JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS Vol. 54, No. 3, June 2019, pp. 1313–1346
COPYRIGHT 2018, MICHAEL G. FOSTER SCHOOL OF BUSINESS, UNIVERSITY OF WASHINGTON, SEATTLE, WA 98195
doi:10.1017/S0022109018000881

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

State Ownership and Debt Choice: Evidence from Privatization

Narjess Boubakri and Walid Saffar*

Abstract

Using a large sample of privatized firms, we find that state ownership is significantly positively associated with the use of bank debt financing, suggesting that privatized firms benefit from the soft budget constraint associated with state ownership. We further find that the relation is more pronounced in countries with high government ownership of banks, high corruption in bank lending, a left-oriented government, and a collectivist national culture, which provides additional support for the soft-budget-constraint view. Finally, in external validity tests, we find that state ownership affects other aspects of debt structure, such as debt maturity and debt security.

I. Introduction

In this article we examine the link between the level of state ownership in newly privatized firms (NPFs) and firms' debt choice in a cross-country setting. Specifically, we examine NPFs' choice between public debt (i.e., arm's-length financing) and private debt (i.e., bank debt). To the best of our knowledge, the relation between the level of state ownership in NPFs and debt choice has not been analyzed in previous literature, likely because cross-country data on debt structure have become available only recently (Lin, Ma, Malatesta, and Xuan (2013)).[1] Focusing on the relation between the level of state ownership and debt

*Boubakri, nboubakri@aus.edu, Bank of Sharjah Chair in Banking and Finance, American University of Sharjah School of Business Administration; Saffar (corresponding author), walid.saffar@polyu.edu.hk, the Hong Kong Polytechnic University School of Accounting and Finance. We gratefully acknowledge the helpful comments on an earlier version of this article from Sabri Boubaker, Yangyang Chen, C. S. Agnes Cheng, Sadok El Ghoul, Bill Francis, Omrane Guedhami, Ferdinand Gul, Iftekhar Hasan, Karen Lai, Paul Malatesta (the editor), William Megginson (the referee), Mujtaba Mian, Jeffrey Ng, Zabihollah Rezaee, Joshua Ronen, Samir Saadi, and Samir Trabelsi. Our article has also benefited from comments from seminar participants at the City University of Hong Kong, Chinese University of Hong Kong, HEC Montreal, the Hong Kong Polytechnic University, the American University of Sharjah, Champagne School of Management, Deakin University, Monash University, IPAG Business School, and the 2017 Paris Financial Management Conference.

[1]Prior research focuses on the effect of managerial ownership (Denis and Mihov 2003), control–ownership divergence (Lin et al., 2013), the presence of multiple large shareholders (Boubaker, Rouatbi, and Saffar, 2017), and product-market competition (Boubaker, Saffar, and Sassi, 2018) on

choice is timely in view of the increase in state ownership around the world following the 2007–2008 financial crisis (Borisova, Fotak, Holland, and Megginson (2015), Megginson (2017)). Borisova, Brockman, Salas, and Zagorchev (2012), for instance, report that as a result of government bailout programs, in 2011 state ownership of equity amounted to nearly 20% of stock market capitalization worldwide. Amid concerns about the role of "state capitalism" (*The Economist*, Jan. 21, 2012, https://www.economist.com/leaders/2012/01/21/the-rise-of-state-capitalism), several countries have put privatization reforms at the top of their economic agendas in an attempt to decrease the role of the state in the economy (Megginson (2010)).

Examining the link between state ownership and debt choice is important first and foremost because bonds and loans are major sources of global corporate financing, especially for large companies such as NPFs, the focus in this article, in need of large pools of capital. The debt financing choices of such firms can thus affect the relative development of bank and bond markets in a country. In addition, developing a liquid bond market is often put forward as an economic priority for a country, and the mere existence of a competitive corporate bond market can pressure banks to attract other types of borrowers, such as small and medium-sized enterprises, which are generally rationed in the credit market. Examining the link between state ownership and debt choice is also important because the state can use its ownership in firms to pursue sociopolitical objectives. As a result, NPFs' decisions in general, and debt choices in particular, are likely to be distorted compared with the decisions of privately owned firms.[2]

The theoretical financial contracting literature emphasizes the role of information asymmetry and agency problems in determining the choice of debt source.[3] First, bank lending differs from other types of debt capital in terms of both the advantage it has in producing information about borrowers (e.g., Boyd and Prescott (1986), Berlin and Loeys (1988)) and the close relationship it has with them (Boot (2000)). Banks thus have superior access to information about borrowers at lower cost, which increases their ability and incentives to monitor borrowing firms. Banks' monitoring incentives are further enhanced by the fact that bank financing is designed for long-term horizons (Petersen and Rajan (1995)), and the concentrated claims of bank debt reduce free-rider problems. Bank financing thus mitigates the degree of information asymmetry between lenders and borrowers. Second, as Fama (1985) argues, costly monitoring by banks reduces moral-hazard problems because the threat of punishment in the form of higher interest rates, contract renegotiation, or firm liquidation (Chemmanur and Fulghieri (1994), Park (2000)) induces managers to make value-maximizing

the debt choice of publicly traded firms. We extend this literature by examining the effect of state ownership on debt choice and by considering NPFs.

[2]The literature also has little to say about the debt structure of firms outside the United States. Filling this gap in our understanding is important because about one-quarter of U.S. public firms experience significant changes in their debt composition from one year to the next but show no significant changes in their total leverage (Rauh and Sufi (2010)).

[3]Firm-level determinants of debt choice include firms' growth opportunities (e.g., Houston and James (1996)), information asymmetry (e.g., Krishnaswami, Spindt, and Subramaniam (1999), Hadlock and James (2002)), and corporate ownership structure (e.g., Lin et al. (2013), Boubaker et al. (2017)), among others.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

decisions rather than extract private benefits (e.g., Stiglitz and Weiss (1981), Rajan (1992)).

Privatization, the deliberate sale by a government of state-owned enterprises (SOEs) or assets to private economic agents, is an ideal setting to investigate firms' debt choice as these firms undergo a dramatic change in ownership structure. Under state ownership, firms receive support from the government that ranges from improved access to bank financing (Sapienza (2004)) and greater regulatory protection to an implicit guarantee of a bailout in times of distress (Faccio, Masulis, and McConnell (2006)). Such support reduces firms' incentives to maximize profits. Moreover, the government often uses SOEs as vehicles to pursue sociopolitical objectives, which works to further reduce firm performance.[4] By decreasing the scope for the government's support as well as its "grabbing hand" (Shleifer and Vishny (1997), Durnev and Fauver (2009)), the privatization process increases NPFs' ability to maximize profits and hence improves firm performance.[5] However, if the government remains a shareholder in an NPF, that is, if an SOE is partially as opposed to fully privatized, some degree of distortion may continue to prevail (Megginson, Ullah, and Wei (2014)).

Existing theories on debt choice and privatization suggest two alternative views on the relation between the level of state ownership and firms' debt choice. First, the *monitoring-avoidance/reputation-building view* predicts that state ownership is negatively related to the use of bank financing. With respect to the monitoring-avoidance argument, compared with public debtholders, banks enjoy superior access to private information about borrowers (Boyd and Prescott (1986), Berlin and Loeys (1988), and Fama (1985)). This information advantage reduces the cost of monitoring. Because state-owned firms tend to pursue sociopolitical objectives rather than profit maximization, banks are likely to scrutinize borrowing firms with state ownership. Firms with state ownership are therefore expected to prefer public debt financing rather than bank debt to avoid bank monitoring.[6] Turning to the reputation-building argument, Perotti (1995) argues that to resolve policy uncertainty surrounding privatization and increase investor support for NPFs, the government needs to signal its commitment to market-oriented policies. To the extent that high-quality firms signal their quality by borrowing publicly (Rajan (1992)), NPFs may signal their commitment to privatization reforms by borrowing from the public bond markets rather than from private banks. In addition, because of their size and their need for substantial amounts of capital, NPFs are likely to tap domestic as well as international bond markets, as documented by 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), and Denis and Mihov (2003)).

[4]For example, the state may invest in underdeveloped areas to boost regional development, and it may overstaff SOEs to boost employment (Shleifer and Vishny (1997)).

[5]Megginson, Nash, and Randenborgh (1994) and Boubakri and Cosset (1998), among many others, document an improvement in performance after privatization.

[6]As Bushman, Piotroski, and Smith ((2004), p. 223) explain, "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 … to directly govern and manage firms, obviating the need for public information."

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

Alternatively, the *soft-budget-constraint view* predicts a positive relation between state ownership and firms' reliance on bank debt. In firms in which the government is a shareholder, the state is likely to act as financial backer in the event of distress, which can soften the firm's budget constraint (Kornai (1979), (1980), Kornai, Maskin, and Roland (2003)). Government support of state-owned firms through subsidies, tax relief, and easy access to finance at preferential rates (Megginson et al. (2014)) further softens firms' budget constraints. Consistent with these arguments, Sapienza (2004) shows that government-linked firms benefit from easy access to bank finance at preferential rates, and Faccio et al. (2006) document that politically connected firms benefit from an implicit government bailout guarantee in times of distress. Focusing on the banking sector in 21 emerging market countries, Brown and Dinç (2011) similarly report that in the 1990s, no bank with majority state ownership failed, whereas approximately 44% of remaining banks failed, were acquired, or were nationalized by the state. These arguments suggest that if the government retains ownership in an NPF, the firm benefits from easy access to credit at a preferential rate and a bailout guarantee in the event of distress,[7] in which case it should rely more on bank debt than public debt financing. Ultimately, the net effect of a borrowing firm's state-ownership stake on its choice between bank debt and public debt is an empirical question.

To examine the debt-financing choices of NPFs, we update Boubakri, Cosset, and Saffar's (2013) database of privatized firms and merge it with the new Capital IQ database, which provides information on firms' debt structure. Using the resulting sample of privatized firms from 62 countries over the 2001–2014 period, we first conduct multivariate analysis to investigate the link between the level of state ownership and debt choice, where we control for firm-level characteristics as well as macroeconomic, political, and legal variables that may affect debt choice. We find empirical support for the soft-budget-constraint view of state ownership. Specifically, we find that state ownership is positively related to bank debt financing, which suggests that NPFs continue to take advantage of government support following privatization. The results from additional tests suggest that the positive relationship is a matter of choice rather than access or force. Our results are both statistically and economically significant. For example, a 1-standard-deviation increase in a firm's state ownership results in a 6% increase in the fraction of bank debt, holding the control variables at their means. Finally, when analyzing bank loan versus bond spreads, we find that bank loans are relatively cheaper than bonds for our sample of NPFs and, hence, could explain these firms' preference for bank debt financing.

One may be concerned that potential endogeneity of state ownership stemming from unobserved or omitted factors that drive firms' ownership structure and debt choice may bias our results. We address this concern using four approaches. First, we test the robustness of our main results using instrumental variables analysis. Second, following Chen, El Ghoul, Guedhami, and Nash (2018), we conduct a Heckman 2-stage analysis and a propensity-score-matching regression, which

[7]Wang, Wong, and Xia (2008) argue that because SOEs benefit from soft budget constraints, they do not need to provide higher quality accounting information in order to obtain better contracting terms.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

control for sample-selection bias. Finally, following Lin et al. (2013), we examine the effect of a change in a firm's ownership structure on the change in the firm's debt choice. This analysis controls for time-invariant omitted factors that might be driving our results. Our results continue to hold using each of these approaches.

