

Why Do Governments Lend?

Evidence from the Corporate Loan Market

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Abstract

Despite the inefficiencies documented in empirical studies, state ownership of productive assets persists worldwide. One explanation is the “market failure” view, positing that the *raison d'être* of state-owned firms is to enable projects the private sector is reluctant to sponsor. I analyze a sample of 148,511 corporate loans worth over USD 37 trillion from 156 countries, initiated between 1980 and 2010, to investigate whether lending by state-owned institutions is consistent with the market-failure view. I find that the proportion of loans involving state-owned lenders is higher in countries with weak protection of property rights, in non-common law countries, and during banking crises. Further, the level of state-owned lender involvement (loan arranging and sole lending versus passive loan syndicate membership) escalates in the presence of weak protection of property rights and during banking crises; the share of the loan retained by state-owned lenders increases in the presence of weak protection of property rights. Finally, I find that loans involving state-owned lenders display larger lending syndicates, longer maturities, less frequent collateralization, and lower spreads, with a discount of approximately 21 bps. Evidence of subsidization is stronger in the presence of weak protection of property rights. Overall, my findings are mostly consistent with the market-failure view.

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Why Do Governments Lend? Evidence from the Corporate Loan Market

From Friedman (1962) to Shleifer (1998), post-war economists have denounced the inefficiencies and the lack of incentives associated with state ownership, concluding that “private ownership is the crucial source of incentives to innovate and become efficient” (Shleifer, 1998). Consistently, a vast and growing empirical literature finds that state ownership is generally associated with operational inefficiency and a peculiar brand of agency costs due to political interference.¹ Yet, worldwide, state ownership of productive assets is remarkably persistent. Despite the global wave of state privatizations, over the past decade governments have acquired more assets than they have sold through share-issue privatizations and direct sales and this trend seems to be accelerating.² This puzzle is often explained by the “market-failure hypothesis” (Gerschenkron, 1962; Atkinson and Stiglitz, 1980), which posits that state ownership is a response to market failures with the purpose of enabling projects the private sector is reluctant to sponsor.

Conversely, the “commercial hypothesis” posits that state-owned firms are not fundamentally different from private-sector firms and operate with the same commercial objectives. The distinction between the two hypotheses is crucial in so far that, according to the commercial view, government and private sector activities tend to intensify, or decline, in unison, while, according to the market-failure view, government involvement substitutes for the private sector when the latter is inactive. In this paper, I explore lending by governments and state-owned entities and test whether the observed lending patterns are consistent with the empirical predictions of the commercial or the market-failure views.

¹ One stream of research focusing on the relative efficiency of the state versus private sector is the privatization literature, which generally finds that the efficiency of state-owned enterprises increases post-privatization. Early publications are surveyed by Megginson and Netter (2001) and Djankov and Murrell (2002). More recent evidence includes Sun and Tong (2003), Boubakri, Cosset and Guedhami (2005), and Estrin, et al. (2009), among others. Empirical evidence of inefficiency in mixed-ownership enterprises is examined by Eckel and Vermaelen (1986) and Boardman and Vining (1989). Additional evidence of lower performance in state-owned firms is offered by Chen, Firth and Xu (2008). The impact of state ownership on the banking sector is the focus of La Porta, Lopez-de-Silanes, and Shleifer (2002), Sapienza (2004), Dinç (2005) and Caprio, Laeven, and Levine (2007).

² See Borisova, Fotak, Holland and Megginson (2012) for more detail. The authors find that the Thomson Reuters SDC Platinum database contains approximately 5,900 government divestments worth USD 1.3 trillion and about 4,100 government investments worth approximately USD 1.2 trillion since 1980 to the present. But, since 2000, the database records USD 725 billion in government divestments and USD 969 billion in government investments. The trend is even more apparent after 2007 – since May 2007, governments have sold USD 157 billion of assets but purchased USD 470 billion.

The financial sector is a particularly apt arena for testing the impact of state ownership. First, state ownership of banks around the world is pervasive and persistent. La Porta, Lopez-de-Silanes, and Shleifer (2002, henceforth “LLS”) find that the average state ownership of banks, around the world, is 41.6 percent in 1995 (the mid-point of my study). Second, the financial sector, being central to both the payment system and to corporate access to funding, affects all other economic activities.

The work of La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997 and 1998, henceforth “LLSV”) highlights the importance of laws and institutions in the development of finance. The relevant finding is that weak institutions hamper the development of financial markets. Building on their insight, I investigate whether, in the presence of a market failure (weak protection of property rights and the resulting lack of development), governments lend more frequently, retain larger shares of loans, escalate their level of involvement (by, for example, arranging loans) and whether, under weak legal systems, government loans provide terms more favorable to borrowers than private-sector loans.

A second testing ground for the market-failure view is offered by banking crises. During banking crises, credit supply is constrained as the private sector is often reluctant to lend (Laeven and Valencia, 2010; Sudheer and Purnanandam, 2011). This can be viewed as a temporary market failure – and the testable implication of the market-failure view is that government lending activity should intensify during a banking crisis. Hence, I analyze government lending patterns and the terms of government loans during banking crises.³

Further, within the market-failure view, government lenders provide credit to firms with otherwise restricted access to financial markets (unlisted, smaller, and riskier firms), to socially important industries (such as regulated industries: utilities, transportation, and telecoms) and, given its centrality in economic activity, to the financial sector. Accordingly, I test whether governments lend more frequently and more actively to such borrowers.

³ Market failures deriving from institutional weakness and banking crises might be due, in the first place, to the actions of governments. While it is plausible to presume that governments are responsible for those failures through legislative or regulatory activity, it is not clear why government lending activity – the focus of this analysis - should cause institutional weakness or induce a banking crisis. Also, government lending cannot, by definition, cause legal origin, used here as an exogenous proxy for strength of the legal environment. Further, the analysis here presented includes both domestic and foreign government lending, and foreign governments are an unlikely cause of domestic market failures. Finally, many of the state-owned lenders are owned by local or regional governments, rather than the central government, and thus are farther removed from the legislative process.

Given that the market-failure view is predicated on the concept that governments seek to provide support to the domestic economy, the predicted lending patterns apply mostly to domestic lending activity. LLS (2002) similarly justify excluding foreign banks from their sample. Accordingly, I isolate loans by domestic and foreign government lenders, expecting to find domestic lending activity conforming to the market-failure view and foreign lending activity to be commercial in nature – where “commercial” implies lending patterns akin to those of private lenders.

I analyze government lending patterns using corporate loan initiations included in the Thomson Reuters LPC Deal Scan database, augmented with borrower accounting data from Worldscope Global.⁴ As proxies for the quality of the legal system, I employ an index of the strength of propriety rights compiled by the Fraser Institute and identifiers of the legal origin of the borrower’s country.⁵ In robustness tests, I use, as an alternative metric of legal system strength, the “Investment Profile” score by the International Country Risk Guide.

I model the probability of government involvement, distinguishing between domestic and foreign government lending, in probit analysis. In contrast with the commercial view, results point to significant differences in lending patterns between state-owned and private-sector institutions. Consistent with the market-failure view, government lending accounts for a higher proportion of loans in countries with weak protection of property rights and in non-common law countries. While domestic government lending is more likely during a banking crisis, foreign government lending displays no such bias. Both domestic and foreign government lending favor regulated industries, though this result is, at least partially, subsumed by a size effect. Government lending also favors state-owned borrowers. Both domestic and foreign government lenders favor large firms but domestic government lending is further biased towards firms with higher levels of idiosyncratic risk. Results are both statistically and economically significant. Holding other predictors at the mean, a decrease in protection of property rights from an index level of 8 (approximately the mean value for Germany) to 6 (approximately the

⁴ For the purpose of this investigation, I define as “state-owned” every firm and institution in which the government owns, directly or indirectly, an equity stake exceeding 50%. The data collection involved in tracking government ownership is described in Section 2.1. For brevity, I refer to government branches and institutions and state-owned firms as “government” and to lending by government branches and institutions and state-owned firms as “government lending”. I use the term “government loans” to indicate loans in which government lenders are either sole-lenders, arrangers or syndicate members.

⁵ Legal origin has often been used as a proxy for the strength of property rights in prior literature, since LLSV (1998) documented that common-law (French civil-law) countries generally have the strongest (weakest) legal protections of investors.

mean value for Romania) roughly triples the probability of government lending, increasing the proportion of loans with government lenders from 1 percent of all loans to 3 percent. Non-common law legal origin increases the proportion of loans with government lenders by 10 percentage points. A banking crisis increases the proportion of loans with government lenders by approximately 5 percentage points.

In the dataset, lenders can assume three basic roles: passive syndicate members, loan arrangers, and single lenders (when the entire loan is provided by one lender). While syndicate membership involves the provision of credit, syndicate arranging involves the additional functions of negotiating with the borrower, reviewing its disclosures, funding the loan, and monitoring the loan agreement. Accordingly, arranging a loan is a higher-involvement task than simple syndicate membership and arrangers not only provide credit, but also facilitate access to funding markets. Sole lending implies the same level of involvement with the borrower as arranging, but the entire loan is retained by the single lender. Accordingly, within the market-failure view, government lenders should arrange loans or single-lend more frequently in the presence of weak protection of property rights and during banking crises. Within a multinomial-logit framework, I investigate the determinants of government roles in lending and find that, conditional on government involvement, arranging and sole lending by governments intensify in the presence of weak protection of property rights and in non-common law countries. This is consistent with a facilitating role of government lenders, in so far as the arranging activity of state-owned banks provides access to credit supplied by both state-owned and private sector lenders. Also, consistent with the market-failure view, arranging activity intensifies during banking crises.

I further investigate which factors determine the stake of the loan retained (not syndicated) by government lenders. Within the market-failure framework, governments should retain larger portions of loans in weak legal systems and during banking crises. Results based on a two-stage selection model (in which the first stage models government participation, while the second models the share of the loan retained) are partially supportive of the market-failure view. While state-owned lenders retain larger shares of loans in the presence of weak property rights, state-owned lenders, in particular when lending to domestic borrowers, retain larger shares of loans in common law countries. Banking crises do not impact the stake retained by government lenders.

To examine the characteristics of government loans, I control for the selection bias in government lending by propensity-score matching. Comparing loan characteristics between government loans and the propensity-

score matched sample, I document that government loans involve larger syndicates: the mean number of lenders for government loans is 16 versus 9 for the matched sample, which is consistent with the facilitating role of loan arranging. Government loans also have slightly longer maturities (54 versus 50 months) and are less frequently collateralized (only 17 percent of government loans are collateralized, versus 23 percent of matched private-sector loans). Most importantly, after controlling for country and borrower characteristics, government loans carry a 21 bps discount. These differences are, once more, conflicting with the commercial view of government lending, as government loans involve terms more favorable to borrowers than do private loans. I further investigate how government lending differs between countries with weak and strong protection of property rights and find results consistent with the market-failure view. When the index of protection of property rights is above median, government loans involve larger syndicates and longer maturities, but other loan characteristics are not statistically different from those of private-sector loans. Conversely, in the presence of weak protection of property rights, government loans involve larger syndicates, longer maturities, less frequent collateralization, higher usage of covenants, and significant lower spreads, with a mean discount of 37 bps. This evidence indicates that governments subsidize loans to a larger extent the weaker the protection of property rights. Comparing characteristics of domestic and foreign government loans, I surprisingly find stronger evidence of loan subsidization by foreign governments: foreign government loans involve both more favorable contract terms and larger discounts than domestic government loans. I do not find a similar distinction when sub-setting the dataset by legal origin or by banking crises. I further subset results by share of the loan retained by governments, finding that terms of loans are favorable to borrowers regardless of the size of the stake retained by the government; the implication is that government lending participation induces other syndicate members to lend at more favorable terms. Finally, I compare government and private-sector loans to the same borrower during the same year and do not find government loans to be substantially different: government loans have longer maturities and involve larger lending syndicates, but are otherwise similar to private loans. This suggests that government lending does not subsidize firms that already have access to financing through private-sector channels.

This study is the first multi-country loan-level analysis to focus on the reasons behind government lending. It contributes to the literature on government's role in the economy first by showing that, contrary to the commercial view, lending patterns of state-owned institutions are different from those of private-sector banks.

