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Abstract

The aim of my dissertation is to provide insights into the rationale and impact of government investments. The first chapter introduces the topic, from a corporate finance perspective. The second chapter (Why Do Governments Lend?) focuses on the factors leading to the participation of state-owned lenders in the corporate loan market, both as providers of capital and as arrangers. The third chapter (Sovereign Wealth Fund Investment, Passivity, and the Value of the Firm) examines the impact of sovereign wealth fund ownership on the performance of listed companies, with a focus on governance. The fourth chapter (Government Ownership and the Cost of Debt: Evidence from Government Investments in Publicly Traded Firms) explores the impact of government ownership on the cost of debt of publicly traded firms, in particular as it relates to the creation of implicit debt guarantees.

Chapter 1: Introduction

While existing literature posits and finds that state ownership is generally associated with operational inefficiency and wasteful political interference, government ownership of productive assets is remarkably persistent.[1] Over the past decade, despite the worldwide success of state privatizations, governments have acquired more assets through stock purchases (USD 969 billion) than they have sold through share-issue privatizations and direct sales (USD 765 billion), and this trend is accelerating.[2]

Gerschenkron (1962) explains this persistence by citing the need for governments to provide support to developing, or struggling, economies. This concept is central to the "market-failure" rationale for government intervention (Atkinson and Stiglitz, 1980; Faccio, 2004). As no sector has historically assumed as much centrality in economic systems as the banking sector, government ownership is particularly widespread in banking, as documented by La Porta, Lopez-de-Silanes, and Shleifer (2002). Hence, in Chapter 2, in order to investigate whether governments act to stimulate development and to support struggling economies through ownership of lending institutions, I analyze a sample of 148,511 corporate loans worth over USD 37 trillion from 156 countries, initiated between 1980 and 2010. 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

[1] Both theoretical discussions and empirical evidence regarding government inefficiencies abound. Examples of theoretical literature include Friedman (1962) and Shleifer (1998). Examples of empirical evidence span from the privatization literature (Megginson and Netter, 2001 offer an early survey) to the "mixed ownership" literature (Eckel and Vermalean, 1986; Boardman and Vining, 1989) to a branch of empirical literature focusing on government ownership of banks (La Porta, Lopez-de-Silanes, and Shleifer, 2002).

[2] Estimates of sales and purchases are based on data from Thomson Reuters SDC Platinum M&A Database.

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. Also, 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.

While persistent, government ownership of productive assets is taking a new shape. Rather than exclusively nurturing state-owned champions, governments are increasingly acquiring stakes – often minority stakes – in publicly traded companies. These investments are, often, in foreign firms. This rise in "state capitalism" is perfectly exemplified by the actions of Sovereign Wealth Funds (SWFs): government-owned investment funds which tend to invest in foreign, publicly listed firms. In Chapter 3, using a sample of 802 investments by 18 SWFs through November 2009, we examine whether SWFs impact value as investors in listed companies.[3] We find that SWFs tend to invest in large, levered, profitable growth firms, usually headquartered in a foreign country, and that have experienced significantly positive abnormal stock returns in the year before the investment is made. These investments usually take the form of direct purchases of newly-issued shares, and thus are financing events for target firms. We find that most of the funds investing internationally generally purchase sizeable but minority ownership stakes in target companies. While SWF investment announcements

[3] Chapter 3 is based on a working paper co-authored with Bernardo Bortolotti and William Megginson.

yield small but significantly positive stock returns, target firms experience much larger, significantly negative abnormal returns over the three years after investment. Despite buying large stakes through direct equity purchases, SWFs play little visible role in target firm corporate governance and rarely take seats on target firm boards. These results indicate that government investments in publicly traded equity are likely to create a value-destroying governance gap, particularly when the investments are in foreign firms.

Having looked at the impact of government ownership on the cost of equity, we focus on the impact on the cost of corporate debt in Chapter 4.[4] Government ownership might carry an implicit debt guarantee that reduces the chance of default and, hence, leads to a lower cost of debt. On the other hand, government ownership could lead to a higher cost of debt by providing an implicit debt guarantee that increases moral hazard for managers and by imposing social and political goals that reduce corporate profitability and thus increase default risk. Using a sample of 1,279 bonds issued by 215 firms subject to changes in government share ownership from 43 countries over 1990-2010, we find that government ownership is associated with lower spreads during the 2008-2010 financial crisis, during banking crises, for highly-levered firms, and for non-investment grade bonds. That is, in times of economic recession or firm distress, the dominant effect is the reduction in perceived default risk. Further, we find that the effect is specific to domestic government ownership, also consistent with the notion that the main channel of impact is the debt guarantee, and we document that the impact of

[4] Chapter 4 is based on a working paper co-authored with Ginka Borisova, Kate Holland and William Megginson.

government ownership differs by type of government entity. Outside of crises, government ownership generally leads to a higher cost of debt.

In the aggregate, my dissertation offers insights into government ownership of corporations and lending institutions. The first contribution is descriptive, as I document the extent of government direct ownership and offer insights into its frequency, across time, geographical regions, and industrial sectors. Second, I provide evidence of the impact of government ownership on the behavior of lending institutions and on the value of equity and cost of debt of public corporations. The results here presented indicate that the impact of government ownership – and, by extension, its optimal level – depends on the strength of the underlying economy and of the legal system of the country in consideration. Also, substantial differences emerge between domestic and foreign government investment activities, revealing the different objectives underlying domestic versus cross-border sovereign investments.

Chapter 2: 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.[5] 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.[6] 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

[5] 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).

[6] See Borisova, Fotak, Holland and Megginson (2011) 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.

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.

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.[7]

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.

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

[7] 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.

"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.[8] 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.[9] 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

[8] 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.

[9] 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.

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 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, more frequent 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, in so far that 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.[10] 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.[11]

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

[10] 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.

[11] 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.

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, 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.[12] I contribute by showing that

[12] 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.

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.[13] 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 of the 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.

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.

[13] 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.

Section 2 describes the data sources and the dataset. Section 3 focuses on the empirical analysis. Section 4 concludes.

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, the composition of the lending syndicate, type of loan, loan initiation date and other contract characteristics can all vary between loans from the same package.[14]

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

[14] 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).

the other hand, I identify instances of state-owned firms not being identified as such in DealScan and I correct such misclassifications.[15] 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 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.[16] 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

[15] 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.

[16] 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.

and Valencia (2010).[17] 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.[18] 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: (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,

[17] Luc Laeven has made the dataset available at http://www.luclaeven.com/Data.htm

[18] 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.

(6) legal enforcement of contracts, and (7) regulatory restrictions on the sale of real property.[19]

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).[20] 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.[21] While this index is not includes 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.[22] 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.

[19] 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).

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

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

[22] http://www.economics.harvard.edu/faculty/shleifer/dataset

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 remained 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 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).[23]

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 to 129 countries. Countries with the highest number of loans involving state-owned lenders include China (2,382 loans, 22.56% of total number of

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

loans in this sub-sample), USA (933 loans, 8.84%), South Korea (876, 8.30%), India (565, 5.35%) and Russia (463 loans, 4.38%).[24]

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. The dataset is biased towards syndicated loans – 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.

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 lender is state-owned ("government loans"), loans in which at least one of the lender is owned by the government of the country in which the borrower headquarters are located, and loans in which at least one of the lender is owned by the government NOT of the country in which the borrower headquarters are located (respectively, "domestic government loans" and "foreign government loans"). To test for differences in means between private loans and the government loan sub-samples, I use two different methodologies, depending on the nature of the data. Two-sample t-tests are used for continuous

[24] 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.

variables, with standard errors clustered at the loan package level.[25] For binary variables, I use Pearson Chi-square tests with standard errors clustered at the loan package level. Results are presented in Table 3.

Compared to private loans, government loans have lower spreads (138 bps for government loans vs. 213 bps for private loans),[26] 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).[27] 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

[25] 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).

[26] 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).

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

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 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.[28]

Overall, contrary to the commercial view, univariate analysis indicates that government lending patterns different substantially from those of private institutions. Results further suggest that government lending is more frequent in the presence of

[28] 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.

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 strength of creditor rights, I add a binary variable equal to one for borrowers headquartered in common law countries.[29] Since the market-failure 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

[29] 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 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.

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.[30] 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

[30] DealScan identifies 39 different "loan purposes". For brevity, I do not report coefficient estimates on the loan purpose dummy variables.

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.

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 firm – 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 computing 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.[31]

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

Overall, 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 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 side, 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.

[31] 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).

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. [32] 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 role of the government.[33] 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

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

[33] 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.

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

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.[34] As before, I distinguish between domestic and foreign governments. The models are estimated by

[34] 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.

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 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.

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.[35] 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 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.

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

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).[36] 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

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

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 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).

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.

3.6. Interpretation: 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).[37] 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

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

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). 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.

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.

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.

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.

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 somehow smaller. The weaker impact could be either due 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.

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.

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 hampering 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 counties. 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 chapter 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.

Chapter 3: Sovereign Wealth Fund Investment, Passivity, and the Value of the Firm[38]

Prompted by recent changes in the global distribution of production and wealth, a new class of investment funds owned and operated by sovereign governments is at the forefront of the rise of a novel form of "state capitalism". This chapter examines investments by sovereign wealth funds (SWFs) in equity of publicly listed firms and, in particular, the impact of those investments on long-term firm performance.

SWFs are a new and extremely important category of state-owned investor that has attracted significant attention from policy-makers, academics, and investors alike since they were assigned this vivid moniker by Andrew Rozanov (Rozanov, 2005). Several characteristics of SWF investing and organization make those funds especially interesting to financial economists. First of all, their sheer size: SWF assets under management are conservatively estimated at over USD 2 trillion in 2010, and are expected to grow to USD 7 trillion or more by 2015 (Jen and Andreopoulos, 2008; Kern, 2009). SWFs thus currently play a significant, though far from dominant, role in global finance and corporate governance, and this role will likely increase dramatically in the future. Furthermore, as state-owned entities, SWFs are organized and managed much differently than large private-sector investment funds and might possibly have different, social rather than purely economic, objectives. These goals, strictly linked to their nature as state-owned investment vehicles, could cause them to impact the behavior and performance of their investment targets. Finally, these fully government-owned investment funds make large, risky, cross-border investments in politically

[38] This chapter is based on collaborative work with Bernardo Bortolotti and William Megginson.

sensitive industries, such as banking, telecommunications, and energy, and in politically sensitive investment categories such as commercial real estate and listed-firm equity.

Existing empirical research on SWFs offers conflicting evidence about whether and how SWFs create value by investing in publicly traded companies. All of the studies that examine such SWF investments using event study techniques (Dewenter, Han, and Malatesta, 2010; Kotter and Lel, 2011; Knill, Lee, and Mauck, 2009; Karolyi and Liao, 2009) find significantly positive announcement period returns of between 0.88% and 2.25%, suggesting that the market welcomes SWF as investors. However, the studies that examine long-term abnormal returns (Dewenter, et al, 2010; Kotter and Lel, 2011; Knill, Lee and Mauck, 2012; Bernstein, Lerner, and Schoar, 2009) generally document significantly negative median returns over six-month or one-year holding periods after SWF investment announcements, and insignificantly negative median abnormal returns over longer holding periods.[39] Unlike our analysis, however, none of these studies examine the direct financing role of SWFs, none employ multiple long-run return estimations and testing methodologies to check for the robustness of their findings, and none provide and test a theoretical framework to interpret the negative long-run returns for target firms after SWF investments.

We employ an event-study methodology to examine the long-term stock return performance of SWF investment targets, then perform cross-sectional analysis on these abnormal returns to test five competing hypotheses explaining the impact of SWF investment on the performance of fund targets. We first hypothesize a possible positive impact due to monitoring: since SWFs are large, long-term institutional investors, they

[39] Only Fernandes (2009) claims to document dramatic improvements in target firm profitability and valuation after SWF investments.

might create value by providing corporate governance for target firms, as SWFs' listed-firm stock purchases typically are large enough to make the funds significant blockholders after investment. Several types of blockholders, especially hedge funds (Brav, Jiang, Partnoy and Thomas, 2008; Klein and Zur, 2009; Ferreira and Matos, 2008; Ferreira, Massa and Matos, 2008; Cronqvist and Fahlenbrach, 2009), have been empirically linked to significant improvements in target firm performance, but Chen, Harford, and Li (2007) show that not all blockholders directly impact corporate governance.

We also hypothesize a possible positive impact due to reduced financial constrains. A large literature (see Stein, 2003 and Campello, Graham and Harvey, 2010) documents that financial constraints can prevent companies from making positive-NPV investments, so if SWFs make direct equity infusions into target firms they might help targets overcome funding constraints and create real economic value. On the other hand, there is also a widespread fear that SWFs will not act as strictly commercially-minded investors, seeking only the highest possible financial return, but will instead be forced to invest strategically by home-country governments seeking political influence or access to foreign technology. Accordingly, a negative impact of SWFs on firm performance could result from the imposition of political goals, diverting resources from shareholder value maximization. A large body of empirical research, summarized in Megginson and Netter (2001) and Estrin, Hanousek, Kočenda, and Svejnar (2009), suggests that governments are usually bad operating *managers* and that firm performance improves with privatization,[40] while another stream of literature has

[40] A novel stream of literature focuses on privatizations, government ownership and cost of debt – see Borisova and Megginson (2011).

looked at 'mixed ownership' firms (Boardman and Vining, 1989; Shirley and Walsh, 2000), generally finding that mixed ownership also has a negative impact on firm value. However, there has been little investigation of whether states can be value-creating *investors*. We formulate a Political Interference Hypothesis, predicting a negative impact on the long-term performance of target firms due to the imposition of political goals not consistent with shareholder value maximization.

Alternatively, as foreign, state-owned investment funds, any posture that SWFs take other than being purely passive investors might generate political pressure or a regulatory backlash from recipient-country governments. Even when SWFs do take majority stakes--which Miracky, Dyer, Fisher, Goldner, Lagarde, and Piedrahita (2008) show occurs almost exclusively when SWFs invest in domestic companies--the funds rarely seem to challenge incumbent managers, as documented by Mehropouya, Huang and Barnett (2009). Woitdke (2002) documents similar behavior by public-sector pension funds in the United States. Even more, SWFs very rarely divest, thus not exercising the type of governance through threat of exit discussed by Parrino, Sias, and Starks (2003) and Admati and Pfleiderer (2009). Thus, a negative impact on firm value could result if SWFs take a completely passive corporate governance stance, thereby helping to entrench managers and increase agency costs, as predicted by our Constrained Foreign State Investor Hypothesis. Finally, we also hypothesize that any abnormal performance observed could simply be due to the stock-picking abilities (or lack of) of the investing SWF and test what we deem the Stock-Picking Hypothesis.

Using a sample of 802 investments in publicly traded companies made by 18 of the largest and most internationally active SWFs between May 1985 and November

2009, we first describe SWF investment patterns and then test what impact those investments have on the performance of target firms. We document that SWFs tend to invest in large, levered, profitable growth firms, usually headquartered in a foreign country, and that have experienced significantly positive abnormal stock returns in the year before the investment is made. These investments usually take the form of direct purchases of newly-issued shares, and thus are financing events for target firms. We find that most of the funds investing internationally generally purchase sizeable but minority ownership stakes in target companies, but at least one fund, Norway's Government Pension Fund-Global, makes much smaller investments via open-market share purchases. With the exception of investments by Norway's SWF, the stakes typically purchased are large enough to make SWFs influential blockholders in the investee companies, should they wish to participate in target firm governance, but we show that most SWFs do not demand or receive seats on a target firm's board after investment or actively participate in governance in any public way other than voting their shares. This mirrors the survey findings presented in Mehropouya, Huang and Barnett (2009), who also show that SWFs rarely initiate shareholder petitions and when funds do vote they almost always support management.

The stock prices of companies receiving SWF equity investments increase significantly though modestly (about 1.25%) upon this announcement, but abnormal returns on investee firm shares are significantly negative over six-month and one-, two-, and three-year holding periods after the investment. These long-term losses are far larger than the positive announcement period returns. Cross-sectional analysis of these abnormal returns finds that the performance of SWF investment targets is worse for

more passive funds, for foreign targets, and for targets headquartered in OECD countries, but is negatively related to the size of the stake acquired and to the size of the target firm. Of the five hypotheses we develop to explain SWF behavior and impact, the results of our cross-sectional analysis offer most support for the Constrained Foreign State Investor Hypothesis.

This manuscript is structured as follows. Section 1 develops the five hypotheses predicting how SWFs will invest and what impact their investments will have on target firms. Section 2 describes the database of listed company targets we create for this study, and describes the investment patterns exhibited by SWFs and analyzes the types of listed firms in which SWFs choose to invest. Section 3 examines the long-term evidence of SWFs' investment performance, using both event-study techniques and tests measuring accounting performance. In Section 4, we discuss further evidence of the passive role of SWFs. Finally, we summarize our conclusions in Section 5.

1. Development of Hypotheses

Our hypotheses relating to SWF impact on target firm value focus on two channels of influence. First, a SWF can have a financial impact on target firm funding if it purchases newly issued securities from the firm itself or if it provides access to future financing. Access to future financing can take the form of follow-up investments or of valuable connections to other state-owned financial institutions. Second, s SWF can impact target firm values after an investment is made by choosing whether to take an active or passive role in firm governance.

In the following sections, we develop five hypotheses describing SWF investment objectives and impact, and after each one we specify the testable empirical predictions based on abnormal stock price returns and on cross-sectional relationship between abnormal returns and characteristics of the investing fund, the target firm, and the transaction. The predicted abnormal returns and cross-sectional relationships for each of the five hypotheses are summarized in Table 9.

1.1. The Active Monitoring Hypothesis

As noted above and described in more detail in Section 2, SWFs invest large sums and often become significant blockholders in target companies. Shleifer and Vishny (1986) hypothesize that large shareholders (blockholders) have the proper incentives to monitor portfolio firm managers and the capability to intervene decisively to punish or replace poorly performing executives. Empirical research (Brav, Jiang, Partnoy and Thomas, 2008; Klein and Zur, 2009; Ferreira and Matos, 2008; Ferreira, Massa and Matos, 2008 and Cronqvist and Fahlenbrach, 2009) shows that at least one class of large institutional investors, hedge funds, are often successful at improving governance of the firms in which they invest. Similarly, by purchasing large stakes in target firms, SWFs should have the power and incentive to monitor target firm managers and discipline under-performers (Edmans, 2009; Cai, Garner, and Walkling, 2009).