To shed further light on the soft-budget-constraint view, we examine how the relationship between state ownership and debt choice varies in the cross section. This analysis not only provides insights on the channels through which the documented relationship operates but also strengthens identification because this relationship is unlikely to arise if our measure of state ownership simply reflects unobserved economic forces. The positive effect of state ownership on the reliance on bank debt should be more pronounced in the presence of factors that strengthen firms' soft budget constraint. We assess the conditioning effect of four factors: i) state ownership of banks, ii) corruption in bank lending, iii) the political orientation of the government, and iv) a country's national culture. Prior work shows that the lending policies of state-owned banks are influenced by the government's sociopolitical goals (La Porta, Lopez-de-Silanes, and Shleifer (2002), Sapienza (2004), and Dinç (2005)). Similarly, corruption in bank lending distorts flows of credit to firms (Khwaja and Mian (2005), Houston, Lin, and Ma (2011), and Akins, Dou, and Ng (2017)). Prior work also shows that left-oriented (as opposed to right-oriented) governments and governments in collectivist (as opposed to individualist) societies are more likely to bail out firms and support employment than to commit to market-oriented policies (Perotti (1995), Biais and Perotti (2002), Cioffi and Höpner (2006), Guiso, Sapienza, and Zingales (2006), Kwok and Tadesse (2006), Chui, Titman, and Wei (2010), Boubakri, Guedhami, Kwok, and Saffar (2016), and Boubakri, Cosset, and Saffar (2017)). Accordingly, we expect the positive relation between the level of state ownership and bank debt reliance to be stronger in countries with high government ownership of banks, high corruption in bank lending, a left-oriented government, and a collectivist national culture. The cross-sectional tests support our predictions. More importantly, these results strengthen support for the soft-budget-constraint view because they are difficult to reconcile with alternative explanations.

We conclude our analysis by conducting external validity tests in which we examine the impact of state ownership on other aspects of debt structure, such as debt maturity and debt security. Short-maturity debt increases monitoring intensity by creditors, underwriters, and rating agencies (Datta, Iskandar-Datta, and Raman (2005)). Collateralization also increases creditors' monitoring incentives, especially if the borrowing firm faces distress (Park (2000)). Anticipating this higher degree of monitoring, state-owned firms, which suffer from more extreme agency problems, are likely to prefer longer-maturity debt with lower levels of collateralization (Datta et al. (2005)). Although bank debt has on average shorter maturity than public debt (e.g., Johnson (1997), Park (2000)), and bank debt is more often secured by collateral than public debt (e.g., Gilson and Warner (2000)), the soft budget constraint associated with state ownership is expected to allow state-owned firms to bypass the collateral requirement of bank debt and contract longer-maturity debt. We thus expect state ownership to be positively related to debt maturity and negatively related to debt security, owing to the soft budget constraint. We find that state ownership does indeed affect borrowing firms' debt

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

maturity and security in the predicted directions: firms with larger state ownership tend to have debt with longer maturities and lower levels of collateralization.

Our study contributes to the privatization literature by providing new evidence on the cost of state ownership. Prior studies show that state ownership is costly in terms of firm-level performance (Megginson et al. (1994), Boubakri, Cosset, Fischer, and Guedhami (2005), and Gupta (2005)), financial reporting quality (Guedhami, Pittman, and Saffar (2009)), cost of capital (Borisova and Megginson (2011), Ben-Nasr, Boubakri, and Cosset (2012)), and risk taking (Boubakri et al. (2013)). Our results extend this work by showing that state ownership distorts resource allocation at the firm level. In particular, whereas publicly listed firms with severe agency problems tend to choose public debt (Lin et al. (2013)), NPFs rely more on bank debt given the soft budget constraint associated with state ownership. This result supports Borisova and Megginson (2011), who show that bondholders require lower credit spreads when government ownership in NPFs is high.

Our study also contributes to the literature on debt choice by considering the role of state ownership. Denis and Mihov (2003), Lin et al. (2013), and Boubaker et al. (2017) show that managerial ownership, the control-ownership wedge, and the presence of multiple large shareholders, respectively, affect firms' debt choice. We extend this literature by using a newly available database (Capital IQ, which provides comprehensive data on firms' debt structure for a large number of companies worldwide (Colla, Ippolito, and Li (2013), Li, Lin, and Zhan (2019))) to provide evidence on the role of state ownership in firms' financing decisions.

The remainder of the article is organized as follows: In Section II, we describe the sample and variables and provide descriptive statistics. Section III presents our main empirical analysis and robustness tests. Section IV analyzes bank loan versus bond terms. Section V reports the results of cross-sectional heterogeneity tests. Section VI reports the results of debt maturity and security tests. Finally, Section VII concludes.

II. Sample, Variables, and Descriptive Statistics

In this section, we first describe our sample of privatized firms. We then discuss our measures of bank debt reliance and government control, as well as the standard control variables used in the literature on debt choice, and we report sample descriptive statistics.

A. Sample

To investigate the impact of state ownership on debt choice, we start with the large multinational sample of privatized firms constructed by Boubakri et al. (2013). This data set is well suited to our research objectives for two reasons. First, it tracks the change in ownership structure after the first privatization, which allows us to analyze the time-varying effect of state ownership on debt choice. Second, it covers firms in countries with diverse institutional environments, which allows us to investigate the relations among debt choice, state ownership, and institutional quality. After excluding financial firms from the sample, we update the sample to include ownership data and privatizations through 2014, where we

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

draw on two sources to retrieve information on privatizations: the World Bank privatization database, which covers firms in developing countries, and Privatization Barometer, which provides information on a comprehensive list of privatized firms in developed countries. Finally, we match this updated sample to the new Capital IQ database, which provides comprehensive data on debt structure from 2001 onward (Lin et al. (2013)). This procedure results in a final sample of 453 privatized firms from 62 countries corresponding to 3,846 firm-year observations over the period 2001–2014.[8]

Tables 1 and 2 summarize the sample of privatized firms by country and industry, respectively. As can be seen in Table 1, China dominates the sample, with almost 7% of firm-year observations, followed by Brazil, Poland, and India, with 6.27%, 6.06%, and 5.07% of observations, respectively.[9] The sample is fairly evenly distributed across the remaining countries, each of which accounts for less than 5% of sample firms. Our sample thus shows wide cross-country variation. This diversity in institutional setting mitigates concerns of selection bias that typically plague privatization studies (e.g., Megginson and Netter (2001)) and allows us to test for the effect of institutional characteristics on the relation between state ownership and debt choice. Turning to Table 2, we find that the majority of our privatized firms operate in the utilities, basic industry, and transportation sectors.

B. Variables

1. Debt Structure

Following recent studies on the determinants of debt choice (Lin et al. (2013), Boubaker et al. (2017), (2018)), we identify a firm's debt structure through its reliance on bank debt. More specifically, we employ the ratio of a firm's bank debt to total debt (BANK) as a proxy for the choice between bank and public debt.

2. State Ownership

As a proxy for the level of state ownership, we use the fraction of shares held by the state (STATE). We collect information on firms' ownership structure in the post-privatization period from two main sources: firms' annual reports and offering prospectuses. However, given the international nature of our sample, we also obtain ownership data from Worldscope; the Asian, Brazilian, and Mexican Company Handbooks; and the Kompass Egypt Financial Year Book. In additional tests, we follow Boubakri et al. (2013) and Chen et al. (2018) and capture state control using the dummy variable CONTROL, which is equal to 1 for firms in which the government retains more than 50% of the firm's shares following privatization.

[8]This sample is comparable to samples used in recent multinational studies on privatized firms: Guedhami and Pittman (2006) employ a sample of 190 firms from 31 countries, Borisova and Megginson (2011) employ a sample of 60 firms from 14 countries, Ben-Nasr et al. (2012) employ a sample of 236 firms from 38 countries, Boubakri et al. (2013) employ a sample of 385 firms from 57 countries, and Chen et al. (2018) employ a sample of 587 firms from 59 countries.

[9]In a robustness test, we omit China from the sample. We find similar results. In an additional robustness test, we weight individual observations by the inverse of the number of firms in the respective country. We continue to find that our results hold.

TABLE 1
Descriptive Statistics by Country

Table 1 reports descriptive statistics by country for the key variables used in our analysis. The sample comprises 3,846 firm-year observations from 62 countries over the period 2001–2014. Variable definitions and data sources are provided in the Appendix.

Country	No. of Obs.	Percentage (%)	BANK	STATE	DTA	TANGIBLE	SIZE	ROA	TOBINS_Q	Z_SCORE	COMMON	BANK_DEP	GDP_GROWTH	LAW&ORDER
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	1.15	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	3.47	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

(continued on next page)

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 1 (continued)

Descriptive Statistics by Country

Country	No. of Obs.	Percentage (%)	BANK	STATE	DTA	TANGIBLE	SIZE	ROA	TOBINS_ Q	Z_ SCORE	COMMON	BANK_ DEP	GDP_ GROWTH	LAW& ORDER
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

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 2
Descriptive Statistics by Industry

Table 2 summarizes the sample by industry classification, following Campbell (1996). The sample comprises 453 privatized firms and 3,846 firm-year observations from 62 countries over the period 2001–2014.

Industry Classification	2-Digit Standard Industrial Classification (SIC) Codes	No. of Firm-Years	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	2.60
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 2-digit SIC codes	56	1.46
Total		3,846	100

3. Control Variables

ROA, the ratio of operating income before depreciation to total assets, is a proxy for firm profitability. According to Denis and Mihov (2003), profitability reflects a firm's project and, in turn, credit quality. The reputation model of Diamond (1991) suggests that firms with a good reputation in the credit market rely more on public debt than bank debt. We thus expect a negative relation between profitability and the use of bank debt.

DTA, the ratio of long-term debt to total assets, captures firm leverage. Higher leverage indicates that the borrowing firm has a positive reputation in the credit market, which reduces the need for bank-monitored debt (Diamond (1991)). We therefore expect a negative effect of leverage on bank debt.

SIZE, the natural logarithm of total assets, measures firm size. Because they have high debt capacity, large firms may benefit from economies of scale when issuing public debt (Blackwell and Kidwell (1988)). Moreover, because large firms are more visible to the market, they suffer less from information asymmetry problems and hence have less need for the screening activities of bank lenders (Houston and James (1996)). Accordingly, we expect firm size to be negatively associated with bank debt.

TOBINS_Q, the market value of equity plus the book value of debt divided by total assets, captures a firm's growth opportunities as perceived by the market. The agency problems associated with debt lead to an underinvestment problem whereby borrowers refuse investments in low-risk projects so as to maximize firm value at the expense of debtholders. The close relationship between banks and their borrowers is likely to reduce the agency costs of debt and, in turn, the underinvestment problem (Denis and Mihov (2003)). Firms with higher growth opportunities should thus benefit more from issuing bank debt, which implies a positive relationship between Tobin's Q and the ratio of bank debt to total debt.

TANGIBLE, the ratio of net property, plant, and equipment to total assets, is a proxy for a firm's asset tangibility. Because a lender's risk is reduced when debt is collateralized by tangible assets, firms with more tangible assets have a

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

more positive reputation in the credit market. Consistent with Diamond's (1991) reputation model, we expect bank debt to decrease in asset tangibility.

Z_SCORE, Altman's (1968) *Z*-score, computed as (1.2 × working capital + 1.4 × retained earnings + 3.3 × earnings before interest and taxes + 0.999 sales)/total assets + 0.6 × (market value of equity/book value of debt), is a proxy for a firm's financial health. Financially distressed firms are more likely to default on their debt obligations, which induces them to rely more on bank borrowing as bank lenders offer more flexibility in restructuring debt agreements. We therefore expect distress risk to be positively related to firms' reliance on bank debt.

