information asymmetry and agency problems in determining the choice of debt source. *First*, it is argued that bank lending differs from other types of debt capital in the advantage it has in producing information about the borrowers (e.g., Boyd and Prescott, 1986; Berlin and Loeys, 1988), and in the closer relationship it leads with them (Boot, 2000). Indeed, banks have a superior access to inside information at lower cost, and hence more efficient monitoring capacities. This is further enhanced by the fact that bank financing is designed for long-term horizons (Petersen and Rajan, 1995). In addition, concentrated bank debt claims allow to reduce free rider problems. For these reasons, bank financing is able to resolve potential information asymmetry between lenders and borrowers. *Second*, the literature further suggests that agency problems play a role in the choice of debt source. As advocated by Fama (1985), the costly extensive monitoring by banks will reduce moral hazard occurrence since any expropriation activity can be subsequently punished by higher interest rates, contract re-negotiation or firm liquidation (Chemmanur and Fulghieri, 1994; Gertner and Scharfstein, 1991; Park, 2000). In addition, close bank monitoring and bank covenants tend to constrain managerial behavior and decisions (e.g., Grossman and Hart, 1982; Fama, 1985), forcing them to choose value maximizing

¹ The literature on the costs and benefits of relying on bank debt rather than public debt is extensive (e.g., Campbell, 1979; Diamond, 1984, 1991; Sharpe, 1990; Boyd and Prescott, 1986; Rajan, 1992; Park, 2000). Firm-level determinants of debt choice include firms' growth opportunities (e.g., Houston and James, 1996), information asymmetry (e.g., Krishnaswami et al., 1999; Hadlock and James, 2002), and corporate ownership structure (e.g., Lin et al., 2013), among others.

corporate decisions, and making them less tempted to extract private benefits (e.g., Stiglitz and Weiss, 1981; Rajan, 1992).

Compared to banks, lenders in public markets (with diffused ownership of debt) are unable to closely monitor borrowers, leading them to require higher returns and thus impose a higher cost of debt capital on the firm. Because of their relatively low incentives to closely and efficiently monitor the firms (free-rider problem as in Diamond, 1984; Houston and James, 1996, for instance), public debtholders leave the latter open to potential expropriation by insiders. To test this hypothesis, empirical studies try to capture the possibility of expropriation with the firm ownership structure and resulting incentives. Denis and Mihov (2003) first show that managerial ownership is indeed related to debt choice, and find that managers with low equity ownership are more likely to choose public debt to avoid scrutiny of banks, while those with high equity ownership will rely on private debt, to avoid the external pressure from debtholders. More recently, Lin et al. (2013) find that agency conflicts arising from the control-ownership divergence of the controlling owner are associated with lower reliance on bank debt financing.² Specifically, the authors sustain (p: 518) that “... banks are more likely to impose particularly strong monitoring on borrowing firms with large divergences between ownership and control. In anticipation of the strict monitoring by banks, firms controlled by large shareholders with excess control rights might prefer public debt financing over bank debt as a way of avoiding scrutiny and insulating themselves from bank monitoring.” Supporting evidence from a sample of French firms is provided in Boubaker et al. (2017) who relate debt choice to the existence of multiple large shareholders (MLS) in the firm.³ They find that reliance on bank debt financing is increasing with the presence of MLS, and this effect is stronger when agency problems between controlling and minority shareholders are more severe.

To date, other than the studies discussed above, the link between ownership structure and debt choice remains relatively unexplored. Contributing to this scarce literature, we seek in this

² The separation between ownership and control is a measure of agency problems as it enhances majority shareholders' control beyond their ownership rights thus allowing them to derive private benefits of control to the detriment of minority shareholders (e.g., Shleifer and Vishny, 1997; Bebchuck et al., 2000; Dyck and Zingales, 2004; Nenova, 2003).

³ The MLS ownership structure plays a monitoring role in alleviating the agency conflicts between the largest controlling owner and minority shareholders (Bennedsen and Wolfenzon, 2000; Pagano and Röell, 1998).

paper to analyze the choice of arm's length financing (i.e., public debt) versus private debt (i.e., bank debt) for newly privatized firms (NPFs) in a cross-country context. While prior research focuses on the impact of managerial ownership (Denis and Mihov, 2003), ownership divergence (Lin et al., 2013), and MLS (Boubaker et al., 2017) on the debt choice for publicly traded firms, we take an alternative perspective, and advance the literature on two fronts: (1) we focus on the impact of shareholders' identity, particularly government ownership, on debt choice and (2), we consider the case of an agency-problems-ridden economic reform, namely privatization. More specifically, in this study we narrow the gap in the literature by examining the following question: in the context of privatization, given the particular ownership structure that involves the government as a shareholder with specific incentives, which debt source will prevail? ⁴

Despite its importance and its obvious policy implications, this decision to the best of our knowledge, does not appear to have been analyzed in the previous literature. This is an important question *first* and foremost from a public policy macro perspective since bonds and loans are major sources of global corporate financing, especially for large companies in need of large pools of capital such as former state-owned firms or NPFs (our focus in this paper). We can thus anticipate that the debt financing choices of such large firms will likely affect the relative development of bank and bond markets in the country. In addition, developing an active liquid bond market is often put forward as an economic priority for several governments: The mere existence of a competitive corporate bond market will put pressure on banks to attract other types of borrowers, in particular, small and medium enterprises which are generally rationed on the credit market (Herring and Chatusripitak, 2007). *Second*, from a micro economic perspective, this research question is important to analyze since firms with government ownership are considered as policy tools. They pursue other objectives than profit maximization, namely political objectives. Therefore, their corporate decisions in general, and debt choice in particular, are likely to be distorted compared to what would otherwise be expected from privately-owned firms. All these considerations motivate our study.

The privatization context is an opportune setting to investigate the debt source choice of NPFs around the world as they undergo a dramatic change in their ownership structure.

⁴ Megginson et al. (2014, 277) advance that "privatizing governments usually continue to wield substantial influence or control of the privatized firms through retained ownership."

Importantly, the shift of ownership from state to private at the time of divestiture is concomitant with a corresponding shift in incentives and firm objectives from political to profit maximization, thus providing us with a natural laboratory/experiment in which we can link residual government ownership to the debt choice decision. In addition, there is a wide cross-sectional variation of state ownership in NPFs, ranging from zero to over 90% in our sample firms. Moreover, this setting is particularly relevant since NPFs are characterized by extreme agency problems and informational asymmetry (Shleifer and Vishny, 1997), considered to be the main drivers of debt choice as discussed above. Also, exploring the debt choice decision in the privatization context is all the more relevant since the reform is often said to aim objectives such as enhancing popular capitalism and developing active, liquid stock and bond markets.

Based on existing theories and previous studies on both debt choice and privatization, we face two alternative views on the expected relation between government ownership and debt source choice. According to the *first view*, government ownership is negatively related to bank debt reliance, based on two main arguments related to “bank monitoring avoidance” and “reputation building.” Indeed, as first sustained in Fama (1985), banks enjoy a comparative advantage compared to public debtholders because they enjoy a privileged access to private information and insiders. This close scrutiny and monitoring of the borrowing firms reduce moral hazard problems that may stem from opportunistic activities of controlling shareholders/insiders at the expense of other stakeholders (Stiglitz and Weiss, 1983; Rajan, 1992). Such outcome cannot be observed under public debt as individual bondholders lack the incentives to engage in costly monitoring. The implication of this discussion is that in firms with government ownership, to hide their expropriation activities (Bushman et al., 2004),⁵ the managers-bureaucrats will likely prefer public debt financing rather than bank debt as a way to avoid scrutiny and bank monitoring, hence, the “bank monitoring avoidance argument.”

In addition, and in the same vein, one could argue the following: owing to their size, these firms that generally require substantial amounts of capital to finance their activities, will likely

⁵ Bushman et al. (2004, p. 223) summarize that: “States that directly own economic enterprises may suppress firm-specific information to hide expropriation activities by politicians and their cronies. It is also possible that a benevolent government uses its state ownership of enterprise to directly govern and manage firms, obviating the need for public information. These arguments imply a negative relation between corporate transparency and the extent of state-owned enterprises.”

choose to tap not only domestic but international bond markets as well. Indeed, according to Megginson (2010), NPFs are among the top four firms in terms of market capitalization in every large country other than the United States and Canada. Finally, the perceived policy risk associated with government ownership may also tilt preferences towards public debt markets.⁶ Indeed, in order to boost investors' interest in NPFs and to increase support for government market-oriented policies, politicians/bureaucrats might force NPFs to use public debt (bond) markets for reputation building (Perotti, 1995). As argued by Rajan (1992), publicly listed firms tend to signal their higher quality by borrowing publicly. From the same perspective, politicians/bureaucrats willing to signal the quality of NPFs (and government quality as market-oriented), will tend to borrow from the public. We label this the "reputation building argument." These considerations related to reputation building and bank monitoring avoidance, suggest a negative relation between corporate government ownership and a borrowing firm's reliance on bank debt.