Second, evidence is consistent with the market-failure view, as government lending substitutes for private-sector lending in the presence of weak property rights and during banking crises. Also, analysis of government lending indicates that state-owned banks not only provide credit, but facilitate access to private-sector credit markets by assuming the role of loan arrangers and thus attracting large syndicates. Third, in a broader sense, results indicate that state-ownership persistence is due, at least partially, to weak legal systems presumably leading to reluctant private-sector involvement in economic activity.⁶ Overall, the main implication is that state-owned banks, by providing credit when otherwise scarce and by facilitating access to private-sector lenders, relax financial constraints that are shown to hamper economic growth.⁷

The finding that government lending is more frequent in the presence of weak protection of property rights is close, in spirit, to LLS (2002), who document, amongst other results, that state ownership of banks is more common in countries with weak legal systems. Yet, the analysis here presented differs in important ways. First, I base my analysis on lending activity, an outcome-based metric, rather than on bank ownership. Second, my findings are based on a more comprehensive analysis, in time (my sample covers the years 1980-2010, while LLS focus mainly on two years, 1970 and 1995), geography (I include 156 countries, while LLS focus on 92) and coverage (I include all banks, while LLS focus on the ten largest banks from each country). Also, I include, and contrast, both domestic and foreign lending activity, while the latter is explicitly excluded by LLS. Third, and most important, my findings cannot be explained by simple state ownership of banks as (1) I control for government size in the economy in my analysis, (2) results apply to both domestic and foreign lending and (3) I show that domestic government lending is stronger during banking crises, while LLS find a weak, negative association between banking crises and state ownership of banks. Finally, I investigate not only the frequency of government lending activity, but also lender role, shares retained, and loan characteristics. This leads to the finding that government lending is not only more frequent in the presence of weak protection of property rights,

⁶ While previous studies document that state ownership of banks is negatively related to the development of a private financial system, the implication of my evidence is that this relationship is driven by the weakness of the legal environment, which drives both lack of private activity (LLSV, 1997 and 1998) and the resulting government intervention.

⁷ Previous research indicates that credit constraints hamper economic growth, in particular under the conditions considered in this paper: weak legal systems and banking crises. For example, Beck and Demirguc-Kunt (2006) find that lack of credit impedes growth of small and medium enterprises in countries with weak protection of property rights. Dell’Ariccia, Detragiache, and Rajan (2008) find that economic sectors that heavily depend on external financing lose approximately 1 percentage point of growth in each crisis year compared to less financially dependent sectors. Chava and Purnanandam (2011) find that profitability of firms dependent on bank financing suffers during a banking crisis.

but the level of government involvement escalates, with government lenders more frequently arranging loans, thus attracting a larger number of private-sector lenders, resulting in loans with longer maturities and lower spreads. The important and novel implication is that government activity substitutes for private-sector lending when the latter is scarce.

A second branch of the literature investigating state ownership of banks focuses on the agency costs associated with political lending.⁸ I contribute by showing that lending patterns are also consistent with the market-failure view of governments, in that government lending is directly related to financial market lack of development and failure. The political and market-failure views of state ownership are each inconsistent with the commercial view, but not mutually exclusive.

My research also adds to the literature on syndicated loans. In this respect, the closest works are Esty and Megginson (2003) and Bae and Goyal (2009), who investigate how the strength of creditor rights impacts the structure of bank loans and find that lenders react to weak creditor protection by adopting contracting structures aimed at mitigating risk.⁹ In this framework, my main contribution is to show that legal structure impacts syndicate composition and that government presence can ameliorate some of the problems related to legal-system weakness. Further, while state ownership is not the main focus of their analysis, Qian and Strahan (2007) anticipate some findings, as they document that state-owned banks own larger shares of syndicated loans in countries of Scandinavian or socialist legal origin and in countries with weak creditor rights. They also investigate whether the share of the loan owned by government banks has an impact on loan characteristics, but find no relationship – contrary to the results of my study – presumably due to the lack of controls for selection biases in government lending in their analysis.

This paper is organized as follows. Section 1 develops testable hypotheses. Section 2 describes the data sources and the dataset. Section 3 focuses on the empirical analysis. Section 4 concludes.

⁸ Existing literature provides strong evidence of political lending. DeBonis (1998) looks at Italian state-owned banks and find that their lending is biased towards state-owned enterprises and local authorities. He further documents that state-owned banks are less profitable in their lending activities and suffer from a higher proportion of non-performing loans. Sapienza (2004) focuses on a sample of Italian banks and finds evidence of lending according to party affiliation. Dinç (2005) finds that state-owned banks increase lending during election years. Khwaja and Mian (2005) show that, in Pakistan, firms with politicians amongst directors receive larger loans from governments.

⁹ The findings indicate that, in the presence of weak protection of property rights, loans are generally smaller, display shorter maturities, more diffused debt ownership and higher loan interest rates as compensation for the increased level of risk.

1. Hypotheses Development

According to the “market-failure view” (Gerschenkron, 1962; Atkinson and Stiglitz, 1980) of state ownership, governments intervene in economic activity when the private sector is reluctant to participate. My empirical focus is on government lending activity and the first “market failure” I use as a testing ground is legal system weakness, which prevents the development of financial markets (LLSV 1997, 1998). The second set of market failures I investigate are banking crises, which lead to a reduction in the availability of credit (Laeven and Valencia, 2010; Sudheer and Purnanandam, 2011). A further implication of the market-failure view is that government lending should provide credit to firms which have limited or costly access to private-sector capital funding. As metrics for firm access to capital markets I consider firm size (larger firms typically have easier access to funding), public listing (listed firms have access to public equity markets and a higher level of transparency, which favors borrowing), and the number of loans from the private sector over the previous years – a direct measure of ease of access to private capital markets. Accordingly, my first testable hypothesis is that government lending will be more frequent (account for a larger proportion of loans) when property rights are weak (low property rights scores and non-common law legal origin), during banking crises, and to firms with less access to private-sector funding (smaller, unlisted firms with fewer private-sector loans).

A higher level of government involvement, aside from leading to more frequent lending, could also result into a more active role. In my analysis, lenders can assume three basic roles: passive syndicate members, loan arrangers, or sole lenders. Syndicate membership involves only the provision of credit, whereas syndicate arranging involves the additional functions of negotiating with the borrower, reviewing its disclosures, and monitoring the loan agreement. Accordingly, arranging a loan is a higher-involvement task than simple syndicate membership and leads not only to the provision of credit, but also to facilitating access to credit markets. Sole lending involves the same level of involvement with the borrower as arranging, but the entire loan is retained by the single lender. Accordingly, within the market-failure view, I expect that government lending will involve more arranging and sole lending in the presence of weak protection of property rights, during banking crises, and for borrowers with less access to private capital markets.

Another measure of government's involvement in lending is the share of the loan that is retained by the government lender (rather than syndicated to other lenders). Accordingly, within the market-failure view, I expect that government lenders will retain larger shares of loans in the presence of weak protection of property rights, during banking crises, and for borrowers with less access to private-sector capital markets.

A market failure, either a weak legal system or a banking crisis, leads to reluctant lending by the private sector, and thus to loan terms less favorable to borrowers (Beck and Demirguc-Kunt, 2006). As the market-failure view predicts governments will provide credit when the private sector is reluctant to do so, the terms of government loans should be more favorable to lenders (compared to the terms on private-sectors loans) in the presence of weak property rights or during a banking crisis. In particular, government loans, compared to private-sector loans, should be larger, have fewer covenants, be less frequently collateralized or senior, have longer maturities and lower spreads in the presence of weak property rights or during a banking crisis.

The predictions of the market-failure view apply mostly to domestic government activity. Accordingly, my analysis distinguishes between domestic and foreign government lending, expecting results consistent with the market-failure for domestic, but not foreign, lenders.

Conversely, the commercial view implies no difference between lending patterns by government and private institutions.

2. Data Sources, Descriptive Statistics and Univariate Analysis

2.1. Data Sources

The source of data analyzed in this study is the Thomson Reuters Loan Pricing Corporation Deal Scan database ("DealScan"). DealScan includes loans, high-yield bonds, and private placement transactions from around the world. The version of the database used here contains loans initiated between January 1980 and May 2010. The database includes information on loan pricing, contract details, terms and conditions, plus limited information on loan participants (borrower and lender identities and limited financials). The loans are organized by "package" and by "facility". Each package represents a loosely-defined "deal" and may contain one or multiple facilities – on an average, there are approximately 1.5 loans in each package. All loans within the same package share the same borrower, but the identity of the lender, or composition of the lending syndicate, type of

loan, loan initiation date and other contract characteristics can all vary between loans from the same package.¹⁰

I limit my analysis to loans identified as ‘364-Day Facility’, ‘Bridge Loan’, ‘Term Loan’ of all types, ‘Revolver line’ of all maturities and ‘Other Loan’, thus excluding not only bonds and private placements, but also credit letters and guarantees. I further exclude loans whose status is ‘Cancelled’ or ‘Rumor’. Further, I exclude from my sample all loans for which data on the composition of the lending syndicate is missing and loans with conflicting information (for example, loans marked as single-lender loans for which multiple lenders are listed).

I first identify state ownership of both lenders and borrowers by using data from DealScan. The database identifies firms as being either majority (more than 50 percent) or minority (between 5 and 50 percent) state-owned. I focus on majority ownership, so use “government lender” to indicate any lender in which the government owns, directly or indirectly, more than 50 percent of equity and “government loans” to indicate any loans involving at least one “government lender” and “private loans” to identify loans with no government lenders. I extensively verify majority state ownership by validating the information in DealScan through external searches. I employ the datasets of state ownership utilized in Bortolotti, Fotak and Megginson (2011) and Borisova, Fotak, Holland and Megginson (2012) and integrate the data with company filings and news searches. I find that DealScan correctly identifies government majority ownership, as I find no instances of firms being identified as state-owned when that is not the case. On the other hand, I identify instances of state-owned firms not being identified as such in DealScan and I correct such misclassifications.¹¹ The final sample includes various types of government lenders: state-owned banks and other state-owned financial institutions, governmental institutions (such as ministries of economy, finance or commerce), supranational entities (such as the European Investment Bank and the Inter-American Development Bank), and, in rare cases, state-owned operating companies (such as *Électricité de France S.A.*).

Accounting data for borrowing firms is obtained from the Thomson Financial Worldscope Global (“Worldscope”) database. As DealScan identifies firms only by name and ticker symbol, matching between

¹⁰ Carey and Hrycray (1999) and Chava and Roberts (2008) describe the database extensively. Some recent empirical studies using data from this database include Guner (2006), Qian and Strahan (2007), Sufi (2009), Bae and Goyal (2009) and Haselmann and Wachtel (2010).

¹¹ With the large number of firms in the database some small classification error is still possible. In regards to the analysis here presented, this hypothetical classification error would lead to conservative results. If firms that truly are state-owned are not classified as such, differences between private and government loans would be more difficult to detect.

DealScan and Worldscope is based on company names; due to differences in spelling, much of the matching is manual. Out of a total of 91,105 borrowers in the sample, I successfully match 16,766 firms between DealScan and Worldscope.¹² To prevent possible endogeneity issues, I retrieve accounting data for the borrower as of December 31 of the year preceding loan initiation. This subset of loans with available accounting data is biased towards larger, publicly traded institutions, so I present results for both the larger sample and for the data subset including borrowers matched to Worldscope.

Banking crises are identified by making use of the dataset described in Laeven and Valencia (2010).¹³ The dataset lists banking crises across the world from 1970 to 2009. Amongst other information, it identifies the country/years during which a banking crisis took place, based on two conditions: “(1) Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and bank liquidations); and (2) Significant banking policy intervention measures in response to significant losses in the banking system” (Laeven and Valencia, 2010).