In addition to the firm-level control variables just described, we include controls for several country-level characteristics. COMMON is a dummy variable that indicates a country's legal origin. Following La Porta, Lopez-de-Silanes, and Shleifer (2006), this variable takes a value of 1 for common-law countries, and 0 for civil-law countries. BANK_DEP proxies for a country's financial depth and is computed as the ratio of the aggregate liquid liabilities of banks to gross domestic product (GDP). We construct this variable using data from the Financial Development and Structure Dataset (Beck, Demirgüç-Kunt, and Levine (2009)). GDP_GROWTH captures a country's level of economic growth. This variable is computed as the growth of GDP per capita over the year using data from World Development Indicators. LAW&ORDER is the International Country Risk Guide (ICRG) assessment of the strength and impartiality of the legal system (the "law" component) and the popular observance of the law (the "order" component).

C. Descriptive Statistics

Table 3 reports descriptive statistics for the key variables used in our analysis. Our main independent variable, STATE, has a mean (standard deviation) of 20.4% (27%), which indicates that on average the government stake in an NPF decreases sharply to approximately 20% of the firm's shares after the first privatization date. These statistics are in line with those reported by Boubakri et al. (2013) and Chen et al. (2018). Control privatizations (CONTROL), that is, privatizations in which the government maintains control by selling less than 50% of the firm's shares, comprise only 21.3% of the total sample. The statistics on a firm's debt structure

TABLE 3
Summary Statistics

Table 3 reports summary statistics for the key variables used in our analysis. The sample comprises 3,846 firm-year observations from 62 countries over the period 2001–2014. Variable definitions and data sources are provided in the Appendix.

Variable	Mean	Median	Std. Dev.
BANK	0.646	0.748	0.351
STATE	0.204	0.001	0.270
CONTROL	0.213	0.000	0.409
DTA	0.482	0.467	0.277
TANGIBLE	0.464	0.475	0.225
SIZE	7.703	7.789	1.994
ROA	0.126	0.115	0.085
TOBINS_Q	2.468	1.165	14.629
Z_SCORE	2.698	1.959	3.762
COMMON	0.269	0.000	0.443
BANK_DEP	79.784	68.911	43.405
GDP_GROWTH	2.874	2.641	3.706
LAW&ORDER	4.091	4.000	1.182

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

(BANK) show that bank debt use is prevalent among our sample of NPFs; bank debt exceeds 64% of a firm's total debt on average. This figure is consistent with that of Lin et al. (2013). Turning to the firm-level controls, the results show that our sample includes small and large firms as well as high- and low-leverage firms, which makes it an ideal sample to study firms' debt structures. In particular, mean (median) firm size is 7.70 (7.79), and mean (median) leverage is 0.48 (0.47).

III. Empirical Analysis

A. Baseline Specification

To empirically examine the effect of the level of state ownership on the choice between bank and public debt, we estimate the following pooled multivariate regression model:

$$\begin{aligned}(1)\qquad \text{BANK} = {} & \alpha_0 + \alpha_1 \text{STATE} + \alpha_2 \text{DTA} + \alpha_3 \text{TANGIBLE} + \alpha_4 \text{SIZE} \\ & + \alpha_5 \text{ROA} + \alpha_6 \text{TOBINS_Q} + \alpha_7 Z_\text{SCORE} + \alpha_8 \text{COMMON} \\ & + \alpha_9 \text{BANK_DEP} + \alpha_{10} \text{GDP_GROWTH} + \alpha_{11} \text{LAW\&ORDER} \\ & + \text{Industry dummies} + \text{Year dummies} + \varepsilon,\end{aligned}$$

where BANK is the ratio of a firm's bank debt to total debt, and STATE is our measure of the level of state ownership in the firm. DTA, TANGIBLE, SIZE, ROA, TOBINS_Q, and Z_SCORE are firm-level control variables previously shown to affect debt choice; we winsorize these measures at the 1st and 99th percentiles to reduce the effect of outliers. At the country level, we control for COMMON, BANK_DEP, GDP_GROWTH, and LAW&ORDER because these factors may also affect the choice between bank and public debt. Industry dummies and year dummies are industry and year fixed effects, respectively, and ε is the error term. In this analysis, we are mainly interested in the coefficient on STATE, α_1, which captures the degree to which variation in the level of state ownership explains firm reliance on bank debt.

B. Main Results

Table 4 presents the results of regressing various specifications of equation (1). In column 1, we regress equation (1) using ordinary least squares (OLS), where heteroscedasticity-robust *t*-statistics are in parentheses beneath the coefficient estimates and standard errors are clustered at the firm level. We find that the coefficient on STATE is positive and statistically significant at the 1% level, suggesting that firm reliance on bank debt increases with the level of state ownership. This result is consistent with the soft-budget-constraint view, which holds that firms with high state ownership benefit from easy access to bank finance at preferential rates and an implicit guarantee of a bailout in the event of distress, as evidenced by their heavier reliance on bank debt financing.

Because our measure of bank debt reliance, BANK, is censored from below and above at 0 and 1, respectively, and because regression methods that do not account for the presence of truncated variables can produce biased coefficient estimates, in column 2 of Table 4 we reestimate equation (1) using a pooled Tobit procedure designed to address censored data. We find that STATE continues

TABLE 4
State Ownership and Bank Debt Reliance

Table 4 provides results of ordinary least squares (OLS) and Tobit regressions of the bank debt ratio on state ownership/control and other firm and country characteristics. Robust t-/z-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	OLS	Tobit	OLS	Tobit
Variable	1	2	3	4
STATE	0.128***	0.169***		
	(2.735)	(2.849)		
CONTROL			0.079***	0.096***
			(2.710)	(2.623)
DTA	0.061*	0.061	0.063*	0.064
	(1.830)	(1.219)	(1.924)	(1.266)
TANGIBLE	0.030	0.020	0.034	0.026
	(0.493)	(0.253)	(0.566)	(0.339)
SIZE	−0.084***	−0.111***	−0.083***	−0.110***
	(−12.094)	(−12.191)	(−12.078)	(−12.145)
ROA	−0.292*	−0.427**	−0.291*	−0.425**
	(−1.853)	(−2.020)	(−1.847)	(−2.008)
TOBINS_Q	−0.002*	−0.004**	−0.002*	−0.004**
	(−1.867)	(−2.110)	(−1.814)	(−2.058)
Z_SCORE	0.013**	0.023**	0.013*	0.023**
	(2.017)	(2.122)	(1.957)	(2.066)
COMMON	−0.087***	−0.122***	−0.086***	−0.119***
	(−2.898)	(−3.260)	(−2.862)	(−3.201)
BANK_DEP	0.001**	0.001***	0.001**	0.001***
	(2.375)	(3.442)	(2.521)	(3.556)
GDP_GROWTH	0.002	0.001	0.002	0.002
	(0.589)	(0.358)	(0.618)	(0.447)
LAW&ORDER	−0.031***	−0.041***	−0.031***	−0.041***
	(−2.770)	(−2.981)	(−2.746)	(−2.962)
Constant	1.326***	1.541***	1.322***	1.534***
	(13.859)	(13.330)	(13.922)	(13.391)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	3,846	3,846	3,846	3,846
R^2/pseudo-R^2	0.252	0.217	0.251	0.216

to have a positive and significant effect on bank debt use, providing further support for the soft-budget-constraint view. This effect is economically material: Increasing STATE by 1 standard deviation from its mean results in a 6% increase in bank debt reliance, holding the control variables at their means. The signs of the coefficients on the control variables are generally consistent with the prior literature. In particular, the results show that bank debt is positively related to leverage, Z-score, and the development of the banking sector and negatively related to size, profitability, Tobin's Q, a common-law tradition, and law and order.

In columns 3 and 4 of Table 4, we repeat the analyses in columns 1 and 2 using an alternative proxy for state ownership. In particular, we replace STATE with CONTROL, which is equal to 1 if the government retains more than 50% of the NPF's shares, and 0 otherwise. We find that CONTROL loads with a positive coefficient that is statistically significant at the 1% level using both OLS and Tobit specifications. These results are also economically significant. For instance, in column 4, bank debt reliance increases by nearly 10% as CONTROL changes from 0 to 1, holding all other variables constant.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

In sum, the results in Table 4 indicate that NPFs are more likely to rely on bank debt the higher the government's ownership stake in the firm, consistent with the soft-budget-constraint view of state ownership.

C. Endogeneity

Although our previous results provide strong evidence in favor of the soft-budget-constraint view, endogeneity issues may prevent precise identification of the causal relation between state ownership and bank debt reliance. For instance, the level of state ownership may be correlated with omitted factors that also influence firms' use of bank debt. We address this concern in three ways. First, we employ an instrumental variables approach where we use an exogenous instrument for state ownership. Second, we perform a Heckman 2-stage analysis to address sample-selection concerns. Third, we run a change regression model in which we regress the change in the dependent variable on the change in the independent variable, which alleviates a potential omitted-variables bias. We report the results in Table 5.

1. Instrumental Variables Analysis

Following Lin et al. (2013) and Chen et al. (2018), we examine the relation between state ownership and bank debt use in an instrumental variables framework using LN_DISTANCE as an instrument for state ownership. LN_DISTANCE is defined as the natural logarithm of the distance in kilometers between the firm's headquarters and the stock exchange on which the firm is listed. Although the distance to the stock exchange is correlated with the percentage of shares held by the government (Boubakri et al. (2016)), it is unlikely to influence a firm's choice between bank and public debt except through the level of state ownership in the firm. In the first-stage regression, reported in column 1 of Table 5, we find that, in line with Boubakri et al. (2016), LN_DISTANCE is significantly and positively related to STATE, suggesting that the distance to the stock exchange is a good predictor of the level of state ownership. To check the validity of our instrument, we conduct two tests. We first run an F-test of the excluded exogenous variable. The results reject the null hypothesis that the instrument does not explain state ownership. We also conduct a Kleibergen–Paap *rk* LM test, which rejects the null hypothesis that the model is underidentified at the 1% level. In the second-stage regression, reported in column 2 of Table 5, the results show that the instrumented value of state ownership is significantly and positively associated with bank debt reliance, confirming our prior findings.