According to the *second view* on the expected relation between government ownership and debt choice, firms are more likely to rely on bank debt, suggesting that government ownership and bank debt are positively related. The main underlying argument for this conjecture is the fact that government ownership provides firms with a "soft budget constraint" that worsens agency problems therein.⁷ The literature abounds with evidence that government-linked and politically connected firms benefit from an easy access to bank finance at preferential rates (Sapienza, 2004), and an implicit government bailout guarantee in times of distress (Faccio et al., 2006). According to Megginson et al. (2014), this is a major cause of the inefficiency and underperformance associated with state ownership. The authors also argue that state-owned banks often offer preferential loans to firms with state ownership under pressure from politicians and bureaucrats, and provide fiscal support in the form of subsidies and tax relief to connected firms. Based on this evidence on the soft budget constraint provided by the banking system to firms with government ownership (e.g., in terms of easier access to finance, preferential rates and lower cost

⁶ Policy risk arises from postprivatization policies that could be implemented by the government (e.g., deregulation, enactment of new legislation, and new administrative procedures) and that could affect previously recognized rights (Perotti, 2005; Ben-Nasr et al., 2012).

⁷ Shleifer and Vishny (1997, p. 768) outline that: "In sum, the bureaucrats controlling state firms have at best only an indirect concern about profits (because profits flow into the government budget), and have objectives that are very different from the social interest."

of bank financing), we expect NPFs to rely more on bank debt rather than public debt. We label this view the “soft budget constraint hypothesis.”

In a nutshell, and based on these conflicting views, we expect that the higher the residual government ownership is, and the more likely firms will opt for private debt financing (if the soft budget constraint hypothesis is validated), or for public financing (if the reputation building/monitoring avoidance hypothesis is true). Stated otherwise, the net effect of the borrowing firm’s residual government ownership stake on its choice between bank debt and public debt is an empirical question that we explore in this paper.

Using a large hand-collected database of 453 privatized firms from 62 countries over the 2001-2014 period, we first conduct a multivariate analysis to investigate the link between the level of government ownership and debt choice. After controlling for firm-level characteristics as well as macroeconomic, political, and legal variables, we find empirical support for the soft budget constraint hypothesis associated with government ownership. We specifically observe that residual government ownership is positively and significantly related to bank debt financing, suggesting that NPFs still take advantage of government support. These findings are robust to addressing endogeneity concerns and to several robustness tests. We employ two approaches to address endogeneity concerns. First, we estimate change regression by considering a model that regresses the change in the ratio of bank debt to total debt on the change in government ownership. Second, we use an instrumental variable approach. The results from these tests are qualitatively similar to our main findings. Our evidence also stands up to a battery of robustness checks, including additional control variables and alternative estimation methods.

Digging further into the relationship between choice of debt source and government ownership, we assess the conditioning effect of country level characteristics, focusing on the extent of government ownership of banks in the country, the country’s political orientation of the government and the culture. Interestingly, we find that the positive relation between government ownership and bank debt reliance holds only in countries with high government ownership of banks, left oriented political systems, and collectivist societies.

Our study contributes to two separate strands of the literature. *First*, we add insights into the debt choice literature by considering the impact of government ownership on this corporate

financing choice. More precisely, this study complements prior research by Denis and Mihov (2003), Lin et al. (2013), and Boubaker et al. (2017), who find that ownership structure (managerial ownership, control-ownership wedge, and MLS, respectively) plays an important role in determining debt choice. *Second*, we add to the privatization literature by showing that continued government ownership distorts resource allocation at the firm level. This result complements existing evidence on the cost of state ownership in terms of 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). Indirectly, our evidence is consistent with results in Borisova and Megginson (2011) who find that bondholders price the advantages of the soft budget constraint associated with being politically connected since they are shown to require higher credit spreads when government residual ownership decreases.

Our analysis and results have policy implications in terms of public policy. From an economic policy perspective, we show that continued government ownership is costly, distorts firms' corporate financing choices and hence contribute to increase rather than decrease the weight of the banking sector in the economy. This in turn crowds out any potential development of public debt markets. Our results are particularly important in this post-crisis era characterized by extensive government bailout and rescue packages to banks. Most of these rescue packages involve the government participation in the banks, thus increasing the weight of governments in the financial system, and by ricochet systemic risk.

2. Literature review

2.1. Theoretical background on firms' debt financing choices

Large cross-country differences in the relative size of bank loans and corporate bonds are documented in the literature, leading economists (e.g., Modigliani and Perotti, 2000) to classify financial systems in two categories: bank-based systems such as Germany and Japan and market-based systems such as the US and UK. The macro-economic financial intermediation theory suggests that banks and markets not only compete with one another, so that growth in one is at the expense of the other (Allen and Gale, 1997; Boot and Thakor, 2011), but also tend to exhibit

certain complementarities between bank lending and capital market funding (Diamond, 1991; Hoshi et al., 1993; Song and Thakor, 2010).

At the micro-level, debt choice theoretical models have focused on how firms make their choices between alternative debt instruments by specifically comparing public debt (i.e. corporate bonds) to bank loans. These models are mostly grounded in an asymmetrical information framework and identify factors such as agency monitoring costs by banks as drivers of corporate debt source choices (e.g., Johnson, 1997; Krishnaswami et al., 1999; Cantillo and Wright, 2000; Esho et al., 2001; Denis and Mihov, 2003).⁸ In times of financial distress, the information asymmetry between lenders (i.e., debtholders) and borrowers (i.e., shareholders) may lead to moral hazard reflected among other things in asset substitution, expropriation by insiders and underinvestment activities (Jensen and Meckling, 1976; Myers, 1977), leading to a higher cost of capital in public markets. Unlike public lenders, private lenders such as banks are able to mitigate these moral hazard and agency problems through effective monitoring mechanisms that include better access to firms' inside information, restrictive covenants and particular agreements (Diamond, 1984; Fama, 1985).

Empirical evidence suggests that to avoid the close scrutiny of banks, firms with agency problems will prefer public financing. For instance, Denis and Mihov (2003) observe that higher managerial ownership affects financing choices by tilting preferences towards public debt financing. More recently, Lin et al. (2013) find for an international sample that firms with agency problems (captured by a larger wedge between control and cash flow rights) tend to rely more heavily on public debt financing and less on bank debt financing in order to circumvent bank monitoring. In the same vein, Boubaker et al. (2017) determine that the presence of multiple large shareholders' structures in French firms is associated with more reliance on bank finance, the effect being stronger when agency problems between controlling and minority shareholders are more acute.

2.2. Debt choice and government ownership: Hypotheses development

⁸ For excellent reviews of the literature, please refer to Hadlock and James (2002) and Denis and Mihov (2003).

The privatization process, more often than not, leads to partial sales whereby the government remains a shareholder (Gupta, 2005). This in turn potentially distorts the incentives' structure and objectives of the firms. Under state-ownership, the firm is a policy tool that allows the government and managers-bureaucrats to pursue political objectives and seek popular support by investing in underdeveloped areas to boost regional development, by overstaffing SOEs, or overinvesting (Shleifer and Vishny, 1997). To pursue these goals, the government offers financial and operational back-up to the firms, ranging from cheap and easy access to the banking system, especially when banks are state-owned (Sapienza, 2004), subsidies and cash in times of distress, regulatory protection, anti-competitive advantages, to an implicit government bailout (Faccio et al., 2006). It thus comes as no surprise that SOEs have always been a burden on States' finances and that their performance, owing to the lack of incentives to pursue profit maximization and efficiency objectives, has been poor.⁹ Shleifer and Vishny (1997) describe the incentives' structure and objectives of SOEs as a reflection of their "extreme agency problems."

The switch to private ownership through privatization changes such incentives' structure by weakening or at best eliminating the "grabbing hand" of the government (Durnev and Fauver, 2009; Shleifer and Vishny, 1997) that distorts optimal allocation of resources. Private owners should now be in a position to rationalize capital allocation and optimize profits. However, when the government remains a shareholder, distortion will still prevail (Megginson et al., 2014). It is in this context that we develop our analysis on the link between the level of government ownership in privatized firms and debt choice along two hypotheses: the soft budget constraint hypothesis, and the reputation building/bank monitoring avoidance hypothesis.

2.2.1. Government ownership is positively related to public debt: Reputation building and bank monitoring avoidance Hypotheses

Agency theory suggests that those who control the firm exploit corporate resources to further their own interests (Jensen 1986). The close scrutiny and monitoring of the borrowing firms by banks tend to reduce moral hazard problems that may stem from opportunistic activities of controlling shareholders/ insiders at the expense of other stakeholders (Stiglitz and Weiss,

⁹ Boardman and Vining (1989), Megginson et al. (1994), and Boubakri and Cosset (1998) are among a large number of studies that document an improvement in performance after privatization.