The Active Monitoring Hypothesis predicts that: (1) SWF investments in listed companies will generate positive excess stock returns for target companies; (2) abnormal returns will be lower for funds with a passive stance (for example, funds

buying small, non-controlling stakes); (3) abnormal returns will be lower for SWF investments in target firms headquartered in OECD countries than in developing countries, because OECD-based companies are likely to benefit less from monitoring, as existing laws offer better protection from managerial opportunism; (4) abnormal returns will be positively related to the stake size the SWF acquires in a target firm, as a larger stake facilitates monitoring; (5) abnormal returns will be higher for domestic than for foreign investments, since a fund is more likely to be able to exert influence over a company headquartered in its home country than abroad; (6) abnormal returns will be lower for highly levered firms, as prior literature shows that high leverage imposes discipline on managers, thus reducing the marginal value of additional monitoring; similarly, (7) abnormal returns will be higher for firms with high liquidity, as easy access to funds is more likely to lead to agency costs and, hence, more need for monitoring; and (8) abnormal returns will be higher if the SWF acquires seats on the board of directors, as that allows for more effective monitoring.

1.2. The Reduced Financial Constraint Hypothesis

A large literature documents that many companies suffer from financial constraints that prevent them from accepting all available positive-NPV investments. As examples, Lamont, Polk and Saá-Requejo (2001) find that financially constrained firms are subject to common shocks and, in a sample of manufacturing firms, they document lower stock returns over 1968-1997 for financially constrained firms; Stein (2003) documents that the sensitivity of investment to cash flow is higher for a priori constrained firms; and Campello, Graham and Harvey (2010) document that the

inability to borrow externally causes many firms to not pursue attractive investment opportunities during the credit crisis of 2008. SWFs may create value by making direct equity capital infusions into such financially constrained firms, thus allowing these companies to fund more economically valuable investments. By their nature, such financing deals tend to be both arms-length and episodic, not necessarily involving any ongoing fund involvement in target firms.[41]

The Reduced Financial Constraint Hypothesis predicts that: (1) SWF investments in listed companies will generate positive excess stock returns for target companies; (2) abnormal returns will be lower for SWF investments in target firms headquartered in OECD countries than in developing countries, since capital markets are more developed in the OECD and thus there is less need for (and payoff to) direct equity financing; (3) abnormal returns will be positively related to the size of the capital injection, if any; (4) abnormal returns will be lower for larger firms, as those are more likely to have alternative financing available; (5) abnormal returns will be higher for firms that have higher leverage, as those firms often face more difficulty obtaining additional financing; (6) abnormal returns will be lower for more liquid firms, as those firms are less likely to be financially constrained.

1.3. The Political Interference Hypothesis

As noted in the introduction, SWFs are often accused of acting as stalking horses for the governments that own them, and of trying to impose non-value-maximizing objectives on target firms. These objectives could be purely political, as in

[41] SWF investments might also signal state backing for the companies in which they invest, and thus signal commitment to back the firm if it meets distress. This signal, in turn, might facilitate access to funding.

forcing the firm to trade with a home-country state owned enterprise or refraining from doing business with or in a country hostile to the fund's government. Alternatively, the objectives could be strategic, such as pushing investment targets to take actions that are suboptimal from a wealth maximization perspective but further the goals of the state – like favoring the development of specific sectors or reducing unemployment through targeted investment. Alternatively, SWFs could simply use their large stake to tunnel (Johnson, La Porta, Lopez-de-Silanes, and Shleifer, 2000; Atanasov, Black, Ciccotello, and Gyoshev, 2010; Jiang, Lee, and Yue, 2010) wealth out of the target company, harming the firm's other shareholders.

The Political Interference Hypothesis predicts that: (1) SWF investments in listed companies will generate negative excess stock returns for target companies; (2) abnormal returns will be lower for funds with a high level of governmental involvement, as government involvement is likely to lead to the imposition of political, rather than commercial, goals; (3) abnormal returns will be higher for Norway's SWF, as it is explicitly managed at arm's length from the government; (4) abnormal returns will be higher for SWF investments in target firms headquartered in OECD countries than in developing countries, since OECD-based companies have better legal protection against minority-shareholder expropriation; (5) abnormal returns will be lower for strategic targets, as those are more likely to have been acquired for political, rather than strictly commercial, purposes; (6) abnormal returns will be negatively related to the stake size the SWF acquires in a target firm, as a larger stake allows for greater influence; (7) abnormal returns will be lower for domestic than for foreign investments, since a fund will be more likely to successfully impose its own political goals on

domestic firms; (8) abnormal returns will be higher for investments in larger firms, as the additional visibility mitigates the fund's ability to impose political goals; (9) abnormal returns will be higher for firms with higher leverage, as the presence of debt imposes constraints on the political goals of the SWF; (10) abnormal returns will be lower for more liquid firms, as the available resources facilitate the imposition of political goals; and (11) abnormal returns should be lower when a fund in fact acquires a board seat, as that facilitates the imposition of non-commercial objectives.

1.4. The Constrained Foreign State Investor Hypothesis

We conjecture that foreign investors, especially high profile ones such as state-owned sovereign wealth funds, will refrain from taking an active corporate governance role in target companies in order not to generate political opposition or a regulatory backlash. In extant literature, there is scant empirical evidence that even privately-owned blockholders are particularly effective monitors, and no evidence suggesting publicly-owned blockholders create value. Even institutional investors such as CalPERS (English, Smythe, and McNeill, 2004) with an avowed goal of improving corporate governance in portfolio companies have achieved only marginal and often fleeting success. Further, Greenwood and Schoar (2009) show that the perceived ability of hedge funds to create investment value is mostly due to their ability to pick likely takeover targets, or to put target firms "in play". In addition, the monitoring role of foreign investors will be further reduced by their reluctance to divest, as the selling of a large block of shares could trigger political reactions and resentment amongst local management, regulators and market participants. Accordingly, we expect SWFs to act

like “Quiet Leviathans” and to be unlikely even to exercise the type of governance through threat of exit discussed by Parrino, Sias, and Starks (2003) and Admati and Pfleiderer (2009), or to withhold their votes as a sign of displeasure with current managers (Del Guercio, Seery, and Woitdke, 2008; Edmans, 2009), for fear of upsetting target firm governments and public opinion.

The testable predictions of the Constrained Foreign State Investor Hypothesis are as follows: (1) SWF investments in listed companies will generate negative abnormal stock returns for target companies; (2) abnormal returns should be lower for funds known to adopt a passive governance stance; (3) abnormal returns will be higher for Norway’s investment targets, as Norway is unlikely to be constrained by foreign opposition; (4) abnormal returns will be lower for SWF investments in target firms headquartered in OECD countries than in developing countries, since investing in OECD-based companies will generate greater hostility from host governments; (5) abnormal returns will be negatively related to the stake size the SWF acquires in a target firm, as a larger stake creates a larger monitoring gap; (6) abnormal returns will be higher for domestic than for foreign investments, since a fund will have greater freedom to intervene in domestic targets; (7) abnormal returns will be lower for larger firms, as those are more visible and investment in those is more likely to attract scrutiny and opposition; and (8) abnormal returns will be lower for targets in which the SWF has acquired seats on the board of directors, as that creates a larger monitoring gap.

1.5. The Stock-Picking Hypothesis

It is also possible that SWFs investment targets exhibit abnormal performance simply due to selective stock-picking, rather than to the influence of the SWFs on investment targets. Accordingly, we formulate a Stock-Picking Hypothesis. The key testable prediction of the Stock-Picking Hypothesis is that abnormal returns will be positively related to SWF age, as the stock-picking ability of the SWF improves as it develops expertise.

1.6. Caveats and Limitations

We should acknowledge several important caveats and limitations to our hypotheses development. First, while we presented each hypothesis as unique and exclusive, this need not be the case in practice. Different funds can have differing objectives, or the same fund can pursue differing goals at different times. Nonetheless, we feel confident that our research will allow us to observe which of the hypothesized effects predominates, on average.

Additionally, our lists of SWF behavioral models and of paths through which SWF investment might influence target firm value are necessarily incomplete. Also, since we examine only SWF investments in publicly traded stocks, which represent a fraction of most funds' portfolios, we must acknowledge that the conclusions we draw about SWF behavior are based on a subset of funds' investments. Accordingly, while our sample allows us to draw conclusions about the impact of SWF investments on publicly traded companies, it should not be interpreted as evidence of the performance of the overall SWF investment portfolios.

2. Data and Sample Description

2.1. The Sample

There is no consensus on what exactly constitutes a sovereign wealth fund. While SWFs are a heterogeneous group, most evolved from funds set up by governments whose revenue streams were dependent on the value of one underlying commodity and thus wished to diversify investments with the goal of stabilizing revenues. Accordingly, most SWFs have been established in countries that are rich in natural resources, with oil-related SWFs being the most common and most important. These include the funds sponsored by Arab Gulf countries, the ex-Soviet republics, Brunei, and Norway. The other important group of SWFs includes those that have been financed out of accumulated foreign currency reserves resulting from persistent and large net exports, especially the funds based in Singapore, Korea, China, and other East-Asian exporters. Because definitions vary and because few funds have disclosed key organizational details, heterogeneous funds are often grouped into the SWF category, even though there are significant differences between funds with respect to organizational structure (separately-incorporated holding companies versus pure state ministries), investment objectives (preservation of wealth versus wealth diversification and growth), compensation policies and status of fund managers (incentivized professionals versus fixed-wage bureaucrats), and degree of financial transparency (Norway's Government Pension Fund-Global versus almost all others).

Most definitions of "sovereign wealth fund" suggest these are state-owned investment funds (not operating companies) that make long-term domestic and

international investments in search of commercial returns.[42] Some definitions are broader than this, as in Truman (2008), who defines a sovereign wealth fund as "a separate pool of government-owned or government-controlled financial assets that includes some international assets." On the other hand, Balding (2008) shows that a more expansive definition encompassing government-run pension funds, development banks, and other investment vehicles would yield a truly impressive total value of "sovereign wealth."[43]

In this study, we employ the selection criteria presented in Miracky and Bortolotti (2009), which defines a SWF as: (1) an investment fund rather than an operating company; (2) that is wholly owned by a sovereign government, but organized separately from the central bank or finance ministry to protect it from excessive political influence; (3) that makes international and domestic investments in a variety of risky assets; (4) that is charged with seeking a commercial return; and (5) which is a wealth fund rather than a pension fund – meaning that the fund is not financed with contributions from pensioners and does not have a stream of liabilities committed to individual citizens. While this sounds clear-cut, ambiguities remain. Several funds headquartered in the United Arab Emirates are defined as SWFs, even though these are organized at the emirati rather than federal level, on the grounds that the emirates are

[42] In addition, most definitions exclude funds directly managed by central banks or finance ministries, as these often have very different priorities, such as currency stabilization, funding of specific development projects, or the development of specific economic sectors.

[43] In ongoing research (Bortolotti, Fotak, Holland, and Megginson, 2010) we have identified over 12,100 investments, worth over USD 1.67 trillion, just in listed-firm stocks by state-owned investment companies, stabilization funds, commercial and development banks, pension funds, and state-owned enterprises. Add to this amount state purchases of government and corporate bonds, plus SWF holdings and foreign exchange reserves of roughly USD 8 trillion, and the total value of state-owned financial assets may already exceed USD 15 trillion.

the true decision-making administrative units.[44] We also include Norway's Government Pension Fund-Global, as the Norwegian government itself considers this a SWF and because it is financed through oil revenues rather than through contributions by pensioners. These criteria yield a sample of 33 sovereign wealth funds from 23 countries; while we identify and list 33 entities that meet our definition of "sovereign wealth funds", we find usable public equity investments for only 18 of those 33 funds. Table 10 presents our list of sovereign wealth funds, along with estimates of their size in early 2010, their inception dates, and the principal source of their funding. This table is based on a more comprehensive description of SWF organization, investment strategy, and mission presented in Barbary (2010). Table 10 shows total assets for all SWFs of USD 2.424 trillion, with oil and gas-financed SWFs managing total assets of USD 1.618 trillion and non-oil SWFs managing assets worth USD 805 billion. Mehropouya, Huang and Barnett (2009) presents a similar total asset value of USD 2.6 trillion held by SWFs in September 2009.[45]

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[44] The sub-national UAE funds included are the Abu Dhabi Investment Authority (the world's second-largest SWF), the Investment Corporation of Dubai (and its subsidiary Istithmar World), Mubadala Development Company, DIFC Investments (Company) LLC, the International Petroleum Investment Corporation (IPIC), and Ras Al Khaimah Investment Authority.

[45] The Sovereign Wealth Fund Institute, which uses a more inclusive definition of SWFs and tracks 50 funds, estimates their total size as USD 3.809 trillion as of December 2009 (see http://www.swfinstitute.org/funds.php). On the other hand, Greene (2009) cites studies showing that SWF assets under management shrank to around USD 3 trillion by late 2008 and that SWFs have not more than USD 1 trillion invested in global equities. Mehropouya, Huang and Barnett (2009) also estimates that SWFs have less than USD 1 trillion invested in international stocks. It has also been reported that some of the earlier estimates of current SWF size were overstated. For example, a *Wall Street Journal* article from May 20, 2009 (Davis, 2009) reports that while earlier estimates of ADIA's size put their assets under management at USD 875 billion, current ones put the figure at USD 282 billion. While part of the decline is due to lower oil prices and investment losses, most of the discrepancy is simply the result of the very limited public fact base on ADIA's portfolio. To the surprise of many, ADIA actually published a 36-page 2009 Review of fund operations on March 15, 2010, and this report disclosed much information about investment strategy and allocations (across asset classes and geographic regions). The report did not, however, disclose the most important unknown data item, total assets under management.

We draw our sample of SWF investments in two ways. First, we collect a preliminary sample of 1,347 sovereign wealth fund investments in listed firms made by any of the SWFs other than Norway's Government Pension Fund-Global (GPFG) from the Monitor-FEEM SWF Transaction Database. This database is organized by the Monitor Group and the Fondazione Eni Enrico Mattei (FEEM), and covers domestic and international investments made by funds between May 1985 and November 2009. This sample includes investments in listed equity, unlisted equity, commercial real estate, private equity funds and joint ventures in which one of the SWFs listed in Table 10 (or one of its subsidiaries) is an investor. These observations were collected using multiple data sources. Information from five financial databases (Thomson One Banker, Bloomberg, the SDC Global New Issues database, the Zephyr M&A database, and Zawya.com) was integrated with data from fund websites and from various news sources.[46] From this, we identify a set of 399 investments in firms with publicly-traded stock made by SWFs other than Norway's GPFG.

We employ a different methodology to collect a second sample of investments, those made by Norway's GPFG. Since this fund, which is described and analyzed in Caner and Grennes (2009) and Ang, Goetzmann, and Schaefer (2009), almost always accumulates small stakes in listed companies through open market share purchases, its investments are rarely documented in the press and are almost never recorded as direct share acquisitions by SDC or Zephyr. We suspect this lack of easily-available information is why previous SWF empirical studies do not include material numbers of

[46] The sources include the Lexis-Nexis database and the archives of *Financial Times*, *New York Times*, *Wall Street Journal*, *GulfNews*, the Associated Press and Reuters. Detailed information about the Monitor-FEEM SWF Transaction Database is provided in Miracky and Bortolotti (2009), available at www.monitor.com and www.feem.it. This database is updated continuously and the managing parties publish annual reports on SWF investments.

observations for GPFG. The Norwegian fund does, however, post annual listing of all its equity holdings around the world, and investments in U.S.-listed stocks made by Norges Bank Investment Management (NBIM), the asset management arm of the GPFG, are publicly disclosed on a quarterly basis beginning in the fourth quarter of 2006. Using these disclosures, we generate a list of new NBIM investments in U.S.-listed companies by tracking the annual investment lists and determining when NBIM makes an initial investment, which we define as an investment that did not appear in the previous year's listing. We then follow NBIM's holdings after the initial investment and record increases in their holdings as follow-on investments. We take the filing date – the day when NBIM files a Form 13F-HR with the U.S. SEC detailing its shareholdings in a listed firm – as the announcement date for performing event studies, since this is the date that the stock ownership information is first publicly disclosed. As a "completion date", we use the last day of the quarter during which the transaction takes place. We find 160 initial and 243 follow-on investments by NBIM from December 31, 2006 through September 30, 2009. Given our reliance on Form 13F-HR as a data source, we have this data only for U.S. listed firm investments by Norway's GPFG (acting through NBIM). Combining the 403 Norwegian fund's investments with the 399 obtained from the Monitor-FEEM Database yields our final sample of 802 SWF investments in listed companies, collectively worth USD 181.6 billion.

2.2. Descriptive Statistics

Panel A of Table 11 details SWF investments by year from May 1985 through November 2009. Very few investments were made in any single year prior to 2001, and

2003 was the first year the total value of investments exceeded USD 1 billion. From that point onward, however, the number and total value of SWF investments surged – reaching a peak of 340 investments worth USD 61.3 billion during 2008. Although the number of investments drops sharply during the first eleven months of 2009, to 50 deals, the total value only drops by about half, to USD 29.3 billion. Clearly, SWFs invested a lot during the crisis, either because that was when political opposition to their investment was lowest, or because that was when financing was most needed to overcome binding financial constraints.

Panel B of Table 11 describes the number and total value of investments made by individual SWFs. All the deals by the main fund and its subsidiaries are included in the main fund's totals. While Norway's GPFG makes by far the largest number of investments in listed stocks, these are on average quite small (USD 12 million) and the total value is a modest USD 4.76 billion. Because of our reliance on Forms 13F, all of Norway's observations in our database involve investments in U.S. listed stocks after the third quarter of 2006, and four-fifths of these deals are made in the stocks of companies headquartered in the United States. The second most active SWF investor, Temasek Holdings, makes only one-third as many investments as Norway's GPFG (132 versus 403), but the total value of these deals is nine times as large, USD 42.4 billion, the largest of any SWF. Singapore's Government Investment Corporation is the third most active stake acquirer both in number and value (79 investments, worth USD 22.6 billion), while the China Investment Corporation ranks a mere seventh in terms of the number of investments (18), but second in overall value (USD 38.9 billion). Other active investors include Khazanah Nasional Berhad (32 transactions, worth USD 3.2

billion), Qatar Investment Authority (31 deals, worth USD 15.3 billion), Kuwait Investment Authority (19 investments, worth USD 13.2 billion), and Abu Dhabi Investment Authority (18 transactions, worth USD 8.5 billion).

Panel C of Table 11, which details the industrial distribution of SWF investments, shows that the SWFs we examine favor investing in companies in the financial industry over all others. The 137 investments in banking (78) and financial service (59) firms account for only one-sixth (16.6%) of all deals by number, but their combined value (USD 118.6 billion) represents almost two-thirds (65.3%) of the value of all acquisitions. This preference for financial investments is, however, a fairly recent phenomenon; sovereign funds allocated less than one-fifth of their investment funds to financial firms as recently as 2006, and allocated even smaller fractions to financial companies in previous years. Other industries attracting significant SWF investment are real estate development and services and REITs (7.9% of deals, 4.0% of value), oil and gas producers (4.1% of deals, 3.8% of value), chemicals (3.0% of deals, 3.2% of value) and general industrials (1.2% of deals, 3.2% of value).