2. Heckman 2-Stage Analysis

Following Chen et al. (2018), we perform a Heckman 2-stage analysis to address sample-selection concerns. As Megginson and Netter ((2001), p. 346) note in their review of privatization studies, "sample selection bias can arise from several sources, including the desire of governments to make privatization look good by privatizing the healthiest firms first." In our context, governments may keep higher stakes in firms with high bank debt reliance out of concern that these firms may be less attractive to shareholders because of their high leverage. In the first stage, we use a probit model to predict whether governments retain control over the privatized firms. In particular, we regress CONTROL on LN_DISTANCE, the

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 5
Endogeneity of State Ownership

Table 5 reports the results of tests that address the endogeneity of state ownership using instrumental variables (IV) analysis, a Heckman 2-stage selection model, and a change regression. The first-stage IV regression results predicting state ownership are reported in column 1. Column 2 reports the second-stage regression of the bank reliance ratio on fitted values of STATE. In the first-stage regression, the instrument for STATE is LN_DISTANCE. In column 3, the Heckman sample-selection model controls for the inverse Mills ratio (LAMBDA). In column 4, the propensity-score-matching analysis uses a sample of privatized firms matched to always-private firms with the closest propensity score. Column 5 reports the results on the effect of a change in a firm's state ownership on the change in the firm's debt structure. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

Variable	First Stage STATE	Second Stage BANK	Heckman Sample-Selection Model, Second Stage	Propensity Score Matching	Change Regression
	1	2	3	4	5
STATE		0.274***	0.147***	0.152***	0.053***
		(2.768)	(2.890)	(2.646)	(2.776)
DTA	−0.008	0.036	0.066**	−0.016	−0.099
	(−0.131)	(0.977)	(1.987)	(−0.204)	(−0.658)
TANGIBLE	0.085	0.268**	0.054	0.095	0.001***
	(1.387)	(2.124)	(0.847)	(1.123)	(3.010)
SIZE	0.016**	−0.038	−0.080***	−0.055***	−0.044*
	(2.063)	(−1.575)	(−10.611)	(−5.768)	(−1.737)
ROA	0.026	−0.213	−0.277*	0.161	−0.285**
	(0.185)	(−1.297)	(−1.721)	(1.077)	(−2.368)
TOBINS_Q	0.002***	0.004	−0.002	−0.000	−0.000**
	(3.174)	(1.288)	(−1.612)	(−0.444)	(−2.078)
Z_SCORE	−0.005	0.000	0.012*	−0.000	0.002
	(−1.138)	(0.042)	(1.888)	(−0.041)	(0.276)
COMMON	0.000	−0.100***	−0.103***	−0.109**	
	(0.014)	(−2.992)	(−3.186)	(−2.425)	
BANK_DEP	0.001**	0.002**	0.001	0.001	0.001
	(2.033)	(2.510)	(1.582)	(1.234)	(0.766)
GDP_GROWTH	0.011***	0.026*	−0.001	−0.072***	−0.000
	(3.207)	(1.919)	(−0.463)	(−3.966)	(−0.056)
LAW&ORDER	−0.016	−0.074***	−0.035***	0.015***	−0.013**
	(−1.229)	(−3.306)	(−2.995)	(2.791)	(−2.397)
LN_DISTANCE	0.031***				
	(2.762)				
LAMBDA			−0.054*		
			(−1.904)		
Constant	−0.098	1.103***	1.332***	1.222***	−0.008
	(−1.080)	(6.802)	(13.223)	(11.586)	(−1.232)
Industry fixed effects	Yes	Yes	Yes	Yes	No
Year fixed effects	Yes	Yes	Yes	Yes	No
N	3,846	3,846	3,846	2,598	1,653
R^2	0.135	0.251	0.255	0.291	0.295

full set of control variables, and industry and year fixed effects (as in column 3 of Table 4). This step allows us to estimate the inverse Mills ratio (LAMBDA). In the second stage, we include LAMBDA as an additional independent variable in the regression of debt choice. The results, reported in column 3 of Table 5, show that state ownership is significantly positively associated with bank debt reliance. In addition, LAMBDA loads negatively and is statistically significant at the 10% level.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

3. Matching Sample[10]

Following Chen et al. (2018), we employ a propensity score matching developed by Rosenbaum and Rubin (1983) that aims to randomize the sample-selection procedure by matching firms with government participation (or residual government ownership) with always-private companies (firms without government participation) using observable firm characteristics. In the first stage, we estimate a similar probit model as in the Heckman approach to predict the likelihood that a domestic government is a residual owner in the firm. We then match a firm with government participation to an always-private firm from the same country and industry and with the closest propensity score (i.e., predicted probability of government participation) estimated from the first stage. In the second stage (column 4 of Table 5), we estimate the regression using the matched sample. Consistent with our main results, we continue to find that the coefficient on state ownership (STATE) loads positively and significantly at the 1% level.

4. Change Regression

Following Lin et al. (2013), we run a change regression in column 5 of Table 5. Unlike a level regression, the change regression considers only the factors that have changed; that is, it omits all unobservable, time-invariant factors that might jointly affect state ownership and bank debt reliance. To be included in the sample for this regression, a firm must have i) at least two firm-year observations, which we require to calculate the change variables, and ii) a nonzero change in its state ownership between the two periods. Consistent with our baseline results, we find that a positive change in the level of government ownership results in a positive change in the ratio of bank debt to total debt. This finding indicates that controlling for unobserved time-specific factors does not materially influence our result that government-owned firms extract benefits from the government, such as easy access to bank debt financing at favorable terms and an implicit guarantee of a bailout in the event of distress.

In sum, Table 5 shows that our main results continue to hold when we use the instrumental variables approach, a Heckman 2-stage selection model, a propensity-score-matching sample, and a change regression, indicating that endogeneity issues are not likely to be driving our findings.

D. Robustness Tests

Table 6 presents the results of a battery of robustness tests. In columns 1–3 we consider alternative sample compositions. Table 1 shows that China accounts for a large number of privatizations over our sample period. To mitigate concerns that our results are driven by China, in column 1 of Table 6 we omit Chinese observations from the analysis. Our main results are unaffected: The level of state ownership is positively and significantly (at the 5% level) related to bank debt reliance. In column 2 of Table 6, we instead exclude firms from transition economies, where privatizations to firm insiders (employees and managers) are common and hence involve a different control-allocation design (Djankov and Murrell (2002), Estrin, Hanousek, Kočenda, Svejnar (2009)).

[10]We thank the referee for suggesting this approach.

TABLE 6
Robustness Tests

Table 6 reports the results of ordinary least squares (OLS) regressions of the bank debt ratio on state ownership and other firm and country characteristics. In column 1 we omit firms from China, in column 2 we omit firms from Eastern Europe, and in column 3 we omit utilities. Column 4 presents a weighted regression. In column 5 standard errors are clustered at the country level. In column 6 we use BANK/ASSETS as the dependent variable. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

Variable	Omit China	Omit Eastern Europe	Omit Utilities	Weighted Regression	Country Clustering	BANK/ ASSETS
	1	2	3	4	5	6
STATE	0.110**	0.167***	0.085**	0.140***	0.133**	0.043**
	(2.206)	(3.423)	(1.922)	(3.295)	(2.559)	(1.933)
DTA	0.056	0.081**	0.109***	0.027	0.057*	0.344**
	(1.626)	(2.395)	(2.859)	(0.825)	(1.748)	(2.113)
TANGIBLE	0.014	−0.009	0.082	0.012	0.030	0.083**
	(0.210)	(−0.137)	(1.120)	(0.197)	(0.466)	(2.142)
SIZE	−0.087***	−0.090***	−0.075***	−0.074***	−0.083***	−0.016***
	(−12.058)	(−12.275)	(−9.390)	(−9.951)	(−8.768)	(−3.126)
ROA	−0.269	−0.345*	−0.370**	−0.236*	−0.285*	0.154
	(−1.635)	(−1.940)	(−2.139)	(−1.796)	(−1.894)	(0.872)
TOBINS_Q	−0.002*	−0.003**	−0.013**	−0.001	−0.002*	−0.001
	(−1.757)	(−2.199)	(−2.059)	(−1.293)	(−1.887)	(−1.288)
Z_SCORE	0.013*	0.017**	0.019**	0.010**	0.013**	0.007*
	(1.876)	(2.356)	(2.358)	(2.068)	(2.024)	(1.735)
COMMON	−0.065**	−0.093***	−0.127***	−0.076**	−0.086*	−0.079***
	(−2.072)	(−2.923)	(−3.438)	(−2.585)	(−1.997)	(−4.618)
BANK_DEP	0.000	0.001**	0.001	0.000	0.001*	0.000*
	(0.776)	(2.083)	(1.476)	(1.300)	(1.794)	(1.745)
GDP_GROWTH	−0.005	0.003	0.003	0.008***	0.002	−0.013***
	(−1.537)	(1.179)	(1.034)	(2.790)	(0.437)	(−6.609)
LAW&ORDER	−0.028**	−0.025**	−0.026	−0.020*	−0.031**	0.031***
	(−2.328)	(−2.081)	(−1.642)	(−1.778)	(−2.279)	(5.015)
Constant	1.383***	1.447***	1.240***	1.315***	1.326***	−0.029
	(14.347)	(16.257)	(9.665)	(14.889)	(12.299)	(−0.216)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	3,584	3,285	2,494	3,846	3,846	3,846
R^2	0.253	0.288	0.234	0.220	0.253	0.352

In addition, these countries often experienced major economic, legal, and institutional changes during the privatization process, which might have a confounding effect on firms' debt choices. We find that our results are not sensitive to excluding these countries. In column 3 of Table 6, we exclude firms from the utility industry because these firms are highly regulated and, accounting for roughly 35% of our sample, could be driving our results. Our main results are qualitatively unchanged when we omit the utility industry from our analysis.[11]

In columns 4 and 5 of Table 6, we consider alternative econometric designs. Because the number of firms is not constant across countries, one may argue that the estimated coefficients are driven by the countries with the largest number of firms. To address this concern, in column 4 we run a weighted regression where the weights are given by the inverse of the number of observations in the

[11] To mitigate the concern that local investors may drive the effect of state ownership on bank debt choice, in an unreported analysis we also control for local ownership in the main regression. We find that local ownership is statistically insignificant. However, state ownership continues to load positively and is statistically significant at the 1% level.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

respective country. We find that the coefficient on STATE continues to be positive and significant at the 1% level, suggesting that the unbalanced number of firms between countries is not driving our findings. In column 5, we cluster the observations at the country level and again find that STATE loads positively and is statistically significant (at the 5% level).

Finally, we check the robustness of our findings to an alternative proxy for bank debt reliance, namely, the ratio of bank debt to total assets (BANK/ASSETS). This alternative measure accounts for firms with a low level of total debt but a high proportion of bank debt, which is likely to reflect a soft budget constraint (Boubaker et al. (2017)). In column 6 of Table 6, we re-run our baseline specification (equation (1)) after replacing BANK with BANK/ASSETS. We find that the effect of state ownership on bank debt reliance remains qualitatively unchanged. In particular, the coefficient on STATE is positive and statistically significant at the 5% level.

E. Additional Control Variables

In our next set of tests, we control for four additional country characteristics to rule out the possibility that the positive association between the level of state ownership and bank debt reliance may be driven in part by omitted country-level factors that themselves are explained by the level of state ownership. First, we control for the strength of creditor protection in the case of bankruptcy. In particular, we use the creditor rights index of Djankov, McLiesh, and Shleifer (2007), CRED_RIGHTS, with higher scores reflecting stronger protection of creditor rights. Second, we control for the extent to which insiders divert corporate resources for their own benefit, which is referred to as self-dealing. To do so, we use the Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) anti-self-dealing index, ANTI_SELF, with higher values indicating a lower level of self-dealing by insiders. Third, we use La Porta et al.'s (2006) index of the public enforcement of laws and regulations, PUBLIC_ENFOR, to control for the degree to which bad corporate practices are curtailed through sanctions or prosecutions. Finally, we control for the ICRG assessment of a country's level of corruption, CORRUPTION, which reflects the quality of governance in a country and the extent to which government officials are likely to extract bribes.

Table 7 reports the regression results including the four additional country-level factors separately in columns 1–4 and together in column 5. We find that the coefficient on STATE consistently remains positive and statistically significant, indicating that the relation we document between the level of state ownership and bank debt reliance is not driven by potential omitted country-level characteristics. We also find that bank debt reliance is positively related to the creditor rights index, public enforcement index, and level of corruption in the country and negatively related to the anti-self-dealing index.