Data on the size of government and protection of creditor rights is from the Economic Freedom of the World survey by the Fraser Institute. This data is available at five-year interval between 1970 and 2000 and yearly thereafter. The most recent data available at the time of writing is from the 2010 edition of the survey, which includes data until 2008.¹⁴ In particular, I obtain two variables, described respectively as “Size of the Government: Expenditures, Taxes and Enterprises” (“*Government Size*”) and “Legal Structure and Security of Property Rights” (or “*Property Rights*”). *Government Size* ranges from one to ten, with higher scores indicating smaller government direct intervention in the economy, based on the metrics: (1) general government consumption spending as a percentage of total consumption, (2) transfers and subsidies as a percentage of GDP, (3) government enterprise and investments, and (4) top marginal tax rates. *Property Rights* is similarly coded on a one-to-ten scale, with higher scores indicating stronger protection of property rights, and is based on the criteria:

¹² By comparison, Bae and Goyal (2009) match 4,407 borrowers between the same two databases. Qian and Strahan (2007) engage in a similar exercise but do not reveal the exact number of matches – yet, their data description lists 4,322 loans for which they find borrower-level accounting data. Haselmann and Wachtel (2010) match approximately 7,000 firms between DealScan and Amadeus.

¹³ Luc Laeven has made the dataset available at <http://www.luclaeven.com/Data.htm>

¹⁴ For the years for which data is not available, I use data for the latest available year. So, for example, I use 1980 data for the years 1981 to 1984. Similarly, I use 2008 data for the years 2009 and 2010.

(1) judicial independence, (2) impartial courts, (3) protection of property rights, (4) military interference in the role of law and the political process, (5) integrity of the legal system, (6) legal enforcement of contracts, and (7) regulatory restrictions on the sale of real property.¹⁵

As an alternative proxy for the level of development of the legal system, I employ the “Investment Profile” score published in the International Country Risk Guide (ICRG).¹⁶ The index is coded on a twelve-point scale (1-12) with higher scores indicating a more business-favorable legal environment. The index is based on three sub-components, measuring the risk of contract non-viability or expropriation, restrictions on profits repatriation, and payment delays. The index itself is available, yearly, from 1984 to 2008.¹⁷ While this index is not included in the main analysis, due to its high level of correlation with the *Property Rights* score, it is employed in robustness tests and thus included in the descriptive analysis.

Data on yearly GDP growth by country is from the World Bank website and information on legal origin is from a dataset made available by Andrei Shleifer.¹⁸ All variables measured in monetary units (such as loan size and firm’s total assets) are in USD, adjusted for inflation to 2011 by using the Consumer Price Index by the US Bureau of Labor Statistics. A summary of variable definitions and related sources are included in Table 1.

***** Insert Table 1 about here *****

2.2. Sample Descriptive Statistics

Descriptive statistics for core variables are reported in Table 2. Panel A contains information on binary variables, while Panel B focuses on continuous variables. The descriptive statistics are based on the raw data; in the remainder of the analysis, continuous variables are winsorized at the first and ninety-ninth percentiles.

The dataset includes 148,511 unique loans to 91,105 distinct borrowers from 156 countries, with a total value of USD 37 trillion (in ‘2011 USD’). The sample includes 15,807 distinct lenders. In terms of geographical

¹⁵ The variables *Government Size* and *Property Rights* correspond to the indices labeled as ‘A1’ and ‘A2’. An older version of the Economic Freedom of the World dataset is discussed – and utilized for empirical analysis - by Easton and Walker (1997).

¹⁶ ICRG data has been used in numerous previous financial studies, including Bae and Goyal (2009).

¹⁷ I employ the index values for 1984 for the years 1980-1983 and the 2008 values for the years 2009 and 2010.

¹⁸ <http://www.economics.harvard.edu/faculty/shleifer/dataset>

distribution of borrowers, the overall dataset is biased towards common law countries (circa 71 percent of observations) and, in particular, towards loans to USA-headquartered borrowers (58 percent).¹⁹

The subset of the sample involving state-owned lenders includes 10,560 loans (7 percent of the total number of loans). Of those loans, 4,819 (3 percent) involve domestic government lenders, and 6,455 loans (4 percent) involve foreign government lenders. This suggests that governments lend more frequently abroad than domestically. This result is unexpected, but should be interpreted with caution, as it could be driven by database coverage bias. The sample includes 279 distinct state-owned lenders. In terms of geographical distribution of borrowers, the government-loan data subset includes loans to borrowers in 129 countries. Countries with the highest number of loans involving state-owned lenders include China (2,382 loans, 22.56% of total number of loans in this sub-sample), the USA (933 loans, 8.84%), South Korea (876, 8.30%), India (565, 5.35%) and Russia (463 loans, 4.38%).²⁰

The sample includes 18,628 loans (12.54% of the total number of loans) originated during a banking crisis. In 3,254 loans, the borrower has a state participation (exceeding 5 percent ownership). Most of the loans in the dataset are syndicated – only 13,893 loans, or 9 percent of the sample, involve single lenders. The total number of packages is 104,245, indicating that there are approximately 1.4 loans per package in the final sample.

***** Insert Table 2 about here *****

2.3. Univariate Analysis

As a first analysis of government lending patterns, I compute mean values of the variables of interest for four subsets of the sample: loans with no government lender involvement (“private loans”), loans in which at least one of the lenders is state-owned (“government loans”), loans in which at least one of the lenders is owned by the government of the country in which the borrower headquarters are located, and loans in which at least one of the lenders is owned by the government not of the country in which the borrower headquarters are located

¹⁹ As discussed in the robustness section, I find the empirical analysis robust to exclusion of loans to USA-headquartered borrowers.

²⁰ Results regarding geographical distribution of loans are untabulated for brevity, but available on request. As discussed in the robustness section, I find the empirical analysis robust to exclusion of loans to borrowers with headquarters in China. China, for the present definition, includes the territories of Taiwan and Hong Kong.

(respectively, “domestic government loans” and “foreign government loans”). To test for differences in means across these three sub-samples, I use two different methodologies, depending on the nature of the data. Two-sample t-tests are used for continuous variables, with standard errors clustered at the loan package level.²¹ For binary variables, I use Pearson Chi-square tests with standard errors clustered at the loan package level. Results are presented in Table 3.

***** Insert Table 3 about here *****

Compared to private loans, government loans have lower spreads (138 bps for government loans vs. 213 bps for private loans),²² a higher number of lenders (13 vs. 6), are more likely to be collateralized (13 vs. 8 percent), less likely to employ covenants (11 vs. 19 percent), less likely to involve a single lenders (6 vs. 10 percent), have longer maturities (66 vs. 51 months), are more likely to involve foreign lenders (83 vs. 57 percent) and are generally larger (USD 307 million vs. USD 247 million).²³ Comparing loans by domestic lenders to those booked by foreign lenders, I find that the former have lower spreads, fewer lenders, less frequent collateralization and use of covenants, are less likely to be collateralized and to involve a single lender, have longer maturity, involve fewer foreign lenders and are significantly smaller.

Somewhat surprisingly, government loans tend to involve borrowers from countries with a smaller size of government. More in line with expectations, government loans provide credit more frequently to borrowers from countries that have weaker protection of creditor rights and with a less-favorable investment profile. While 73 percent of loans with no government involvement are to borrowers from common law countries, only 44 percent of loans with government lenders are to borrowers from common law countries. Further, I find a negative correlation between government lending and banking crises, as 13 percent of loans with no government lenders are initiated during banking crises, but only 11 percent of government loans are; however, multivariate analysis, presented in the following sections, does not support this finding. Finally, mean GDP growth is higher during the

²¹ Problems related to standard error clustering in finance panel data sets are discussed in Petersen (2009). The estimation methods employed to cluster standard errors here and in the remainder of the paper are described in Skinner, Holt and Smith (1989).

²² The spreads here considered are ‘all in drawn’ spreads from DealScan, defined as “The amount the borrower pays (in basis points) over LIBOR for each dollar drawn down, including both the spread of the loan and any annual or facility fee paid” (data definition from an electronic file provided by Thomson Reuters with the database).

²³ Here and in the remainder of the paper, reported results are statistically significant at the 10% level or lower, unless otherwise specified.

initiation of loans with government involvement (5.2 vs. 2.8 percent). Compared to foreign government loans, domestic government loans are extended to borrowers from countries with smaller governments, stronger protection of creditor rights, stronger investment profile, and are less likely to be initiated in common law countries and during banking crises, but are associated with stronger GDP growth.

Finally, in terms of borrower characteristics, both domestic and foreign government loans are associated with larger (higher total assets) and more profitable borrowers (higher ROA), and borrowers with lower Tobin Q scores. While borrowers of loans with domestic government lenders have generally lower leverage than borrowers of loans from private lenders, the opposite (higher leverage) is true for borrowers of loans with foreign government lenders.²⁴

Overall, contrary to the commercial view, univariate analysis indicates that government lending patterns differ substantially from those of private institutions. Results further suggest that government lending is more frequent in the presence of weak legal systems, but less frequent during banking crises, thus providing conflicting evidence for the market-failure view.

3. Empirical Analysis of Government Lending Patterns

3.1. Determinants of Government Participation

I employ probit analysis to investigate within a multivariate framework which factors affect the government decision to lend. The response is a binary variable equal to one if state-owned lenders are involved. As predictors, I use variables which are exogenous to government lending participation, including both country and borrower characteristics. As the market-failure view of state ownership predicts that government lending is more likely in the presence of weak creditor rights protection, I add a variable measuring the strength of property rights. Given the findings of LLSV (1997, 1998) linking legal origin to the strength of creditor rights, I add a binary variable equal to one for borrowers headquartered in common law countries.²⁵ Since the market-failure

²⁴ The differences, while statistically significant, are marginal: mean debt-to-asset ratio is .65 for all-private loans, .62 for loans with domestic government lenders and .68 for loans with foreign government lenders.

²⁵ The common law origin dummy variable and the variable measuring the strength of property rights are correlated, as property rights tend to be weaker in non-common law countries. To investigate whether multicollinearity is affecting

view predicts that governments provide credit when access to financing is otherwise restricted, I add a binary variable equal to one during banking crises. In a similar spirit, I add two measures of access to private lending markets – the number of private loans obtained by the borrower over the previous five years and a binary variable equal to one if the borrower is listed on a public exchange. As an additional control and to measure the strength of previous relationships with the government, I add the number of government loans obtained by the borrower over the previous five years. Also, since the market-failure view predicts possible industry biases, I add controls for regulated industries (SIC codes 4000-5000, including telecoms, transportation and utilities) and depository institutions (SIC codes 6000-6500). As an additional control for the ease of access to financing, I add a binary variable equal to one if the borrower is publicly traded. Given that government lending might focus on state-owned enterprises, I include a binary variable equal to one if the borrower has a share of state ownership exceeding five percent. As additional controls for country characteristics, I include variables measuring country GDP growth and an index of the size of the government in the economy. Since governments might be prone to provide credit for specific types of projects, I add fixed effects for loan purpose.²⁶ As in the univariate analysis, I cluster standard errors at the loan package level.

Results are presented in the first column of Table 4. Consistent with the market failure view, the proportion of loans with government lenders decreases in protection of creditor right and, consistently, is higher for non-common law countries. The positive coefficient on the crisis variable indicates that government lending is more likely during a banking crisis – yet, the probability of government lending is positively related to GDP growth. Government lending is more likely for both depository institutions and regulated industries. Finally, government lending is more likely for state-owned borrowers.

In the third and fifth column of Table 4, I present results disaggregated by domestic and foreign government lenders. Most of the parameter estimates retain similar signs and levels of significance, but some differences are notable. Domestic governments, unlike foreign governments, are less likely to lend to depository institutions. Foreign governments, in addition, do not display higher levels of lending during banking crises.

parameter estimates, I re-estimate coefficients for the various models here presented by adding only one of those two variables at the time, finding parameter estimate to be robust.

²⁶ DealScan identifies 39 different “loan purposes”. For brevity, I do not report coefficient estimates on the loan purpose dummy variables.