Panel D of Table 11 presents the geographic distribution of SWF investments (by target country). The United States is easily the most popular target nation for SWFs, both in terms of number and total value invested, with 53.1% of the number (426 of 802) and 32.1% of the total value (USD 58.3 billion of USD 181.6 billion) of SWF investments being channeled to U.S.-headquartered companies. This includes investments by Norway's GPFG, for which we have data only for U.S. listed investments, but the United States remains the most popular SWF target country even after excluding the 320 investments worth USD 4.0 billion made by GPFG in U.S.

headquartered firms. China is the second most popular target country in terms of both number and value, though most of the 43 deals worth USD 32.0 billion are domestic investments by the China Investment Corporation--including the USD 20 billion, December 2007 purchase of an equity stake in China Development Bank, which is the largest single investment in our database (Dickie, 2008). Singapore ranks third in number (39) but only sixth in value (USD 10.9 billion), whereas the United Kingdom ranks third in value (USD 20.9 billion) but only sixth in number (28). The majority of all deals (560, or 69.8%) and value (USD 120.2 billion, or 66.2%) of SWF investments are targeted at OECD-headquartered companies, and foreign (cross-border) investments represent 90.2% of the number and 77.8% of the value of all SWF deals.

Finally, we examine how SWFs acquire the stakes they purchase in listed companies. We find that a majority of the investments that all SWFs (except Norway's) make in publicly traded companies are privately-negotiated, primary share offerings rather than open market share purchases. All of Norway's investments are open market purchases of small stakes in listed firms, but that fund is unique in this respect. Excluding Norway, we identify the method of investment for 129 transactions, and 91 of these (70.5%) are direct purchases—and thus represent capital infusions for target firms—while only 38 (29.5%) are open market share purchases. In terms of purchase size, capital infusions are even more dominant, accounting for 88.2% of the USD 92.1 billion worth of deals for which we can identify purchase method. To our knowledge, this method of acquiring equity stakes sets SWFs (and private equity investors, who have a fundamentally different investment objective) apart from other institutional investors; pension funds, hedge funds, mutual funds and other types of internationally

active institutional investors generally acquire stock through open-market purchases rather than by direct sales.

2.3. Target Selection

We begin our empirical analyses by examining the types of firms that SWFs select for investment. To gain insights about how SWFs select targets, we first employ long-run return estimations to see if target firms generate significantly positive or negative abnormal returns during the year before SWF investment, which presumably encompasses the period when the funds make their stock selections. We then present descriptive statistics for these firms prior to SWF investments and compare their characteristics to industry median values. In particular, we test whether firms targeted for investment exhibit stock return performance that differs significantly from local market indices and from matched firms over various holding periods of up to one year before the investment is announced.

Target firm and index returns come from Datastream, and we compute abnormal returns using all the long-run return estimation procedures and benchmarks described in section 3.2. However, we only report results versus the local index here in the interest of space and because all of the results obtained using other indices and matching methodologies are qualitatively similar. The first section of Table 12 presents buy-and-hold abnormal returns for all target firms computed versus a local market index over one-year, six-month, three-months, one-month, one-week and one-day holding periods prior to the day that the SWF investment is announced (Day 0). The second part of Table 12 presents results excluding firms that were targeted by Norway's GPFG.

The mean abnormal return over a one-year holding period is 17.09% for all target firms and 20.99% for non-Norway targets, and both are significant at the 1% level. The six-month, three-month and one-month mean abnormal returns are all positive and statistically significant at either the 5% or 1% level in both samples. Median abnormal returns, on the other side, are much closer to zero, with signs switching between positive and negative depending on the holding period selected. The nonparametric tests for significance are, with one exception, not statistically significant. These results demonstrate that SWFs purchase the stocks of firms that have performed well--extremely well, based on average abnormal returns--during the year prior to the funds' investments. This perhaps suggests a tendency for funds to act as momentum investors, while the striking difference between very high mean returns and quite modest median abnormal returns might reveal a skewness preference in their stock selections.

To gain another perspective on whether SWFs invest in troubled or prosperous target firms, we compute mean and median values of the pre-event sample's accounting metrics of interest and compare these to industry mean and median values for the same country. The accounting metrics we use in this section, and other variables employed later in our empirical tests, are defined in Table 13.

All variables and metrics are computed as of December 31 of the year prior to the SWF investment and mean, median, and industry-referential results are presented in Table 14. The median book value of equity of sample firms, USD 890 million, exceeds the industry median in 87% of the cases, and median market cap is about USD 2.3 billion, which is greater than industry median 90% of the time. Total assets are a

median USD 2.8 billion, which exceeds the industry median in 88% of all cases, and target firms have somewhat higher leverage, with median debt to assets at 62%, greater than the industry median in 56% of all cases. Target firms in our sample also have higher valuations, with a median market-to-book ratio of 2.26, greater than industry medians in 66% of the cases, and are more profitable, with median return on assets of 6.1%, which exceed industry medians 70% of the time. Median return on equity of targets is 15.23%, higher than industry medians 65% of the time. Median cash to total assets is 29.81%, greater than industry medians in 48.12% of the cases and median Quick Ratio is 1.03, greater than industry medians 47.95% of the time. All of these values are statistically significantly different from industry medians at the 1% level based on nonparametric Wilcoxon Signed Rank tests (with the exception of the quick ratio results, significant at 5%). Overall, this analysis indicates that SWFs invest in large, highly levered, growing and profitable firms--likely, the most visible and high-profile growth firms.

3. Performance of Target Firms

3.1. Announcement Period Event Study Results

While the focus of our analysis is on the long-term impact of SWFs on investment targets, this section briefly analyzes the market's reaction to announcement of SWF investments. We do so mainly to compare our sample to those analyzed in other empirical studies. We report short-term event study results in Table 15, where we present market adjusted abnormal returns obtained by using a local price index as a benchmark. As reported in Panel A, the mean excess return is 1.25% over the three-day

event window spanning days -1 to +1, where day 0 is the day the SWF investment is announced. While the median excess return is smaller (+0.17%), the number of positive abnormal returns exceeds the number of negative ones (368 to 320), so both parametric and nonparametric test statistics are highly significant.

We further investigate short-term market reactions to SWF investments by excluding transactions by Norway's GPFG. We do this for two reasons, as we want to both make sure that our results are not driven by one fund, which alone constitutes over half of our sample, and since we believe the Norwegian fund has governance characteristics that are likely to lead to a different market impact. In particular, GPFG has a higher level of transparency than any other fund, and has a reputation as a responsible and sophisticated investor. The fund also makes large numbers of very small investments. Panel B reports results obtained when excluding GPFG observations. The mean cumulative abnormal return is much larger, ranging from 2.14% on day 0 to 2.91% over the three-day event window. In Panel C, we report results related to short-term market reaction to announcements of acquisitions solely by GPFG. Comparing Panel A and Panel B suggests that announcements of investments by GPFG elicit almost no market response. Mean cumulative abnormal return estimates range from 0.02% to 0.32%, while medians range from -2% to +2%, and only one of the twelve test statistics presented is statistically significant.

In unreported results, we verify that our results are qualitatively similar when using a market model with a local market index benchmark or when employing matched-firm adjusted returns (as we describe in section 3.2). We also obtain similar results when employing either of two global market index benchmarks, the Datastream

and the MSCI total return world indices. Overall, our results clearly indicate that the market reaction to SWF investment announcement is positive.

Our results are in line with results documented in other, contemporaneous, studies. Dewenter, Han and Malatesta (2010), in a sample of 227 SWF investments, document significantly positive abnormal returns of 1.5%, while Kotter and Lel (2011) find, in a sample of 417 investments made by SWFs into 326 separate publicly traded companies, that SWF investments are associated with significantly positive announcement period abnormal returns averaging 2.2%. Knill, Lee and Mauck (2012) collect a sample of 232 SWF investment announcements and document a significantly positive announcement-period abnormal return of 1.43%. Karolyi and Liao (2009) find, for a sample of 181 SWF investments, positive and significant announcement period returns of 0.88%. Clearly, while the exact magnitude of the abnormal return differs across studies, all agree on a positive market reaction to investment announcements. Our results are of comparable magnitude to these other studies.

3.2. Long-Term Event Study Results

We report long-term event study results in Tables 16 and 17. In each case, we focus on four different event windows, respectively spanning six months, one year, two years, and three years after SWF investment. For robustness, we employ several different benchmarks in the event studies. In unreported results, we use two alternative global market indices: the MSCI World and the Datastream-supplied total return indices; we do not report results employing those benchmarks as they are very similar to those obtained by making use of local market indices, which we consider more

informative. The first set of reported results is computed using Datastream value-weighted local total return indices as proxies for market performance, while the second set employs matched-firm methodologies, as advocated by Lyon, Barber and Tsai (1999). First, we match on country, exchange, size and book-to-market[47] then, in an alternative approach, we match on country, exchange, industry and pre-event performance.[48]

For each benchmark, we compute buy-and-hold abnormal returns. For robustness, we also present monthly cumulative abnormal returns, although we note that the latter might be negatively biased. Finally, we also compute calendar-time portfolio abnormal returns as in Jaffe (1974) and Mandelker (1974), to address possible correlations in CARs due to transactions being clustered in time. In all cases, we present results of two non-parametric tests for the significance of the abnormal return, the Generalized Sign (GS) test and the Wilcoxon Sign Rank (WSR) test. When testing buy-and-hold abnormal return, we compute a bootstrapped, skewness-adjusted t-statistic as suggested by Lyon, Barber and Tsai (1999) to correct for the skewness of long-horizon buy-and-hold abnormal returns. When testing cumulative abnormal returns, we employ the crude-dependence adjusted (CDA) t-statistic proposed by Brown and Warner (1985). When testing calendar-time portfolio abnormal returns, we compute a calendar-time t-statistic.

[47] We take the unusual step of matching on both country of incorporation and primary listing exchange as we find that a portion of target firms in our sample are listed on foreign exchanges and have share prices quoted in foreign currency. We obtain headquarters' location and listing exchanges for each firm/security from Datastream. We use Worldscope to obtain measures of firm size (aggregate market capitalization, WC08001), and market-to-book ratio (WC09704).

[48] As a proxy for industry we use the FTSE level-3 industry classification from Datastream. As a proxy for performance we obtain the raw stock market return computed as the change in the Datastream Total Return Index over the calendar year preceding the SWF investment.

In Panels A, B, and C of Table 16 we present buy-and-hold abnormal returns using local market adjusted or matched firm abnormal returns; we repeat the analysis with the same benchmarks excluding Norway's investments in Panels D, E, and F of Table 16. Cumulative abnormal returns with the same sets of benchmarks are presented in Panels A, B, C, and D of Table 17 and cumulative abnormal returns excluding Norway are again presented in Table 17, Panels E, F, G, and H. Results in Table 16, Panel A, indicate that market adjusted buy-and-hold mean abnormal returns are insignificantly negative over all four holding periods examined (the six-month, one-year, two-year and three-year windows) and range from -1.32% at one year to -4.61% over three years. Medians are substantially more negative, ranging from -3.13% at six months to -12.75% at three years and the first three holding periods are significantly negative at the 1% level according to the WSR test statistic, while the three-year holding period result is significantly negative at the 5% level**.**

Results in Panel B are obtained by employing a size and book-to-market matching methodology and a buy-and-hold abnormal return estimation procedure. Mean abnormal returns are all negative and become steadily more so with holding period length, from -1.86% over six months to -21.88% over three years. The bootstrapped, skewness-adjusted t-test indicates statistical significance at the 10% level for the one-year holding period and at the 5% level for the three-year holding period. Median abnormal returns are also consistently negative but exhibit a narrower spread between least and most negative, ranging from -2.75% over one year to -16.73% over three years. The two-year and three-year median abnormal returns are significantly negative

at the 5% level based on the GS test at the 1% and 5% level, respectively, based on the WSR test.

Results in Panel C are obtained by employing industry and performance matches; mean abnormal returns become increasingly negative over the four holding periods, increasing from -3.74% for six months to -12.13% over three years, and bootstrapped, skewness adjusted t-statistics indicate significance at the six-months (5% level) and one-year (1% level) horizons. Median abnormal returns are all negative, with the WSR test statistics being statistically significant at the 10% level for the one-year and two-year holding periods. Results obtained excluding Norway are presented in Panels D, E, F, and G of Table 16. For the sake of brevity, we will not extensively discuss those results, as they are qualitatively similar. Means are somewhat smaller, but medians are generally more negative, and overall patterns are similar.

These consistently negative, and generally significant, long-run abnormal returns after SWF investments are very hard to reconcile with the positive announcement period abnormal returns. On the other hand, the long-run negative returns far exceed the positive short-run returns, so we conclude that the overall market impact of SWFs as investors is quite negative.

Long term event study results using monthly cumulative abnormal returns, presented in Table 17, appear to differ substantially according to which benchmark is employed. Local market index adjusted returns, in Panel A, display negative mean abnormal returns over the six-months, but positive abnormal returns over the one-year, two-year and three-year holding periods while the CDA t-statistics are all statistically insignificant. The median abnormal return is negative at the six-month horizon and

positive over the other horizons, with the GS test statistics significant at the 1% level of two-years and at the 10% level over three-years and the WSR test statistic significant at the two-year horizon at the 1% level. Calendar-time abnormal returns are negative at all horizons and statistically significant at the 10% level at the one-year horizon.

We also compute market-model abnormal returns and present these in Panel B. These abnormal returns, which adjust for the risk level of the target security, are consistently negative and strongly statistically significant, with means ranging from -7.99% over six-months to -56.39% over three years. Medians show a similar pattern of negative abnormal returns, ranging from -3.97% over six-months to -40.35% over three-years. Calendar time abnormal returns range from -11.05% over six-months to -59.62% over three-years. The extreme magnitude of the results, significantly greater than those obtained by using market-adjusted or even matched firm abnormal returns, does give us pause. We report the results, but note that, especially at long horizons, market model returns might be unreliable.[49]

Results in Panel C are obtained using a size and book-to-market matching methodology. All mean, median and calendar-time abnormal returns are negative. The CDA t-statistics are all insignificant, the calendar time t-statistics are significant at the 10% level at the one- and two-year horizons, the GS test statistics are significant at the 5% level at the six-month, one-year and two-year horizons, while the WSR test statistics are significant at the 5% level over one- and two-year holding periods.

Results in Panel D are obtained by employing industry and performance matches. All mean, median and calendar-time abnormal returns are negative, with the

[49] Given the positive abnormal performance of SWF investment targets over the one-year prior to the investment announcement previously documented, it is likely that market model parameter estimates are inducing a negative bias in our estimation of abnormal returns.

exception of the calendar-time abnormal return over the three-year holding period. The CDA t-statistics are all statistically insignificant, while the calendar time t-statistic is significant at the 10% level over the six-month holding period and at the 5% level over the one-year and two-year holding periods. The GS test statistic is statistically significant at the 5% level over the six-month, one-year and two-year holding periods while the WSR test statistic is statistically significant at the 5% level over the one-year and two-year holding periods.

The same methodology is applied to results excluding Norway in Panels E-H of Table 16. Once more, for the sake of brevity, we do not discuss those results in detail, as they are very similar to those obtained when including Norwegian investments in our sample. We note, however, that most of the coefficient estimates are of slightly greater magnitude, but levels of significance are mostly unaffected due to the smaller sample sizes.

Though the magnitude of the underperformance varies across models and benchmarks, evidence of the log-run underperformance itself is fairly consistent, at least up to the two-year post-investment horizon. While we recognize that the abnormal returns computed by using the market model differ greatly from those estimated using the matched-firm approach, both sets of results indicate some degree of underperformance. As previously noted, we put more faith in the results obtained by using the matched-firm approach, as do most recent papers employing long-run event study methods. We conclude that SWF investments underperform relative to local market indices and relative to matched firms, as predicted by the Political Interference and Constrained Foreign State Investor hypotheses.

3.3. Comparison with Previous Long-Term Findings

Our long-term findings are consistent with Knill, Lee and Mauck (2012), who find negative one-year abnormal returns equal to -6.3%. Kotter and Lel (2011) find negative and significant abnormal returns over the one-year holding period, negative but not statistically significant returns over holding periods up to three years and positive and statistically significant returns over the five-year holding period. We believe the difference between their results and ours to be driven both by their use of market adjustments and the use of a global market index. While we do not report, for brevity, our results against a global market index benchmark, we find that those, while negative, have a lower level of significance than results against local market indices; we find this result plausible, since a global market index will be a noisier proxy for market performance than a local market index. Second, as we report, market adjusted results offer a lower level of significance than abnormal returns computed by using estimation procedures that take into account firm-specific risk factors--market models or matched-firm methodologies. Even in our analysis, market adjusted abnormal returns present the lowest level of statistical significance. As discussed by Lyon, Barber and Tsai (1999), matched-firm approaches are better specified in long-term studies, especially when one of the matching criteria includes, as in one of our specifications, pre-event performance. In addition, Kotter and Lel (2011) use only one, nonparametric, test for statistical significance (the Wilcoxon Sign Rank Test), while we offer a wide range of test statistics, including the boostrapped, skewness-adjusted t-statistic that Lyon, Barber and Tsai (1999) advocate and the crude-dependency adjusted t-statistic by Brown and

Warner (1985). Finally, our sample is larger at the one-year and two-year horizons: Kotter and Lel have 279, 203 and 172 observations at the one-year, two-year and three-year horizons, respectively, while we have, in the event studies against local market indices, 617, 366 and 165 observations.

Dewenter, Han and Malatesta (2010) find that post-investment average long-run abnormal returns are insignificant and close to zero for holding periods up to five years, but median long-run abnormal returns are significantly negative over one year and consistently negative over all holding periods. The authors use local market indices as benchmarks and abnormal returns are computed with a market adjustment. As in the previous discussion of the results by Kotter and Lel (2011), we note that market-adjusted returns have lower levels of significance, in our analysis, that market-model or matched-firm abnormal returns; we consider matched-firms abnormal returns to be suffering from the least misspecification problems. Second, a portion of the DHM dataset contains investments in subsidiaries of publicly traded firms. For those transactions, DHM use the abnormal return on the stock price of the publicly traded parent, while we exclude such transactions from our sample. It is plausible that the stock price reaction of the parent is weaker, thus making it harder to obtain statistically significant results. Third, we offer a wider range of alternative event-study methodology, varying benchmarks, abnormal return estimation procedures and different test statistics. Finally, we have a larger sample: while they have 178 observations for the one-year window and 127 for the three-year window, whereas we have, respectively, 617 and 165.