F. Alternative Explanations[12]

Our results that residual state ownership is positively related to bank debt reliance can be interpreted as a choice (because of preferential access to bank

[12] We thank the referee for suggesting these alternative explanations.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 7
Additional Control Variables

Table 7 reports the effect of additional control variables on the relation between state ownership and debt choice. In columns 1–4, we separately add CRED_RIGHTS, ANTI_SELF, PUBLIC_ENFOR, and CORRUPTION to the baseline model (column 1 of Table 4). In column 5, we include all four additional control variables simultaneously. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

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

financing under the soft-budget-constraint view of government ownership), or as a pressure (under the grabbing-hand view of government ownership). We present two tests to differentiate between these two explanations. If NPFs are pressured by the government to continue to borrow from state-owned banks (SOBs), then we should observe no such distortion when NPFs are relieved from government control. In other words, government politicians could only pressure those NPFs that are under their control. In column 1 of Table 8, when we drop firms under government control (CONTROL = 1), we still find that our results hold. The coefficient on STATE loads positive and is significant at the 1% level. This finding suggests that NPFs choose to rely more on bank debt financing even if they are not compelled to do so by the government (i.e., under government control). In another attempt to differentiate between the competing explanations of choice versus

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 8
Alternative Explanations

Table 8 reports the results of ordinary least squares (OLS) regressions of the bank debt ratio on government ownership and other firm and country characteristics. In column 1 we omit firms under government control. In column 2 we omit firms from countries with high government effectiveness. In column 3 we omit less developed bond markets, and in column 4 we omit countries with easy access to banks. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	Choice versus Force		Choice versus Access	
	Omit Firms under Government Control	Omit Countries with High Government Effectiveness	Omit Less Developed Bond Markets	Omit Countries with Easy Access to Banks
Variable	1	2	3	4
STATE	0.079***	0.063**	0.119**	0.060***
	(2.853)	(2.262)	(2.084)	(2.780)
DTA	0.049	0.027	0.080**	0.033
	(1.278)	(0.616)	(2.113)	(0.903)
TANGIBLE	−0.026	−0.070	0.095	−0.067
	(−0.381)	(−1.050)	(1.428)	(−0.950)
SIZE	−0.086***	−0.066***	−0.092***	−0.084***
	(−11.177)	(−8.664)	(−12.088)	(−10.418)
ROA	−0.190	−0.173	−0.384**	−0.175
	(−1.138)	(−1.081)	(−2.302)	(−1.057)
TOBINS_Q	−0.002	−0.001	−0.002**	−0.002
	(−1.363)	(−0.816)	(−2.271)	(−1.308)
Z_SCORE	0.007	0.008	0.011*	0.010
	(1.272)	(1.337)	(1.917)	(1.416)
COMMON	−0.100***	−0.012	−0.143***	−0.030
	(−2.820)	(−0.358)	(−4.128)	(−0.792)
BANK_DEP	0.001*	0.001**	0.001**	0.001
	(1.934)	(2.037)	(2.141)	(1.043)
GDP_GROWTH	−0.002	−0.000	0.001	−0.004
	(−0.712)	(−0.086)	(0.354)	(−1.223)
LAW&ORDER	−0.033***	0.010	−0.041***	−0.024*
	(−2.614)	(0.679)	(−3.237)	(−1.874)
Constant	1.415***	1.088***	1.449***	1.253***
	(13.489)	(10.365)	(12.305)	(10.034)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	3,027	2,885	2,927	2,893
R^2	0.276	0.172	0.319	0.206

force, we re-run our analysis after dropping firms from countries with more political pressure on the government and par ricochet on government-owned firms or NPFs; that is, we exclude from the analysis observations from countries in the bottom quartile for government effectiveness distribution.[13] In column 2 of Table 8, we find that in the sample of firms from countries with more effective governments (i.e., independent from political pressures), NPFs choose to rely more on bank debt financing. These two findings suggest that even when NPFs are not forced to do so by the government (when the government is not controlling the firm or in more effective governments), they still choose to rely more on bank debt financing.

There is also a second plausible counterargument. The positive relationship between residual state ownership and bank debt financing may indeed be a matter

[13]The government effectiveness measure is obtained from the Worldwide Governance Indicators and captures, among other things, whether the government is independent from political pressures.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

of choice (because of the preferential access to bank financing under the soft-budget-constraint view) or the extent of access to capital markets (because of limited access or underdeveloped public financing infrastructure). We first note that the propensity-score-matching procedure presented in Section III.C helps in elucidating this issue by comparing the choice of debt financing for a sample of privatized firms and a sample of comparable always-private firms with a similar institutional setting (i.e., same country). Our results confirm that the latter rely less on bank financing than the former and corroborate the choice rather than the access view. Furthermore, we examine the choice versus the access interpretation of the results as follows: In column 3 of Table 8, we exclude firms from countries that do not have well-developed bond markets because these firms are less likely to find public debt financing feasible and are, thus, less likely to be confronted with the choice between bank debt and public debt. Following Lin et al. (2013), we exclude countries with a ratio of bond market capitalization to GDP below 10%. Despite the shrinkage in the number of observations, the coefficient on STATE remains significantly positive at the 5% level, which confirms the choice interpretation. In a final attempt to differentiate between the competing choice versus access explanations, we exclude firms from countries with greater access to bank debt financing (i.e., we keep countries with constrained access to bank debt financing). More specifically, we exclude countries in the top quartile according to the distribution of the ratio of private credit by deposit money banks to GDP. In column 4 of Table 8, we find that the coefficient on STATE remains significantly positive at the 1% level, suggesting that even when bank access is distorted, NPFs still rely more on bank debt. All in all, our findings confirm that privatized firms choose to rely more on bank debt financing when the state is involved in the ownership structure by choice rather than because they face limited access to public markets and financing.

IV. Bank Loan versus Bond Terms Analysis

Our evidence so far suggests that NPFs rely more on bank debt mainly because banks provide access to better loan terms. In what follows, we test this conjecture for our sample of privatized firms with available data on loan and bond spreads. Loan spread is from DealScan and represents the amount the borrower pays in basis points over the London Interbank Offered Rate (LIBOR) for each dollar drawn down, including both the spread of the loan and any annual or facility fee paid. Bond spread is from Datastream and is calculated as the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. In Panel A of Table 9, we present tests for differences in bank loan spreads versus bond spreads for our sample of NPFs.[14] The results suggest that bank spreads are in general lower by 57 basis points (bps) than bond spreads for our sample of privatized firms. The difference is statistically significant at the 1% level. In other words, for these firms, bank debt is cheaper than public debt, providing support to the soft-budget-constraint hypothesis.[15]

[14] We thank the referee for suggesting this test for our sample of NPFs.

[15] We echo Marques, Megginson, and Pinto (2017) that the comparability between loans and bonds has some drawbacks (e.g., different level of liquidity and different covenants and fees).

TABLE 9
Difference-in-Means Tests

Panel A of Table 9 presents 2-tailed tests for differences in means for bank loan spreads versus bond spreads. Panel B presents 2-tailed tests for differences in means for fully versus partially privatized firms for loan terms (SECURED_LOANS, COVENANTS, and LOAN_SIZE) and bond terms (CALLABILITY, SECURED_BONDS, and RATING). Variable definitions and sources are provided in the Appendix. The *p*-value shows the significance of the 2-tailed difference-in-means test.

Panel A. Spreads

	Bank Loans	Bonds	Mean Difference (bank loans – bonds)	*p*-Value
	1	2	3	4
Spread (basis points)	133.15	190.42	−57.27	0.000

Panel B. Loan and Bond Terms

	Government Presence, Partially Privatized	No Government Presence, Fully Privatized	Mean Difference (government – no government)	*p*-Value
	1	2	3	4
Loan terms				
SECURED_LOANS	0.106	0.173	−0.067	0.015
COVENANTS	0.033	0.138	−0.105	0.004
LOAN_SIZE	9.542	9.131	0.411	0.196
Bond terms				
CALLABILITY	0.096	0.091	0.005	0.365
SECURED_BONDS	0.124	0.113	0.011	0.216
RATING	2.405	2.752	−0.347	0.000

In addition to comparing loan and bond spreads, in Panel B of Table 9, we also contrast, for privatized firms with and without government presence, other loan and bond terms identified in the prior literature as determinants of their respective spreads (e.g., Borisova et al. (2015)). More specifically, we compare secured loans, covenants, and loan size for loan terms, and we compare callability, secured bonds, and S&P credit ratings for bond terms. We find that among the loan terms, secured loans and covenants seem to be lower for partially privatized firms, confirming the preferential access to bank loans. Moreover, among the bond terms determinants, we find that fully privatized firms have higher credit ratings compared with partially privatized firms. This result is similar to the evidence of Borisova and Megginson (2011) and points to the possibility that fully privatized firms benefit from the confidence of both investors and credit rating agencies.

V. Cross-Sectional Heterogeneity

Our analyses so far indicate that firms with a high level of state ownership rely primarily on bank debt because they face lower barriers to bank finance due to government support. This result is consistent with the soft-budget-constraint view. In this section we shed additional light on this result by examining cross-sectional heterogeneity in the relation between state ownership and bank debt use. Arguably, the strength of this relation may differ across countries with different characteristics. We consider four country-level conditioning variables: government ownership of banks, corruption in bank lending, the political orientation of the government, and the country's national culture.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

A. The Role of Government Ownership of Banks and Corruption in Bank Lending

As we discuss in Section I, the positive effect of state ownership on the use of bank debt should be more pronounced in countries with high government ownership of banks and in countries with high corruption in bank lending. The government has better ability to control banks' lending policies when it has greater ownership of banks. We thus expect NPFs to benefit more from access to external financing in countries with high government ownership of banks. Moreover, under corrupt bank lending practices, credit allocation is shaped by political ties (Houston et al. (2011)). We therefore expect NPFs to gain more benefit from preferential access to credit when politicians can force banks to divert the flow of credit to these firms.

To examine the effect of government ownership of banks on the relation between state ownership and bank debt reliance, we divide our sample countries into two groups according to the median level of government ownership of banks. To do so, we define GOV_BANK as the fraction of a banking system's assets that is in banks that are controlled by the government (i.e., 50% or higher ownership share), where we construct GOV_BANK using data from question 3.7 in Barth, Caprio, and Levine's (2013) Bank Regulation and Supervision Survey. Similarly, to examine the effect of corruption in bank lending on the relation between state ownership and bank debt reliance, we divide our sample countries into two groups according to the median level of corruption in bank lending. Our measure of lending corruption, CORR_LENDING, comes from the responses of current or potential borrowers to the following World Business Environment Survey (WBES) question: "Is the corruption of banking officials an obstacle for the operation and growth of your business?" The possible responses are 1 = no obstacle, 2 = a minor obstacle, 3 = a moderate obstacle, and 4 = a major obstacle, and thus CORR_LENDING is increasing in the perceived severity of lending corruption (see also Akins et al. (2017)).