1983; Rajan, 1992). High government ownership is associated with extreme agency problems according to Shleifer and Vishny (1997, 1998), since state-owned firms pursue political objectives rather than profit maximization. Given that these bureaucrats-managers operate under a soft budget constraint, they have more opportunities and incentives to expropriate corporate assets (Megginson et al., 2014). For instance, these managers may be pressured to invest in politically expedient projects, rather than positive NPV projects. Taking these agency costs into account, banks are more likely to impose particularly strong monitoring on borrowing firms with large government ownership. As a consequence, and in anticipation of the strict monitoring by banks, firms with high government ownership might prefer public debt financing over bank debt as a way to avoid scrutiny and bank monitoring, hence the “bank monitoring avoidance effect.”

Privatized firms where the government is still a residual shareholder may be forced to use public debt (bond) markets for reputation building (Perotti, 1995), and to boost investors’ interest in NPFs. To this effect, Perotti (1995) argues that in order to resolve the policy uncertainty surrounding privatization (related to future government political interference as mentioned earlier), the government needs to signal its commitment to market oriented policies by divesting control of the firm. From the government perspective, NPFs can be used as a policy tool to ensure that the privatization reform is a success, and decrease the level of uncertainty around the ownership change.¹⁰ Opting for bond market financing, and removing state-back up guarantees will help build reputation for the government and help achieve the economic objective of boosting domestic markets. Therefore, the higher the residual government ownership and the higher the need to signal commitment by using NPFs to tap public markets instead of private debt markets. In addition, because of their need for substantial amounts of capital and owing to their size, firms will likely choose to tap domestic as well as international bond markets, in accordance with the behavior of large publicly traded companies documented in previous studies that find a positive link between a firm’s size and its reliance on public debt financing (Houston and James, 1996; Krishnaswami et al., 1999; Denis and Mihov, 2003). This is the reputation building hypothesis.

¹⁰ Shleifer and Vishny (1998) have argued that only full privatization from the state’s self-serving “grabbing hand” will achieve the expected benefits of private ownership.

Overall, this discussion suggests that the higher the residual government ownership is, and the more likely firms will opt for public debt financing. We formulate our testing hypothesis as follows:

H1: Reliance on public debt is more likely when residual government ownership is high

2.2.2. Government ownership is positively related to private debt: The soft budget constraint hypothesis

In firms where the government is a shareholder, the State acts as a financial backer in situation of distress providing a soft budget constraint that is first formulated by Kornai (1979; 1980). As mentioned by Megginson et al. (2014, p277), “An organization with a soft budget constraint can always count on the government to bail it out when its budget constraint is persistently breached.” The authors argue that state ownership is closely associated with the “soft budget effect” since governments can support state-owned firms by providing subsidies, tax relief, and easy access to finance at preferential rates. These direct and indirect means of support will soften the firm’s budget constraint as a result (Kornai et al., 2003). This argument finds empirical support in a cross-country study of politically connected firms by Faccio et al. (2006) who conclude that these firms are more likely to benefit from a government bailout than non-connected peers. Evidence from the banking sector for the existence of government back-up is also found in Brown and Dinc (2011) who report that during his study period, no bank with majority government ownership fails, whereas about 44% of the remaining banks fail, are acquired, or are nationalized by the state. In sum, we conjecture that as long as the government retains ownership, NPFs remain politically connected and benefit from a soft budget constraint that engulfs government support in terms of easy access to credit, lower cost of borrowing, and bailout guarantee in times of distress.¹¹ In this case, we expect NPFs to rely more on bank debt than public debt.

H2: Reliance on bank debt is more likely when residual government ownership is high.

¹¹ Borisova and Megginson (2011) analyze the impact of residual government ownership on the cost of debt and find that spreads rise as the government divests ownership in NPFs. Wang, Wong, and Xia (2008) argue that, because SOEs can appeal to soft-budget constraints, they do not need “to provide higher quality accounting information in order to obtain better contracting terms.”

2.3. The conditioning impact of country characteristics

2.3.1. Government ownership of banks

In a seminal paper, La Porta et al. (2002) find that government ownership of banks is pervasive in an international setting. They note (p. 267) that it is “especially common in countries with poorly protected property rights, heavy government intervention in the economy and underdeveloped financial markets.” They further document a negative association between government ownership of banks and subsequent development of the financial system, economic growth and growth of productivity. With direct control of banks’ assets, “the government’s role in finance is much broader than the regulation and enforcement functions to which it is generally limited in the U.S.” (Dinc, 2005, p454). La Porta et al. (2002) explain the government pervasive ownership of banks by the political view of government participation in finance that reflects the desire of politicians to control investment by firms, but for political objectives. They provide employment, subsidies, and other benefits in return of votes, political contributions, and bribes (Kornai, 1979; Shleifer and Vishny, 1994). Sapienza (2004) confirms this conjecture by showing that state owned Italian banks pursue political objectives in their lending policies. In the same vein, Dinc (2005) finds that government-owned banks increase their lending in election years relative to private banks. Fan et al. (2012) recently report evidence that firms in countries with larger banking sectors have shorter debt maturity (typically this is bank debt).

For this reason, we expect the relation between government ownership and bank debt reliance to be stronger in countries with extensive government ownership of banks since it enhances the soft budget constraint of government-owned firms.

H2a: The relation between residual government ownership and bank reliance is stronger in countries with high government ownership of banks

2.3.2. Political orientation

Theoretical models in Perotti (1995) and Biais and Perotti (2002) suggest that the design of the privatization process depends on the expected level of policy risk, as well as the government’s credibility and its commitment to the reform (reflected in its political ideology). A government’s political orientation refers to whether the ideology of the government is left or right oriented. As

discussed in Biais and Perotti (2002), left-wing governments are less likely to apply market-oriented policies and tend to be less committed to these policies than right-wing governments. They are also more likely to intervene in the economy, and to influence post privatization valuation (Ben-Nasr et al., 2012). In addition, given their political commitment to the working class (as opposed to right-wing governments being committed to market forces), left-wing governments are more likely to bailout large companies in distress (including NPFs), to protect employment (Cioffi and Hopner, 2006). Based on these arguments, we expect the relation between residual government ownership in privatized firms and bank debt reliance to be stronger when governments are left oriented since they make the soft budget constraint of NPFs more beneficial. Hence our next hypothesis:

H2b: The relation between government residual ownership and bank debt reliance is stronger in countries with left-wing governments.

2.3.3. Culture

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). One fundamental driver of cultural differences across countries is Hofstede's (2001) distinction between individualism and collectivism (Markus and Kitayama, 1991; Heine, 2007). This cultural dimension has an important economic impact (e.g., Gorodnichenko and Roland, 2011) since it conditions resource allocations. Indeed, as discussed in Boubakri et al. (2015), individualistic societies rely on individual actions and consider resource allocation needs to be determined by free competitive markets. In these societies, government interventionism is minimal. In collectivist societies instead, collective interests dominate and resource allocation is primarily left to the government that will foresee that the group interests and concerns are secured. In collectivist societies, the soft budget constraint of NPFs should be more beneficial and the guarantee of bailout of firms (especially with high government ownership) in times of financial distress, more likely. Moreover, Zheng et al. (2012) find that firms located in countries with high collectivism tend to use more short-term debt (generally bank debt). We expect this relation to be especially true in firms with high government ownership. We thus conjecture that:

H2c: The relation between government residual ownership and bank debt reliance is stronger in countries with collectivist culture.

3. Sample, variables, and descriptive statistics

3.1 Sample

To investigate the impact of government ownership on debt choice, we consider a large multinational sample of privatized firms over the period 2001-2014. Our sample selection procedure starts by identifying the list of privatized firms in *Compustat Global* where we collect data on financial and ownership structure. We draw on two sources to retrieve information on privatizations. The first database is *World Bank* privatization database which covers firms in developing countries. The second database is *Privatization Barometer* which provides information on a comprehensive list of privatized firms in developing countries. Last, we match this sample with firms covered by the Capital IQ database, where we find data on debt structure. After applying this procedure, we are left with a final sample of 453 privatized firms in 62 countries corresponding to 3,846 firm-year observations. Tables 1 and 2 describe the sample of privatized firms by country and industry, respectively. As can be seen in Table 1, China dominates the sample firms with almost 7% of total firm-year observations, followed by Brazil, Poland and India with 6.27%, 6.06% and 5.07%, respectively. The sample is fairly distributed across the remaining countries, each of which accounts for less than 5% of sample firms. Table 2 shows that the majority of our privatized firms operate in the utilities sector, basic industries and transportation.

[Insert Tables 1 and 2 about here]

3.2 Variables

Debt structure. Following previous studies on the determinants of debt choice (Boubaker et al., 2017; Lin et al., 2013), we identify a firm's debt structure through its reliance on bank debt. More specifically, we employ the ratio of bank debt in firm total debt (*BANK*) as a proxy for the choice between bank and public debt.