To gain further insight into borrower characteristics related to government lending, I estimate alternative model specifications including accounting variables. I add firm size (total assets), firm leverage, ROA, a measure of liquidity (the quick ratio) and Tobin's Q to the model, presuming that each of those could be related to the ease of obtaining financing. As accounting data is mostly unavailable for non-publicly traded firms – and, as most government borrowers are non-publicly traded – I remove from this model the two binary variables identifying publicly traded institutions and government borrowers. Also, I develop a measure of idiosyncratic risk by regressing the loan spread on country, borrower and loan characteristics and compute the residual from this model. This residual can be interpreted as an unexplained risk component and is therefore included as an explanatory variable in the model. Results presented in the second, fourth and sixth column of Table 4 indicate that government lenders target larger firms, both foreign and domestic. While overall government lending and foreign government lending appear to be negatively related to the borrower's Tobin's Q, the result is not statistically significant for domestic government lending. Domestic government lending is more likely for firms with higher idiosyncratic risk. Finally, the addition of accounting variables affects the coefficient estimate for the banking crisis binary variable (positive, but not statistically significant) and largely subsumes industrial biases, as only the negative coefficient estimate for domestic government lending remains statistically significant. The explanatory power of the probit models fitted is quite strong, with the percentage of concordant predictions ranging between 81 percent and 94 percent.²⁷

Economic interpretation of probit coefficients is non-intuitive, as the impact on the probability of the modeled event is conditional on the level of all predictors. Nonetheless, I attempt to assess the economic significance of the observed effects. Based on the coefficient estimates in the first column of Table 4, holding all other predictors at the mean level, an increase in protection of property rights from an index level of 6 (approximately the mean value for Romania) to 8 (approximately the mean value for Germany) decreases the probability of government lending by approximately 2.16 percentage points, from 3.35 percent to 1.19 percent. Similarly, common law legal origin decreases the probability of government participation, at the mean, by 10

²⁷ In probit analysis, to compute the proportion of concordant predictions, estimated coefficients are fitted in-sample to compute the probability of lending by a state-owned entity. An observation is “concordant” if the predicted probability of government lending is greater than (is smaller or equal than) 50 percent and the loan involves at least one state-owned lender (does not involve any state-owned lenders).

percentage points. On the other hand, a banking crisis increases the probability of government participation by approximately 5 percentage points.

Overall, these results lead to rejecting the commercial view of government lending, as there are clear and systematic differences in the proportion of loans involving government lenders. Most of the findings are consistent with the market failure view, as the proportion of loans involving at least one government lender increases in weak property rights, non-common law countries, during banking crises and to borrowers with few previous government loans. On the other hand, the fact that government lenders seem to prefer larger borrowers is not supportive of the market failure view, as larger firms generally have easier access to funds.

***** Insert Table 4 about here *****

3.2. Determinants of Government Role

In the lending process as here described, the lender can assume three basic roles: “passive” syndicate member, arranger, or single lender. While syndicate membership involves a creditor role, syndicate arranging involves not only the provision of credit, but the additional functions of negotiating with the borrower, reviewing its disclosures and monitoring the loan agreement. Accordingly, arranging a loan is a higher-involvement task than simple syndicate membership and facilitates access to other lenders. Similarly, sole lending involves the same level of involvement with the borrower as arranging, but the entire loan is retained by the single lender, at least at loan inception.²⁸ Within the market-failure view, the level of government involvement should escalate in environments with weak protection of creditor rights and, consistently, in non-common law countries. A similar prediction (more active involvement by government lenders) applies to banking crises. Finally, the market-failure view implies more active government involvement for borrowers with restricted access to private credit (small, unlisted firms with few prior private-sector loans).

To empirically test which factors determine the choice of lending role, I employ a multinomial-logit framework. In this, I include the same set of predictors used in Table 4 to examine the impact those have on the

²⁸ The loan could be subsequently syndicated. Unfortunately, available data only allow identification of syndication at loan inception.

role of the government.²⁹ As a base case, I use the government being a passive (non-arranging) syndicate member. Hence, reported parameter estimates should be interpreted as indicating which factors determine the government being an arranger, rather than a syndicate member and which factors determine the government being a single lender, rather than a syndicate member. Models include controls for government size and GDP growth.

For the sample of all government investors, results indicate that both arranging and sole lending are more likely in the presence of weak protection of property rights, consistently with the market-failure view. Somewhat surprisingly, these results are driven by foreign, rather than domestic, investors. Also consistent with the market-failure view is the finding that arranging and sole lending are less likely in common law countries – which indicates a higher level of involvement in non-common law country loans. This finding applies to both domestic and foreign lenders (but the coefficient estimate is not statistically significant for foreign government arranging). Also consistent with the market-failure view, governments assume a more active lending role during a banking crisis. Both domestic and foreign governments are more likely to arrange loans during a crisis, indicating that government lenders might play a facilitating role, enabling firms not only to borrow from state institutions, but to access private-sector capital markets as well. Domestic government lenders are more likely to be single lenders during crises, but not foreign government lenders.

Borrower characteristics also influence the level of government involvement. More active involvement of government lenders is observed for loans to state-owned borrowers, but the results are statistically significant only for the sample including all government lenders and for the arranger role of foreign lenders. Government lenders are more likely to arrange loans for borrowers with previous access to government loans and less likely to arrange loans for borrowers with previous private loans. Foreign governments are less likely to arrange loans for listed borrowers.

Overall, results are indicative of a more active role in the presence of market failures (weak property rights and banking crises). The implications are important. First, arranging implies a facilitating role, as it allows borrowers to access other, presumably private, lenders. Second, the escalating role of government lenders (their higher propensity to arrange loans) in the presence of market failures is indicative of the fact that results are not

²⁹ I report results for the model “without accounting data”, as the sample “with accounting data” has too few observations for government single lenders to reliably estimate the multinomial logit parameters.

simply driven by state ownership of banks, which LLS (2002) have shows tends to be higher in weak property rights countries.

***** Insert Table 5 about here *****

3.3. Share of the Loan Retained by Government Lenders

Given that a large portion of the loans in the sample are syndicated, there are substantial differences in the share of the loan retained by lenders. I model the size of the stake retained by government lenders as a function of the same set of predictors used in the previously presented probit models (Table 4). To explore what factors drive the decision to retain a certain proportion of the loan, I use Heckman two-stage models (Heckman, 1979) to account for the selection bias – as government lending focuses on countries and firms with certain non-random characteristics. Accordingly, in the first stage, I model the probability of government lending as a probit – as done in Table 4. In the second stage, I employ the same set of predictors to investigate the factors determining the size of the loan retained by government lenders, after controlling for the selection bias (by adding the inverse Mill's ratio). The first stage includes 'loan purpose' dummy variables, which are excluded from the second stage.³⁰ As before, I distinguish between domestic and foreign governments. The models are estimated by maximum likelihood, with standard errors clustered at the package level and adjusted for the truncation of the dependent variable (bounded at 0 and 100).

Results are presented in Table 6. Coefficient estimates indicate that government lenders retain larger shares of loans in the presence of weak property rights. But coefficient estimates vary in magnitude across models and economic significance is limited: after controlling for accounting data, for every one point increase in the metric of property rights (coded on a one-to-ten scale), government share of the loan decreases by 2 percentage points. Somewhat surprisingly, the analysis indicates that domestic government investors retain larger shares of loans in common law countries, but, once more, the magnitude of coefficient estimates varies across models and economic significance is limited: when controlling for accounting data, the share of loan retained by government lenders is 2 percentage points higher in common law countries. While results are only marginally significant, the

³⁰ A Sargan test (Sargan, 1958) indicates that loan purpose is correlated with government participation, but not with the proportion of the loan retained by the government.

effect seems opposite for foreign government lenders. During a banking crisis, domestic governments appear to retain a larger share of the loan (a sizable 30 percentage points more) but the result is not robust to inclusion of accounting variables.

In terms of borrower characteristics, government lenders retain smaller stakes in loans to borrowers with previous private loans. Domestic governments retain significantly smaller stakes in loans to listed borrowers. Foreign governments retain smaller stakes in loans to larger firms and higher stakes in loans to borrowers with higher idiosyncratic risk. For both domestic and foreign government lenders, the size of the stake retained is inversely proportional to the borrower's Tobin's Q.

In this analysis of stakes, the strongest findings are those concerning property rights: consistent with the market-failure view, government lenders retain larger stakes of loans in the presence of weak property rights. On the other side, the results indicating that domestic government lenders retain smaller stakes of loans in common law countries are contrary to the predictions of the market failure view. Economic significance of the findings is limited.

***** Insert Table 6 about here *****

3.4. Impact on Loan Characteristics – Propensity Score Matching

To investigate how government loans differ from private-sector loans, I compare characteristics of loans with government lending to those from a propensity-score matched sample involving only private-sector loans.³¹ Matching loans on the basis of pre-investment borrower and country characteristics is necessary because the analysis presented in the previous section clearly indicates that government lending is not random, but rather is systematically biased in terms of industry (more to regulated industry, less to depository institutions), firm characteristics (borrowers tend to be larger firms, with lower Tobin's Q and higher levels of idiosyncratic risk) and country characteristics (government lending is less likely in common law countries and in general in countries with stronger protection of creditor rights; further, it tends to increase during banking crises). To control for these selection biases, I utilize the models "with accounting data" presented in Table 4 to estimate a predicted

³¹ Propensity-score matching has been widely used in both the economics and finance literature. A recent example is Lowry, Officer and Schwert (2010).

probability of government lending for each loan in my sample. I then match each government loan with the private loan with the closest predicted probability of government involvement. The rationale is to find the loan that is closest in terms of exogenous characteristics, thus effectively controlling for government selection bias. For each variable measuring loan characteristics, I compute means for the sample of government loans and compare those to means for the matched sample. Statistical significance of difference in means is tested by using paired t-tests with standard errors clustered at the package level. The findings are presented in Table 7. Panel A reports results for the overall sample. Government loans involve a higher number of lenders (the mean number of lenders for government loans is 16, while for private-sector loans it is 9), longer maturities (54 versus 50 months), while a lower proportion of loans is collateralized (17 percent versus 23 percent). Government loans also involve foreign lenders more frequently (in 92 percent of cases, versus 81 percent).³² Finally, government loans involve lower spreads (128 bps versus 149 bps, for an economically and statistically significant discount of 21 bps). Differences in loan size, covenant usage and frequency of collateralization are not statistically significant. Overall, government loans appear to subsidize borrowers, as contract terms are more favorable (longer maturities, lower levels of collateralization) and loans are cheaper (lower spreads). The exception to this is that covenants are used more frequently. The finding that government loans involve a higher number of lenders indicates that government loans favor borrowers by facilitating access to a larger lender base.

Panel B presents results for domestic government lenders. Loans by domestic governments involve more lenders, less frequent use of collateral and longer maturities, but government loans are smaller than matched private-sector ones (USD 439 million versus USD 580 million). Use of covenants is less frequent and loans are less likely to be senior. Finally, loans by domestic governments attract foreign lenders less often than the matched sample. Spreads are slightly higher on domestic government loans, by about 10 bps, than on matched private credits, but the result is not statistically significant.

Panel C presents results for foreign government lenders. Foreign government loans also involve more lenders, but loans are generally larger and covenants are used more frequently. Similarly to domestic government loans, loans by foreign governments are less likely to be senior or collateralized. Spreads, however, are significantly lower than those originating from the matched sample (120 bps versus 153 bps). Overall, this set of

³² But the result is due to foreign government lenders, as seen in Panels B and C.

results points to the somewhat surprising finding that foreign government loans are generally more favorable to borrowers than domestic government loans.

According to the market-failure view, governments should lend at more favorable terms, compared to private-sector lenders, when property rights are weak, reflecting a reluctance to lend by private-sector lenders. To investigate this hypothesis, Panels D and E report results for loans given to borrowers from countries with property rights indices below and above medians in the year of loan initiation, respectively. Compared to the matched private-sector loan sample, government loans initiated in countries with weak property rights have more lenders, longer maturities, more frequent use of covenants but less frequent collateralization, a higher participation of foreign lenders and lower spreads, with a mean discount of 37 bps. In contrast, government loans initiated in strong property right protection countries involve more lenders, longer maturities, and greater participation of foreign lenders, but the other results are not statistically significant and the spread discount is only 5 bps. Overall, this set of results is consistent with the hypothesis that governments subsidize loans more strongly in the presence of weak property rights.

In unreported analysis, I also split the sample between loans to borrowers in common and non-common law countries and find no important differences. Similarly, government loans initiated during banking crises do not differ substantially from loans given during non-crisis periods. I further subset the sample by share of the loan retained by government lenders and find no substantial differences between subsamples. Overall, this analysis suggests that presence of government lenders induces private sector lenders to accept more borrower-friendly terms, especially in the presence of weak property rights. This is consistent with the idea that government participation provides a “political umbrella”, as discussed by Esty and Megginson (2003).