3.4. Long Term Cross-Sectional Analysis

We perform a series of cross-sectional regressions of six-month, one-year, two-year and three-year abnormal returns. For each regression, only observations with available data for all explanatory variables are used. The final number of observations employed in each regression specification ranges from 294 to 23, as detailed in Table 18.[50] We use the local market index-adjusted abnormal return as a response variable.[51] The set of explanatory variables includes: a measure of government involvement in SWF operations (*SWF Government Involvement*), computed as one minus the score given by Truman (2008) to the level of managerial independence from the government;[52] a measure of how passive the SWF is in its investments (*SWF Passive Stance*), obtained by adding the scores given by Truman (2008) on the presence of stake limits and on the ban on controlling stakes;[53] a binary variable set equal to one if the investing fund is Norway (*Norway*), as we conjecture that Norway's SWF differs significantly from its peers in terms of governance and transparency and could thus have a different impact on investment targets; a binary variable set equal to one if the

[50] While we present, for completeness, the results of cross-sectional analysis of three-year abnormal returns, we note that the sample size is quite small.

[51] In unreported robustness tests, we find that, if we use matched-firm abnormal returns as response variables, we obtain very similar coefficient estimates, but with somewhat lower levels of statistical significance, possibly due to slightly smaller sample sizes. We present results based on a cross-sectional analysis of local index-adjusted abnormal returns as that allows us to use the largest sample.

[52] Truman (2008) offers, for each fund, a score on a scale of zero to one, reflecting the level of independence of management from governmental interference (with 1 indicating full managerial independence); as we wish to measure the level of governmental involvement, we build a variable equal to one minus the score offered by Truman (2008) on this dimension. Accordingly, higher values on our variable indicate higher government involvement.

[53] Truman (2008) scores funds on the presence of stake size limits (with 0 indicating no limits and 1 indicating strictly enforced limits) and on the avoidance of controlling stakes (with 0 indicating no avoidance and 1 indicating absolute avoidance). We add those two scores to obtain a proxy measure for how passive the fund tends to be in its investment strategy. Accordingly, higher levels of our proxy measure indicate a more passive stance.

target firm is headquartered in an OECD country (the variable is labeled *OECD*), as we observe that firms headquartered in OECD countries might have easier access to capital and better shareholder protection; a binary variable equal to one if the target is in the 'strategic' industrial groups Aerospace and Defense, Energy, Utilities, Resources, or Telecoms and IT (*Strategic Target*); a variable measuring the age, in years, of the investing SWF at the time of the investment (*SWF Age*) to test for the presence of learning effects in stock-picking; a variable equal to the proportion of the stake acquired in a capital infusion or zero in the case of a secondary-market transaction (*Capital Infusion*); a variable measuring the size of the stake owned after the investment (*Stake Owned*), to test whether market reaction depends on the proportion of the firm that is under SWF control; a binary variable equal to one if the SWF investment is in a foreign company (*Foreign Target*); the market capitalization of the target firm (*Market Value*), the leverage (*Leverage*) of the target firm, proxied by debt-to-asset ratio, and its liquidity (*Liquidity*), proxied by the firm's Quick Ratio, all three measured as of the end of the calendar year prior to the SWF investment; and a binary variable set equal to one if the SWF acquires one or more seats on the board of directors (*BoD*). Definitions of all variables are summarized in Table 13. Finally, we add a control variable measuring abnormal stock market returns over the one-year period preceding investment, to control for possible momentum or reversal effects. All our regressions are estimated with robust standard errors clustered by target firm, to mitigate potential econometric problems caused by multiple investments in the same target firms.

Results of the regressions are reported in Table 18. The level of government involvement is negatively related to long-term abnormal returns, but the result is

statistically significant, at the 5% level, only over the two-year holding period; we interpret this as weak evidence of a detrimental impact of government involvement in SWFs on target firm performance. The level of passivity of the investing fund is negatively related to abnormal returns, with results statistically significant at the 1% level for the six-month and two-year holding period, at the 10% level for the one-year holding period, and at the 5% level for the three-year holding period. We interpret this as evidence of a passive SWF role leading to deteriorating target firm performance. The OECD binary variable has negative coefficients, statistically significant at the 1% level at the six-month horizon and at the 10% level for the three-year horizon, which indicates lower abnormal returns for SWF investments in OECD targets. The binary variable identifying strategic targets has positive but not statistically significant coefficients, while the variable measuring the age of a SWF has negative coefficients, statistically significant at the 5% level for the two-year holding period. The variable measuring the size of the capital infusion has coefficients of different signs, none statistically significant. The size of the stake owned is negatively related to firm performance at all horizons, and the result is statistically significant at the 5% level for the two-year horizon, which we consider weak evidence of a negative relation between stake size and firm performance. The dummy variable indicating foreign targets has a positive coefficient for the six-month holding period and negative coefficients for the other periods, significant at the 10% level at the one-year horizon and at the 1% level at the two-year horizon; overall, this suggests worse performance for foreign targets. Target size is negatively related to firm performance at all horizons, but the result is statistically significant, at the 5% level, only for the two-year holding period. The

coefficients on the leverage and liquidity variables change signs at different horizons and none of the relationships are statistically significant. Finally, seats on boards of directors are negatively related to firm performance, with the results being statistically significant at the 5% level for the two-year window and at the 10% level for the three-year window.

In an unreported robustness test, we exclude all observations the target of which is subject to additional SWF investments, keeping only the first of such transactions. We find our core results to be robust in this reduced sample, although some of the coefficients lose statistical significance, likely due to the smaller sample size.

3.5. Interpretation of Findings

Taken together, the evidence of a positive market reaction followed by negative long-term performance is puzzling. A similar pattern is documented by Hertzel, et al. (2002) regarding private placements of equity; for their sample of 619 publicly traded firms announcing private equity placements over the years 1980 to 1996, the market reacts positively, but the subsequent (three-year) stock price performance is negative. As do Hertzel, et al. (2002), we note that our results indicate that investors are overoptimistic about the prospects of target firms, but ultimately fail to fully explain the puzzle.

Our long-term event study results clearly point to long-term underperformance, thus ruling out the two hypotheses which predict a positive impact of SWFs on investment targets as being dominant (the Active Monitoring Hypothesis and the Reduced Financial Constraints Hypothesis). Further, cross-sectional results are not

consistent with the Stock-Picking Hypothesis, as the sign on the coefficient of the variable measuring the age of the SWF is negative, rather than positive as expected, which would be consistent with a learning effect. Also, characteristics of the SWF (the level of government involvement and how passive the fund is in its investments) and of the deal (size of the stake acquired, acquisition of seats on boards of directors) are significant in explaining the abnormal return, which is also not consistent with the Stock-Picking Hypothesis.

Similarly, the negative abnormal returns observed contradict the Active Monitoring Hypothesis. In addition, the negative relationship between the size of the stake owned and performance and the negative relationship between acquisition of board of director seats and performance are highly inconsistent with active monitoring. The negative abnormal returns are also not consistent with the Reduced Financial Constraints Hypothesis being dominant. Further, while the lower returns on OECD targets are consistent with this hypothesis, the lack of relationship between firm leverage and firm liquidity and abnormal performance is not consistent.

On the other hand, the negative abnormal returns are consistent with the predictions of the Political Interference and Constrained Foreign State Investor hypotheses. The negative relationship between the level of government involvement and firm performance is consistent with the Political Interference Hypothesis, while the negative relationship between fund passivity and target performance is consistent with the Constrained Foreign State Investor Hypothesis. Yet, we should note that statistical significance of the relationship between fund passivity and target performance is much higher and more robust across holding periods, thus favoring the Constrained Foreign

State Investor Hypothesis. The negative coefficient of the Stake variable is also consistent with both hypotheses, as is the one on board of director seats.

The fact that investments by Norway's Government Pension Fund Global (GPFG) exhibit stronger long-term performance than those by other SWFs deserves attention. GPFG is largely insulated from government interference, so the higher abnormal returns are consistent with the Political Interference Hypothesis. At the same time, Norway's SWF is generally considered a passive investor and, hence, the higher abnormal return is not consistent with value-destruction at the hands of passive investors. Yet, this commonly held perception might be inaccurate. Reports abound of the managing arm of the fund, Norges Bank Investment Management (NBIM) attempting to impact the governance of the companies in which it invests. Well publicized cases include opposing Volkswagen plans to take over Porsche assets, blocking a takeover attempt at Constellation Energy by Warren Buffett's Berkshire Hathaway and initiating governance changes at Sara Lee Corp.[54] In addition, a recent report by Mehropouya, Huang and Barnett (2009) finds that, contrary to public perceptions, GPFG "actively exercises its voting rights with a well-defined engagement strategy." Accordingly, we maintain that the higher abnormal returns earned by GPFG investment targets is consistent with both the Political Interference and the Constrained Foreign State Investor hypotheses.

We can determine which of the two surviving hypotheses receives the most empirical support from the regression analyses by summarizing how the hypotheses offer contradictory predictions regarding eight variables (see Table 9). First, the

[54] An analysis of the GPFG's corporate governance (by Reuters), entitled "Norway SWF wages lone governance crusade," is available at http://blogs.reuters.com/columns/2009/10/08/norway-swf-wages-lone-governance-crusade/.

Political Interference Hypothesis predicts higher abnormal returns for foreign targets, as political interference is less likely with foreign targets, while the Constrained Foreign State Investor Hypothesis predicts lower returns on foreign targets since that is when SWFs are most constrained in their monitoring. Second, the Political Interference Hypothesis predicts higher returns for target firms headquartered in OECD countries, since political interference is less likely in OECD countries where shareholder protection tends to be better, while the Constrained Foreign State Investor Hypothesis predicts lower returns because opposition to SWFs is particularly strong in OECD countries. Third, the Political Interference Hypothesis predicts a positive relationship between firm size (measured by *Market Value*) and subsequent performance, as it is harder to impose non-commercial goals on larger and more visible firms, while the Constrained Foreign State Investor Hypothesis predicts a negative relationship since larger firms are more visible and hence opposition to investments by foreign state entities is more likely. Fourth, the Political Interference Hypothesis further predicts a negative coefficient on the variable identifying strategic targets, while no effects are predicted by the Constrained Foreign State Investor Hypothesis. Fifth, whereas the Political Interference Hypothesis predicts that greater fund-government involvement in SWF affairs will lead to poorer investment performance (thus a negative coefficient on *SWF Government Involvement*) the Constrained Foreign State Investor Hypothesis predicts that this will have no impact but, sixth, the hypotheses' predictions are reversed regarding the impact of SWF passivity-as-policy (SWF Passive Stance). Seventh and eighth, the Political Interference Hypothesis predicts a positive coefficient on the variable measuring leverage and a negative coefficient on the variable measuring

liquidity, while the Constrained Foreign State Investor Hypothesis predicts no impact for either factor.

he results from cross-sectional analysis of long-term abnormal returns therefore indicate that SWFs act as politically constrained state investors, at least in their foreign investments. SWFs appear to have an adverse effect on the quality of the governance of target firms, but that negative impact appears largely due to a passive stance that leads to a gap in monitoring the activities of the firm's management. We discuss further evidence of the passive stance of SWFs in the following section.

4. Are SWFs Passive?

To directly study the monitoring role—or lack thereof—exercised by SWFs, we collect board of director composition data for companies and examine whether sovereign funds acquire representation on target firm boards in the years after the initial fund investment. Dewenter, Han, and Malatesta (2010) perform a similar analysis, and Saigol (2009) presents anecdotal evidence that some funds are demanding board seats. We begin with the full dataset of 318 SWF investments, other than by Norway's GPFG, for which full information on investment dates, amounts, and percent stakes acquired is available. We search for annual reports for the years following the SWF investment for all non-U.S. investee companies (from the target firm's website) and examine proxy statements from the SEC's EDGAR database for U.S. targets. We determine the composition of corporate boards for 198 companies, including director profiles, and record any director with an affiliation with an SWF or subsidiary as a representative of the fund who obtained their seat as a result of that fund's investment. The other 120

observations are unusable, because the investment was too recent to show up on statements on the target firm's website (30 cases), the investment was too early (usually before 2003) for an annual report to be listed on the target company's website (49 cases), or because no board of director profiles are provided (41 cases). Amazingly, English language reports are available for all but three companies. We also obtain board of director data for 157 companies in which Norway's GPFG made an initial investment between December 2006 and September 2009, yielding a usable sample of 355 observations. These results are presented in Table 11.

We find that funds acquire seats in only 53 companies, or in only 14.9% of all cases, though this percentage rises to 26.8% when the 157 targets of Norway's fund are excluded—since the Norwegian fund always makes small investments and never receives a board seat. In 53 of the 198 non-Norwegian cases, the investing SWF obtained one or more board seats (usually only one), and another six companies were acquired by the SWF - which presumably obtained a controlling number of seats, bringing the total to 59 of 204 cases (28.9%) where funds obtained board representation. In 145 cases, the fund did not obtain board representation within two years of investment (71.1%). Table 11 details the observations and lists how frequently individual funds and their subsidiaries obtain board seats, and aggregates the data for funds and their subsidiaries. Khazanah and Temasek obtain board seats far more frequently than do other funds, whereas ADIA, Kuwait Investment Authority, and Qatar Investment Authority rarely if ever acquire board representation. Only 4 of the 37 usable US investments by non-Norwegian funds are followed by board seat acquisitions and *none* of the twelve UK deals resulted in board seats.

Non-Norwegian SWFs are significantly more likely to acquire seats in domestic than in foreign companies (in 56.4% versus 19.5% of all cases), and are especially unlikely to acquire seats on a target company headquartered in an OECD country (7.4% of cases). Furthermore, when non-Norwegian funds do acquire board seats, they are more likely to nominate a representative from a fund subsidiary than from the main fund itself, and this propensity is strikingly higher when acquiring a seat on a foreign (especially OECD) company's board. These results suggest that SWFs are reluctant to exercise effective corporate governance over their foreign investments, but are much more willing to do so domestically.[55] This is strongly supported by (unreported) supplemental analysis that examines seat acquisitions just by the main SWFs, rather than by both the funds and their subsidiaries. The difference between these findings and those for subsidiaries are striking. Main funds obtain board seats in only 32 of the 150 usable observations (21.3%), plus only 4 acquisitions (24.0% total), versus 22 board seat acquisitions and two acquisitions out of 53 usable SWF-subsidiary investments (41.5%). Subsidiaries are also much more likely to take seats in foreign deals than are the main funds. This suggests that SWFs deliberately and rationally choose to funnel controversial foreign investments through low-visibility subsidiaries rather than by investing directly using the main funds.

Additional evidence of a passive role of SWFs is offered in an analysis of engagement and voting by SWFs presented in Mehropouya, Huang and Barnett (2009), which finds "few cases in which SWFs held seats at their portfolio companies" and that

[55] There is at least one other, practical reason why SWFs do not demand board seats more frequently: lack of staff. Johnson and Slyngstad (2010) and Anderlini (2009) report that the largest and third largest SWFs, Norway's Global Pension Fund- Global and China Investment Corporation, have only 250 and 400 employees, respectively.

"the funds appear to stick to their claims that they are relatively passive investors". The report also documents that "proxy votes discovered through our analysis were mostly cast for management" and that "no major case of shareholder resolutions introduced by the SWFs was discovered, with the exception of ESG (Environmental, Social and Governance) engagements of the Norwegian Government Pension Fund Global". Rose (2008) discusses how SWFs avoid acquiring large, controlling stakes in the United States, especially in financial institutions, to avoid becoming "bank holding companies" and receiving additional oversight by the Federal Reserve. Kotter and Lel (2011) find that CEO turnover rates and accounting performance of SWF investment targets differ insignificantly between SWF target firms and a control group, concluding that SWFs are passive investors. Some SWFs commit themselves to a passive strategy, presumably in order to pre-empt political opposition to their investments. Examples include the China Investment Corporation, which in its 2009 annual report commits to a passive stance, and the Abu Dhabi Investment Authority which sent a letter to Western financial regulators, in which the fund commits to never use its investments as a foreign policy tool.[56]

The evidence described above most strongly supports the Constrained Foreign State Investor Hypothesis. As state-owned investment funds from largely non-democratic countries, these funds are politically constrained from exercising effective

[56] A dissenting opinion regarding SWF governance assertiveness is offered by Dewenter, Han and Malatesta (2010) who analyze instances of monitoring, network transaction and governmental interference following SWF investments. Despite weak evidence obtained in cross-sectional analysis of abnormal returns, they conclude that SWFs are active investors and that their activities impact long term abnormal returns, yet they fail to explain how this active monitoring fails to lead to a positive impact on firm performance.

discipline of target firm managements--especially in the United States, Britain, and continental Europe, where expressed hostility to SWFs was intense during 2006-2008.

5. Conclusions

This study presents an empirical analysis of SWF investment patterns and examines the impact of SWF investments on targeted firms. We list and describe the investment philosophies of the major funds, analyze their overall size, and discuss estimates of future growth. Using a broad sample of SWF investments in listed firm stocks we provide a comprehensive overview of SWF investment patterns by fund, by industry sector, and by geography. We present evidence on the mechanics of SWF investments, and measure the impact of SWFs on the subsequent performance of the listed companies in which they invest. We document that SWFs purchase, on average, sizable minority stakes in target companies. We also find that SWFs (except for Norway's Government Pension Fund-Global) generally buy equity stakes in listed companies by purchasing newly-issued stock directly from target companies in friendly transactions that exclude outside participation by existing shareholders. This feature of SWF investment suggests that funds become the allies of target-firm managers and are thus constrained from playing a meaningful disciplinary or monitoring role. In addition, these government-owned funds face significant political pressure from recipient countries to remain passive investors in cross-border deals.

On average, the stocks of companies receiving SWF equity investments increase significantly over the three-day window surrounding the purchase announcement, suggesting that investors welcome SWFs as shareholders. Despite these positive

announcement-period reactions, SWF stock purchases are associated with much larger and significantly negative abnormal returns over the three years following the initial investment, and these results are robust to the use of multiple benchmarks and event study methodologies. Median abnormal returns and returns excluding Norway are consistently more negative than are mean abnormal returns. Funds only rarely acquire board of director seats after foreign investments, but are significantly more likely to acquire seats in domestic companies. Funds are especially unlikely to acquire seats on a target company headquartered in an OECD country.