State ownership. In this study, we use as a proxy for our independent variable the level of state ownership (*STATE*) which is calculated as the fraction of shares held by the government. For this aim, we collect information on firms' ownership structure in the post-privatization period based on two main sources, namely the annual reports and offering prospectuses. Given the

international nature of our sample, we use different other sources to complete the ownership data, including *Worldscope*, the *Guide to Asian Companies* and *Orbis*.

Control variables

ROA is defined as the ratio of operating income before depreciation to total assets. It is a proxy for firm profitability which also reflects firms' project and credit quality according to Denis and Mihov (2003). Based on the reputation model of Diamond (1991), successful firms, which have a good reputation on the credit market, rely more primarily on public debt rather than bank debt. Hence, we expect that there is a negative effect of profitability on bank debt use.

DTA measures firm leverage which is calculated as the ratio of long-term debt to total assets. A higher leverage indicates that the borrowing firm has acquired a positive reputation of creditworthiness in the credit market, which lowers the need to bank-monitored debt (Diamond, 1991). It is also argued that firms with a better credit quality issue more public debt since the monitoring problems of publicly traded debt are more than offset by the lower transaction costs (Denis and Mihov, 2003). As a consequence, the effect of leverage on bank debt is expected to be negative.

SIZE is equal to the natural logarithm of firm total assets. Large firms may benefit from economies of scale when issuing public debt as they have a high debt capacity (Blackwell and Kidwell, 1988). Moreover, since large firms are more visible to the public market, they are characterized by a lower level of information asymmetry, which reduces their need to the screening activities of bank lenders (Houston and James, 1996). Therefore, we expect firms size to be negatively associated with bank debt.

TOBIN's is Tobin's Q which measures firm growth opportunities perceived by the market and is defined as the sum of market value of equity plus book value of debt divided by total assets. Agency problems of debt create an underinvestment problem that leads borrowers to refuse to invest in low-risk projects so as to maximize firm value at the expense of debtholders. The close relationship of banks with their borrowers is likely to reduce these agency costs of underinvestment (Denis and Mihov, 2003). Therefore, firms with higher growth opportunities benefit more from issuing bank debt. We expect a positive relationship between Tobin's Q and the ratio of bank debt to total debt.

TANGIBLE is a proxy for assets tangibility computed as the ratio of net property, plant and equipment to total assets. Since lenders' risk is mitigated when debt is collateralized by tangible assets, then firms with higher tangible assets gain a positive reputation of creditworthiness in the credit market. Consistent with Diamond's (1991) model on reputation, bank debt is expected to decrease in asset tangibility.

ZSCORE is a proxy for a company's financial health and is computed using the Altman's (1968) z-score calculated as follows: $(1.2 \times \text{working capital} + 1.4 \times \text{retained earnings} + 3.3 \times \text{earnings before interest and taxes} + 0.999 \times \text{sales}) / \text{total assets} + 0.6 \times (\text{market value of equity} / \text{book value of debt})$. Financially distressed firms are more likely to default on their debt payment, which induces them to rely on bank borrowing since bank lenders are more flexible in restructuring debt agreements. Hence, we expect distress risk to be positively related to firms' reliance on bank debt.

In addition to the above firm-level specific variables, we also control for country-specific variables. *COMMON* is a dummy variable that reflects a country's legal origin. Following La Porta et al. (2006), this variable takes one for common law system countries and zero for civil law system countries. *BANKDEP* is an indicator for the size of the financial system or financial depth and is computed as the ratio of liquid liabilities of banks divided by gross domestic product (GDP) (Beck et al., 2009). This variable is constructed based on data from the *Financial Development and Structure Dataset*. *GDPGROWTH* is a proxy for the level of economic development. This variable is obtained from the *World Development Indicators* and is computed as the gross domestic product (GDP) per capita growth over the year. *LAW* is the *International Country Risk Guide* (ICRG) assessment of a country's rule of law which reflects the quality of legal institutions. This measure ranges from 0 to 6 and increases with the improvement in "the quality of contract enforcement and property rights, the police, and the courts, as well as the likelihood of crime and violence".

3.3 Descriptive statistics

Table 3 displays summary descriptive statistics for all of our analysis variables, which are winsorized at the 1st and 99th percentiles to reduce the effect of outliers. The independent variable *STATE* has a mean, median and standard deviation of 20.4%, 0.1%, and 27%, respectively. These statistics are in line with those reported in Boubakri et al. (2016) and show that the state owns

more than 20% of the shares of our sample firms. Moreover, the reported statistics on firms' debt structures show that bank debt use is largely prevalent among our sample of privatized firms as the average proportion of bank debt exceeds 64% of firms' total debt. Additionally, we find that our sample is heterogeneous in terms of leverage since the leverage ratio varies between 0.053 and 4.758 with an average of 0.482, which makes it an ideal sample to understand firms' debt structures.

[Insert Table 3 about here]

4. Empirical evidence

4.1. Model specification

To empirically test the impact of state ownership on the choice between bank and public debt, we estimate several specifications using a pooled multivariate regression framework for the following model:

$$\begin{aligned}
 BANK = & a_0 + a_1 STATE + a_2 DTA + a_3 TANGIBLE + a_4 SIZE + a_5 ROA + a_6 TOBIN's + a_7 \\
 & ZSCORE + a_8 COMMON + a_9 BANKDEP + a_{10} GDPGROWTH + a_{11} LAW + \\
 & Industry\ dummies + Year\ dummies + \varepsilon \quad (1)
 \end{aligned}$$

where *BANK* is the proportion of bank debt in the firm total debt, *STATE* is the proxy for government ownership, *DTA*, *TANGIBLE*, *SIZE*, *ROA*, *TOBIN's* and *ZSCORE* is the set of firm-specific variables that have been shown to be important determinants of debt choice, *COMMON*, *BANKDEP*, *GDPGROWTH* and *LAW* are country-specific characteristics that matter for the choice between bank and public debt, *Industry dummies* and *Year dummies* represent industry and year fixed effects, and ε is the error term. In this analysis, we are mainly interested in the coefficient a_1 which measures the degree to which variations in state ownership explains firm reliance on bank debt.

4.2 Results

Table 4 presents the results of the regression of bank debt ratio on state ownership along with the control variables used in Model (1). In column (1), we report ordinary least squares regression results where the heteroskedasticity-robust *t*-statistics are in parentheses beneath the coefficient estimates and standard errors are clustered at the firm level. We find that the

coefficient a_1 is positive and statistically significant at the 1% level, suggesting that firm reliance on bank debt increases with higher state ownership. This result is consistent with the “soft-budget constraint” view which implies that firms with high state ownership benefit from an easy access to bank finance at preferential rates evident in them relying more heavily on bank debt financing.

However, since our bank debt measure, *BANK*, is censored from above and below at 0 and 1, we use Tobit regression methodology instead of ordinary least squares which may be inconsistent. We therefore re-estimate our baseline regression using the Tobit approach and report the results in column (2) of Table 4. The results indicate that *STATE* has a positive and significant effect on bank debt use, corroborating the soft-budget constraint view which suggests that government-owned firms benefit from the soft budget constraint provided by the banking system. This effect is also economically significant since the increase in bank debt use following the increase in state ownership from the first to the third quartile is equal to 11%.

[Insert Table 4 about here]

4.3 Endogeneity concerns

Although our previous results provide strong evidence in favor of the soft-budget constraint advantage, it remains necessary to overcome endogeneity issues which may prevent the precise identification of the causal relation between state ownership and bank debt reliance. It is highly likely that the level of state ownership correlates with some omitted factors, such as the economic conditions, that might influence firms’ bank debt use. We therefore deal with this problem in two ways. First, we employ an instrumental variable approach which relies on the use of an exogenous instrument of state ownership. Second, we run a change regression model which regresses the change in the dependent variable on the change in the independent variable since it alleviates the problem of omitted variables bias.

Instrumental variable regression. We examine the relation between state ownership and bank debt use in an instrumental variable framework using *LNDISTANCE* as an instrument for state ownership. *LNDISTANCE* is defined as the natural logarithm of the distance in kilometers of the firm’s headquarter to the stock exchange in which the firm is listed. While the distance to stock exchange is correlated with the percentage of shares held by the government (see Boubakri et al., 2016), it is unlikely to directly influence a firm’s choice between bank and public debt except

through state ownership. Table 5 displays the results of the instrumental variable regression. In the first-stage regression, similar to Boubakri et al. (2016), we find that *LNDISTANCE* is significantly and positively related to *STATE*, suggesting that the distance to stock exchange is a good predictor of the level of state ownership. In the second-stage regression, the results show that the instrumented values of state ownership are significantly and positively associated with state ownership, confirming our prior findings.