***** Insert Table 7 about here *****

3.5. Impact on Loan Characteristics – Same Borrower and Year

The above analysis focuses on comparing loan characteristics for government loans to a sample of private-sector loans matched on the basis of propensity scores. While propensity score matching controls for observable country and firm characteristics, a selection bias possibly persists, as previous results show that domestic government lending focuses on firms with high levels of idiosyncratic risk. To fully control for

idiosyncratic firm risk factors, I compare government and private-sector loans extended to the same borrower, during the same year. While this analysis has the advantage of controlling for firm and country characteristics in the strongest sense, it suffers from a different bias – the sample is restricted to firms that have access to both private-sector and government lending. In so far as government lending focuses on firms with restricted access to capital, the selection bias in this analysis should lead to a cautious interpretation of results.

Results for the sample including both domestic and foreign government loans are presented in Table 8, Panel A. Compared to private-sector loans, government loans involve a larger number of lenders and longer maturities, more frequent usage of covenants and more frequent involvement of foreign lenders. Levels of seniority, frequency of collateralization and spreads do not appear statistically different.

I disaggregate results for domestic and foreign government lenders in Panel B and Panel C of Table 8. For domestic government lending, loans appear to have larger syndicates (11 versus 6 lenders) and longer maturities (70 versus 64 months). Loan size is slightly larger, but the difference is not statistically significant. Covenants usage is actually more common for government loans than for the matched sample, while levels of seniority and frequency of collateralization are not statistically different. Spreads are higher for domestic government loans, by about 16 bps, but the result is also not statistically significant. Lending by domestic governments is associated with less frequent presence of foreign lenders. Foreign government lending is also associated with larger syndicates and longer maturities, but these loans are larger, involve more frequent use of covenants and higher levels of seniority. Foreign government loan spreads are lower, by about 5 bps, which is consistent with the higher usage of covenants and seniority of the loans (but not with longer maturities).

Overall, results indicate that government loans extended to borrowers with access to private markets involve terms very similar to those of contemporaneous (same year) private loans to the same borrowers.

***** Insert Table 8 about here *****

3.6. Interpretation of Empirical Evidence – the “Social” and “Political” Views

A branch of the literature investigating state ownership of banks focuses on the distinction between a “social” and a “political” motivation for government intervention. According to the social view, state ownership arises as a response to the private sector’s reluctance to sponsor projects with high social benefits, but presumably

low economic profitability, thus contributing to economic development and improving social welfare (Stiglitz, 1993). In contrast, the political view maintains that governments acquire control of productive assets in order to provide benefits to supporters in exchange for bribes or political support in the form of votes or contributions, leading to inefficient capital allocation (Shleifer and Vishny, 1998).³³ It is not my intention, in the present paper, to test the social and political motivations underpinning state ownership, as I do not directly explore welfare effects of government lending. Nonetheless, I briefly discuss in this section whether the evidence presented is consistent with the social and political views. Clearly, both social and political views of government lending are not consistent with the commercial view; on the other side, the social and political frameworks are not mutually exclusive and, while the market failure view would appear more directly related to the social view, it is not predicated on the same welfare-enhancement predicted by the social view.

The predictions of the social view in regards to the relationship between state ownership of banks and strength of legal protection of property rights are clear: governments are expected to step in when legal system are weak to fill the gap in credit availability due to lack of private sector lending. On the other hand, the predictions of the political view in regards to the relationship between state ownership of banks and strength of legal protection of property rights are mixed. LLS (2002) argue that both the social and the political view of state ownership imply stronger government presence being associated with weak property rights. They reason that, under the political view, governments will own larger shares of the banking sector in the presence of weak property rights because “the attraction of such political control of banks is presumably greatest in countries with underdeveloped financial systems and poorly protected property rights, because the government does not need to compete with the private sector as a source of funds” (LLS 2002). In contrast, Andrianova, Demetriades and Shortland (2010) discuss evidence that politicians are able to extract more benefits, in the form of donations and profitable directorships, from private banks, especially in the presence of weak legal systems. Accordingly, the finding that government lending activity is stronger in the presence of weak protection of property rights is consistent with the social view of state ownership and with the political view under the LLS (2002) interpretative framework, but is contrary to the political view as interpreted by Andrianova, Demetriades and Shortland (2010).

³³ Empirical studies finding support for this view include DeBonis (1998), Sapienza (2004), Dinc (2005) and Khwaja and Mian (2005).

The social view similarly predicts that government should intensify lending during banking crises, but no such prediction is made by the political view. Accordingly, the finding that government lending intensifies around a banking crisis is consistent with the social, but not the political view. The findings are mixed in regards to borrower's characteristics. Results indicate that governments tend to lend to firms with weak access to private credit markets (few private loans), which is consistent with the social view. On the other hand, governments favor, in lending, state-owned enterprises, which is consistent with both the social view (if we assume that state-owned enterprises are indeed a means to finance socially beneficial projects, then lending to state-owned enterprises is socially beneficial as well) and the political view (as state-owned enterprises might be used as a conduit for political favors). Finally, the political view predicts strong loan subsidization by domestic governments, but findings actually indicate that spreads on domestic government loans are not significantly different from those on private-sector loans.

In the aggregate, results presented here do not allow rejecting the political view, but the social view appears to more successfully explain the overall findings – and the social view is closely related to the market failure view. Nonetheless, as LLS (2002) discuss, empirical tests aimed at distinguishing between the social and political view should be based on measuring outcomes – ultimately, the best test is the link between government involvement and subsequent measures of economic prosperity, which is beyond the scope of this paper.

3.7. Robustness Tests

This section discusses additional robustness tests. Results are unreported but available upon request.

3.7.1. *One Observation per Loan Package*

In DealScan, loans are grouped into “packages,” wherein larger deals often include multiple loans. The multiple loans within a package share a common borrower, but the composition of the lending syndicate and loan terms often differ. The loans within a single package might be contemporaneous (for example, a lending syndicate offering a short-term loan and a revolving credit line at the same time) or might occur at different points in time, as in the case of a renegotiated credit line. In the dataset here described, there are on average 1.4 loans per package. While loan and syndicate characteristics are not necessarily fixed within a package, some degree of

correlation might exist. Further, borrower and country characteristics are clearly clustered at the package level. Accordingly, the assumption of independence, crucial in many of the statistical methodologies applied in this analysis, does not hold across loans originating from the same package. To alleviate this problem, most of the analysis so far presented clusters standard errors at the package level. As a further robustness test, I replicate all of the results presented above with a reduced sample, including only one loan per package. In particular, for each package I select the earliest loan (based on the loan initiation date) or, if multiple loans share the same “earliest” initiation date, the largest loan (measured as total loan value, in USD) amongst the contemporaneous ones. In unreported results, I find that using this reduced sample does not affect any of the findings presented in Tables 4, 5, 7 and 8. Results presented in Table 6 do not employ clustering, due to a lesser dependence problem, as the decision to retain a certain share of the loan is taken at the loan level, not at the package level.

3.7.2. Clustering by Firm

In the sample used here, loans are not only clustered at the package level, but they are also clustered at the borrower level, as borrowers are at times recipients of multiple loans. Hence, I re-estimate all parameters from the various models presented in Tables 4, 5, 7 and 8 by clustering standard errors at the borrower, rather than package, level. The main findings are unaffected.

3.7.3. ICRG Investment Profile

As an alternative to the Fraser Institute’s measure of protection of property rights, I use the “Investment Profile” score from the International Country Risk Guide and re-estimate all the results presented in Tables 4 to 8. Aside from differences in parameter estimates magnitudes (largely due to differences in scaling of the two indices), all results and levels of statistical significance are unaffected.

3.7.4. Minority State Ownership of the Lender

State ownership of the lender is defined in this paper as majority ownership, meaning direct or indirect control of over fifty percent of equity of the institution by governments or state-owned entities. Yet DealScan identifies minority state ownership as well, where “minority” is defined as exceeding five percent of equity.

Making use of this data, I replicate this analysis by identifying government lenders in which state ownership, direct or indirect, exceeds five percent of equity. While signs and significance levels of the coefficient estimates presented in Tables 4 to 8 are unaffected, the magnitudes of the estimated coefficients are somewhat smaller. The weaker impact could be due either to weaker government interference or to more noise in the data – as discussed, the dataset used in the main analysis has been extensively validated and multiple errors have been corrected, while no such data validation was performed on the variable identifying minority state ownership.

3.7.5. Excluding the Initial Five Years

One of the metrics employed as a measure of access to external financing is the number of previous private loans obtained by a borrower over the past five years. This metric is biased (downwards) for the early years of the sample. To check for robustness against this bias, I replicate the analysis by excluding loans initiated during the first five years of the study period, 1980-1984. The findings presented in Tables 4 to 8 are unaffected.

3.7.6. Excluding Borrowers with Headquarters in USA or China

Due to both the size of the economy and reporting biases, DealScan is heavily biased towards loans originating from the United States. In order to check whether the main results are driven by this bias, I first add a binary variable identifying borrowers with headquarters in the USA to the predictors in Tables 4 to 8 and find core results to be unaffected. As a second robustness check, I exclude loans to borrowers headquartered in the United States from the analysis. While the statistical significance of some of my results is somewhat reduced, likely due to the smaller sample size, coefficient estimates presented in Tables 4 to 8 are largely unaffected. That is not surprising, given that government loans are rare in the United States and mostly associated with foreign government lenders.

Descriptive analysis also indicates that the subset of loans involving state-owned lenders includes a substantial portion (approximately one fifth by count) of loans to Chinese companies. Accordingly, I replicate tables 4 to 8 excluding loans to borrowers based in China. As in the above-described robustness check excluding USA-based borrowers, while the statistical significance of some results is somewhat reduced, likely due to the smaller sample size, coefficient estimates are largely unaffected.

4. Conclusions

The empirical analysis in this study is structured as a test of the market-failure view of state ownership (state ownership is a response to a lack of private-sector involvement: Gerschenkron, 1962; Atkinson and Stiglitz, 1980), in contrast with the commercial view (state-owned institutions share the same commercial goals of the private sector). The “market failures” used as testing grounds are weak legal systems, which have been found to hamper the development of private financial markets (LLSV, 1997 and 1998), and banking crises, which lead to a reduction in the availability of private credit (Laeven and Valencia, 2010; Sudheer and Purnanandam, 2011).

Probit model estimation reveals that government lending accounts for a higher proportion of all loans in countries with weak protection of ownership rights, in non-common law countries, and during banking crises. In terms of borrower characteristics, results are mixed, as governments tend to lend to institutions that do not have previous private-sector loans (an indication of restricted access to capital) but also to larger firms (which should have easier access to funding).

Multinomial logit modeling of the government role in lending indicates that both sole lending and loan arranging by government lenders are more likely in the presence of weak legal systems and during banking crises. This evidence indicates that, in the presence of market failures, government lenders not only provide credit, but facilitate borrower’s access to private credit markets as well. Analysis of the share of the loan retained by government lenders partially supports the market-failure view. While governments retain (rather than syndicate) larger shares of loans in the presence of weak protection of creditor rights, government lenders – in particular, domestic government lenders – retain larger shares of loans in common law countries. Banking crises do not significantly affect the share of the loan retained by government lenders. Government lenders further retain smaller loan shares to borrowers with previous private sector loans and domestic government lenders retain smaller stakes in loans to listed borrowers.

When analyzing loan characteristics, I control for selection biases by employing propensity-score matching. Results indicate that government loans involve larger syndicates and longer maturities, are less frequently collateralized, and carry a 21 bps discount. Terms of government loans are especially borrower-friendly in the presence of weak property rights. Surprisingly, foreign government lenders provide loans at a

larger discount than domestic government lenders. Further analysis indicates that government subsidization does not apply to loans to borrowers that have access to private lending markets, which supports the view that government lending is not “crowding out” private-sector activity.

Two sets of results open interesting avenues for future extensions. First, the unexpected finding that foreign government activity is consistent with the market-failure view leads to question why do governments provide support to foreign markets and firms. One possible explanation is that this result is due to the activities of supranational lenders (such as the Inter-American Development Bank) or to those of “import-export” banks. I plan to further investigate the issue in future extensions. Second, the finding that government presence and arranging activity induces private-sector syndicate members to accept more borrower-friendly loan terms is suggestive of a facilitating role of government lenders which warrants further investigation.