In cross-sectional analyses, the longer-term post-acquisition target performance is related to fund characteristics and to the SWF's level of involvement. The performance of SWF investment targets is worse for more passive funds, for foreign targets, and for targets headquartered in an OECD country, but long-run returns are negatively related to the size of the stake acquired and to the size of the target firm. Firm performance also appears to deteriorate more when SWFs acquire seats on board of directors. These results are most consistent with the Constrained Foreign State Investor Hypothesis, which predicts that SWFs should be especially reluctant to "interfere" in target firm management by demanding high performance or by holding managers to account. The key question going forward is whether SWFs will continue to act as "Quiet Leviathans" in terms of corporate governance, or will instead adopt a more assertive stance commensurate with their true financial power.

Chapter 4: Government Ownership and the Cost of Debt[57]

Governments and state-owned entities have been such active stock-market investors that they now own approximately one-fifth of global stock-market capitalization (Anonymous, 2010). After focusing on the impact of government investments – in particular, SWF investments – on the value of firm equity, we investigate the impact of this novel and growing form of government ownership on the cost of publicly traded debt of the firms in which governments invest.

The rise in "state capitalism" that this phenomenon of government stock purchases both reflects and encompasses has been deeply controversial, especially when it involves share purchases by foreign state-owned investors such as sovereign wealth funds (SWFs) (Bortolotti, Fotak, and Megginson, 2010; Dewenter, Han, and Malatesta, 2010; Kotter and Lel, 2011) or state-owned enterprises (SOEs) (Karolyi and Liao, 2010; Karolyi and Taboada, 2011). The mass of published research examining the effectiveness of governments versus private investors as owners of business enterprises points to the superiority of the latter, and empirical evidence overwhelmingly documents that when governments privatize SOEs, performance tends to improve.[58] All this suggests that states should be reducing their ownership of corporate equity, rather

[57] This chapter is based on collaborative work with Ginka Borisova, Kate Holland and William Megginson.

[58] The relative effectiveness of state versus private ownership is examined in Eckel and Vermaelen (1986), Boardman and Vining (1989), Kole and Mulherin (1997), Shleifer (1998), Chhibber and Majumdar (1999), Shirley and Walsh (2000), LaPorta, López-de-Silanes, and Shleifer (2001), Sapienza (2004), Dinç (2005), Caprio, Laeven, and Levine (2007), Chen, Firth, Xin, and Xu (2008), Chernykh (2008), Lin and Su (2008), Wolf (2009), Firth, Lin, and Zou (2010), Morck, Yavuz, and Yeung (2011), and Lin, Ma, Malatesta, and Yuan (2011). Early privatization empirical studies are summarized in Megginson and Netter (2001) and Djankov and Murrell (2002), while more recent research includes Sun and Tong (2003), Megginson, Nash, Netter, and Poulsen (2004), Boubakri, Cosset, and Guedhami (2005), D'Souza, Megginson, and Nash (2005), Gupta (2005), Brown, Earle, Telegdy (2006, 2010), Wolf and Pollitt (2008), Estrin, Hanousek, Kočenda, and Svejnar (2009), Boubakri, Cosset, Guedhami, and Saffar (2011), and Denisova, Eller, Frye, and Zhuravskaya (2011).

than increasing it. Yet, this evidence is mostly based on an analysis of operating performance or of equity prices. The impact of government ownership on the value of firm debt is largely unexplored.[59]

Despite governments in some ways resembling other large institutional investors, they often invest with different goals. While private investors are generally concerned with wealth maximization, several possible rationales for state ownership of listed equity have been put forth.[60] Governments might purchase equity stakes to influence companies to pursue socially-desirable objectives, such as maintaining high levels of employment, or to subsidize industries considered vital to the nation's political and military goals. These motivations suggest that governments are reluctant to allow a company in which they purchase stock to fail. Accordingly, investors come to expect that governments will likely honor the debt obligations of struggling government-owned firms, thus providing a sort of implicit debt guarantee (Faccio, Masulis, and McConnell, 2006; Brown and Dinç, 2011; Borisova and Megginson, 2011). Such a debt guarantee is likely to lower the perceived risk of default, leading to investors requiring lower risk premiums and, hence, to a lower cost of debt for the issuing firm.

On the other side, Stiglitz, Jaramillo-Vallejo, and Park (1993) warn that this reluctance of governments to allow firms (especially financial institutions) to fail is likely to increase managerial moral hazard, as shareholders and managers enjoy the benefits of strong firm performance, while the government and, ultimately, the

[59] Borisova and Megginson (2011) offer a recent exception, as they investigate the closely related impact of privatizations on the firms' cost of debt.

[60] An intriguing recent analysis of the motivations underlying the opposite phenomenon – determinants of governments' desire to *nationalize* private (petroleum) assets – is presented in Guriev, Kolotilin, and Sonin (2009).

taxpayers share the costs of insolvency. Such moral hazard is further strengthened by a lower risk of a manager losing his/her job, as government-owned firms are less likely to be acquired in a takeover or be allowed to go bankrupt. This moral hazard problem is also exacerbated by a monitoring gap which is likely to be associated with government ownership, as shown, for example, by Bortolotti, Fotak, and Megginson (2010) for SWF investments – governments typically provide lower levels of monitoring than other private shareholders and the implicit guarantees they offer remove monitoring incentives for other stakeholders. In addition, government ownership might lead to the imposition of social and political priorities on investment targets, which could result in deviations from purely economic shareholder value maximization. Such deviations are likely to negatively impact firm performance and firm value, which in turn will lead to a higher probability of default and a higher cost of debt. In other words, the implicit debt guarantee has a direct effect on the cost of debt – by lowering the perceived risk of default, it lowers the required risk premium – but it also an indirect effect of increasing moral hazard and agency costs, which could lead to a higher risk of default.

The net impact of government ownership on the cost of debt of a firm is thus a matter for empirical investigation. Our analysis aims to determine which of these effects dominates. Accordingly, we examine the link between government ownership and spreads (above benchmark yields) on publicly traded corporate bonds issued by firms in which governments and other state-owned investors purchase an ownership stake. Our sample consists of 1,279 bonds issued by 215 publicly traded companies from 43 countries over 1990-2010.[61] The correct measure of government ownership is crucial to our analysis and we manually collect stock ownership for all bond issuers in our sample

[61] Our focus on debt issued by publicly traded firms is driven by data availability constraints.

for each year between 1990 and 2010. Our main analysis relies on panel regressions in which we model the spread on corporate bonds as a function of government ownership after controlling for other factors (both security- and firm-specific) which have been found in previous research to affect the cost of debt. We note that a government guarantee on the debt of investment targets is likely to be more valuable during times of economic hardship as defaults are, all else equal, more likely during crises or recessions (Ivashina and Scharfstein, 2010; Puri, Rocholl, and Steffen, 2011; Santos, 2011). Accordingly, we distinguish between the recent financial crisis and previous 'non-crisis' years. During non-crisis years, we find that firms with one or more government entities as a shareholder display significantly higher spreads, by 52 basis points (bp), on their bonds. During the recent financial crisis, however, government presence is associated with lower spreads, by 24 bp, and each percentage point increase in government stake ownership translates into a 1 bp decrease in the cost of debt. In robustness tests, we use an alternative metric of country-level distress constructed by Laeven and Valencia (2010), which identifies banking-sector distress over the period 1970-2010 around the globe. Using this alternative proxy, we still find government ownership is associated with a significantly higher cost of debt (39 bp) during non-crisis years and a lower cost of debt (15 bp) during crisis years. Further, by employing a two-stage selection model, we find that our core results are not affected by the inclusion of sample-selection bias controls.

Past research has also documented that not all institutional investors are good monitors and that the monitoring is mostly – perhaps uniquely – provided by independent, long-term investors (Borokhovich, Brunarski, Harman, and Parrino, 2006;

Chen, Harford and Li, 2007; Ferreira and Matos, 2008; Brav, Jiang, Partnoy, and Thomas, 2008; Cronqvist and Fahlenbrach, 2009; Klein and Zur, 2009; Aggarwal, Erel, Ferreira, and Matos, 2011; Chung and Zhang, 2011). Similarly, different government-owned entities vary in terms of objectives and *modus operandi*. For example, government entities such as SOEs are likely to be more closely involved in the management of investment targets than are pure state actors, such as the central government or local/regional governments (Sapienza, 2004; Dinç, 2005; Brown and Dinç, 2005; Fan, Wong, and Zhang, 2007). State-owned investment vehicles such as pension funds and SWFs likely monitor target firm managements differently than do pure government entities or state-owned operating companies (Woidtke, 2002; Giannetti and Laeven, 2009; Bortolotti, Fotak, and Megginson, 2010; Jiang, Lee, and Yue, 2010). An activist stance by acquiring state entities could, therefore, either mitigate or amplify the adverse impact of government-induced moral hazard depending on the goals of the government entity. We find that the increase in cost of debt during non-crisis years is driven by the presence of local governments, SOEs with a mix of public and private ownership, government-owned financial institutions, and pension funds. However, during the crisis, local government and mixed SOE ownership helps lower the cost of debt in target firms. When focusing on the size of the stake owned, we find that large stakes held by SWFs and other government-owned financial institutions increase the cost of debt in non-crisis years. In the crisis period, larger holdings by central governments and by mixed SOEs lead to a lower cost of debt. Overall, our evidence is consistent with the idea that direct government involvement – whether central or regional – provides the strongest implicit debt guarantees, due to political

goals (often inconsistent with firm default) and "deep pockets", thereby helping lower the cost of debt during crisis periods. Conversely, the increase in the cost of debt is primarily linked to financial arms of the government (e.g., SWFs, pension funds), whose investing objectives are often commercial and, as such, do not lead to a similar implied debt guarantee.

We further note that implicit government guarantees are likely to be strongest for domestic targets, as the default of a foreign investment target is less likely to carry the political stigma associated with domestic failures of state-owned companies. For example, social and political goals are less likely to be imposed on foreign targets, as employment maximization is unlikely to be a goal imposed by a foreign-government owner. Additionally, recent empirical studies show that local investors are better able to overcome informational asymmetries than are more distant investors (Baik, Kang, and Kim, 2010; Almazan, de Motta, Titman, and Uysal, 2010). On the other hand, even more empirical evidence points to the superiority of foreign institutional and corporate investors as monitors of investee-firm managements, which could lead to higher firm valuations and thus a reduced cost of debt (Djankov and Murrell, 2002; Brown, Earle, Telegdy, 2006 and 2010; Ferreira and Matos, 2008). Clearly, we should expect different types of government entities to impact the cost of debt of investee firms in materially different ways. Accordingly, by separately analyzing the impact of domestic and foreign government ownership, we find that the implicit debt guarantee documented during the recent financial crisis is specific to domestic government presence. Foreign government ownership, however, is associated with an increase in the cost of debt

during the non-crisis years, equal to about 1 bp for each percentage point of stake owned.

We note that government guarantees might be more valuable the more likely the firm is to default. Accordingly, we have allowed for a different impact of government ownership on the cost of corporate debt during financial and banking crises (with the implicit assumption that firm default risk increases during times of economic hardship), showing that the value of a government debt guarantee is greater during times of economy-wide distress. In additional analysis, we focus on a firm-specific measure of distress, by investigating the impact of government ownership on the cost of debt for a sample of firms issuing high-risk (non-investment grade) bonds. In this sample of non-investment grade bonds we observe patterns similar to our main results – domestic (foreign) government ownership during crisis (non-crisis) years is associated with a lower (higher) cost of debt. The effects we document are strong. For non-investment grade bonds, domestic government presence leads to a significant discount of 72 bp over the entire sample and of 133 bp during the crisis years. Foreign government presence, on the other hand, is associated with significant increases in the cost of debt of 143 bp over crisis years and 209 bp over non-crisis years.

On balance, these results suggest that private investors believe that stock ownership by most domestic government categories can improve the creditworthiness of corporate bond issuers by providing an implicit bond payment guarantee that becomes especially valuable during a financial crisis. Evidence on the impact of the cost of debt of government ownership has been investigated recently by Borisova and Megginson (2011). Our research differs from their analysis in several ways, most

importantly in that they examine privatizations – the reduction of state control in firms – while we look at the government as an investor. Our analysis further indicates that the relationship between government ownership and cost of corporate debt is dramatically affected by firm-specific and economy-wide distress, differences between types of government acquirers and, finally, by the distinction between domestic and foreign government ownership. Our final sample spans 43 countries, and includes firms from North America and Asia, while Borisova and Megginson (2011) focus solely on domestic government ownership of European firms.

This study is structured as follows. Section 1 develops the hypotheses. Section 2 describes data sources, sample construction, and variable definitions and offers descriptive statistics and univariate tests. Section 3 discusses the methodology, panel regressions, and the associated model estimation results. Section 4 focuses on robustness tests, while Section 5 concludes.

1. Hypothesis Development

Governments, as acquirers, differ from private entities in multiple ways. Most importantly, government ownership carries an implicit – and, sometimes, explicit – guarantee on the debt of the firm, as it is unlikely that a firm with state ownership will be allowed to default on its debt. This unwillingness of governments to allow firms to default is due to three main reasons. First of all, there are political goals, such as low unemployment, which are not consistent with the loss of jobs frequently associated with the default of a firm. Second, government ownership is often motivated by the desire to maintain key industries providing crucial services to the country; accordingly,

governments are not keen on allowing such strategic holdings to default. Finally, politicians do not wish to be associated with a failed investment and will thus pressure or steer the government to rescue an insolvent government-owned firm. Consistent with this reasoning, Faccio, Masulis, and McConnell (2006) find that politically connected firms are more likely to be recipients of government bailouts, while Brown and Dinç (2005) show evidence that defaults of government-owned banks are less common than defaults of privately owned banks. Consequently, debt holders likely perceive a reduced probability of default as governments will back the debt of the firm. Since government guarantees extend directly to the debt of the firm, we might expect that state ownership would lower the debt pricing for target firms.

However, Borisova and Megginson (2011) show that the relationship between government ownership stake and debt pricing is non-monotonic, and several factors resulting from state presence could raise the firms' cost of debt financing. First, as discussed by Stiglitz, Jaramillo-Vallejo, and Park (1993), the implicit government guarantee allows shareholders and managers to benefit from strong firm performance, while public funds are used to keep firms afloat during difficult periods. Consequently, we expect managers to increase levels of risk taking, which in turn is likely to increase the cost of debt of the government-owned firm.

Second, the moral hazard problem might be reinforced by a monitoring gap that occurs because the government is unable, or unwilling, to supervise management. Since bondholders expect governments to rescue distressed firms, their own incentives to monitor the actions of management decrease (Anonymous, 1998). Further, government employees might simply not have the skills or technical knowledge necessary for proper

monitoring, due to either political appointments or other inefficiencies in the government employment sector. Borisova, Brockman, Salas, and Zagorchev (2012) find a lower quality of corporate governance in publicly traded firms partially owned by the government when compared to firms free from state ownership. Governments might be reluctant to actively impact the governance of firms in which they invest for fear of public opposition and backlash by media and regulators, especially if the investment target is located abroad. Bortolotti, Fotak, and Megginson (2010) accordingly propose the "Constrained Foreign Government Investor Hypothesis" and show evidence that SWFs create a "governance gap" that leads to value destruction, largely due to their desire not to stir opposition. Eckel and Vermaelen (1986) also point to the fact that government ownership might decrease the probability of a takeover, hence reducing the disciplining effect associated with the threat of a takeover.

Third, government investment vehicles might be affected by political pressures, thus leading them to pursue goals other than wealth maximization. State entities might want to maximize employment, favor domestic investments, acquire foreign technologies and, as Shleifer (1998) suggests, pursue political goals and increase government officials' personal income. Kahan and Rock (2010) discuss how, despite nominal fiduciary duties, governments can impose their own goals on a firm more easily than private controlling shareholders. Well-known cases of government ownership directing the benefits to their political supporters or simply appeasing the groups that had power to overthrow the existing government highlight inefficiencies in

state ownership.[62] All of these factors are likely to lower the risk-adjusted performance of government-owned firms, and as Crabbe and Fabozzi (2001) document, firm profitability is closely linked to the firm's ability to repay borrowed funds.

Between implicit debt guarantees and the moral hazard and political goals linked to state owners, the net impact of government ownership on the cost of debt of target firms is a matter of empirical investigation. We simply hypothesize that government ownership does have an impact on the cost of debt of investment targets, positing:

H1: Government ownership impacts the cost of debt of investment targets.

We test the above hypothesis by investigating whether the cost of debt of firms with government entities amongst their shareholders is different from the cost of debt of a sample containing the same firms during years without government ownership. We also note that the impact that government ownership has on firm behavior could plausibly be conditioned by the size of the government owned stake. Governments might be more protective of firms in which they own larger stakes, thus reinforcing the implicit debt guarantee previously mentioned, or, similarly, state owners may have a stronger impact on the governance and behavior of firms in which they hold larger stakes. Accordingly, in subsequent analysis, we examine the relationship between firms' cost of debt and the size of the stake owned by government investors. The value of a debt guarantee, implicit or clearly stated, increases in the likelihood of distress or bankruptcy of the borrower. Therefore, if government ownership provides a debt guarantee, its value is likely to increase in times of distress. Hence, we hypothesize that:

[62] Refer to Shleifer (1998) for examples. Some instances include post World War II British government sponsoring of coal mines due to the miner union power to overthrow current government and the Philippines running a state-owned power utility that shuts off electricity seven days a week.

H2: The impact of government ownership on the cost of debt of investment targets differs during recessions and periods of market-wide financial distress.

As a first test of the above hypothesis, we make use of the recent financial crisis (spanning the years 2008, 2009, and 2010). This event, affecting virtually the entire global economy, is an appropriate testing ground as it constitutes an exogenous shock in most domestic economies. Using both interaction variables and data subsets, we investigate whether the impact of government ownership on the cost of firms' debt differs during the recent financial crisis. For robustness, we replicate our analysis by focusing on a broader set of financial crises – the banking crises described by Laeven and Valencia (2010).

Using similar reasoning regarding the importance of an implicit government guarantee during times of overall market distress, we investigate whether this guarantee would also be more valuable in the presence of firm-specific distress when access to capital markets is constrained and defaults are more likely. We thus examine the influence of government ownership on the cost of non-investment-grade bonds and highly-levered firms, which we use as proxies for firm-specific distress, and theorize the following:

H3: The impact of government ownership on the cost of debt of investment targets differs during periods of firm-specific distress.

Past research has documented that not all institutional investors are good monitors and that the best monitoring is provided by independent, long-term investors (Chen, Harford, and Li, 2007). Government-owned entities similarly differ in terms of objectives and *modus operandi*. Some classes of government entities are more likely to

be closely involved in the management and monitoring of their acquisition targets. An activist stance by the acquiring entities could mitigate the adverse impact of government-induced moral hazard. Similarly, the strength of the implicit debt guarantee differs according to the nature of the government entity holding the investment stake, in turn leading to different impacts on the cost of debt.