Change regression. Unlike the level regression, the change regression considers only the factors that have changed, and omits all unobservable time invariant factors that might jointly affect state ownership and the proportion of bank financing in total debt. The results of the change regression are presented in Table 5 column (3). Consistent with our baseline findings, we show that a positive change in the level of shares held by the government results in a positive change in the ratio of bank debt total debt. This finding indicates that controlling for unobserved time-specific factors do not materially influence our previous evidence which is consistent with the fact that government-owned firms take advantage from government support to access bank debt financing at favorable conditions. Overall, after using an instrumental variable approach and a change regression, our results remain qualitatively unchanged, confirming that our findings are not driven by endogeneity issues.

[Insert Table 5 about here]

4.4 Additional control variables

In Table 6, we control for additional variables. We use different country-specific characteristics to completely rule out the possibility that the increase in bank debt reliance following the increase in government ownership may actually be related to some country-level factors which are in part explained by the level of government ownership. To address this concern, we first control for the legal rights of creditors which reflect the power of secured lenders in case of bankruptcy. Particularly, we use the creditor rights index (*CREDITORIGHTS*) of Djankov et al. (2007) that ranges from zero to four, with higher scores reflecting higher protection of creditor rights. Second, we control for the extent to which insiders are likely to divert corporate resources to their own use at the expense of other investors, which is referred to as self-dealing. For this aim, we follow Djankov et al. (2008) in constructing the anti-self-dealing index

(*ANTISELF*) defined as the average of ex-ante and ex-post private control of self-dealing, with higher values indicating a lower self-dealing that insiders engage in. Third, we use the index of public enforcement of law and regulation (*PUBLICENFOR*) to control for the effectiveness of the law in curtailing bad corporate practices through sanctions or even prosecutions. The public enforcement index is from La Porta et al. (2006) and it is calculated as the average of five subindexes that cover broad aspects of public enforcement, namely supervisor characteristics index, rule-making power index, investigative powers index, orders index, and criminal index. Finally, we control for a country-level corruption (*CORRUPTION*), which reflects the quality of governance of a country and measures how government officials in a certain country are likely to extract bribery.

Table 6 reports results of the regression including additional controls for country-level factors. Importantly, we find that the coefficient estimate on *STATE* remains positive and statistically significant, thus showing that the observed relation between government ownership and bank debt reliance is not driven by potential omitted country-level characteristics.

[Insert Table 6 about here]

5. Cross-sectional heterogeneity

Our analyses so far indicate that firms with higher state ownership rely primarily on bank debt since they face lower constraints to access bank finance due to the government support that guarantees better contracting terms. This finding is consistent with the “soft-budget constraint” hypothesis. In this section, we go deeply into the understanding of the cross sectional heterogeneity in the relation between state ownership and bank debt use, by examining the role of country-level factors. Arguably, the nature of business-government relations may differ across countries with different characteristics, which in turn leads the government support to state-owned enterprises to be significantly altered. To be specific, we consider three country-level conditioning variables: government ownership of banks, political orientation, and culture.

5.1. The role of government ownership of banks

The impact of state ownership on bank debt reliance should depend on the level of government ownership of banks. According to our prediction in *H2a*, the positive impact of the

residual state ownership on the proportion of bank debt in total debt is more pronounced in countries with higher government ownership of banks. We specifically argue that the government has a better ability to control banks' lending policies when its ownership of banks is pervasive. In this case, we expect the government to provide more favorable lending conditions for firms with high state ownership.

To better gauge the effect of government ownership of banks on the relation between state ownership and bank debt reliance, we divide our sample into two groups of countries according to the level of government ownership of banks. More specifically, we define the variable *GOVBANK* as the fraction of the banking system's assets that is in banks that are 50% or more government owned. *GOVBANK* is obtained from the *Bank Regulation and Supervision* survey question 3.7.

Table 7 reports the results of the subsample analysis for countries with high and low percentage of government-owned banks. We find that the coefficient on the variable *STATE* is positive and statistically significant only for the subsample of countries with a high government ownership of banks. In contrast, the coefficient on *STATE* is statistically insignificant in the subsample of countries with low government ownership of banks. Overall, these results are consistent with the idea that the government enhances the soft budget constraint of state-owned firms when it controls bank lending policies.

[Insert Table 7 about here]

5.2 *The role of political orientation*

Another issue to consider is the role of a country's political orientation in shaping the impact of government ownership on firms' choice between bank and public debt. Left-wing governments are more prone to intervene in the economy compared to right-wing governments. In this case, firms located in countries with left-oriented political preferences are more likely to enjoy the implicit government bailout guarantee. Consequently, we would expect such firms to benefit more from the soft budget constraint advantage when they have higher state ownership, which in turn facilitates their access to bank debt financing.

We perform a subsample analysis to test the above conjecture on the role political orientation in driving the relation between state ownership and bank debt reliance. We split our sample into two groups classified according to two variables that capture a government's political orientation. We first use a dummy variable *LEFTWING* that takes one for left-oriented governments and 0 for right-oriented ones. We also use the level of government transfers and subsidies (*TRANSFERS*) which is equal to the government transfers and subsidies as a percentage of GDP from the Economic Freedom of the World.

Table 8 present the results of our subsample regressions. As expected, our findings show that the state ownership-bank debt relation depends on the government's political orientation. More specifically, we find that state ownership loads positively and significantly on bank debt ratio for the subsample of firms headquartered in countries with left-wing governments and countries with a high level of government transfers and subsidies. These results confirm the idea that firms take advantage from the government support and intervention to access bank debt, only when the government is more likely to intervene in the economy.

[Insert Table 8 about here]

5.3 *The role of culture*

We also investigate whether the positive relation between state ownership and bank debt reliance is sensitive to the country's national culture. We argue that state ownership increases more significantly firm reliance on bank debt in collectivist societies. The premise behind this idea is that, in collectivist cultures, the government is more influential and interventionist thus protecting collective interests, contrary to individualistic cultures where the emphasis is mainly placed on individual interests. Therefore, the "soft budget constraint", associated with the government's desire to facilitate firms' access to bank debt financing at favorable terms, will be more pronounced in collectivist societies.

To test our prediction in *H2c*, we conduct a subsample analysis to evaluate the impact of state ownership on bank debt use conditional on national culture. To capture whether a government is collectivist or individualist, we use two cultural indices on Individualism, *COLLECTIVISM_HF* and *COLLECTIVISM_TK*, developed by Hofstede (2001) and Tang and Koveos (2008), respectively. These indices increase with the degree of a country's individualism.

To make them positively correlated with a country's collectivism, we subtract them from 100 for ease of interpretation.

In Table 9, models (1) and (2) replicate our tests for the subsample of firms classified according to both indices *COLLECTIVISM_HF* and *COLLECTIVISM_TK*, respectively. The results provide consistent support with our prediction in *H2c*. More specifically, we show evidence that firm reliance on bank debt is strongly positively associated with state ownership in collectivist countries but is unrelated to state ownership in individualist countries, suggesting that the soft budget constraint holds only when the government is interventionist. Collectively, our subsample analysis findings provide further insights on the nature of the relation between state ownership and bank debt use by highlighting the conditioning role of government characteristics.

[Insert Table 9 about here]

6. Conclusion

The corporate finance extensive literature over the last half-century has been largely dominated by studies on the capital structure of firms (i.e., mix between equity and debt) (e.g., Marsh, 1982). Not only do firms choose between debt and equity, they also have a debt choice decision to make, namely between public financing by capital markets through debt issuance, or private financing by financial intermediaries through bank loans. We examine this issue in relation to government ownership in a large sample of 453 newly privatized firms from 62 countries over the period 2001-2014.

Based on debt choice and privatization literatures, the relation between government ownership and debt source choice could go either way. For instance, one can advance two main arguments related to "bank monitoring avoidance" and "reputation building" to expect a negative relation between government ownership and bank debt reliance. Following arguments in Fama (1985), Stiglitz and Weiss (1983), and Rajan (1992) on the monitoring advantage of bank debt, we anticipate that managers-bureaucrats in firms with government ownership will likely prefer public debt financing rather than bank debt as a way to avoid scrutiny and bank monitoring, hence, the "bank monitoring avoidance argument. They are likely to do so to hide their expropriation activities (Bushman et al., 2004). Along the same line of thought, government ownership is generally perceived to increase policy risk, which may in turn tilt preferences

towards public debt markets. One such possibility may arise as politicians/bureaucrats force NPFs to use public debt (bond) markets for “reputation building” (Perotti, 1995) (i.e., in order to boost investors’ interest in NPFs and to increase support for government market-oriented policies). These considerations related to reputation building and bank monitoring avoidance, suggest a negative relation between corporate government ownership and a borrowing firm’s reliance on bank debt. However, one can also expect government ownership and bank debt choice to be positively related, (i.e., firms are more likely to rely on bank debt) based on the fact that government ownership provides firms with a “soft budget constraint” and easier access to finance at preferential rates. This will likely incentivize NPFs to rely more on bank debt rather than public debt.