This study contributes to the literature on state ownership by offering insights into the main motivation for government intervention in lending markets. Results strongly indicate that government lenders allocate loans differently than private lenders, in contrast with the commercial view of state ownership. Results are mostly consistent with the market-failure view of state ownership. The implications of (government) lending activity in the presence of weak legal systems or during banking crisis should not be underestimated. By providing credit when otherwise scarce and by facilitating borrower access to private-sector lenders, state-owned lenders relax financial constraints that are shown to seriously hamper economic growth (Beck and Demirguc-Kunt, 2006; Dell’Ariccia, Detragiache, and Rajan, 2008).

The practical implications are clear. Regardless of the causes of legal system weakness (and it is plausible that the government itself is to blame), government lending activity serves an important substitution role for reluctant private-sector lending. Yet, that should not be interpreted as implying that state ownership is welfare-maximizing or otherwise desirable – previous research indicates that state ownership might lead to inefficiency and political distortions in fund allocations. Rather, results suggest that forcing privatizations in an environment lacking strong protection of property rights could exacerbate financial constraints for corporate borrowers.

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Table 1 – Variable Definitions

Table 1 includes a list, definitions and sources of the main variables used in the analysis.

Variable Name	Definition	Source
Government Presence		
<i>Lender All Gov</i>	Binary variable, equal to one if one or more lenders are majority-owned, directly or indirectly, by a sovereign entity.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Lender Domestic Gov</i>	Binary variable, equal to one if one or more lenders are majority-owned, directly or indirectly, by a sovereign entity from the borrower's headquarters country.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Lender Foreign Gov</i>	Binary variable, equal to one if one or more lenders are majority-owned, directly or indirectly, by a sovereign entity not from the borrower's headquarters country.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Arranger (ALL/Domestic/Foreign) Gov</i>	Binary variable, equal to one, if the lead arranger of the loan is state-owned.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Syn (ALL/Domestic/Foreign) Gov</i>	Binary variable, equal to one if one or more of the syndicate members (excluding the lead arranger) are state-owned.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Sole Lender (ALL/Domestic/Foreign) Gov</i>	Binary variable, equal to one if the loan is provided by one lender and if that lender is majority owned, directly or indirectly, by a sovereign entity.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
<i>Share (ALL/Domestic/Foreign) Gov</i>	Proportion of the loan retained by lenders that are majority owned, directly or indirectly, by a sovereign entity, coded 1-100.	DealScan
Loan Characteristics		
<i>Loan Size/Log Loan Size</i>	Total value of the loan, in 2011 USD (adjusted using CPI).	DealScan
<i>Maturity</i>	Loan duration at inception, in months.	DealScan
<i>Number of Lenders</i>	Number of lenders participating in a loan syndicate	DealScan
<i>Spread</i>	The amount the borrower pays (in basis points) over LIBOR for each dollar drawn down, including both the spread of the loan and any annual or facility fee paid.	DealScan
<i>Collateralized</i>	Binary variable, equal to one if the loan is collateralized.	DealScan
<i>Senior</i>	Binary variable, equal to one if the loan is senior.	DealScan
<i>Covenant</i>	Binary variable, equal to one if the loan contract includes financial covenants.	DealScan

Table 1 – Variable Definitions, Continued

Variable Name	Definition	Source
Country Characteristics		
<i>Size of the Government</i>	Index measuring the government role in the economy, coded on a 1-10 scale, where higher values indicate a weaker role.	Economic Freedom of the World, index for 'Size of Government: expenditures, Taxes, and Enterprises' (A1)
<i>Property Rights</i>	Index measuring the strength of the legal environment and the security of property rights, coded on a 1-10 scale, where higher values indicate stronger protection.	Economic Freedom of the World, index for 'Legal Structure and Security of Property Rights' (A2)
<i>Investment Profile</i>	An index measuring factors affecting the risk to investment, based on the subcomponents: 'Contract Viability/Expropriation', 'Profits Repatriation' and 'Payment Delays'.	International Country Risk Guide
<i>GDP Growth</i>	Percentage change in gross domestic product, yearly.	World Bank
<i>Common Law</i>	Binary variable, equal to one if the country of borrower headquarters is of common law origin.	La Porta et al. (2002)
<i>Crisis</i>	Binary variable, equal to one if the country of the borrower headquarters is undergoing a banking crisis in the year of loan initiation.	Laeven and Valencia (2010)
Borrower Characteristics		
<i>Gov Borrower</i>	Binary variable, equal to one if the borrower is owned, or partially owned (min 5%) by a sovereign entity.	DealScan, Monitor-FEEM SWF database, firm disclosures
<i>Previous Private Loan N</i>	The number of private-sector loans to the borrower over the previous five years.	DealScan
<i>Previous Gov Loan N</i>	The number of government loans to the borrower over the previous five years.	DealScan
<i>Financial Borrower</i>	Borrowers with primary SIC code 6000-6500.	DealScan
<i>Regulated Borrower</i>	Borrowers with primary SIC code 4000-5000.	DealScan
<i>Publicly Traded Borrower</i>	Binary variable, equal to one if the borrower is publicly traded.	Worldscope
<i>TA/Log TA</i>	Total Assets, in 2011 USD (adjusted using CPI).	Worldscope
<i>DTOA</i>	Debt to Assets.	Worldscope
<i>ROA</i>	Return on Assets.	Worldscope
<i>QR</i>	Quick Ratio: (Cash and Cash Equivalents+Marketable Securities+Accounts Receivable)/(Current Liabilities)	Worldscope
<i>TQ</i>	Tobin's Q: (Market Value of Equity+Book Value of Debt)/(Book Value of Equity+Book Value of Debt)	Worldscope

Table 2 – Sample Descriptive Statistics

Table 2 reports descriptive statistics for the main sample of loans. Variables are as defined in Table 1. Panel A includes binary variables. *Count* is the number of observations for which the binary variable is equal to one. *Proportion of Total* is the proportion of non-missing observations for which the binary variable is equal to one. *Total Non-Missing Obs* is the total number of loans with non-missing data for the variable of interest. Panel B includes all other variables, for which it reports mean, 1st, 25th, 50th, 75th, and 99th percentiles, standard deviation, and total number of observations.

Panel A – Binary Variables

Variable	Count	Proportion of Total	Total Non-Missing Obs
Government Presence			
<i>Lender All Gov</i>	10,560	7.11%	148,511
<i>Lender Domestic Gov</i>	4,819	3.24%	148,511
<i>Lender Foreign Gov</i>	6,455	4.35%	148,511
<i>Arranger Gov</i>	3,572	2.41%	148,511
<i>Arranger Domestic Gov</i>	2,248	1.51%	148,511
<i>Arranger Foreign Gov</i>	1,468	0.99%	148,511
<i>Syn Gov</i>	6,375	4.29%	148,511
<i>Syn Domestic Gov</i>	2,413	1.62%	148,511
<i>Syn Foreign Gov</i>	4,532	3.05%	148,511
<i>Single lender Gov</i>	613	0.41%	148,300
<i>Single lender Domestic Gov</i>	158	0.11%	148,300
<i>Single lender Foreign Gov</i>	455	0.31%	148,300
Loan			
<i>Single lender</i>	13,839	9.33%	148,300
<i>Collateralized</i>	13,029	8.77%	148,511
<i>Covenant</i>	27,185	18.31%	148,511
<i>Senior</i>	146,924	98.93%	148,510
Borrower			
<i>Foreign Lender</i>	87,165	58.69%	148,511
<i>Financial Borrower</i>	11,700	8.37%	139,799
<i>Regulate Borrower</i>	21,894	15.66%	139,799
<i>Gov Borrower</i>	3,254	2.19%	148,511
<i>Publicly Traded Borrower</i>	37,421	25.20%	148,511
Country			
<i>Crisis</i>	18,628	12.54%	148,511
<i>Common Law</i>	103,102	71.37%	144,467

Panel B – Continuous Variables

Variable	Mean	Std Dev	1st Pctl	25th Pctl	Median	75th Pctl	99th Pctl	N
<i>Share Gov Lender</i>	1.02%	0.08	0.00%	0.00%	0.00%	0.00%	30.00%	143,022
<i>Share Domestic Gov Lender</i>	0.50%	0.05	0.00%	0.00%	0.00%	0.00%	13.33%	146,298
<i>Share Foreign Gov Lender</i>	0.50%	0.06	0.00%	0.00%	0.00%	0.00%	8.33%	144,801
<i>Government Size (1-10)</i>	6.56	0.97	3.15	6.18	6.88	7.13	9.11	147,369
<i>Property Rights (1-10)</i>	7.83	1.07	3.90	7.51	7.90	8.66	9.23	147,369
<i>Investment Profile (1-12)</i>	10.25	2.02	5.75	9.00	11.50	11.75	12.00	147,591
<i>Maturity (months)</i>	53.38	82.70	5.00	24.00	54.00	66.00	205.00	137,081
<i>Loan Size (USD)</i>	282,230,387	848,304,310	54,224	17,315,193	74,723,240	237,068,928	3,273,263,161	148,200
<i>Previous Gov Loan N</i>	0.13	0.73	0.00	0.00	0.00	0.00	4.00	148,506
<i>Previous Private Loan N</i>	1.74	2.94	0.00	0.00	0.00	3.00	13.00	148,506
<i>GDP Growth</i>	2.95%	0.03	-6.29%	1.93%	2.87%	4.15%	11.30%	148,156
<i>TA</i>	9,709,326	42,126,635	19,358	403,472	1,405,455	5,085,716	135,273,981	37,421
<i>DtoA</i>	0.66	0.52	0.13	0.50	0.64	0.78	1.55	37,086
<i>QR</i>	1.86	22.72	0.09	0.59	0.89	1.31	22.35	32,414
<i>ROA</i>	4.19%	68.28%	-44.12%	1.42%	4.59%	7.91%	27.52%	35,078
<i>TQ</i>	1.65	24.51	0.30	0.88	1.16	1.58	6.15	35,551
<i>Spread (bps)</i>	210.86	152.72	15.00	90.00	200.00	300.00	750.00	100,056
<i>Number of Lenders</i>	6.96	7.55	1.00	2.00	4.00	9.00	36.00	148,511

Table 3 – Univariate Analysis

Table 3 reports means of the listed variables, defined as in Table 1. The overall sample (148,511 loans) is divided into subsets: the first column includes all loans not involving government lenders (137,951 loans), the second all loans involving government lenders (10,560 loans), the third all loans involving domestic government lender (4,819 loans) and the fourth fall loans involving foreign government lenders (6,455 loans). Reported p-values (in gray, italicized) for binary variables are based on Pearson’s Chi-Square tests for differences in frequencies between each of the government subsets and the set of loans with no government presence; standard errors are clustered at the loan package level. Reported p-values for non-binary variables are based on two-sample t-tests for differences in means; standard errors are clustered at the loan package level and levels of significance are two-sided.