H4: The impact of government ownership on the cost of debt of investment targets differs according to the type of government investment vehicle.

Accordingly, we investigate whether different classes of government-owned acquirers (central government, local government, SWFs, SOEs, mixed SOEs, public pension funds, and government financial institutions) have different impacts on the cost of debt of investment targets.[63] In particular, we expect government acquirers that are more closely associated with the political goals of government (such as central governments) to take on the role of "protectors" and to provide the strongest debt guarantees. Entities with a more independent nature (such as government-owned pension funds and SWFs) should more closely follow the behavior of other institutional investors. They are less likely to suffer from the political distortions that lead to government support of distressed firms and less able to rescue defaulting portfolio holdings.

[63] The classification is based on the identity of the government-owned shareholder (the investor). The 'central government' group is comprised by non-independent branches of the central (national) government, such as ministries (most often, ministries of finance) and national treasuries. 'Local/regional government' refers to non-independent branches of sub-national governments (most often, municipalities and townships). 'Pension funds' refers to government-owned pension funds, while for 'Sovereign Wealth Funds' we follow the descriptions given by Thomson ONE Banker and the SWF Institute. 'Government financial institutions' includes financial institutions owned by governments and consists primarily of central and development banks. The 'full SOE' category includes all enterprises fully owned by the government, while 'mixed SOE' includes all enterprises in which the government retains partial ownership or some level of control (for example, through 'golden shares').

Government guarantees are strongest for domestic targets, as the default of a foreign investment target is less likely to carry the political stigma associated with domestic failures of state-owned companies. Also, active involvement of a foreign government in a domestic target can be met with significant public opposition, so governments may sometimes choose to be passive investors, especially in their foreign holdings. This reduced monitoring can lead to increased risk taking, reduced firm efficiency and, therefore, a higher cost of debt. This analysis suggests a lower cost of debt for domestic investments due to greater debt guarantees and the reduced monitoring role of foreign governments. On the other hand, government involvement could lead to the higher cost of debt for domestic entities as those investments typically pursue not only shareholder value maximization, but also other political and social goals. Bortolotti, Fotak, and Megginson (2010) document that social and political goals are less likely to be imposed on foreign targets, as foreign acquisitions tend to be largely driven by economic rationale. Thus, we hypothesize:

H5: The impact of government ownership on the cost of debt of investment targets will differ for domestic firms.

2. Sample Description

We collect a sample of government investments from the Securities Data Company (SDC) Platinum Mergers and Acquisitions database. As an initial screen, we include all investments by entities whose ultimate parent is flagged as 'government' over the years 1980-2010 – that is, investments by governments, government agencies and firms which are, directly or indirectly, majority-owned by governments. This initial

search yields a total of 2,517 completed government investment transactions involving 1,953 unique target firms. We further rely on SDC to collect additional information about the deals, such as announcement and completion dates, the proportion of shares acquired for each deal, the proportion of shares held by the acquirer after the deal, the nation of the acquirer, and the nation and primary SIC code of the target. This sample is restricted to government investments in publicly traded firms, so that we can obtain audited accounting data for the investment targets.

We use the SDC New Issues database to identify target firms based on CUSIP identifiers with publicly traded "plain vanilla" bonds outstanding over the period 1990-2010.[64] Following Borisova and Megginson (2011), we only use straight bonds with fixed coupons as the spreads of debt securities with additional features are more sensitive to sovereign bond yield fluctuations (Duffee, 1998). Based on the 1,953 unique CUSIPs from our government investment sample, SDC returns 7,804 straight bonds from 388 issuers. The retrieval of bond spread and rating data requires bond ISINs, and SDC provides ISINs for 2,977 bonds. Of the remaining bonds without identifiers, we record ISINs for 945 additional securities manually found in Datastream, yielding a combined total of 3,922 bonds.

Data for these bonds are obtained from Datastream. We retrieve interpolated spreads relative to a currency-matched benchmark of government bonds, as defined by Datastream. We also use this database to retrieve time-varying Standard and Poor's (S&P) ratings for the bond issues. Bond yield data and historical credit ratings are

[64] Our bond data period begins in 1990 since bond credit spreads are generally unavailable before this time. We recognize government investments starting in 1980 as these data are available and allow us to find a greater sample of firms where the state is present and for which we can subsequently find bond data.

recorded as of the Wednesday closer to November 15 of each year (i.e., the third Wednesday of each November). We use data as of Wednesday to avoid end-of-week or beginning-of-week distortions in market data. For similar reasons, we use a target date of November 15 to avoid end-of-year effects. We retrieve 10,124 bond-year spreads for our sample, and 6,854 of these (from 1,554 bonds and 278 firms) are found with accompanying yearly S&P ratings. To eliminate outliers in the credit spread data, we truncate the top and bottom 1% of spreads. It is worth noting that our use of a November sampling point means that spread observations for 2008 are all after the collapse of Lehman Brothers on September 14, and thus after the 2008 financial crisis truly began.

Crucial to our analysis are accurate, time-varying values of government ownership, both in the aggregate and for various categories of state investing entities. Therefore, we further augment our dataset by using numerous sources to verify and track government ownership over time in the target assets. For each of our 215 target firms, we manually collect ownership for each year between 1990 and 2010. SDC provides the starting point for this collection via the investments that form our sample, as well as sales by the same acquirer-target pair in order to capture decreases in stakes. We then locate our sample firms in the Thomson ONE Banker ownership module, track holdings of all institutional shareholders across our sample period as of the end of the calendar year, and classify each reported shareholder into various government investing categories (or as non-government investors). When not available in this database, ownership amounts and investor identifications are found using company annual reports, filings, and business descriptions. These data are provided by Thomson ONE

Banker; entities' websites, press releases, the Securities and Exchange Commission's Electronic Data-Gathering, Analysis, and Retrieval system (EDGAR); the Canadian Securities Administrators' System for Electronic Document Analysis and Retrieval (SEDAR), Privatization Barometer, the World Bank privatization database, and Lexis-Nexis.

To perform our analysis, historical accounting data for the bond-issuing firm are also required. We search for relevant financial data using Worldscope and are able to collect necessary measures for a final dataset of 215 firms. These firms are targets of 289 government purchases, and have 1,279 sample bonds outstanding that meet our selection criteria, thus yielding 5,126 bond-year observations.

2.1. Descriptive Statistics

We provide a first insight into the composition of our sample by analyzing the government investment transactions included in the final dataset. The sample includes a total of 289 government purchase transactions, valued at USD 334 billion. Core descriptive information is presented in multiple panels in Table 20. Panel A breaks down government investments by year of announcement. Approximately half of our sample (55% by transaction value, for a total of USD 188 billion) spans the crisis years 2008-2010, allowing for a comparison between the recent financial crisis and previous years.

Panel B details government investments by stake ownership. Investments worth USD 175 billion, 52% of our sample by deal value, involve non-controlling ownership (less than 50%). Investments worth USD 109 billion, 33% of our sample, involve

controlling, but not full, ownership. Finally, investments for USD 51 billion, 15% of our sample, involve full government ownership.

Panel C describes the country of origin of the acquiring government. 30% of our sample by deal value (USD 99 billion), but only about 4% by the number of transactions, originates from the United Kingdom. The list of governments leading in total value of acquisitions includes Singapore (11%), the United Arab Emirates (9%), the Russian Federation (7%), Germany (7%), and the Netherlands (6%).

Panel D describes the transaction sample in terms of country of incorporation of the target. The top nation is again the United Kingdom, with 36% of all deal value (USD 120 billion), likely due to the British government rescuing the domestic financial industry during the recent crisis. The other top target nations by total value are the United States (13% of the sample), Germany (8%), the Russian Federation (7%), and the Netherlands (6%).

Panel E describes our sample in term of target industry. Target firms are classified according to one-digit US SIC codes. The leading target industry is SIC code 6, 'Finance, Insurance and Real Estate', comprising 98 deals worth USD 174 billion (52% of the sample, by deal value). The utility sector, SIC code 4, 'Transportation, Communications, Electric, Gas, and Sanitary Services,' attracts the second largest number (86) and value (USD 97 billion) of state investments. No other industrial sector attracts more than seven percent of total investment.

2.2. Variables

Our main analysis is based on panel regressions, with yield spreads as response variables and proxies for the cost of debt. The variables used in this analysis are described in Table 21.

Descriptive statistics relevant to the main variables are included in Table 22. The presence and level of government investment in target firms serve as our primary explanatory factors of interest. *Govt presence* is a binary variable taking a value of 1 if there is any government ownership in the firm during a specific calendar year, and 0 otherwise; we also collect levels of state ownership represented as a percentage of a firm's shares. As presented in Table 22, out of a total of 5,126 bond-years, 3,148 (61%) involve the presence of government. Mean government ownership is 13.67% for the overall sample and 22.26% for the sample of bond-years in which government is present as a shareholder.

We account for foreign governments investing in our target firms, as this type of state ownership could yield different effects on the cost of debt of target firms. Foreign government ownership consists of 1,358 observations (bond-years), which is 26% of the overall sample and 43% of the sample with state ownership. Also, because the recent financial crisis has spurred large waves of government intervention, we also include a financial crisis indicator taking a value of one when credit spreads are measured in the period 2008-2010 and find that 1,834 of the observations (36% of the overall sample) span the financial crisis period.

To further explore how government involvement can affect debt pricing, we disaggregate state ownership into different investing entities. Specifically, government

owners are split into seven categories, identified by the following variables: *Central govt*, consisting of the national government and its treasuries and ministries (comprising 581 bond-year observations and 18% of the sample with government ownership); *Govt financial institution*, comprised of central banks, government development banks, and other state financial institutions (212 observations; 7% of the state ownership sample); *Local/regional govt*, a state owner representing a state, city, or region (77 observations; 2% of the state ownership sample); *Pension fund*, a government-run pension fund (784 observations; 25% of the state ownership sample); *Mixed SOE*, a partially government-controlled enterprise that has some non-government ownership (1,649 observations; 53% of the state ownership sample); *Full SOE*, state-owned enterprises (913 observations; 29% of the state ownership sample); and *SWF*, sovereign wealth funds (897 observations; 28% of the state ownership sample).

As a first control variable, we include S&P credit ratings obtained from Datastream. We form an ordinal scale with the best credit quality assigned the highest number, and we use the natural logarithm of credit rating to account for possible nonlinearity. The expected sign of the coefficient on the credit rating is negative – the higher the credit rating, the lower the spread. The median credit rating in our sample corresponds to an S&P rating of "A-".

The number of days to maturity is also included in our models, with an expected positive coefficient due to more uncertainty over the lifetime of the bond. Average time to maturity in our sample is about 2800 days, or about 7.7 years. We also control for the bond's age, defined as the number of days between the issue date and the date on which the spread was collected; average bond age in our sample is 1644 days, or

approximately 4.5 years. Houweling, Mentink, and Vorst (2005) document the age of the bond as one of the most important determinants of bond market liquidity. We expect a negative relation between bond age and credit spreads, as in Borisova and Megginson (2011), since as the bond's maturity date approaches there is less uncertainty associated with its coupon and par value payments.

Banks and other financial institutions are often treated separately in empirical analysis, as their capital structures are typically different from those of other firms and because they generally enjoy higher levels of government support in case of distress. We accordingly define an indicator variable identifying banking firms based on the firm's industry classification, name, and business description, and we expect this variable to be negatively associated with firms' cost of debt. Over one-fourth of all target firm observations (1,300 of 5,126 total firm-years observations) are for investments in commercial banks.

We further include controls for firm leverage (computed as total assets minus equity, divided by equity) to serve as a proxy for the probability of default. Including firm leverage as a control variable also allows us to account for the impact of deleveraging associated with capital injections. We expect firms with higher leverage to have a higher cost of debt, as in Collin-Dufresne, Goldstein, and Martin (2001) and Krishnan, Ritchken, and Thomson (2005). We also include the market-to-book ratio (with an average of 1.86) and size (proxied by the natural logarithm of total assets, with a mean of 10.96), as both have been shown by Fama and French (1993) to explain variation in bond returns. Larger firms are generally considered safer, at least partially due to increased asset diversification; hence, we expect a negative relationship between

firm size and cost of debt. Market-to-book is generally viewed as a proxy for the growth prospects of the company, so we expect higher growth opportunities to be associated with more ease of debt repayment, and, hence, a lower cost of debt. Finally, we include return-on-equity (with a mean of 7.47%), which Crabbe and Fabozzi (2001) document being associated with ease of debt repayment. Accordingly, we expect return-on-equity to be negatively associated with the cost of debt. Further, we obtain collateral and instrument types from Bloomberg, as those could also have an impact on bond pricing. We consider twenty-six different types of collateral and instrument types.

Our sample also includes transactions related to government bailouts, and we account for these rescues in an attempt to isolate their effect on bond spreads. Bailouts are identified using SDC deal synopses, as well as reports from the press and company financial statements. We identify 479 bond observations (9% of our sample) from 27 firms related to bailouts for the full sample, with the bulk of these occurring during the 2008-2010 period (472 bond-years of 26 firms). We exclude these observations whenever performing regression analysis for the crisis period or employing a financial crisis binary variable.

2.3. Mean Differences Tests

Before presenting our main, panel-based analysis, we offer a first look at the data though tests for differences in means presented in Table 23. In our analysis, we compute mean spreads for various bond-year data subsets: with and without government ownership, distinguishing between domestic and foreign government ownership, for the crisis and non-crisis sub-periods, and isolating issuers that belong to

the banking sector. Given that each firm in our sample can have multiple bond observations, the distribution of spreads is possibly clustered at the firm level. As discussed by Peterson (2009), clustering of observations can lead to problems in the estimation of standard errors. Accordingly, we employ a standard error estimation methodology adjusted for clustering (at the firm level) as described by Skinner, Holt and Smith (1989). We then employ the clustered standard-error estimates to compute two-sample t-test for mean differences between data subsets.

For the earlier years of the sample period (1990-2007), bond spreads of firms with government ownership are significantly higher than those without government ownership (167 bp vs. 146 bp). However, during the 2008-2010 financial crisis we find significantly lower spreads in bond-years with government presence (with a mean spread of 311 bp) than in those without government presence (396 bp).[65] We interpret these univariate results as indicative of the importance of the implicit government guarantee during times of financial distress.

We also compare government ownership by the relation of the investing government to its target firm. Firms are grouped based on whether the majority of their government ownership is held by a domestic state entity or a foreign one. Firms with a majority of domestic government ownership have a lower mean spread (147 bp) than firms with a majority of foreign government ownership (270 bp) over the period 1990-2007. But, during the 2008-2010 crisis, firms with domestic government ownership have a cost of debt (314 bp) not statistically different from those with foreign government ownership (307 bp).

[65] Here and in the remainder of the paper, discussed results are statistically significant at the 10% level or lower, unless otherwise indicated.

Our last set of reported univariate results indicates that banking firms have significantly lower average bond spreads than non-banking firms when government owners are present. However, for the subsample without state ownership, we find that a significant difference does exist in the pre-crisis years but disappears during the crisis years of 2008-2010, indicating the relatively greater importance of state guarantees for banks in this period. Governments likely recognize the importance of backing troubled financial institutions: 65% of our bank observations are from bailed-out firms, compared to only 7% of our non-bank observations.

The univariate analysis suggests that government ownership, while generally associated with a higher cost of debt, leads to a reduction in cost of debt during times of economic distress. These results are consistent with the increased value of an implicit government debt guarantee when default is, unconditionally, more likely. Such an effect appears to be most important for banking firms during a period of financial crisis. Our panel regressions in the next section allow us to further examine the association between government ownership and debt pricing and to clarify which state entities could have the strongest effect on the cost of debt.

3. Panel Regressions

3.1. Methodology

We employ regression analysis to test the effect of government ownership on a target company's cost of debt, measured by its bonds' credit spreads. To control for heteroskedasticity and account for time-series dependence, firm-clustered standard errors are also employed, as suggested by Petersen (2009). Year fixed effects are also

used in all regressions. Similar to Borisova and Megginson (2011), the preliminary model is as follows:

$$y_{it} = \varsigma + \beta X_{it} + \gamma r_{it} + \nu_t + \varepsilon_{it}, \quad (1)$$

where y_{it} represents the credit spread, ς is an intercept term, β is a set of coefficients, and X_{it} is a matrix of explanatory variables. γ is a scalar coefficient, r_{it} is the credit rating, ν_t (t = 1...20) represents the yearly fixed effects, and ε_{it} is a classical error term. The indices *i* and *t* refer, respectively, to bonds and years.

The explanatory variables include control factors, as described in Section 2.2, and variables of interest related to government ownership. Depending on the specific model being tested, we employ either binary variables identifying bond-years with government shareholders or continuous variables measuring the size of the stake owned by the government, expressed as a percentage. In additional specifications, we identify the presence or stake owned by specific categories of government shareholders. Further, to allow for the different impact of government ownership on the cost of debt during times of distress, we add interactions between the government-ownership variables and metrics of economy or firm distress. To alleviate endogeneity concerns, we evaluate the cost of debt for the same firm in years with and without government ownership and we also lag government ownership values (e.g., December 2006 ownership is matched with bond spreads in November 2007), as in Borisova, Brockman, Salas, and Zagorchev (2012).

All models in the analysis use an orthogonalized value of credit rating to control for the impact of other independent variables on its assigned value. Liu and Thakor (1984) present a detailed discussion of the residual transformation procedure, and more

recently, other works have also used it for the credit rating of bonds (Datta, Iskandar-Datta, and Patel, 1999; Klock, Mansi, and Maxwell, 2005; Borisova and Megginson, 2011).

3.2. Government Ownership and Cost of Debt by Investor Categories

We apply the model described in the previous section and present results regarding the effect of government ownership on the cost of debt in Table 24. In Panel A, our main explanatory variable of interest, government ownership, is expressed as a binary variable, equal to 1 in the year of interest, if the bond is issued by a firm for which at least one shareholder is a government or government-owned entity. In Panel B, the explanatory variable of interest is the size of the firms' stake held by all government-owned shareholders during the year of interest. In Model 1, we consider overall government ownership, which is broken down by government acquirer type in the models to follow: sovereign wealth funds (SWF) in Model 2; central government in Model 3; local and regional government in Model 4; full state owned enterprises (full SOE) in Model 5; mixed state owned enterprise (mixed SOE) in Model 6; government owned pension funds in Model 7 and government financial institutions in Model 8.

We evaluate the data over the full 1990-2010 period and add a variable identifying the 2008-2010 financial crisis period and interactions between the *Financial Crisis* binary variable and the government ownership metrics. By focusing on the years 2008-2010, during which most worldwide markets were affected by a global financial crisis, we make use of this exogenous shock to firms, allowing us to measure the differential impact of government ownership with limited concerns of reverse causality.