We test this conjecture in a cross-country sample and find, after controlling for firm-level characteristics as well as macroeconomic, political, and legal variables, empirical support for the soft budget constraint hypothesis associated with government ownership. We specifically observe that residual government ownership is positively and significantly related to bank debt financing, suggesting that NPFs still take advantage of government support. These findings are robust to addressing endogeneity concerns and to several robustness tests. We next examine the potential conditioning effect of country level characteristics, and show that the positive relation between government ownership and bank debt reliance holds only in countries with high government ownership of banks, left oriented political systems, and collectivist societies.

Our results suggest that continued government ownership is costly, distorts firms’ corporate financing choices and hence contribute to increase rather than decrease the weight of the banking sector in the economy. This in turn crowds out any potential development of public debt markets. This is of particular importance in the face of crises generally characterized by extensive government bailout and rescue packages to banks that basically end up increasing the weight of governments in the financial system, and hence the systemic risk.

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APPENDIX

Variable definitions and sources

Variable	Definition	Source
Dependent variable		
<i>BANK</i>	The ratio of bank debt to total debt	Capital IQ
Firm level variables		
<i>SIZE</i>	Firm size measured as the natural logarithm of total assets.	Compustat data
<i>TOBIN's</i>	Tobin's Q defined as the sum of market value of equity plus book value of debt divided by total assets.	As above
<i>DTA</i>	Firm leverage measured as the ratio of total liabilities to total assets.	As above
<i>ROA</i>	Firm profitability defined as the ratio of operating income before depreciation to total assets.	As above
<i>TANGIBLE</i>	Asset tangibility calculated as the ratio of net property, plant and equipment to total assets.	As above
<i>ZSCORE</i>	Altman's (1968) z-score, calculated as follows: $(1.2 * \text{working capital} + 1.4 * \text{retained earnings} + 3.3 * \text{earnings before interest and taxes} + 0.999 * \text{sales}) / \text{total assets} + 0.6 * (\text{market value of equity} / \text{book value of debt})$.	Compustat data
<i>LNDISTANCE</i>	The natural logarithm of the distance in kilometers from the firm's headquarters to the stock exchange in which it is listed.	http://www.distancefromto.net
<i>STATE</i>	The percentage of shares held by the government	Mainly from firms' annual reports and offering prospectuses
Country level variables		
<i>CORRUPTION</i>	ICRG assessment of a country's corruption, rescaled (0 for low corruption and 6 for high corruption)	International Country Risk Guide
<i>PUBLICENFOR</i>	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.	La Porta et al. (2006).
<i>ANTISELF</i>	Average of ex-ante and ex-post private control of self-dealing.	Djankov et al. (2008)
<i>CREDITORIGHTS</i>	Creditor rights index is the sum of four distinct dummy variables. The first dummy variable equals one if restrictions are in place in case a debtor needs to file for reorganization. The second dummy becomes one when in the case of reorganization, the secured creditors are able to seize collateral. The third dummy concerns the priority over liquidation proceedings and becomes one if secured lenders are given priority. The fourth dummy concerns the continuation of management activities during the reorganization process. This dummy becomes one if management cannot continue in this scenario.	Djankov et al. (2007)
<i>BANKDEP</i>	Ratio of liquid liabilities to GDP	Financial development and Structure Dataset Beck et al. (2009)
<i>COMMON</i>	A dummy variable for common law system countries, and 0 otherwise.	La Porta et al. (2006).
<i>GDPGROWTH</i>	The GDP per capita growth over the year	World Development Indicators

<i>LAW</i>	ICRG assessment of a country's rule of law	International Country Risk Guide
<i>LEFT</i>	A dummy variable equal to 1 for a left-oriented government, and 0 otherwise	Beck et al. (2001)
<i>COLLECTIVISM_HF</i>	100 minus Hofstede's cultural index on Individualism	Hofstede (2001)
<i>COLLECTIVISM_TK</i>	100 minus Tang and Koveos' updated cultural index on Individualism	Tang and Koveos (2008)
<i>GOVBANK</i>	A measure of the degree of government ownership of banks, calculated as the fraction of the banking system's assets that is in banks that are 50% or more government owned (survey question 3.7)	Barth, Caprio, and Levine (2003) Bank Regulation and Supervision
<i>TRANSFERS</i>	Transfers and subsidies as a share of GDP	Economic Freedom of the World

TABLE 1
Descriptive Statistics by Country

Country	Obs.	%	BANK	STATE	DTA	TANGIBLE	SIZE	ROA	TOBIN's	ZSCORE	COMMON	BANKDEP	GDP GROWTH	LAW
Argentina	64	1.66	0.46	0.02	0.47	0.73	7.26	0.15	1.22	1.64	0.00	26.85	3.20	2.54
Australia	41	1.07	0.59	0.06	0.52	0.47	9.24	0.19	1.57	2.10	1.00	86.47	1.57	5.67
Austria	102	2.65	0.60	0.31	0.45	0.46	8.72	0.12	1.29	1.93	0.00	96.34	1.03	6.00
Bahrain	4	0.1	1.00	0.00	0.39	0.22	4.55	0.05	1.04	2.25	1.00	73.92	-2.04	5.00
Belgium	24	0.62	0.45	0.24	0.50	0.23	7.72	0.19	1.61	3.06	0.00	108.09	0.79	5.00
Brazil	241	6.27	0.68	0.12	0.45	0.40	7.71	0.14	5.20	2.36	0.00	55.14	2.19	2.08
Bulgaria	14	0.36	0.53	0.00	0.62	0.29	7.65	0.09	1.12	0.93	0.00	68.78	2.45	2.61
Chile	17	0.44	0.39	0.02	0.42	0.70	8.12	0.14	115.74	20.37	0.00	68.06	3.85	4.50
China	262	6.81	0.81	0.40	0.50	0.47	8.12	0.10	1.60	2.98	0.00	159.01	9.26	4.04
Colombia	45	1.17	0.46	0.37	0.35	0.54	8.18	0.15	1.86	3.35	0.00	18.25	3.49	1.86
Croatia	37	0.96	0.77	0.17	0.38	0.47	7.35	0.13	1.77	4.05	0.00	65.31	1.77	4.78
Czech Republic	22	0.57	0.57	0.38	0.41	0.62	7.93	0.13	1.13	2.45	0.00	70.05	3.00	5.00
Denmark	27	0.7	0.39	0.20	0.53	0.55	8.39	0.16	1.68	2.06	0.00	67.22	0.19	6.00
Egypt	25	0.65	0.94	0.34	0.28	0.47	7.73	0.14	1.05	3.20	0.00	80.20	2.04	3.42
Finland	112	2.91	0.73	0.27	0.49	0.41	7.46	0.11	1.32	2.59	0.00	60.63	0.92	6.00
France	104	2.7	0.35	0.14	0.81	0.24	9.73	0.13	1.70	1.78	0.00	80.68	0.46	4.95
Germany	117	3.04	0.46	0.21	0.47	0.35	9.53	0.09	1.15	1.62	0.00	113.60	1.19	5.00
Ghana	3	0.08	0.57	0.14	0.46	0.67	6.80	0.16	1.58	1.88	1.00	25.96	1.96	2.00
Greece	80	2.08	0.67	0.39	0.42	0.55	7.97	0.14	1.54	2.62	0.00	94.92	0.08	4.13
Hong Kong	11	0.29	0.92	0.51	0.73	0.81	9.47	0.09	1.09	0.58	1.00	290.78	3.68	4.91
Hungary	78	2.03	0.93	0.04	0.40	0.58	6.46	0.12	1.01	2.65	0.00	53.79	2.11	4.00
India	195	5.07	0.75	0.66	0.60	0.43	8.08	0.11	1.66	3.07	1.00	67.67	5.88	4.00
Indonesia	90	2.34	0.67	0.40	0.43	0.52	7.77	0.22	11.47	5.45	0.00	37.32	4.03	2.81
Ireland	17	0.44	0.34	0.06	0.57	0.33	7.46	0.08	1.16	1.36	1.00	103.49	0.47	6.00
Israel	22	0.57	0.68	0.13	0.59	0.52	8.08	0.19	3.62	4.26	1.00	95.69	1.44	5.00
Italy	171	4.45	0.69	0.17	0.58	0.39	8.49	0.10	1.78	1.70	0.00	77.76	-0.77	4.00
Jamaica	13	0.34	0.91	0.00	0.27	0.21	4.75	0.05	0.82	2.93	1.00	46.76	0.27	1.92
Japan	39	1.01	0.32	0.32	0.34	0.38	10.88	0.19	1.31	2.79	0.00	207.68	0.76	5.00
Jordan	47	1.22	0.85	0.29	0.34	0.45	6.37	0.17	2.02	5.94	0.00	124.16	2.19	4.00