In Table 10, we report the results for countries with a high and low percentage of government-owned banks in columns 1 and 2 and for countries with high and low lending corruption in columns 3 and 4, respectively. We find that the coefficient on STATE is positive and statistically significant only for the subsamples of countries with high government ownership of banks and with high lending corruption; the coefficient on STATE is statistically insignificant in the subsamples of countries with low government ownership of banks and low lending corruption. Reinforcing this evidence, the difference in the coefficients on STATE between subsamples is statistically significant at conventional levels for both country-level conditioning variables. These results suggest that the positive relation between state ownership of NPFs and bank debt reliance is more pronounced in countries with high government ownership of banks and in countries with high lending corruption, which is consistent with the idea that the effects of NPFs' soft budget constraints are greater under government ownership of banks and corrupt bank lending.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 10

Subsample Analyses: Government Ownership of Banks and Corruption in Bank Lending

Table 10 reports the results of ordinary least squares (OLS) regressions of the bank debt ratio on state ownership and other firm and country characteristics. Columns 1 and 2 report the results for subsamples of firms from countries with high and low government ownership of banks (GOV_BANK), respectively. Columns 3 and 4 report the results for subsamples of firms from countries with high and low corruption in bank lending (CORR_LENDING), respectively. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	GOV_BANK		CORR_LENDING	
	High	Low	High	Low
Variable	1	2	3	4
STATE	0.118**	0.051	0.197***	−0.043
	(2.116)	(0.690)	(4.368)	(−1.344)
DTA	0.059	0.060	0.014	0.094***
	(1.216)	(1.192)	(0.389)	(3.099)
TANGIBLE	−0.004	0.042	0.023	−0.086**
	(−0.041)	(0.536)	(0.537)	(−2.064)
SIZE	−0.075***	−0.093***	−0.093***	−0.044***
	(−6.553)	(−10.055)	(−16.008)	(−7.195)
ROA	−0.087	−0.507**	−0.515***	0.042
	(−0.386)	(−2.480)	(−3.626)	(0.390)
TOBINS_Q	−0.000	−0.004*	−0.005***	0.000
	(−0.191)	(−1.920)	(−3.740)	(0.292)
Z_SCORE	0.007	0.016	0.029***	0.003
	(0.927)	(1.383)	(3.773)	(0.902)
COMMON	−0.086*	−0.078*	−0.186***	0.008
	(−1.945)	(−1.911)	(−6.811)	(0.426)
BANK_DEP	−0.000	0.001*	0.001*	0.001***
	(−0.354)	(1.716)	(1.923)	(4.088)
GDP_GROWTH	0.009**	−0.011**	−0.012***	−0.003
	(2.441)	(−2.513)	(−3.261)	(−1.077)
LAW&ORDER	0.025	−0.041**	−0.025***	0.052***
	(1.267)	(−2.564)	(−2.590)	(4.447)
Constant	1.270***	1.449***	1.452***	0.655***
	(10.883)	(10.804)	(14.576)	(7.012)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	1,405	2,313	1,472	1,419
R^2	0.214	0.299	0.316	0.146

B. The Role of a Country's Political Orientation

A country's political orientation may also influence the relation between state ownership and firms' choice between bank and public debt. Left-oriented governments are more likely to intervene in the economy compared with right-oriented governments (Boubakri et al. (2017)). Firms located in countries with a left-oriented government are therefore more likely to enjoy an implicit guarantee of a government bailout in the event of distress. Accordingly, we expect firms in left-oriented countries to benefit more from the soft budget constraint associated with state ownership that facilitates access to bank debt financing.

To test this conjecture on the effect of a country's political orientation on the relation between state ownership and bank debt reliance, we again conduct subsample analysis. Here, we employ two proxies for a government's political orientation. First, we use LEFT, a dummy variable that takes the value of 1 for left-oriented governments, and 0 for right-oriented governments, where we obtain information on a government's political orientation from the Database of Political

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

Institutions. Second, we use government transfers and subsidies as a percentage of GDP, TRANSFERS, which we obtain from Economic Freedom of the World.

Table 11 presents the results. As expected, we find that the relation between state ownership and bank debt reliance depends on the government's political orientation. In particular, we find that state ownership loads positively and significantly on the bank debt ratio only for the subsamples of firms headquartered in countries with a left-oriented government and in countries with a high level of government transfers and subsidies. Moreover, the difference in the coefficients on STATE between subsamples of high and low government intervention in the economy is statistically significant at the 1% level for both country-level conditioning variables. These results suggest that NPFs benefit from government support only when the government is more likely to intervene in the economy.

TABLE 11
Subsample Analyses: Political Orientation

Table 11 reports the results of ordinary least squares (OLS) regressions of the bank debt ratio on government ownership and other firm and country characteristics. Columns 1 and 2 report results for subsamples of firms from countries with left- and right-oriented governments, respectively. Columns 3 and 4 report results for subsamples of firms from countries with high and low government transfers and subsidies (TRANSFERS), respectively. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	LEFT		TRANSFERS	
	Yes	No	High	Low
Variable	1	2	3	4
STATE	0.117**	0.081	0.184***	−0.069
	(2.006)	(1.275)	(3.130)	(−0.941)
DTA	0.015	0.054	0.099	−0.006
	(0.306)	(1.305)	(1.638)	(−0.109)
TANGIBLE	−0.071	0.101	−0.068	0.142*
	(−0.922)	(1.315)	(−0.868)	(1.686)
SIZE	−0.083***	−0.085***	−0.070***	−0.096***
	(−9.409)	(−9.815)	(−7.311)	(−9.704)
ROA	−0.705***	−0.042	−0.266	−0.053
	(−3.118)	(−0.236)	(−1.265)	(−0.227)
TOBINS_Q	−0.003*	−0.002	−0.003*	0.001
	(−1.934)	(−1.486)	(−1.892)	(0.265)
Z_SCORE	0.019**	0.009	0.016*	0.002
	(2.539)	(1.360)	(1.905)	(0.178)
COMMON	−0.027	−0.101***	−0.050	−0.127**
	(−0.601)	(−2.773)	(−1.340)	(−2.082)
BANK_DEP	0.001**	0.000	0.001**	−0.000
	(2.503)	(0.362)	(2.312)	(−0.227)
GDP_GROWTH	0.006	−0.008**	−0.000	−0.005
	(1.483)	(−2.414)	(−0.064)	(−0.935)
LAW&ORDER	−0.032**	−0.035**	−0.019	−0.060***
	(−2.100)	(−2.179)	(−0.987)	(−3.338)
Constant	1.279***	1.452***	1.235***	1.463***
	(10.934)	(10.349)	(11.539)	(10.557)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	1,554	2,292	2,029	1,771
R^2	0.284	0.270	0.227	0.372

C. The Role of National Culture

We next 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 firm reliance on bank debt more in collectivist societies. The rationale behind this idea is that, in collectivist countries, where the emphasis is on the group's interests, the government intervenes in the market more, whereas in individualistic countries, where the emphasis is on individuals' interests, the government intervenes in the market less (Boubakri et al. (2016)). The soft budget constraint associated with state ownership should thus be more pronounced in collectivist societies.

To test our prediction, we conduct subsample analysis conditional on a country's national culture. To capture whether a country's national culture is collectivist or individualist, we use the COLLECTIVISM_HF and COLLECTIVISM_TK indices of Hofstede (2001) and Tang and Koveos (2008), respectively. Because the original indices increase in the degree of a country's individualism, we subtract them from 100 so that larger values of the indices indicate greater collectivism.

Table 12 reports the results of the subsample tests where firms are classified according to COLLECTIVISM_HF and COLLECTIVISM_TK. The results

TABLE 12
Subsample Analyses: Collectivism

Table 12 reports the results of ordinary least squares (OLS) regressions of the bank debt ratio on state ownership and other firm and country characteristics. Columns 1 and 2 report results for subsamples of firms from countries with a high and low Hofstede collectivism index (COLLECTIVISM_HF), respectively. Columns 3 and 4 report results for subsamples of firms from countries with a high and low Tang and Koveos collectivism index (COLLECTIVISM_TK), respectively. Robust *t*-statistics clustered at the firm level are reported beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	COLLECTIVISM_HF		COLLECTIVISM_TK	
	High	Low	High	Low
Variable	1	2	3	4
STATE	0.159**	0.096	0.083**	−0.013
	(2.355)	(1.330)	(2.398)	(−0.125)
DTA	0.064	0.122***	0.035	0.184***
	(0.704)	(2.941)	(0.455)	(3.183)
TANGIBLE	−0.029	0.046	−0.209**	0.263**
	(−0.361)	(0.448)	(−2.069)	(1.994)
SIZE	−0.075***	−0.096***	−0.067***	−0.120***
	(−8.132)	(−8.599)	(−5.301)	(−6.728)
ROA	−0.098	−0.632**	−0.093	−1.098***
	(−0.437)	(−2.418)	(−0.397)	(−2.882)
TOBINS_Q	−0.000	−0.016***	−0.001	−0.015
	(−0.305)	(−3.647)	(−0.719)	(−1.529)
Z_SCORE	0.002	0.042***	0.009	0.037
	(0.419)	(4.243)	(0.830)	(1.633)
COMMON	−0.090*	−0.083*	0.082*	−0.217***
	(−1.859)	(−1.734)	(1.788)	(−3.670)
BANK_DEP	0.001**	0.001	−0.001	0.001*
	(2.273)	(1.267)	(−0.888)	(1.884)
GDP_GROWTH	−0.001	0.006	−0.006	−0.002
	(−0.317)	(1.093)	(−1.488)	(−0.255)
LAW&ORDER	−0.031	−0.020	−0.002	−0.043**
	(−1.500)	(−0.878)	(−0.068)	(−2.009)
Constant	1.261***	1.144***	1.384***	1.501***
	(8.931)	(5.896)	(9.971)	(6.622)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	1,648	1,776	1,376	1,289
R^2	0.251	0.314	0.220	0.369

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

support our predictions. Specifically, we find 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. Moreover, the difference in the coefficients on STATE between the high- and low-collectivism subsamples is statistically significant at the 1% level for both collectivism indices. These findings suggest that the soft budget constraint holds only in countries with a collectivist national culture.

VI. External Validity: Debt Maturity and Debt Security

In the previous analysis, we show that state ownership is positively associated with NPFs' reliance on bank debt, consistent with the soft-budget-constraint view. A soft budget constraint may also affect other aspects of debt structure. In this section, we extend our analysis by examining the effect of state ownership on debt maturity and debt security.

Several studies show that banks' monitoring incentives are higher under short debt maturity and high collateral requirements (Park (2000), Datta et al. (2005)). To avoid such monitoring intensity, firms with more pronounced agency problems, such as those with state ownership, are expected to prefer a debt structure with long maturity and low levels of collateral (Datta et al. (2005)). Moreover, Johnson (1997), Gilson and Warner (2000), and Park (2000) show that compared with public debt, bank debt has shorter maturity and is more collateralized. Accordingly, we argue that if NPFs rely more on bank debt due to the soft budget constraint associated with state ownership, they will prefer longer-maturity structures with lower collateral requirements. We thus expect state ownership to be positively associated with debt maturity and negatively associated with debt security.

Table 13 presents the results of OLS regressions on the effect of state ownership on debt maturity and debt security. In columns 1 and 2, the dependent variables are the fraction of total debt maturing within 3 years (MATURITY_3) and 5 years (MATURITY_5), respectively, and in column 3, the dependent variable is the proportion of total debt secured by collateral (SECURED). As can be seen from the table, state ownership has a significantly positive effect on debt maturity and a significantly negative effect on debt security, in line with our predictions. These effects of state ownership on debt maturity and security are consistent with the soft-budget-constraint view and corroborate our findings on the reliance on bank debt.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

TABLE 13
Debt Maturity and Security

Table 13 reports the results of ordinary least squares (OLS) regressions of debt maturing in 3 years (column 1), debt maturing in 5 years (column 2), and debt security (column 3) on state ownership and other firm and country characteristics. Robust *t*-statistics clustered at the firm level are reported in parentheses beneath each estimate. Variable definitions and sources are provided in the Appendix. *, **, and *** refer to significance at the 10%, 5%, and 1% levels, respectively.