The results in Table 24, Panel A indicate that the presence of government ownership is associated with a higher cost of debt, with a spread increase of approximately 52 bp during non-crisis years. But during the recent financial crisis, the presence of government ownership is associated with a decrease in the cost of debt of approximately 24 bp. This means that government ownership is associated with a 52 bp increase in the cost of debt, but the interaction between the financial crisis and government presence leads to a decrease in the cost of debt equal to 76 bp; the full impact is given by the sum of the estimated coefficients. In Models 2 to 8, we observe that the increase in the cost of debt during the non-crisis years is due to government financial institutions (with an increase in spread equal to 132 bp), local/regional governments (87 bp), pension funds (71 bp), and mixed SOEs (39 bp), in order of magnitude. On the other side, the lower cost of debt during the financial crisis is driven by mixed SOEs and local/regional governments, each associated with a discount of approximately 48 bp.

The Table 24, Panel B results show that the stake of government ownership does not appear to impact the cost of debt in a statistically significant manner prior to the 2008 crisis, but each percentage point of government ownership is related to 1 bp decrease in the cost of debt during the financial crisis. When disaggregating results by government investor types, we find that shareholding amounts by SWFs or other government-owned financial institutions are associated with an increase in the cost of debt, while the discount during the financial crisis is mostly due to holdings of central governments and mixed SOEs. This is consistent with the "investor" nature of SWF and financial institutions and "protector" nature of the central government and some of its

most efficient SOEs.[66] Government financial institutions, pension funds, and SWFs, in particular, are typically motivated by economic goals for their investments. Central governments, on the other hand, pursue economy-wide stabilization goals, especially during the crisis times.

Overall, our first set of results is consistent with the idea that government shareholding increases the cost of debt during regular, non-crisis years but decreases the cost of debt of portfolio holdings during the recent financial crisis. We find this decreasing effect most strikingly when considering the overall presence of state ownership, as well as when looking at the existence of local government and mixed SOE ownership. This result is largely consistent with governments introducing inefficiencies and the pernicious effects of moral hazard but offering, at the same time, implicit debt guarantees that become extremely valuable during times of distress. To further investigate the plausibility of those implicit debt guarantees, we investigate distinctions between domestic and foreign government ownership in the following section.

3.3. Domestic versus Foreign Government Ownership

We hypothesize that domestic and foreign government investments are motivated by different sets of priorities. Our expectation is that the desire to maintain high levels of employment and political concerns about market failures are likely to strengthen the implicit debt guarantees offered by government shareholders on their

[66] Dinc and Gupta (2011) show that profitable firms are likely to be privatized early. The mixed SOE firms have the benefit of not only being more profitable and efficient prior to the time when a part of the ownership is allocated to private investors, but also later on due to the higher efficiency of partially private ownership.

domestic portfolio holdings. We also expect a weaker implicit debt guarantee to be provided by foreign government ownership since government influence in foreign markets is likely to be weaker. Additionally, investments by foreign governments are more likely to be commercially-oriented (motivated by profit seeking) and thus are less likely to involve the creation of implicit debt guarantees. Accordingly, we expect the previously-documented results to appear stronger for the subsets of domestic and foreign government ownership. We expect the domestic implicit government guarantee, as opposed to the foreign one, to play a larger and more positive role in influencing the cost of debt of their targets, especially during the financial crisis.

Results for the effect of domestic versus foreign government ownership on the cost of debt are presented in Table 25. Our main explanatory variable of interest, government ownership, is expressed as presence (binary variable) in Panel A and as a stake (percentage) in Panel B. In Model 1, we present results for domestic government ownership over the full 1990-2010 period; in Model 2, for foreign government ownership over 1990-2010; in Model 3, for domestic government ownership over 1990-2007; in Model 4, for foreign government ownership over 1990-2007; in Model 5, for domestic government ownership over 2008-2010; and in Model 6, for foreign government ownership over 2008-2010.

Table 25, Panel A reveals that the presence of a domestic government shareholder significantly decreases in the cost of debt of its portfolio-holdings by approximately 56 bp during the recent financial crisis. No similar pattern is associated with foreign government presence, as the latter is always associated with a statistically insignificant increase in the cost of debt. During the non-crisis period neither foreign

nor domestic government ownership has a statistically significant impact on the cost of debt of portfolio-holdings.

Table 25, Panel B reveals similar results. A larger stake owned by a domestic government shareholder is associated with a lower the cost of debt, but the effect is statistically significant only during the recent financial crisis. The result is, however, economically important, as the cost of debt tends to decrease by 1 bp for every percentage point of domestic government ownership. On the other hand, a stake owned by a foreign government is positively associated with the cost of debt, but the effect is statistically significant only during the non-crisis years. The effect is, again, economically significant, with the cost of debt increasing by 1.25 bp for every percentage point in foreign government ownership.

Overall, the distinction between domestic and foreign government ownership and between crisis and non-crisis years reveals that the impact of government ownership on the cost of debt can vary, and that a pooled analysis risks obfuscating important nuances. In particular, our more detailed analysis indicates that domestic government ownership decreases the cost of debt of firms during crisis years, while foreign government ownership increases the cost of debt during non-crisis years. These results are, once more, consistent with the view that government ownership influences firm behavior through multiple channels, whose relative importance and net effect depend on environmental factors. Times of distress reveal the dominance of an implicit debt guarantee, especially valuable when default is more likely and stronger when the investor is a domestic government. Conversely, ownership by a foreign government entity creates a distortion of incentives (and possibly a monitoring gap as described by

Bortolotti, Fotak and Megginson, 2010) that proves particularly deleterious in non-crisis years.

3.4. Distressed Firms

We further investigate the influence of government ownership on the cost of debt when firms are in financial distress. Noting that the value of debt guarantees is likely to increase as default becomes more likely, we have focused on testing whether government ownership affects the cost of debt differently during a financial crisis in section 3.2. Although an exogenous shock such as a financial crisis allows us to limit concerns of reverse causality, it also presents a different set of challenges – during such an encompassing crisis, firm distress is often accompanied by a reduction in the supply of credit. Hence, a reduced cost of debt associated with government ownership could be because government shareholders ease access to capital markets, rather than because government shareholders are providing a debt guarantee. To check for such debt-supply effects, we further analyze the impact of government shareholding on the cost of debt around firm-years of firm-specific distress, during which we have no reason to suspect a systemic debt-supply shock. Accordingly, to identify a sample for which distress is more likely, we focus on firms that issue non-investment-grade bonds.

Moreover, we investigate whether the influence of government ownership on the cost of debt of distressed firms differs during the economy-wide financial crisis and according to whether the government is foreign or domestic. Therefore, besides analyzing the influence of government ownership on the cost of debt of firms that are in distress over our full 1990-2010 period, we also examine that influence for the 2008-

2010 financial crisis period and the pre-crisis period of 1990-2007. This allows us to evaluate whether the implicit government guarantee influences the cost of capital for distressed firms in general and also during economy-wide distress. Finally, we also break down government owners of firms that issue junk bonds into foreign and domestic entities.

Results for the effect of government ownership on the cost of debt of firms that issue non-investment-grade bonds are presented in Table 26. Our main explanatory variable of interest – government ownership – is expressed as presence (binary variable) in Panel A and as a stake (percentage) in Panel B. In Model 1, we present results for domestic government ownership over the full 1990-2010 period; in Model 2, for foreign government ownership over 1990-2010; in Model 3, for domestic government ownership over 1990-2007; in Model 4, for foreign government ownership over 1990-2007; in Model 5 for domestic government ownership over 2008-2010 and in Model 6 for foreign government ownership over 2008-2010.

Table 26, Panel A shows that the cost of debt is a function of the presence of domestic government ownership for the overall 1990-2010 period and also for the 2008-2010 crisis period. Domestic government presence lowers the cost of debt by approximately 73 bp over the overall 1990-2010 time period and even more so, by approximately 133 bp, over the 2008-2010 crisis period. On the other hand, the cost of debt is positively and significantly associated with the presence of the foreign government ownership in all models. The presence of foreign government ownership in firms that issue non-investment-grade bonds is associated with an approximately 143 bp increase in the cost of debt during the overall 1990-2010 period and during the 2008

financial crisis. Furthermore, foreign government ownership is associated with even higher spreads during the 'pre-crisis' period, as compared to the crisis period. Spreads for firms with non-investment-grade bonds that have foreign government ownership are about 210 bp higher during the 1990-2007 period.

Table 26, Panel B results echo those of Panel A as domestic government stake ownership is associated with a lower cost of debt for firms with non-investment-grade bonds during the 2008 crisis. Results imply that a 1 percentage point increase in domestic government ownership leads to about a 7 bp reduction in the cost of debt for firms with non-investment-grade bonds during the crisis and to about a 2 bp reduction over the whole 1990-2010 period. Panel B also shows that foreign government ownership increases the cost of debt for firms that issue non-investment-grade bonds, but the significant relation is present only for the pre-crisis 1990-2007 period. Nevertheless, while foreign government presence leads to a significantly higher cost of debt for non-investment-grade bond issuers overall, the stake that a foreign government owns matters as well prior to the onset of the crisis. Further, the increase in the cost of debt is economically significant – a 1 percentage point increase in foreign government ownership leads to about a 4 bp increase in the cost of debt of non-investment-grade bond issuers over the 1990-2007 period.

Overall, the results in Table 26 for non-investment-grade bond issuers support our results in Table 26 for all firms and are even stronger in showing the distinct influence of foreign and domestic government ownership, especially during the financial crisis. The domestic government's implicit guarantee matters for distressed firms (that issue non-investment-grade bonds) and is significantly associated with a

lower cost of debt over the full 1990-2007 period and over the 2008-2010 financial crisis. On the other hand, foreign government ownership is associated with a higher cost of debt for firms with j non-investment-grade bonds, especially in the pre-crisis 1990-2007 period. Our interpretation of these results is that the implicit government guarantee is important for the cost of capital during a variety of distress periods—whether economy-wide or firm-specific. Also, this implicit government guarantee is provided mainly by the domestic, rather than foreign, government ownership of distressed firms, which is also similar to the results for the full sample in section 3.3.

4. Robustness and Extensions

4.1. Alternative Model Specifications

In this section we carry out checks of the robustness of our results to alternative specifications. We check for the influence of government ownership on the cost of debt using an alternative economy-wide distress specification. We also group all categories of government acquirers into one regression and analyze the results over three periods – the full 1990-2010 period, the pre-crisis period of 1990-2007, and the financial crisis period of 2008-2010. These alternative models are presented in Table 27. In Model 1 we present the results for the influence of the presence of government ownership on the cost of debt during various banking crises for the full 1990-2010. Model 2 examines debt pricing for highly-levered firms that have strong direct government ownership. Models 3-8 evaluate the simultaneous impact of different government investor type categories on the cost of debt. Our main explanatory variable of interest, government ownership by different acquirer types, is expressed as presence (dummy) in Models 3,

5, and 7 and as a stake (percentage) in Models 4, 6, and 8. Results are also presented for three time periods: the full 1990-2010 period in Models 3 and 4; the 1990-2007 period in Models 5 and 6; the financial crisis 2008-2010 period in Models 7 and 8.

In Table 27, Model 1 we adopt a broader definition of the "crisis" by focusing on a wide sample of banking crises identified by Laeven and Valencia (2010) and show that our results still hold.[67] In this analysis, we find that government shareholding is associated with an increase in the cost of debt of 39 bp in non-banking-crisis years. During a banking crisis, the cost of debt of non-government owned firms in our sample increases by 68 bp, but the estimated coefficient associated with the interaction between government ownership and banking crises indicates that the increase in the cost of debt for government-owned firms during a banking crisis is much lower (below 14 bp). Accordingly, during a banking crisis the cost of debt of government-owned firms is about 15 bp lower. This robustness test confirms our general findings that government ownership is associated with a higher cost of debt during normal economic periods, but with a lower cost of debt during periods of distress, consistent with the creation of implicit debt guarantees.

As a robustness check for our distressed firm models in section 3.4, Model 2 of Table 27 features an interaction between firm leverage and the existence of a strong government presence, proxied by shareholdings by central governments, during the 1990-2007 pre-crisis period. Although we show previously that central government

[67] We thank Luc Laeven for making a dataset identifying banking crises available at http://www.luclaeven.com/Data.htm. The authors identify banking crises 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). The dataset lists country-years in which banking crises occur across the world from 1970 to 2009.

presence can help lower the cost of debt during the crisis, it could also aid highly-levered firms facing debt problems that are more firm-specific than macroeconomic. Model 2 shows no significant link between central government ownership and debt pricing for the full sample of firms but also displays that the cost of debt drops for more highly-levered firms with national government ownership. This result complies with our earlier analysis of junk-bond issuers by showing how government guarantees are more valuable to firms facing distress.

In Table 27, Models 3-8 group the ownership from different government entities into one regression, and our results are similar to those of Table 24. These models allow us to compare firm-years with ownership of each government entity to non-government owned firm-years, while controlling for the effects of other government owners. We document that during the 2008-2010 crisis the cost of debt is a significant negative function of government ownership by central governments and mixed SOEs. Models 7 and 8 show that during the crisis the reduction in the cost of debt for firms with ownership by central governments is 75 bp, and a 1 percentage point increase in central government ownership is associated with a 1.2 bp reduction. Also, mixed SOE ownership is associated with a 90 bp reduction in the cost of debt of the targets, where a 1 percentage point increase in mixed SOE ownership leads to a 2.23 bp reduction in the cost of debt. Finally, outside of the crisis and during the overall 1990-2010 period, the cost of debt is significantly and positively linked to government ownership by government financial institutions and SWFs.

Models 7 and 8 also comply with the pattern noted in Table 24, where the implicit government guarantee is the strongest during the crisis for the types of

government acquirers that have a "protector" function, rather than an "investor" function. Lower cost of debt for firms during the 2008 crisis is associated with central government ownership, as well as full and mixed SOE ownership, while the higher cost of debt during this period is associated with the government "investor" group—government financial institutions and pension funds. These results on the influence of different types of government investors according to their "protector" or "investor" functions support the notion that different state actors operate with diverse objectives. Further investigation along these lines could provide more insight into the channels through which government entities affect the cost of debt.

4.2. Two-Stage Selection Models

As a more formal method of accounting for endogeneity, Heckman treatment effect models are also used (Heckman, 1979). In these two-stage models, an initial selection equation is fit using a probit model describing the characteristics associated with firm-years where government ownership is present. The probit model includes firm-specific variables present in the second-stage outcome equation, as well as variables that predict the presence of government ownership and are exogenous to the credit spread outcome we intend to model. Results from the selection equation are presented in Table 28 and are used to calculate a selectivity correction – the inverse Mills Ratio (*Lambda*) – included in our credit spread models to account for unobserved factors related to the government's presence in a firm and potentially to the cost of debt. Second-stage results are presented in Table 29.

The results presented in Table 29 indicate that our main findings are robust to the inclusion of controls for sample selection bias. While overall government ownership is associated with a higher cost of debt, government ownership is associated with a lower cost of debt during financial or banking crises.

5. Conclusions

Our research examines how government ownership affects firms' cost of debt. As documented by Faccio, Masulis, and McConnell (2006) and Brown and Dinç (2005), governments are generally reluctant to allow state-owned firms to default. Accordingly, government ownership might provide an implicit debt guarantee reducing the chance of default and, hence, the cost of corporate debt. On the other hand, the implicit debt guarantee might induce moral hazard for managers, by reducing the probability of disciplinary replacement, by eliminating takeover threats, and by minimizing the risk of bankruptcy. Such an increase in moral hazard is thus likely to lead to higher risk taking and, thus, to a higher cost of debt. Also, government ownership could increase the cost of debt by imposing social and political goals that reduce corporate profitability and thus increase default risk. Given these two conflicting effects of government ownership on the cost of debt, we note that the resulting impact is a matter deserving empirical investigation.

In panel regressions, we analyze yield spreads on a sample of 1,279 bonds issued by 215 publicly-traded firms subject to changes in government share ownership from 43 countries over 1990-2010. We note that a government guarantee on the debt of investment targets is likely to be more valuable during times of economic hardship as

defaults are, all else equal, more likely during recessions. Focusing on the recent financial crisis, we find that government ownership affects the cost of debt differently in crisis versus non-crisis years. During non-crisis years, firms with the government as a shareholder display an increase of 52 bp in bond spreads. On the other hand, during the recent financial crisis, government presence is associated with a 24 bp decrease in spreads. We find similar results when adopting a broader definition of "financial crisis" (from Laeven and Valencia, 2010) in robustness tests.

Different government-owned entities vary in terms of objectives and *modus operandi* – and we conjecture these varying goals could differentially impact the cost of debt. When not isolating the recent crisis period, we find that the increase in cost of debt during the non-crisis years is generally due to ownership by government-owned financial institutions, SWFs and pension funds. On the other hand, firms with central, local, and SOE government ownership are mostly responsible for the decrease in the cost of debt during the crisis. We further find that large stakes owned by central governments and by mixed SOEs lead to lower cost of debt, while large stakes owned by SWFs and other government-owned financial institutions increase the cost of debt. Overall, our evidence is consistent with the idea that certain government investors act as protectors, favoring political goals (typically inconsistent with firm default) and providing the strongest implicit debt guarantees. On the other hand, the increase in the cost of debt is mostly specific to financial arms of the government, whose objectives are more similar to those of other institutional investors (i.e., often commercial) and, as such, do not lead to a similar implied debt guarantee.

We further note that implicit government guarantees are likely to be strongest for domestic targets. Correspondingly, we find that the implicit debt guarantee documented during the recent financial crisis is specific to domestic government presence. Conversely, foreign government ownership is associated with an increase in the cost of debt during the non-crisis years, equal to about 1 bp for each percentage point of stake owned.

We finally note that the value of a debt guarantee is greater the higher the likelihood of default. Mindful of the distinction between the impact of domestic and foreign government ownership, we focus on a sample of non-investment-grade bonds and find domestic (foreign) government ownership during crisis (non-crisis) years to be associated with a lower (higher) cost of debt. The results are economically strong: for non-investment-grade bonds, domestic government presence leads to a discount of 72 bp over the entire period and of 133 bp during the crisis years. Foreign government presence is associated with an increase in the cost of debt of 143 bp during the crisis and 209 bp in non-crisis years.

On balance, these results suggest that stock ownership by domestic governments improves the perceived creditworthiness of corporate bond issuers by providing an implicit bond payment guarantee. This guarantee becomes especially valuable during a financial crisis or in the presence of firm-specific distress factors. On the other hand, during non-crisis years, government ownership is associated with higher spreads – and the result is mostly due to shareholding by foreign governments and by government-owned financial institutions.