	No Gov	All Gov		Domestic Gov		Foreign Gov	
Loan Characteristics							
<i>Spread</i>	213.55	138.28	<i><0.0001</i>	127.47	<i><0.0001</i>	142.81	<i><0.0001</i>
<i>Number of Lenders</i>	6.40	12.86	<i><0.0001</i>	11.17	<i><0.0001</i>	14.65	<i><0.0001</i>
<i>Collateralized</i>	8.47%	12.71%	<i><0.0001</i>	11.37%	<i><0.0001</i>	13.37%	<i><0.0001</i>
<i>Covenants</i>	18.86%	11.10%	<i><0.0001</i>	10.33%	<i><0.0001</i>	11.12%	<i><0.0001</i>
<i>Senior</i>	98.92%	99.03%	<i>0.3624</i>	98.59%	<i>0.1003</i>	99.41%	<i><0.0001</i>
<i>Sole Lender</i>	9.60%	5.81%	<i><0.0001</i>	3.28%	<i><0.0001</i>	7.06%	<i><0.0001</i>
<i>Maturity</i>	51.27	65.94	<i><0.0001</i>	73.61	<i><0.0001</i>	60.55	<i><0.0001</i>
<i>Foreign Lender</i>	56.86%	82.66%	<i><0.0001</i>	62.00%	<i>0.0006</i>	100.00%	<i>NA</i>
<i>Loan Size</i>	\$246,706,874	\$307,484,248	<i><0.0001</i>	\$208,700,967	<i><0.0001</i>	\$397,967,096	<i><0.0001</i>
Country Characteristics							
<i>Government Size</i>	6.56	6.62	<i>0.0002</i>	6.57	<i>0.68</i>	6.69	<i><0.0001</i>
<i>Property Rights</i>	7.92	6.68	<i><0.0001</i>	6.58	<i><0.0001</i>	6.75	<i><0.0001</i>
<i>Investment Profile</i>	10.30	9.73	<i><0.0001</i>	9.83	<i><0.0001</i>	9.65	<i><0.0001</i>
<i>Common Law</i>	73.14%	44.18%	<i><0.0001</i>	34.83%	<i><0.0001</i>	50.98%	<i><0.0001</i>
<i>Crisis</i>	12.68%	10.81%	<i><0.0001</i>	9.79%	<i><0.0001</i>	10.98%	<i>0.0031</i>
<i>GDP Growth</i>	2.75%	5.19%	<i><0.0001</i>	6.13%	<i><0.0001</i>	4.48%	<i><0.0001</i>
Borrower Characteristics							
<i>TA</i>	\$7,546,534	\$14,120,081	<i><0.0001</i>	\$9,415,248	<i>0.1968</i>	\$18,032,275	<i><0.0001</i>
<i>DtoA</i>	0.64	0.66	<i>0.0031</i>	0.62	<i>0.0083</i>	0.68	<i><0.0001</i>
<i>QR</i>	1.41	1.49	<i>0.4975</i>	1.64	<i>0.2005</i>	1.36	<i>0.6318</i>
<i>ROA</i>	3.61%	4.71%	<i><0.0001</i>	4.77%	<i>0.0029</i>	5.11%	<i><0.0001</i>
<i>TQ</i>	1.40	1.13	<i><0.0001</i>	1.07	<i><0.0001</i>	1.20	<i><0.0001</i>
<i>Publicly Traded Borrower</i>	25.53%	20.80%	<i><0.0001</i>	20.96%	<i><0.0001</i>	20.42%	<i><0.0001</i>
<i>Previous Gov Loans</i>	0.08	0.79	<i><0.0001</i>	0.80	<i><0.0001</i>	0.81	<i><0.0001</i>
<i>Previous Priv Loans</i>	1.79	1.06	<i><0.0001</i>	0.71	<i><0.0001</i>	1.28	<i><0.0001</i>
<i>Financial Borrower</i>	7.69%	17.18%	<i><0.0001</i>	6.95%	<i>0.0007</i>	24.36%	<i><0.0001</i>
<i>Regulated Borrower</i>	15.16%	22.13%	<i><0.0001</i>	24.22%	<i><0.0001</i>	20.66%	<i><0.0001</i>

Table 4 – Determinants of Government Lending Activity

Table 4 reports parameter estimates from probit models. Responses are binary variables, equal to one if a majority government controlled lender is involved. The first two columns refer to all government lenders, the third and fourth to domestic government lenders, the fifth and sixth to foreign government lenders. All variables are as defined in Table 1, except for *ID Risk*, a measure of idiosyncratic risk equal to the residual of a regression of loan spreads on firm, country and loan characteristics. Models include fixed effects for loan purpose (unreported). Standard errors are clustered at the package level. *p*-values from two-sided tests of significance are reported in grey italics. Parameter estimates significant at the 10% level are bolded.

	All Gov		Domestic Gov		Foreign Gov	
<i>Intercept</i>	-0.5483	-4.4937	-0.9396	-3.8099	-1.1128	-5.1099
	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>
<i>Property Rights</i>	-0.214	-0.1443	-0.1809	-0.1818	-0.1942	-0.0926
	<i><.0001</i>	<i>0.0003</i>	<i><.0001</i>	<i>0.0009</i>	<i><.0001</i>	<i>0.04</i>
<i>Common Law</i>	-0.2281	-0.3524	-0.4175	-0.9435	-0.0181	-0.0145
	<i><.0001</i>	<i>0.003</i>	<i><.0001</i>	<i><.0001</i>	<i>0.5764</i>	<i>0.91</i>
<i>Crisis</i>	0.139	0.1053	0.1812	0.1017	0.0425	0.088
	<i><.0001</i>	<i>0.2724</i>	<i><.0001</i>	<i>0.6135</i>	<i>0.1812</i>	<i>0.3911</i>
<i>Government Size</i>	0.048	0.1369	0.0325	0.1543	0.0683	0.1064
	<i><.0001</i>	<i>0.002</i>	<i>0.0352</i>	<i>0.0048</i>	<i><.0001</i>	<i>0.0481</i>
<i>GDP Growth</i>	0.0679	0.0764	0.0716	0.084	0.0451	0.062
	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i>0.0039</i>	<i><.0001</i>	<i>0.0041</i>
<i>Financial Borrower</i>	0.272	-0.0811	-0.234	-3.2205	0.4202	-0.0445
	<i><.0001</i>	<i>0.769</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i>0.8725</i>
<i>Regulated Borrower</i>	0.1149	-0.1191	0.1233	-0.0231	0.0879	-0.126
	<i><.0001</i>	<i>0.1266</i>	<i>0.0002</i>	<i>0.8705</i>	<i>0.0015</i>	<i>0.1157</i>
<i>Previous Gov Loan N</i>	0.2238	0.1587	0.1671	0.1368	0.1785	0.1664
	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i>0.0005</i>	<i><.0001</i>	<i><.0001</i>
<i>Previous Priv Loan N</i>	-0.0414	-0.0628	-0.0855	-0.146	-0.0251	-0.0456
	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>	<i><.0001</i>
<i>Gov Borrower</i>	0.3488		0.2735		0.401	
	<i><.0001</i>		<i><.0001</i>		<i><.0001</i>	
<i>Publicly Traded Borrower</i>	0.0081		-0.039		0.0233	
	<i>0.7008</i>		<i>0.2164</i>		<i>0.298</i>	
<i>Log TA</i>		0.2342		0.1632		0.2429
		<i><.0001</i>		<i><.0001</i>		<i><.0001</i>
<i>DtoA</i>		-0.0056		0.3504		-0.1568
		<i>0.9663</i>		<i>0.1599</i>		<i>0.2772</i>
<i>ROA</i>		0.0026		0.0060		0.0033
		<i>0.5272</i>		<i>0.4371</i>		<i>0.4736</i>
<i>QR</i>		0.0059		0.0082		0.0022
		<i>0.6111</i>		<i>0.5942</i>		<i>0.8571</i>
<i>TQ</i>		-0.1894		-0.1225		-0.1915
		<i>0.0002</i>		<i>0.2730</i>		<i>0.0003</i>
<i>ID Risk</i>		0.0002		0.0014		-0.0002
		<i>0.4562</i>		<i>0.0006</i>		<i>0.4981</i>
N Obs	135,492	18,911	135,492	18,911	135,492	18,911
Response = 1	8,293	751	3,230	220	5,610	582
Percent Concordant	84%	85%	89%	94%	81%	83%

Table 5. Government Role

Table 5 reports parameter estimates from multinomial logit models. The first two columns refer to all government lenders, the third and fourth to domestic government lenders, the fifth and sixth to foreign government lenders. In each model, the response is a categorical variable equal to '1' if the government lender is a single lender, '2' if the government lender is a loan arranger, '3' if the government lender is a syndicate member (but not arranger). Results reported are for comparisons between group 1 (sole lenders) and group 3 (syndicate members) and between group 2 (arrangers) and group 3 (syndicate members). All variables are as defined in Table 1, except for *ID Risk*, a measure of idiosyncratic risk equal to the residual of a regression of loan spreads on firm, country and loan characteristics. All models include loan purpose fixed effects (unreported). Standard errors are clustered at the loan package level. *p*-values from two-sided tests of significance are reported under the parameter estimates, in grey italics. Parameter estimates significant at the 10% level are bolded.

	All Government		Domestic Government		Foreign Government	
	Arranger	Sole Lender	Arranger	Sole Lender	Arranger	Sole Lender
<i>Intercept</i>	-0.4956 <i>0.1912</i>	0.0737 <i>0.9146</i>	-2.2844 <i>0.0027</i>	-2.0034 <i>0.2152</i>	-1.1505 <i>0.0243</i>	-0.5216 <i>0.5048</i>
<i>Property Rights</i>	-0.1354 <i><.0001</i>	-0.3944 <i><.0001</i>	0.0248 <i>0.7543</i>	-0.0822 <i>0.5776</i>	-0.1131 <i>0.0102</i>	-0.3132 <i><.0001</i>
<i>Common Law</i>	-0.3475 <i>0.0011</i>	-0.4227 <i>0.0092</i>	-0.5281 <i>0.0034</i>	-0.7671 <i>0.0441</i>	-0.184 <i>0.2008</i>	-0.3882 <i>0.095</i>
<i>Crisis</i>	0.7373 <i><.0001</i>	0.1152 <i>0.5212</i>	1.0641 <i><.0001</i>	0.7204 <i>0.0343</i>	0.6678 <i><.0001</i>	-0.1344 <i>0.5668</i>
<i>Government Size</i>	0.1055 <i>0.0026</i>	0.0758 <i>0.1957</i>	0.345 <i><.0001</i>	0.1984 <i>0.1304</i>	0.0869 <i>0.075</i>	0.0274 <i>0.6675</i>
<i>GDP Growth</i>	0.0323 <i>0.0135</i>	-0.0613 <i>0.0051</i>	0.0682 <i>0.0071</i>	-0.0646 <i>0.1216</i>	-0.00517 <i>0.7614</i>	-0.0509 <i>0.0678</i>
<i>Financial Borrower</i>	-0.7104 <i><.0001</i>	-0.8042 <i><.0001</i>	-0.571 <i>0.0017</i>	-1.1536 <i>0.0075</i>	-0.3915 <i>0.0014</i>	-0.5999 <i>0.0057</i>
<i>Regulated Borrower</i>	0.1185 <i>0.2226</i>	-0.1496 <i>0.3072</i>	0.1257 <i>0.3876</i>	0.1678 <i>0.508</i>	0.0509 <i>0.7233</i>	-0.3272 <i>0.0976</i>
<i>Gov Borrower</i>	0.3585 <i>0.0009</i>	0.3047 <i>0.0849</i>	0.2678 <i>0.1789</i>	0.0541 <i>0.9017</i>	0.3386 <i>0.0129</i>	0.1403 <i>0.5751</i>
<i>Previous Gov Loan N</i>	0.1333 <i><.0001</i>	0.0693 <i>0.0509</i>	0.105 <i>0.0051</i>	-0.0233 <i>0.6755</i>	0.1198 <i><.0001</i>	0.0528 <i>0.4314</i>
<i>Previous Priv Loan N</i>	-0.1241 <i><.0001</i>	-0.0251 <i>0.3417</i>	-0.072 <i>0.0946</i>	0.1363 <i>0.0051</i>	-0.1123 <i><.0001</i>	-0.0465 <i>0.2237</i>
<i>Publicly Traded Borrower</i>	-0.3008 <i>0.0008</i>	-0.2005 <i>0.1827</i>	0.0213 <i>0.8867</i>	-0.1395 <i>0.617</i>	-0.4977 <i><.0001</i>	-0.00184 <i>0.9921</i>
N Syndicate Member	5,226	5,226	1,554	1,554	4,133	4,133
N Arranger	2,566	2,566	1,534	1,534	1,118	1,118
N Sole Lender	501	501	142	142	359	359

Table 6. Share of the Loan Retained by Government Lenders

Table 6 reports parameter estimates from two-stage models for the proportion of the loan retained by government lenders. The first stage includes probit models for government participation, akin to those presented in Table 4. Reported parameter estimates are for the second stage of the models, in which responses are the proportions of loans (coded on a 0-100 scale) retained by government lenders. The first two columns refer to all government lenders, the third and fourth to domestic government lenders, the fifth and sixth to foreign government lenders. All variables are as defined in Table 1, except for *ID Risk*, a measure of idiosyncratic risk equal to the residual of a regression of loan spreads on firm, country and loan characteristics. All models include loan purpose fixed effects in the first stage and inverse Mill's ratios in the second stage (unreported). Standard errors are clustered at the loan package level. *p*-values from two-sided tests of significance are reported under the parameter estimates, in grey italics. Parameter estimates significant at the 10% level are bolded.