	MATURITY_3	MATURITY_5	SECURED
Variable	1	2	3
STATE	0.035***	0.020**	−0.168***
	(3.000)	(2.026)	(−2.798)
DTA	0.011	0.007	0.112*
	(0.607)	(0.427)	(1.911)
TANGIBLE	−0.012	−0.008	−0.106
	(−0.846)	(−0.632)	(−1.405)
SIZE	−0.001	0.002	0.072***
	(−0.713)	(1.247)	(7.412)
ROA	−0.040	0.047*	0.159
	(−1.082)	(1.702)	(0.696)
TOBINS_Q	0.000**	0.000***	0.006
	(2.578)	(2.880)	(1.376)
Z_SCORE	−0.001	−0.002**	−0.024
	(−1.357)	(−2.132)	(−0.938)
COMMON	0.025***	0.011*	−0.092***
	(3.934)	(1.904)	(−2.818)
BANK_DEP	0.000	0.000	0.001*
	(1.468)	(1.318)	(1.860)
GDP_GROWTH	0.001	0.001	0.005
	(1.175)	(1.317)	(0.811)
LAW&ORDER	0.003	−0.003	0.021
	(1.073)	(−1.232)	(1.289)
Constant	−0.101***	−0.091***	−1.274***
	(−4.356)	(−3.733)	(−10.445)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N	2,087	1,975	2,895
R^2	0.052	0.053	0.140

VII. Conclusion

The corporate finance literature over the last half century has focused largely on firms' capital structure, that is, the mix between equity and debt (e.g., Marsh (1982)). However, in addition to choosing between debt and equity, firms have to choose between public financing through debt issuance and private financing through bank loans. In this article we examine the latter decision in relation to state ownership using a large sample of 453 NPFs from 62 countries over the period 2001–2014.

Based on the debt choice and privatization literature, the relation between state ownership and debt source could go either way. On the one hand, the monitoring-avoidance/reputation-building view predicts a negative relation between state ownership and bank debt reliance. For instance, the arguments of Fama (1985), Stiglitz and Weiss (1983), and Rajan (1992) on the monitoring advantage of bank debt suggest that manager-bureaucrats in firms with state ownership prefer public debt financing over bank debt to hide their expropriation activities (Bushman et al. (2004)). Similarly, because state ownership is generally perceived as associated with policy risk, which may increase investor preferences for public debt, manager-bureaucrats may influence NPFs to use public debt to

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

signal its commitment to market-oriented policies and boost investor support in the firm (Perotti (1995)). On the other hand, the soft-budget-constraint view predicts a positive relation between state ownership and bank debt reliance. The rationale is that state ownership provides firms easier access to finance at preferential rates and an implicit guarantee of a bailout in the event of distress and, hence, a soft budget constraint that incentivizes NPFs to rely more on bank debt than public debt. The net effect of state ownership on NPFs' debt structure is thus an empirical question.

We examine this question in a cross-country setting and find support for the soft-budget-constraint view of state ownership. Specifically, we find that after controlling for a variety of firm- and country-level variables likely to affect firms' debt choice, state ownership is significantly positively related to bank debt financing, suggesting that NPFs benefit from continued government support following privatization. This finding is robust to addressing endogeneity concerns and to conducting a battery of robustness tests. When we consider cross-sectional heterogeneity based on four country-level conditioning characteristics, we find that the positive relation between state ownership and bank debt reliance is more pronounced in countries with high government ownership of banks, high corruption in bank lending, a left-oriented government, and a collectivist national culture. Finally, in external validity tests, we find that state ownership affects other aspects of debt structure, such as debt maturity and debt security.

Our results have a major policy implication. Specifically, our results show that continued state ownership in NPFs distorts firms' financing choices, increasing rather than decreasing the dependence of these firms on the banking sector. This effect works against the development of public debt markets. These results are particularly important in the current post-crisis era because extensive government bailouts of banks during the financial crisis have led to greater government participation in banks and, in turn, greater government influence over the financial system, increasing systemic risk.

Appendix. Variable Definitions and Sources

Dependent Variables

BANK: The ratio of bank debt to total debt. *Source*: Capital IQ.

BANK/ASSETS: The ratio of bank debt to total assets. *Source*: Capital IQ.

MATURITY_3: The ratio of long-term debt due after 3 years to total debt. *Source*: Capital IQ.

MATURITY_5: The ratio of long-term debt due after 5 years to total debt. *Source*: Capital IQ.

SECURED: The ratio of total secured debt to total debt. *Source*: Capital IQ.

Firm-Level Variables

SIZE: Firm size, measured as the natural logarithm of total assets. *Source*: Compustat.

TOBINS_Q: Tobin's Q, defined as the sum of market value of equity plus book value of debt divided by total assets. *Source*: Compustat.

DTA: Firm leverage, measured as the ratio of long-term debt to total assets. *Source*: Compustat.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

ROA: Firm profitability, defined as the ratio of operating income before depreciation to total assets. *Source*: Compustat.

TANGIBLE: Asset tangibility, calculated as the ratio of net property, plant, and equipment to total assets. *Source*: Compustat.

Z_SCORE: Altman's (1968) Z-score, calculated as (1.2 × working capital + 1.4 × retained earnings + 3.3 × earnings before interest and taxes + 0.999 × sales)/total assets + 0.6 × (market value of equity/book value of debt). *Source*: Compustat.

LN_DISTANCE: The natural logarithm of the distance in kilometers between the firm's headquarters and the stock exchange on which it is listed. *Source*: http://www.distancefromto.net.

CONTROL: Dummy variable equal to 1 for firms in which the state maintains control (i.e., the government holds more than 50% of the firm's shares) following privatization, and 0 otherwise. *Source*: Mainly from firms' annual reports and offering prospectuses.

STATE: The percentage of shares held by the government. *Source*: Mainly from firms' annual reports and offering prospectuses.

Bond and Bank Loan Variables

BOND_SPREAD: The difference between the corporate bond's current yield to maturity and that of the benchmark government bond most closely matched by maturity. Expressed in basis points (bps). *Source*: Datastream.

RATING: The natural log of the S&P bond rating, after conversion to an ordinal scale (AAA = 22, AA+ = 21, etc.). *Source*: Datastream.

SECURED_BONDS: Dummy variable equal to 1 for a bond secured through collateral, and 0 otherwise. *Source*: Datastream.

CALLABILITY: Dummy variable equal to 1 for a callable bond, and 0 otherwise. *Source*: Datastream.

BANK_LOAN_SPREAD: All-in-drawn spread, calculated as the difference between the corporate loan's current yield to maturity and that of LIBOR after adjusting for associated loan origination fees. Expressed in basis points (bps). *Source*: DealScan.

SECURED_LOANS: Dummy variable equal to 1 for a loan secured through collateral, and 0 otherwise. *Source*: DealScan.

LOAN_SIZE: The natural log of the total value of the facility (in USD). *Source*: DealScan.

COVENANTS: Dummy variable equal to 1 for a loan contract that includes financial covenants, and 0 otherwise. *Source*: DealScan.

Country-Level Variables

LAW&ORDER: ICRG assessment of a country's law and order. *Source*: International Country Risk Guide.

CORRUPTION: ICRG assessment of a country's corruption, rescaled (0 for low corruption and 6 for high corruption). *Source*: International Country Risk Guide.

CORR_LENDING: Country average of firm responses to the question, "Is the corruption of bank officials an obstacle for the operation and growth of your business?" (1 = no obstacle, 2 = a minor obstacle, 3 = a moderate obstacle, 4 = major obstacle). *Source*: World Business Environment Survey (WBES) (2000).

PUBLIC_ENFOR: Index of public enforcement equal to the arithmetic mean of i) supervisor characteristics index, ii) rule-making power index, iii) investigative powers index, iv) orders index, and v) criminal index. *Source*: La Porta et al. (2006).

COMMON: A dummy variable that takes the value of 1 for common-law countries, and 0 otherwise. *Source*: La Porta et al. (2006).

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

ANTI_SELF: Average of ex ante and ex post private control of self-dealing. *Source*: Djankov et al. (2008).

BANK_DEP: Ratio of liquid liabilities to GDP. *Source*: Financial Development and Structure Dataset (Beck et al. (2009)).

GDP_GROWTH: GDP per capita growth over the year. *Source*: World Development Indicators.

CRED_RIGHTS: Creditor rights index, equal to the sum of four dummy variables. The first dummy variable equals 1 if restrictions are in place on a debtor filing for reorganization, and 0 otherwise. The second dummy equals 1 when, in the case of reorganization, secured creditors are able to seize collateral, and 0 otherwise. The third dummy equals 1 if secured lenders are given priority in liquidation proceedings, and 0 otherwise. The fourth dummy equals 1 if creditors take over management during the reorganization process, and 0 otherwise. *Source*: Djankov et al. (2007).

LEFT: A dummy variable equal to 1 for a left-oriented government, and 0 otherwise. *Source*: Database of Political Institutions.

COLLECTIVISM_HF: Calculated as 100 minus the Hofstede cultural index on individualism. *Source*: Hofstede (2001).

COLLECTIVISM_TK: Calculated as 100 minus the Tang and Koveos updated cultural index on individualism. *Source*: Tang and Koveos (2008).

GOV_BANK: The degree of government ownership of banks, calculated as the fraction of the banking system's assets that is in banks controlled by the government (i.e., 50% or higher government ownership share; survey question 3.7). *Source*: Barth et al. (2013).

TRANSFERS: Transfers and subsidies as a share of GDP. *Source*: Economic Freedom of the World.

References

Akins, B.; Y. Dou; and J. Ng. "Corruption in Bank Lending: The Role of Timely Loan Loss Recognition." *Journal of Accounting and Economics*, 63 (2017), 454–478.

Altman, E. I. "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy." *Journal of Finance*, 23 (1968), 589–609.

Barth, J. R.; G. Caprio Jr; and R. Levine. "Bank Regulation and Supervision in 180 Countries from 1999 to 2011." *Journal of Financial Economic Policy*, 5 (2013), 111–219.

Beck, T.; A. Demirgüç-Kunt; and R. Levine. "Financial Institutions and Markets Across Countries and Over Time: Data and Analysis." World Bank Policy Research Working Paper Series (2009).

Ben-Nasr, H.; N. Boubakri; and J. C. Cosset. "The Political Determinants of the Cost of Equity: Evidence from Newly Privatized Firms." *Journal of Accounting Research*, 50 (2012), 605–646.

Berlin, M., and J. Loeys. "Bond Covenants and Delegated Monitoring." *Journal of Finance*, 43 (1988), 397–412.

Biais, B., and E. Perotti. "Machiavellian Privatization." *American Economic Review*, 92 (2002), 240–258.

Blackwell, D. W., and D. S. Kidwell. "An Investigation of Cost Differences between Public Sales and Private Placements of Debt." *Journal of Financial Economics*, 22 (1988), 253–278.

Boot, A. W. "Relationship Banking: What Do We Know?" *Journal of Financial Intermediation*, 9 (2000), 7–25.

Borisova, G.; P. Brockman; J. M. Salas; and A. Zagorchev. "Government Ownership and Corporate Governance: Evidence from the EU." *Journal of Banking and Finance*, 36 (2012), 2917–2934.

Borisova, G.; V. Fotak; K. Holland; and W. L. Megginson. "Government Ownership and the Cost of Debt: Evidence from Government Investments in Publicly Traded Firms." *Journal of Financial Economics*, 118 (2015), 168–191.