Kazakhstan	15	0.39	0.12	0.55	0.20	0.39	8.58	0.19	0.53	2.41	0.00	35.29	4.11	3.77
Kenya	20	0.52	0.92	0.42	0.53	0.69	7.07	0.08	0.87	1.26	1.00	43.18	2.10	2.03
Latvia	36	0.94	0.97	0.01	0.30	0.43	4.77	0.09	1.13	3.60	0.00	42.47	6.18	5.00
Lithuania	28	0.73	0.73	0.09	0.51	0.53	4.85	0.16	0.87	2.26	0.00	37.94	6.80	4.00
Malaysia	121	3.15	0.64	0.31	0.37	0.52	7.04	0.10	1.06	2.08	1.00	122.78	3.10	3.75
Malta	11	0.29	1.00	0.25	0.49	0.77	5.14	0.16	2.85	3.42	0.00	156.51	1.17	5.00
Mexico	29	0.75	0.55	0.00	0.34	0.50	7.82	0.18	1.17	2.95	0.00	25.06	0.66	2.33
Morocco	17	0.44	0.91	0.21	0.43	0.45	7.71	0.29	2.76	4.93	0.00	98.90	3.16	4.88
Netherlands	24	0.62	0.17	0.09	0.67	0.34	9.74	0.17	1.33	1.13	0.00	120.69	0.45	6.00
New Zealand	39	1.01	0.09	0.22	0.48	0.68	8.02	0.14	1.36	1.75	1.00	83.92	0.92	5.68
Nigeria	21	0.55	0.87	0.00	1.06	0.39	6.03	0.15	2.23	2.16	1.00	25.25	5.78	1.88
Norway	11	0.29	0.13	0.65	0.46	0.45	9.69	0.26	1.51	2.59	0.00	51.85	1.82	6.00
Oman	45	1.17	0.96	0.30	0.24	0.59	5.63	0.19	1.75	5.63	0.00	33.35	-1.40	5.00
Pakistan	139	3.61	0.84	0.16	0.57	0.60	5.43	0.10	1.21	1.47	1.00	41.12	1.90	3.17
Peru	75	1.95	0.46	0.00	0.43	0.66	7.03	0.16	1.46	2.61	0.00	31.45	4.43	3.14
Philippines	44	1.14	0.75	0.13	0.55	0.41	7.27	0.12	1.36	1.77	0.00	57.05	3.60	2.39
Poland	233	6.06	0.74	0.10	0.45	0.42	6.32	0.09	1.14	2.20	0.00	48.77	3.89	4.39
Portugal	56	1.46	0.52	0.06	0.58	0.41	9.43	0.11	1.38	1.63	0.00	114.81	-0.02	5.00
Russia	65	1.69	0.72	0.07	0.45	0.57	8.98	0.10	1.99	4.26	0.00	45.77	2.83	3.60
Singapore	61	1.59	0.16	0.00	0.42	0.53	8.45	0.14	1.69	2.84	1.00	117.27	3.45	5.10
Slovakia	8	0.21	0.84	0.00	0.58	0.44	7.01	0.00	0.89	1.84	0.00	65.62	2.73	4.00
Slovenia	25	0.65	0.81	0.15	0.53	0.50	6.79	0.16	1.17	2.18	0.00	59.62	1.71	4.54
South Africa	23	0.6	0.22	0.24	0.33	0.62	9.36	0.22	1.45	3.27	1.00	41.93	1.76	2.35
South Korea	66	1.72	0.24	0.18	0.45	0.55	10.07	0.14	1.03	2.52	0.00	73.85	3.58	4.85
Spain	97	2.52	0.53	0.04	0.54	0.47	9.42	0.11	1.35	1.75	0.00	128.96	0.39	4.85
Sri Lanka	116	3.02	0.79	0.05	0.33	0.51	4.26	0.11	1.31	2.82	1.00	35.71	5.82	2.79
Sweden	51	1.33	0.50	0.04	0.52	0.21	8.17	0.10	1.16	1.79	0.00	64.44	1.24	6.00
Switzerland	13	0.34	0.27	0.59	0.46	0.38	9.77	0.23	1.93	2.86	0.00	156.82	0.98	5.08
Thailand	63	1.64	0.66	0.45	0.44	0.63	7.87	0.13	3.95	4.64	1.00	100.32	3.52	2.74
Trinidad & Tobago	11	0.29	0.16	0.00	0.57	0.45	6.08	0.10	1.20	1.63	1.00	41.76	5.55	2.41
Turkey	107	2.78	0.90	0.05	0.48	0.32	7.35	0.14	2.17	3.99	0.00	42.89	3.04	4.04
United Kingdom	114	2.96	0.41	0.01	0.53	0.50	8.86	0.11	1.40	1.81	1.00	140.09	1.15	5.61

Vietnam	38	0.99	0.94	0.00	0.46	0.17	4.80	0.11	1.30	3.97	0.00	104.79	4.77	4.00
Total	3,846	100	0.65	0.20	0.48	0.46	7.70	0.13	2.47	2.70	0.27	79.78	2.87	4.09

TABLE 2
Sample Industry Classifications

Industry Classifications	Two-digit SIC codes	Number of firm-year	Percentage (%)
Basic industries	10, 12, 14, 24, 26, 28, 33	533	13.86
Capital Goods	34, 35, 38	118	3.07
Construction	15-17, 32, 52	329	8.55
Consumer durables	25, 30, 36, 37, 50, 55, 57	232	6.03
Food/tobacco	1, 9, 20, 21, 54	216	5.62
Leisure	27, 58, 70, 78, 79	100	2.6
Petroleum	13, 29	310	8.06
Services	72, 73, 75, 80, 82, 87, 89	55	1.43
Textiles/trade	22, 23, 31, 51, 53, 56, 59	83	2.16
Transportation	40-42, 44, 45, 47	462	12.01
Utilities	46, 48, 49	1,352	35.15
Other	The remaining two-digit SIC codes	56	1.46
Total		3,846	100

Note: Table 2 provides industry classification as in Campbell (1996) for a sample of 453 privatized firms from 62 countries over the period 2001-2014.

TABLE 3
Regression Variables: Summary Statistics

Variable	Mean	Median	Std. Deviation	Min	Max
<i>BANK</i>	0.646	0.748	0.351	0.000	1.000
<i>STATE</i>	0.204	0.001	0.270	0.000	0.995
<i>DTA</i>	0.482	0.467	0.277	0.053	4.758
<i>TANGIBLE</i>	0.464	0.475	0.225	0.001	0.958
<i>SIZE</i>	7.703	7.789	1.994	0.728	11.164
<i>ROA</i>	0.126	0.115	0.085	-0.457	0.406
<i>TOBIN's</i>	2.468	1.165	14.629	0.353	217.517
<i>ZSCORE</i>	2.698	1.959	3.762	-13.805	36.822
<i>COMMUN</i>	0.269	0.000	0.443	0.000	1.000
<i>BANKDEP</i>	79.784	68.911	43.405	14.604	313.665
<i>GDPGROWTH</i>	2.874	2.641	3.706	-13.863	30.342
<i>LAW</i>	4.091	4.000	1.182	1.000	6.000

TABLE 4
Residual State Ownership and Collectivism

Variable	OLS	TOBIT
	(1)	(2)
<i>STATE</i>	0.128*** (2.735)	0.169*** (2.849)
<i>DTA</i>	0.061* (1.830)	0.061 (1.219)
<i>TANGIBLE</i>	0.030 (0.493)	0.020 (0.253)
<i>SIZE</i>	-0.084*** (-12.094)	-0.111*** (-12.191)
<i>ROA</i>	-0.292* (-1.853)	-0.427** (-2.020)
<i>TOBIN's</i>	-0.002* (-1.867)	-0.004** (-2.110)
<i>ZSCORE</i>	0.013** (2.017)	0.023** (2.122)
<i>COMMUN</i>	-0.087*** (-2.898)	-0.122*** (-3.260)
<i>BANKDEP</i>	0.001** (2.375)	0.001*** (3.442)
<i>GDPGROWTH</i>	0.002 (0.589)	0.001 (0.358)
<i>LAW</i>	-0.031*** (-2.770)	-0.041*** (-2.981)
<i>Constant</i>	1.326*** (13.859)	1.541*** (13.330)
<i>IND EFFECTS</i>	YES	YES
<i>YEAR EFFECTS</i>	YES	YES
<i>N</i>	3,846	3,846
<i>R²/Pseudo R²</i>	0.252	0.217

Notes: This table provides the results of the OLS and tobit regressions of the bank debt ratio on government ownership and other firm and country characteristics. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