	All Gov		Domestic Gov		Foreign Gov	
<i>Intercept</i>	26.6708	50.6338	-49.2008	30.6167	5.7900	9.4391
	<i>0.6252</i>	<i><.0001</i>	<i>0.3959</i>	<i><.0001</i>	<i>0.7931</i>	<i>0.0127</i>
<i>Property Rights</i>	-31.3098	-1.9861	-12.1041	-1.5773	-13.3905	0.0612
	<i><.0001</i>	<i>0.0005</i>	<i>0.0405</i>	<i><.0001</i>	<i><.0001</i>	<i>0.8248</i>
<i>Common Law</i>	-2.8051	-2.4411	24.7537	2.2089	-0.1014	-1.2720
	<i>0.8326</i>	<i>0.1116</i>	<i>0.0052</i>	<i>0.0188</i>	<i>0.9890</i>	<i>0.0849</i>
<i>Crisis</i>	0.6401	-3.8779	31.8019	-2.2496	-0.4267	0.5448
	<i>0.9627</i>	<i>0.1318</i>	<i><.0001</i>	<i>0.5789</i>	<i>0.9640</i>	<i>0.5095</i>
<i>Government Size</i>	-13.9550	1.1385	-7.8538	-0.6119	-3.9853	0.7398
	<i>0.0012</i>	<i>0.0161</i>	<i>0.0415</i>	<i>0.0596</i>	<i>0.0452</i>	<i>0.0001</i>
<i>GDP Growth</i>	3.6513	0.1441	1.1874	-0.0989	-0.5129	0.0824
	<i>0.0273</i>	<i>0.4301</i>	<i>0.4733</i>	<i>0.2872</i>	<i>0.5364</i>	<i>0.2990</i>
<i>Financial Borrower</i>	-6.9027	NA	-19.1034	NA	0.3281	NA
	<i>0.5676</i>	NA	<i>0.3183</i>	NA	<i>0.9645</i>	NA
<i>Regulated Borrower</i>	0.8438	-0.8434	-7.0202	-0.9322	0.0110	1.0414
	<i>0.9524</i>	<i>0.5342</i>	<i>0.5825</i>	<i>0.2662</i>	<i>0.9989</i>	<i>0.0337</i>
<i>Previous Gov Loan N</i>	5.9204	0.0090	1.1433	0.5093	2.1055	-0.0801
	<i>0.0437</i>	<i>0.9801</i>	<i>0.6546</i>	<i>0.0085</i>	<i>0.1997</i>	<i>0.5717</i>
<i>Previous Priv Loan N</i>	-5.1373	-0.4813	-0.8629	-0.0509	-0.6879	-0.2095
	<i>0.0029</i>	<i>0.0410</i>	<i>0.7769</i>	<i>0.8864</i>	<i>0.4740</i>	<i>0.0050</i>
<i>Gov Borrower</i>	-1.4306		-6.3960		1.2579	
	<i>0.9279</i>		<i>0.7436</i>		<i>0.8748</i>	
<i>Publicly Traded Borrower</i>	-4.0855		-39.5053		-1.6012	
	<i>0.7508</i>		<i>0.0002</i>		<i>0.8163</i>	
<i>Log TA</i>		-2.3572		-0.3957		-0.6406
		<i><.0001</i>		<i>0.1578</i>		<i><.0001</i>
<i>DtoA</i>		6.5143		2.1980		0.3346
		<i>0.0309</i>		<i>0.3482</i>		<i>0.7690</i>
<i>ROA</i>		-0.0110		0.2173		0.0357
		<i>0.9499</i>		<i>0.0789</i>		<i>0.6431</i>
<i>QR</i>		-0.1058		-0.0579		0.0477
		<i>0.1458</i>		<i>0.4624</i>		<i>0.0651</i>
<i>TQ</i>		-2.3001		-1.0300		-0.6441
		<i>0.0008</i>		<i>0.0124</i>		<i>0.0088</i>
<i>ID Risk</i>		0.0344		-0.0001		0.0090
		<i><.0001</i>		<i>0.9747</i>		<i>0.0169</i>
N Obs	40,077	7,960	40,077	7,964	40,077	7,960
R-squared	9.90%	62.49%	6.84%	71.24%	3.53%	52.75%

Table 7. Loan Characteristics, Propensity Score Matching

Table 7 compares mean characteristics of loans with government lenders to propensity-score matched loans involving only private lenders. Tests for significance of mean differences are implemented as paired t-tests with standard errors clustered at the package level; reported *p*-values are two-sided. All variables are as defined in Table 1. Differences statistically significant at the 10% level or lower are bolded. Panel A includes all government loans. Panel B includes only loans by domestic governments, while Panel C includes only loans by foreign governments. Panel D includes only government loans given to borrowers from a country with *Property Rights* scores below the median (during the year of loan initiation). Panel E includes only government loans given to borrowers from a country with *Property Rights* scores above the median (during the year of loan initiation).

Panel A – All Government Loans

	Mean	Matched Sample Mean	Difference	<i>p</i> -value	N Obs
<i>Number of Lenders</i>	15.66	9.21	6.45	<.0001	1,216
<i>Maturity (months)</i>	53.97	49.93	4.04	0.0032	1,134
<i>Loan Size</i>	\$586,984,649	\$579,109,309	\$7,875,340	0.858	1,203
<i>Covenants</i>	26.07%	25.66%	0.41%	0.8459	1,216
<i>Senior</i>	99.01%	99.34%	-0.33%	0.3932	1,216
<i>Collateralized</i>	17.19%	22.70%	-5.51%	0.0023	1,216
<i>Spread (bps)</i>	128.03	148.94	-20.91	0.0291	482
<i>Foreign Lender</i>	92.19%	80.92%	11.27%	<.0001	1,216

Panel B – Domestic Government Loans

	Mean	Matched Sample Mean	Difference	<i>p</i> -value	N Obs
<i>Number of Lenders</i>	13.09	8.75	4.34	<.0001	472
<i>Maturity (months)</i>	59.40	51.46	7.94	0.0016	436
<i>Loan Size</i>	\$438,552,677	\$579,917,212	-\$141,364,535	0.0765	462
<i>Covenants</i>	7.20%	18.01%	-10.81%	0.0001	472
<i>Senior</i>	97.67%	98.52%	-0.85%	0.3696	472
<i>Collateralized</i>	11.44%	23.73%	-12.29%	<.0001	472
<i>Spread (bps)</i>	146.74	137.05	9.69	0.6425	137
<i>Foreign Lender</i>	79.87%	86.65%	-6.78%	0.0094	472

Panel C – Foreign Government Loans

	Mean	Matched Sample Mean	Difference	p-value	N Obs
<i>Number of Lenders</i>	17.43	9.29	8.14	<.0001	829
<i>Maturity (months)</i>	50.73	49.39	1.34	0.3716	781
<i>Loan Size</i>	\$685,315,385	\$566,675,771	\$118,639,614	0.0217	826
<i>Covenants</i>	35.34%	28.95%	6.39%	0.0193	829
<i>Senior</i>	99.88%	99.88%	0.00%	1	829
<i>Collateralized</i>	19.30%	23.04%	-3.74%	<.0001	829
<i>Spread (bps)</i>	119.53	152.69	-33.15	0.0008	374
<i>Foreign Lender</i>	100.00%	79.01%	20.99%	<.0001	829

Panel D – Weak Property Rights

	Mean	Matched Sample Mean	Difference	p-value	N Obs
<i>Number of Lenders</i>	14.82	9.04	5.78	<.0001	905
<i>Maturity (months)</i>	56.48	50.55	5.93	0.0003	839
<i>Loan Size</i>	\$492,903,065	\$564,109,828	-\$71,206,763	0.1491	896
<i>Covenants</i>	26.30%	22.32%	3.98%	0.0957	905
<i>Senior</i>	99.12%	98.90%	0.22%	0.6703	905
<i>Collateralized</i>	18.12%	21.88%	-3.76%	0.0684	905
<i>Spread (bps)</i>	122.99	159.91	-36.92	0.0013	310
<i>Foreign Lender</i>	89.83%	80.99%	8.84%	<.0001	905

Panel E – Strong Property Rights

	Mean	Matched Sample Mean	Difference	p-value	N Obs
<i>Number of Lenders</i>	18.22	10.26	7.95	<.0001	285
<i>Maturity (months)</i>	47.97	43.20	4.77	0.0433	257
<i>Loan Size</i>	\$866,057,395	\$800,473,453	\$65,583,943	0.5182	285
<i>Covenants</i>	23.86%	27.37%	-3.51%	0.3685	285
<i>Senior</i>	98.60%	99.65%	-1.05%	0.2552	285
<i>Collateralized</i>	13.68%	17.89%	-4.21%	0.2277	285
<i>Spread (bps)</i>	128.23	132.95	-4.72	0.7763	142
<i>Foreign Lender</i>	98.95%	84.56%	14.39%	<.0001	285

Table 8. Loan Characteristics, Same Borrower and Year

Table 7 compares mean characteristics of loans with government involvement to loans given during the same year to the same borrower by private entities. Tests for significance of mean differences are implemented as paired t-tests with standard errors clustered at the package level; reported *p*-values are two-sided. All variables are as defined in Table 1. Differences statistically significant at the 10% level or lower are bolded. Panel A includes all government loans. Panel B includes only domestic government loans, while Panel C includes only foreign government loans.

Panel A – All Government Loans

	Mean	Matched Sample Mean	Difference	<i>p</i> -value	N Obs
<i>Number of Lenders</i>	12.89	7.34	5.55	<.0001	1,505
<i>Maturity (months)</i>	63.30	57.81	5.49	<.0001	1,306
<i>Loan Size</i>	\$374,686,221	\$327,320,599	\$47,365,622	0.0042	1,495
<i>Covenants</i>	10.30%	8.24%	2.06%	0.001	1,505
<i>Senior</i>	98.80%	98.07%	0.73%	0.109	1,504
<i>Collateralized</i>	16.81%	17.14%	-0.33%	0.7162	1,505
<i>Spread (bps)</i>	138.33	138.66	-0.33	0.9241	537
<i>Foreign Lender</i>	88.11%	85.65%	2.46%	0.0149	1,505

Panel B – Domestic Government Loans

	Mean	Matched Sample Mean	Difference	<i>p</i> -value	N Obs
<i>Number of Lenders</i>	10.55	5.52	5.02	<.0001	497
<i>Maturity (months)</i>	70.44	64.43	6.01	0.0041	432
<i>Loan Size</i>	\$273,556,079	\$238,270,403	\$35,285,676	0.1373	494
<i>Covenants</i>	6.04%	4.23%	1.81%	0.0388	497
<i>Senior</i>	97.79%	97.38%	0.40%	0.6554	497
<i>Collateralized</i>	19.11%	21.13%	-2.01%	0.15	497
<i>Spread (bps)</i>	133.00	116.86	16.14	0.1501	123
<i>Foreign Lender</i>	63.98%	73.24%	-9.26%	0.0001	497

Panel C – Foreign Government Loans

	Mean	Matched Sample Mean	Difference	<i>p</i> -value	N Obs
<i>Number of Lenders</i>	14.21	8.18	6.03	<.0001	1,061
<i>Maturity (months)</i>	59.34	54.72	4.62	<.0001	918
<i>Loan Size</i>	\$433,141,253	\$376,363,710	\$56,777,544	0.0073	1,054
<i>Covenants</i>	11.78%	9.80%	1.98%	0.0126	1,061
<i>Senior</i>	99.34%	98.40%	0.94%	0.0591	1,060
<i>Collateralized</i>	16.02%	15.55%	0.47%	0.6843	1,061
<i>Spread (bps)</i>	139.53	144.70	-5.17	0.0799	433
<i>Foreign Lender</i>	100.00%	91.89%	8.11%	<.0001	1,061