Borisova, G., and W. L. Megginson. "Does Government Ownership Affect the Cost of Debt? Evidence from Privatization." *Review of Financial Studies*, 24 (2011), 2693–2737.

Boubaker, S.; W. Rouatbi; and W. Saffar. "The Role of Multiple Large Shareholders in the Choice of Debt Source." *Financial Management*, 46 (2017), 241–274.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

Boubaker, S.; W. Saffar; and S. Sassi. "Product Market Competition and Debt Choice." *Journal of Corporate Finance*, 49 (2018), 204–224.
Boubakri, N., and J.-C. Cosset. "The Financial and Operating Performance of Newly Privatized Firms: Evidence from Developing Countries." *Journal of Finance*, 53 (1998), 1081–1110.
Boubakri, N.; J.-C. Cosset; K. Fischer; and O. Guedhami. "Privatization and Bank Performance in Developing Countries." *Journal of Banking and Finance*, 29 (2005), 2015–2041.
Boubakri, N.; J.-C. Cosset; and W. Saffar. "The Role of State and Foreign Owners in Corporate Risk-Taking: Evidence from Privatization." *Journal of Financial Economics*, 108 (2013), 641–658.
Boubakri, N.; J.-C. Cosset; and W. Saffar. "The Constraints on Full Privatization: International Evidence." *Journal of Corporate Finance*, 42 (2017), 392–407.
Boubakri, N.; O. Guedhami; C. C. Kwok; and W. Saffar. "National Culture and Privatization: The Relationship between Collectivism and Residual State Ownership." *Journal of International Business Studies*, 47 (2016), 170–190.
Boyd, J. H., and E. C. Prescott. "Financial Intermediary-Coalitions." *Journal of Economic Theory*, 38 (1986), 211–232.
Brown, C. O., and I. S. Dinç. "Too Many to Fail? Evidence of Regulatory Forbearance When the Banking Sector Is Weak." *Review of Financial Studies*, 24 (2011), 1378–1405.
Bushman, R. M.; J. D. Piotroski; and A. J. Smith. "What Determines Corporate Transparency?" *Journal of Accounting Research*, 42 (2004), 207–252.
Campbell, J. "Understanding Risk and Return." *Journal of Political Economy*, 104 (1996), 298–345.
Chemmanur, T. J., and P. Fulghieri. "Reputation, Renegotiation, and the Choice between Bank Loans and Publicly Traded Debt." *Review of Financial Studies*, 7 (1994), 475–506.
Chen, R.; S. El Ghoul; O. Guedhami; and R. Nash. "State Ownership and Corporate Cash Holdings." *Journal of Financial and Quantitative Analysis*, 53 (2018), 2293–2334.
Chui, A. C.; S. Titman; and K. J. Wei. "Individualism and Momentum around the World." *Journal of Finance*, 65 (2010), 361–392.
Cioffi, J. W., and M. Höpner. "The Political Paradox of Finance Capitalism: Interests, Preferences, and Center-Left Party Politics in Corporate Governance Reform." *Politics and Society*, 34 (2006), 463–502.
Colla, P.; F. Ippolito; and K. Li. "Debt Specialization." *Journal of Finance*, 68 (2013), 2117–2141.
Datta, S.; M. Iskandar-Datta; and K. Raman. "Managerial Stock Ownership and the Maturity Structure of Corporate Debt." *Journal of Finance*, 60 (2005), 2333–2350.
Denis, D. J., and V. T. Mihov. "The Choice among Bank Debt, Non-Bank Private Debt, and Public Debt: Evidence from New Corporate Borrowings." *Journal of Financial Economics*, 70 (2003), 3–28.
Diamond, D. W. "Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt." *Journal of Political Economy*, 99 (1991), 689–721.
Dinç, I. S. "Politicians and Banks: Political Influences on Government-Owned Banks in Emerging Markets." *Journal of Financial Economics*, 77 (2005), 453–479.
Djankov, S.; R. La Porta; F. Lopez-de-Silanes; and A. Shleifer. "The Law and Economics of Self-Dealing." *Journal of Financial Economics*, 88 (2008), 430–465.
Djankov, S.; C. McLiesh; and A. Shleifer. "Private Credit in 129 countries." *Journal of Financial Economics*, 84 (2007), 299–329.
Djankov, S., and P. Murrell. "Enterprise Restructuring in Transition: A Quantitative Survey." *Journal of Economic Literature*, 40 (2002), 739–792.
Durnev, A., and L. Fauver. "Stealing from Thieves: Firm Governance and Performance When States Are Predatory." Working Paper, McGill University (2009).
Estrin, S.; J. Hanousek; E. Kočenda; and J. Svejnar. "The Effects of Privatization and Ownership in Transition Economies." *Journal of Economic Literature*, 47 (2009), 699–728.
Faccio, M.; R. W. Masulis; and J. McConnell. "Political Connections and Corporate Bailouts." *Journal of Finance*, 61 (2006), 2597–2635.
Fama, E. F. "What's Different about Banks?" *Journal of Monetary Economics*, 15 (1985), 29–39.
Gilson, S., and J. Warner. "Private versus Public Debt: Evidence from Firms That Replace Bank Loans with Risky Public Debt." Working Paper, Harvard Business School (2000).
Guedhami, O., and J. A. Pittman. "Ownership Concentration in Privatized Firms: The Role of Disclosure Standards, Auditor Choice, and Auditing Infrastructure." *Journal of Accounting Research*, 44 (2006), 889–929.
Guedhami, O.; J. A. Pittman; and W. Saffar. "Auditor Choice in Privatized Firms: Empirical Evidence on the Role of State and Foreign Owners." *Journal of Accounting and Economics*, 48 (2009), 151–171.
Guiso, L.; P. Sapienza; and L. Zingales. "Does Culture Affect Economic Outcomes?" *Journal of Economic Perspectives*, 20 (2006), 23–48.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

Gupta, N. "Partial Privatization and Firm Performance." *Journal of Finance*, 60 (2005), 987–1015.
Hadlock, C. J., and C. M. James. "Do Banks Provide Financial Slack?" *Journal of Finance*, 57 (2002), 1383–1419.
Hofstede, G. H. *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations across Nations*. Thousand Oaks, CA: Sage (2001).
Houston, J., and C. James. "Bank Information Monopolies and the Mix of Private and Public Debt Claims." *Journal of Finance*, 51 (1996), 1863–1889.
Houston, J. F.; C. Lin; and Y. Ma. "Media Ownership, Concentration and Corruption in Bank Lending." *Journal of Financial Economics*, 100 (2011), 326–350.
Johnson, S. A. "An Empirical Analysis of the Determinants of Corporate Debt Ownership Structure." *Journal of Financial and Quantitative Analysis*, 32 (1997), 47–69.
Khwaja, A. I., and A. Mian. "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market." *Quarterly Journal of Economics*, 120 (2005), 1371–1411.
Kornai, J. "Resource-Constrained versus Demand-Constrained Systems." *Econometrica: Journal of the Econometric Society*, 47 (1979), 801–819.
Kornai, J. *The Economics of Shortage,* 2 vols. Amsterdam, Netherlands: Elsevier, North-Holland (1980).
Kornai, J.; E. Maskin; and G. Roland. "Understanding the Soft Budget Constraint." *Journal of Economic Literature*, 41 (2003), 1095–1136.
Krishnaswami, S.; P. A. Spindt; and V. Subramaniam. "Information Asymmetry, Monitoring, and the Placement Structure of Corporate Debt." *Journal of Financial Economics*, 51 (1999), 407–434.
Kwok, C. C., and S. Tadesse. "National Culture and Financial Systems." *Journal of International Business Studies*, 37 (2006), 227–247.
La Porta, R.; F. Lopez-de-Silanes; and A. Shleifer. "Government Ownership of Banks." *Journal of Finance*, 57 (2002), 265–301.
La Porta, R.; F. Lopez-de-Silanes; and A. Shleifer. "What Works in Securities Laws?" *Journal of Finance*, 61 (2006), 1–32.
Li, X.; C. Lin; and X. Zhan. "Does Change in the Information Environment Affect Financing Choices?" *Management Science*, forthcoming (2019).
Lin, C.; Y. Ma; P. Malatesta; and Y. Xuan. "Corporate Ownership Structure and the Choice between Bank Debt and Public Debt." *Journal of Financial Economics*, 109 (2013), 517–534.
Marques, M. O.; W. L. Megginson; and J. M. Pinto. "A Comparative Analysis of Ex Ante Credit Spreads: Structured Finance versus Straight Debt Finance." Working Paper, University of Oklahoma (2017).
Marsh, P. "The Choice between Equity and Debt: An Empirical Study." *Journal of Finance*, 37 (1982), 121–144.
Megginson, W. "Privatization and Finance." *Annual Review of Financial Economics*, 2 (2010), 145–174.
Megginson, W. L. "Privatization, State Capitalism, and State Ownership of Business in the 21st Century." *Foundations and Trends in Finance*, 11 (2017), 1–153.
Megginson, W. L.; R. C. Nash; and M. Randenborgh. "The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis." *Journal of Finance*, 49 (1994), 403–452.
Megginson, W. L., and J. M. Netter. "From State to Market: A Survey of Empirical Studies on Privatization." *Journal of Economic Literature*, 39 (2001), 321–389.
Megginson, W. L.; B. Ullah; and Z. Wei. "State Ownership, Soft-Budget Constraints, and Cash Holdings: Evidence from China's Privatized Firms." *Journal of Banking and Finance*, 48 (2014), 276–291.
Park, C. "Monitoring and Structure of Debt Contracts." *Journal of Finance*, 55 (2000), 2157–2195.
Perotti, E. C. "Credible Privatization." *American Economic Review*, 85 (1995), 847–859.
Petersen, M. A., and R. G. Rajan. "The Effect of Credit Market Competition on Lending Relationships." *Quarterly Journal of Economics*, 110 (1995), 407–443.
Rajan, R. G. "Insiders and Outsiders: The Choice between Informed and Arm's-Length Debt." *Journal of Finance*, 47 (1992), 1367–1400.
Rauh, J. D., and A. Sufi. "Capital Structure and Debt Structure." *Review of Financial Studies*, 23 (2010), 4242–4280.
Rosenbaum, R. R., and D. B. Rubin. "The Central Role of the Propensity Score in Observational Studies for Causal Effects." *Biometrika*, 70 (1983), 41–55.
Sapienza, P. "The Effects of Government Ownership on Bank Lending." *Journal of Financial Economics*, 72 (2004), 357–384.
Shleifer, A., and R. W. Vishny. "A Survey of Corporate Governance." *Journal of Finance*, 52 (1997), 737–783.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press

Stiglitz, J. E., and A. Weiss. "Credit Rationing in Markets with Imperfect Information." *American Economic Review*, 71 (1981), 393–410.

Stiglitz, J. E., and A. Weiss. "Incentive Effects of Terminations: Applications to the Credit and Labor Markets." *American Economic Review*, 73 (1983), 912–927.

Tang, L., and P. E. Koveos. "A Framework to Update Hofstede's Cultural Value Indices: Economic Dynamics and Institutional Stability." *Journal of International Business Studies*, 39 (2008), 1045–1063.

Wang, Q.; T.-J. Wong; and L. Xia. "State Ownership, the Institutional Environment, and Auditor Choice: Evidence from China." *Journal of Accounting and Economics*, 46 (2008), 112–134.

https://doi.org/10.1017/S0022109018000881 Published online by Cambridge University Press