TABLE 5
Residual State Ownership and Collectivism: Endogeneity

Variable	First Stage <i>STATE</i>	Second stage <i>BANK</i>	Change regression
	(1)	(2)	(3)
<i>STATE</i>		0.274*** (2.768)	0.053*** (2.776)
<i>DTA</i>	-0.008 (-0.131)	0.036 (0.977)	-0.099 (-0.658)
<i>TANGIBLE</i>	0.085 (1.387)	0.268** (2.124)	0.001*** (3.010)
<i>SIZE</i>	0.016** (2.063)	-0.038 (-1.575)	-0.044* (-1.737)
<i>ROA</i>	0.026 (0.185)	-0.213 (-1.297)	-0.285** (-2.368)
<i>TOBIN's</i>	0.002*** (3.174)	0.004 (1.288)	-0.000** (-2.078)
<i>ZSCORE</i>	-0.005 (-1.138)	0.000 (0.042)	0.002 (0.276)
<i>COMMUN</i>	0.000 (0.014)	-0.100*** (-2.992)	
<i>BANKDEP</i>	0.001** (2.033)	0.002** (2.510)	0.001 (0.766)
<i>GDPGROWTH</i>	0.011*** (3.207)	0.026* (1.919)	-0.000 (-0.056)
<i>LAW</i>	-0.016 (-1.229)	-0.074*** (-3.306)	-0.013** (-2.397)
<i>LNDISTANCE</i>	0.031*** (2.762)		
<i>Constant</i>	-0.098 (-1.080)	1.103*** (6.802)	-0.008 (-1.232)
<i>IND EFFECTS</i>	YES	YES	NO
<i>YEAR EFFECTS</i>	YES	YES	NO
<i>N</i>	3,846	3,846	1,653
<i>Pseudo R²</i>	0.135	0.251	0.295

Notes: This table provides the regression results of the two stages of the instrumental variable approach and change regression of the relation between government ownership and bank debt ratio. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

TABLE 6
Additional Control Variables

Variable	CREDITOR	ANTISELF	PUBLICENFOR	CORRUPTION	ALL
	(1)	(2)	(3)	(4)	(5)
STATE	0.128*** (2.681)	0.109** (2.332)	0.134** (2.538)	0.100** (2.201)	0.119** (2.354)
DTA	0.066* (1.962)	0.063* (1.924)	0.082** (2.244)	0.053 (1.604)	0.063* (1.688)
TANGIBLE	0.024 (0.390)	0.035 (0.578)	-0.033 (-0.444)	0.006 (0.098)	-0.024 (-0.334)
SIZE	-0.083*** (-11.818)	-0.077*** (-9.990)	-0.089*** (-9.681)	-0.078*** (-10.964)	-0.084*** (-9.038)
ROA	-0.299* (-1.883)	-0.265* (-1.676)	-0.404** (-2.147)	-0.239 (-1.554)	-0.349* (-1.932)
TOBIN's	-0.002* (-1.870)	-0.002 (-1.582)	-0.003* (-1.807)	-0.002 (-1.457)	-0.002* (-1.756)
ZSCORE	0.013** (1.985)	0.012* (1.907)	0.017* (1.938)	0.011* (1.777)	0.017** (2.091)
COMMUN	-0.098*** (-2.955)	-0.014 (-0.391)	-0.057 (-1.474)	-0.083*** (-2.838)	-0.023 (-0.487)
BANKDEP	0.001* (1.834)	0.001*** (3.306)	0.000 (0.812)	0.001* (1.925)	0.000 (0.793)
GDPGROWTH	0.002 (0.596)	0.006** (2.277)	-0.002 (-0.535)	-0.001 (-0.205)	-0.002 (-0.590)
LAW	-0.037*** (-3.164)	-0.035*** (-3.179)	-0.031** (-2.186)	0.005 (0.405)	0.002 (0.124)
CREDITORIGTHS	0.017 (1.098)				0.045** (2.531)
ANTISELF		-0.229*** (-2.858)			-0.376*** (-3.760)
PUBLICENFOR			-0.016 (-0.173)		0.167* (1.675)
CORRUPTION				0.058*** (4.017)	0.039** (2.230)
Constant	1.315*** (13.366)	1.378*** (11.539)	1.527*** (12.004)	1.351*** (14.094)	1.516*** (11.427)
IND EFFECTS	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES
N	3,820	3,712	2,881	3,846	2,881
Pseudo R ²	0.254	0.254	0.270	0.267	0.303

Notes: This table presents the impact of the use of additional control variables on the relation between government ownership and debt choice. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

TABLE 7
Subsample Analyses

Variable	GOVBANK	
	HIGH	LOW
	(1)	(2)
STATE	0.118** (2.116)	0.051 (0.690)
DTA	0.059 (1.216)	0.060 (1.192)
TANGIBLE	-0.004 (-0.041)	0.042 (0.536)
SIZE	-0.075*** (-6.553)	-0.093*** (-10.055)
ROA	-0.087 (-0.386)	-0.507** (-2.480)
TOBIN's	-0.000 (-0.191)	-0.004* (-1.920)
ZSCORE	0.007 (0.927)	0.016 (1.383)
COMMUN	-0.086* (-1.945)	-0.078* (-1.911)
BANKDEP	-0.000 (-0.354)	0.001* (1.716)
GDPGROWTH	0.009** (2.441)	-0.011** (-2.513)
LAW	0.025 (1.267)	-0.041** (-2.564)
Constant	1.270*** (10.883)	1.449*** (10.804)
IND EFFECTS	YES	YES
YEAR EFFECTS	YES	YES
N	1,405	2,313
Pseudo R ²	0.214	0.299

Note: This table reports regression results on the impact of the country's level of state owned banks on the relation between government ownership and debt choice. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

TABLE 8
Subsample Analyses

Variable	LEFT		TRANSFERS	
	YES (1)	NO (2)	HIGH (3)	LOW (4)
STATE	0.117** (2.006)	0.081 (1.275)	0.184*** (3.130)	-0.069 (-0.941)
DTA	0.015 (0.306)	0.054 (1.305)	0.099 (1.638)	-0.006 (-0.109)
TANGIBLE	-0.071 (-0.922)	0.101 (1.315)	-0.068 (-0.868)	0.142* (1.686)
SIZE	-0.083*** (-9.409)	-0.085*** (-9.815)	-0.070*** (-7.311)	-0.096*** (-9.704)
ROA	-0.705*** (-3.118)	-0.042 (-0.236)	-0.266 (-1.265)	-0.053 (-0.227)
TOBIN's	-0.003* (-1.934)	-0.002 (-1.486)	-0.003* (-1.892)	0.001 (0.265)
ZSCORE	0.019** (2.539)	0.009 (1.360)	0.016* (1.905)	0.002 (0.178)
COMMUN	-0.027 (-0.601)	-0.101*** (-2.773)	-0.050 (-1.340)	-0.127** (-2.082)
BANKDEP	0.001** (2.503)	0.000 (0.362)	0.001** (2.312)	-0.000 (-0.227)
GDPGROWTH	0.006 (1.483)	-0.008** (-2.414)	-0.000 (-0.064)	-0.005 (-0.935)
LAW	-0.032** (-2.100)	-0.035** (-2.179)	-0.019 (-0.987)	-0.060*** (-3.338)
Constant	1.279*** (10.934)	1.452*** (10.349)	1.235*** (11.539)	1.463*** (10.557)
IND EFFECTS	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES
N	1,554	2,292	2,029	1,771
Pseudo R ²	0.284	0.270	0.227	0.372

Note: This table reports regression results on the impact of the country's political orientation on the relation between government ownership and debt choice. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

TABLE 9
Subsample Analyses

Variable	COLLECTIVISM_HF		COLLECTIVISM_TK	
	HIGH (1)	LOW (2)	HIGH	LOW
STATE	0.159** (2.355)	0.096 (1.330)	0.083** (2.398)	-0.013 (-0.125)
DTA	0.064 (0.704)	0.122*** (2.941)	0.035 (0.455)	0.184*** (3.183)
TANGIBLE	-0.029 (-0.361)	0.046 (0.448)	-0.209** (-2.069)	0.263** (1.994)
SIZE	-0.075*** (-8.132)	-0.096*** (-8.599)	-0.067*** (-5.301)	-0.120*** (-6.728)
ROA	-0.098 (-0.437)	-0.632** (-2.418)	-0.093 (-0.397)	-1.098*** (-2.882)
TOBIN's	-0.000 (-0.305)	-0.016*** (-3.647)	-0.001 (-0.719)	-0.015 (-1.529)
ZSCORE	0.002 (0.419)	0.042*** (4.243)	0.009 (0.830)	0.037 (1.633)
COMMUN	-0.090* (-1.859)	-0.083* (-1.734)	0.082* (1.788)	-0.217*** (-3.670)
BANKDEP	0.001** (2.273)	0.001 (1.267)	-0.001 (-0.888)	0.001* (1.884)
GDPGROWTH	-0.001 (-0.317)	0.006 (1.093)	-0.006 (-1.488)	-0.002 (-0.255)
LAW	-0.031 (-1.500)	-0.020 (-0.878)	-0.002 (-0.068)	-0.043** (-2.009)
Constant	1.261*** (8.931)	1.144*** (5.896)	1.384*** (9.971)	1.501*** (6.622)
IND EFFECTS	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES
N	1,648	1,776	1,376	1,289
Pseudo R ²	0.251	0.314	0.220	0.369

Note: This table reports regression results on the impact of the country's culture on the relation between government ownership and debt choice. All reported t-values in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered by firm. The list of variables definitions and sources are provided in the Appendix. *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.