References

Admati, Anat and Paul Pfleiderer, 2009, The "Wall Street Walk" and Shareholder Activism: Exit as a Form of Voice, *The Review of Financial Studies* 22: 2645-2685.

Aggarwal, Reena, Isil Erel, Miguel Ferreira, and Pedros Matos, 2011, Does governance travel around the world? Evidence from institutional investors, *Journal of Financial Economics* 100: 154-181.

Almazan, Andre, Adolfo de Motta, Sheridan Titman, and Vahap Uysal, 2010, Financial Structure, Acquisition Opportunities, and Firm Locations, *Journal of Finance* 65: 529-563.

Anderlini, Jamil, 2009, December 22, Chinese fund's form gives it edge in turf war, *Financial Times*.

Andrianova, Svetlana, Panicos Demetriades, and Anja Shortland, 2010, Is Government Ownership of Banks Really Harmful to Growth?, Working Paper.

Ang, Andrew, William Goetzmann, and Stephen Schaefer, 2009, Evaluation of active management of the Norwegian Government Pension Fund-Global, Report to the Norwegian Parliament.

Anonymous, 1998, *Corporate governance, state-owned enterprises and privatization*, Paris, France: OECD Publishing.

Anonymous, 2010, November 11, China buys up the world, *The Economist.*

Atanasov, Vladimir, Bernard Black, Conrad Ciccotello, and Stanley Gyoshev, 2010, How Does Law Affect Finance? An Examination of Equity Tunneling in Bulgaria, *Journal of Financial Economics* 96: 155-173.

Atkinson, Anthony and Joseph Stiglitz, 1980, *Lectures on Public Economics*, London: Mc-Graw Hill.

Bae, Kee-Hong and Vidhan Goyal, 2009, Creditor Rights, Enforcement, and Bank Loans, *Journal of Finance* 64: 823-860.

Baik, Bok, Jun-Koo Kang, and Jin-Mo Kim, 2010, Local institutional investors, informational asymmetries, and equity returns, *Journal of Financial Economics* 97: 81-106.

Balding, Christopher, 2008, A portfolio analysis of sovereign wealth funds, Working Paper, University of California-Irvine.

Barbary, Victoria, 2010, The asset allocation of sovereign wealth funds, Report, Monitor Group.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001, New Tools in Comparative Political Economy: The Database of Political Institutions, *World Bank Economic Review* 15: 165-176.

Beck, Thorsten and Asli Demirguc-Kunt, 2006, Small and medium-size enterprises: Access to finance as a growth constraint, *Journal of Banking and Finance* 30: 2931-2943.

Bernstein, Shai, Josh Lerner, and Antoinette Schoar, 2009, The investment strategies of sovereign wealth funds, Working Paper, Harvard University.

Bessembinder, Hendrik, Kathleen Kahle, Williamn Maxwell, and Danielle Xu, 2009, Measuring abnormal bond performance, *Review of Financial Studies* 22: 4219-4258.

Boardman, Anthony and Aidan Vining, 1989, Ownership and performance in competitive environments: a comparison of the performance of private, mixed, and state-owned enterprises, *Journal of Law and Economics* 32: 1-33.

Borisova, Ginka, Paul Brockman, Jesus Salas, and Andrey Zagorchev, 2012, Government Ownership and Corporate Governance: Evidence from the EU, *Journal of Banking and Finance*, forthcoming.

Borisova, Ginka, Veljko Fotak, Kate Holland, and William L. Megginson, 2012, State ownership and Cost of Debt: Evidence from Government Investments in Publicly Traded Firms, Working Paper, Sovereign Investment Lab, Paolo Baffi Centre, Bocconi University.

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

Borokhovich, Kenneth, Kelly Bunarski, Yvette Harman, and Robert Parrino, 2006, Variation in the Monitoring Incentives of Outside Stockholders, *Journal of Law and Economics* 49: 651-680.

Bortolotti, Bernardo, Veljko Fotak, and William L. Megginson (2010), Quiet Leviathans: Sovereign Wealth Fund Investment, Passivity, and the Value of the Firm, Working Paper, Sovereign Investment Lab, Paolo Baffi Centre, Bocconi University.

Boubakri, Narjess, Jean-Claude Cosset, and Omrane Guedhami, 2005, Postprivatization corporate governance: the role of ownership structure and investor protection, *Journal of Financial Economics* 76: 369-399.

Boubakri, Narjess, Jean-Claude Cosset, Omrane Guedhami, and Walid Saffar, 2011, The political economy of residual state ownership in privatized firms: Evidence from emerging markets, *Journal of Corporate Finance* 17: 244-258.

Brav, Alon, Wei Jiang, Frank Partnoy, and Randall Thomas, 2008, Hedge fund activism, corporate governance, and firm performance, *Journal of Finance* 63: 1729-1775.

Brown, Craig and Serdar Dinç, 2005, The politics of bank failures: Evidence from emerging markets, *Quarterly Journal of Economics* 120: 1413-1444.

Brown, Craig and Serdar Dinç, 2011, Too many to fail? Evidence of regulatory forbearance when the banking sector is weak, *Review of Financial Studies* 24: 1378-1405.

Brown, David, John Earle, and Álmos Telegdy, 2006, The productivity effects of privatization: Longitudinal estimates from Hungary, Romania, Russia, and Ukraine, *Journal of Political Economy* 114: 61-99.

Brown, David, John Earle, and Álmos Telegdy, 2010, Employment and wage effects of privatization: Evidence from Hungary, Romania, Russia, and Ukraine, *Economic Journal* 120: 683-708.

Brown, Stephen and Jerold Warner, 1985, Using Daily Stock Returns: The Case of Event Studies, *Journal of Financial Economics* 8: 208-258.

Campello, Murillo, John Graham, and Campbell Harvey, 2010, The Real Effects of Financial Constrains: Evidence from a Financial Crisis, *Journal of Financial Economics* 97: 470-487.

Caner, Mehmet and Thomas Grennes, 2009, Sovereign wealth funds: The Norwegian experience, Working Paper, North Carolina State University.

Caprio, Gerard, Luc Laeven, and Ross Levine, 2007, Governance and bank valuation, *Journal of Financial Intermediation*, 16: 584-617.

Carey, Mark and Mark Hrycray, 1999, Credit Flow, Risk, and the Role of Private Debt in Capital Structure, Working Paper, Federal Reserve Board.

Chava, Sudheer and Amiyatosh Purnanandam, 2011, The effect of banking crisis on bank-dependent borrowers, *Journal of Financial Economics*, 99: 116-135.

Chava, Sudheer and Michael Roberts, 2008, How Does Financing Impact Investment? The Role of Debt Covenants, *Journal of Finance*, 63: 2085-2121.

Chen, Gongmeng, Michael Firth, Yu Xin, and Liping Xu, 2008, Control transfers, privatization, and corporate performance: Efficiency gains in China's listed companies, *Journal of Financial and Quantitative Analysis* 43: 161-190.

Chen, Gongmeng, Michael Firth, and Liping Xu, 2009, Does the type of ownership control matter? Evidence from China's listed companies, *Journal of Banking & Finance*, 33: 171-181.

Chen, Xia, Jarrad Harford, and Kai Li, 2007, Monitoring: Which institutions matter?, *Journal of Financial Economics* 86: 279-305.

Chernykh, Lucy, 2008, Ultimate ownership and control in Russia, *Journal of Financial Economics* 88: 169-192.

Chhibber, Pradeep and Sumit Majumdar, 1999, Foreign ownership and profitability: property rights, control and performance of firms in Indian industry, *Journal of Law and Economics* 42: 209–238.

Chung, Kee and Hao Zhang, 2011, Corporate governance and institutional ownership, *Journal of Financial and Quantitative Analysis* 46: 247-273.

Collin-Dufresne, Pierre, Robert Goldstein, and Spencer Martin, 2001, The determinants of credit spread changes, *Journal of Finance* 56: 2177-2207.

Crabbe, Leland and Frank Fabozzi, 2001, *Managing a Corporate Bond Portfolio*, New York, NY: John Wiley & Sons.

Cronqvist, Henrik and Rüdiger Fahlenbrach, 2009, Large shareholders and corporate policies, *Review of Financial Studies* 22: 3941-3976.

Datta, Sudip, Mai Iskandar-Datta and Ajay Patel, 1999, Bank monitoring and the pricing of corporate public debt, *Journal of Financial Economics* 51: 435-449.

DeBonis, Riccardo, 1998, Public Sector Banks in Italy: Past and Present, Working Paper.

Del Guercio, Diane, Laura Seery, and Tracie Woitdke, 2008, Do boards pay attention when institutional investor activists "just vote no"?, *Journal of Financial Economics* 90: 84-103.

Dell'Ariccia, Giovanni, Enrica Detragiache, and Raghuram Rajan, 2008, The real effect of banking crises, *Journal of Financial Intermediation*, 17: 89-112.

Denisova, Irina, Markus Eller, Timothy Frye, and Ekaterina Zhuravskaya, 2011, Everyone hates privatization, but why? Survey evidence from 28 post-communist countries, Working Paper, New Economic School (Moscow).

Dewenter, Kathryn, Xi Han, and Paul Malatesta, 2010, Firm value and sovereign wealth fund investments, *Journal of Financial Economics* 98: 256-278.

Dickie, Mure, 2008, January 2, Injection of $20bn aids CDB transition, *Financial Times*.

Dinç, Serdar, 2005, Politicians and banks: Political influences on state-owned banks in emerging markets, *Journal of Financial Economics* 77: 453-479.

Dinç, Serdar, Nandini Gupta, 2011, The Decision to Privatize: Finance and Politics, *The Journal of Finance* 66: 421-269

Djankov, Simeon, Oliver Hart, Caralee McLiesh, and Andrei Shleifer, 2008, Debt Enforcement Around the World, *Journal of Political Economy* 116: 1105-1149.

Djankov, Simeon and Peter Murrell, 2002, Enterprise restructuring in transition: A quantitative survey, *Journal of Economic Literature* 40: 739-792.

D'Souza, Juliet, William Megginson, and Robert Nash, 2005, Effect of institutional and firm-specific characteristics on post-privatization performance: Evidence from developed countries, *Journal of Corporate Finance* 11: 747-766.

Duffee, Gregory, 1998, The relation between treasury yields and corporate bond yield spreads, *Journal of Finance* 53: 2225-2241.

Easton, Stephen, and Michael Walker, 1997, Income, Growth and Economic Freedom, *American Economic Review* 87: 328-332.

Eckel Catherine and Theo Vermaelen, 1986, Internal Regulation: The Effects of State ownership on the Value of the Firm, *The Journal of Law and Economics* 29: 381-403.

Edmans, Alex, 2009, Blockholder Trading, Market Efficiency and Managerial Myopia, *The Journal of Finance* 64: 2481-2513.

English, Philip, Thomas Smythe, and Chris McNeil, 2004, The 'CalPERS effect' revisited, *Journal of Corporate Finance* 10: 157-174.

Estrin, Saul, Jan Hanousek, Evžen Kočenda and Jan Svejnar, 2009, The effects of privatization and ownership in transition economies, *Journal of Economic Literature* 47: 699-728.

Esty, Benjamin and William Megginson, 2003, Creditor Rights, Enforcement, and Debt Ownership Structure: Evidence from the Global Syndicated Loan Market, *Journal of Financial and Quantitative Analysis* 38: 37-59.

Faccio, Mara, Ronald Masulis, and John McConnell, 2006, Political Connections and Corporate Bailouts, *Journal of Finance* 61: 2597-2635.

Fama, Eugene and Kenneth French, 1993, Common Risk Factors in the Returns on Stocks and Bonds, *Journal of Financial Economics* 33: 3-56.

Fan, Joseph, Tak Wong, and Tianyu Zhang, 2007, Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms, *Journal of Financial Economics* 84: 330-357.

Fernandes, Nuno, 2009, Sovereign wealth funds: Investment choices and implications around the world, Working Paper, IMD International.

Ferreira, Miguel, Massimo Massa, and Pedro Matos, 2009, Shareholders at the gate? Institutional investors and the cross-border mergers and acquisitions, Working Paper, University of Southern California.

Ferreira, Miguel, and Pedro Matos, 2008, The color of investors' money: The role of institutional investors around the world, *Journal of Financial Economics* 88: 499-533.

Firth, Michael, Chen Lin, and Hong Zou, 2010, Friend or foe? The role of the state and mutual fund ownership in the split shares structure reform in China, *Journal of Financial and Quantitative Analysis* 45: 685-706.

Friedman, Milton, 1962, *Capitalism and Freedom*, Chicago, IL: University of Chicago Press.

Gerschenkron, Alexander, 1962, *Economic Backwardness in Historical Perspective. A Book of Essays*, Cambridge, MA: Harvard University Press.

Giannetti, Mariassunta and Luc Laeven, 2009, Pension reform, ownership structure, and corporate governance: Evidence from a natural experiment, *Review of Financial Studies* 22: 4092-4127.

Greene, Sophia, 2009, October 11, SWFs prove not to be so big, bad or secretive, *Financial Times*.

Greenwood, Robin and Michael Schor, 2009, Investor activism and takeovers, *Journal of Financial Economics* 92: 362-375.

Greenwald, Bruce and Joseph Stiglitz, 1986, Externalities in Economies with Imperfect Information and Incomplete Markets, *Quarterly Journal of Economics* 101: 229-6.

Gropp, Reint, Hendrik Hakenes, and Isabel Schnabel, 2011, Competition, risk-shifting, and public bail-out policies, *Review of Financial Studies* 24: 2084-2120.

Guner, Burak, 2006, Loan Sales and the Cost of Corporate, *The Review of Financial Studies* 19: 687-716.

Gupta, Nandini, 2005, Partial privatization and firm performance, *Journal of Finance* 60: 987-1015.

Guriev, Sergei, Anton Kolotilin, and Konstantin Sonin, 2009, Determinants of Nationalization in the oil sector: A theory an evidence from panel data, *Journal of Law, Economics and Organization* 27: 301-323.

Hall, Peter, 1992, On the removal of skewness by transformation, *Journal of the Royal Statistical Society, Series B (Methodological)* 54: 221-228.

Haselmann, Rainer and Paul Wachtel, 2010, Foreign banks in syndicated loan markets, *Journal of Banking and Finance*, 35: 2679-2689.

Hertzel, Michael, Michael Lemmon, James Linck, and Lynn Rees, 2002, Long-run performance following private placements of equity, *Journal of Finance* 57: 2595-2617.

Heckman, James, 1979, Sample selection bias as a specification error, *Econometrica* 47: 153-61.

Houweling, Patrick, Albert Mentink, and Ton Vorst, 2005, Comparing Possible Proxies of Corporate Bond Liquidity, *Journal of Banking and Finance* 29: 1331-58.

Ivashina, Victoria and David Scharfstein, 2010, Bank lending during the financial crisis of 2008, *Journal of Financial Economics* 97: 319-338.

Jaffe, Jeffrey, 1974, Special Information and Insider Trading, *Journal of Business* 47: 410-428.

Jen, Stephen and Spyros Andreopoulos, 2008, SWFs: Growth tempered – US$10 trillion by 2015, *Morgan Stanley Views*.

Jiang, Guohua, Charles Lee, and Heng Yue, 2010, Tunneling through intercorporate loans: The China experience, *Journal of Financial Economics* 98: 1-20.

Johnson, Simon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2000, Tunneling, *American Economic Review* 90: 22-27.

Johnson, Steve and Yngve Slyngstad, 2010, January 24, Norway's billions need active management, *Financial Times*.

Kahan, Marcel and Edward Rock, 2010, When the Government is the Controlling Shareholder, *Delaware Journal of Corporate Law* 35: 409-437.

Karolyi, Andrew and Rose Liao, 2009, What is different about government controlled acquirers in cross-border acquisitions? Working Paper, Cornell University.

Karolyi, Andrew and Alvaro Taboada, 2011, The influence of governments in cross-border bank mergers, Working Paper, Cornell University.

Kern, Steffen, 2009, Sovereign Wealth Funds – State Investments during the Financial Crisis, Report, Deutsche Bank Research.

Khwaja, Asim and Atif Mian, 2005, Do lenders favor politically connected firms? Rent provision in an emerging financial market, *Quarterly Journal of Economics*, 120: 1371-1411.

Klein, April and Emanuel Zur, 2009, Entrepreneurial shareholder activism: Hedge funds and other private investors, *Journal of Finance* 64: 182-229.

Klock, Mark, Sattar Mansi, and William Maxwell, 2005, Does corporate governance matter to bondholders?, *Journal of Financial and Quantitative Analysis* 40: 693-71.

Knill, April, Bong-Soo Lee, and Nathan Mauck, 2012, Sovereign wealth fund investment and the return-to-risk performance of target firms, *Journal of Financial Intermediation* 21: 315-340

Kole, Stacey and Harold Mulherin, 1997, The government as a shareholder: A case from the United States, *Journal of Law and Economics* 40: 1-22.

Kotter, Jason and Ugur Lel, 2011, Friends or foes? Target selection decisions of sovereign wealth funds and their consequences, *Journal of Financial Economics* 101: 360-381.

Krishnan, C., Peter Ritchken, and James Thomson, 2005, Monitoring and controlling bank risk: does risky debt help?, *Journal of Finance* 60: 343-378.

La Porta, Rafael, Florencio López-de-Silanes, and Andrei Shleifer, 2002, Government Ownership of Banks, *Journal of Finance* 57: 265-301.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1997, Legal Determinants of External Finance, *Journal of Finance*, 52: 1131-1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, Law and Finance, *Journal of Political Economy* 106: 1113-1155.

Laeven, Luc and Fabian Valencia, 2010, Resolution of Banking Crises: The Good, the Bad, and the Ugly, Working Paper, International Monetary Fund.

Lamont, Owen, Christopher Polk, and Jesus Saá-Requejo, 2001, Financial Constraints and Stock Returns, *Review of Financial Studies* 14: 529-554.

Lin, Chen, Yue Ma, Paul Malatesta, and Yuhai Xuan, 2011, Ownership structure and the cost of corporate borrowing, *Journal of Financial Economics* 100: 1-23.

Lin, Chen and Dongwei Su, 2008, Industrial diversification, partial privatization and firm valuation: Evidence from publicly listed firms in China, *Journal of Corporate Finance* 14: 405-417.

Liu, Pu and Anjan Thakor, 1984, Interest yields, credit ratings, and economic characteristics of state bonds: an empirical analysis, *Journal of Money, Credit and Banking* 16: 344-351.

Lowry, Michelle, Micha Officer, and William Schwert, 2010, The Variability of IPO Initial Returns, *Journal of Finance* 65: 425-465.

Lyon, John, Brad Barber, and Chih-Ling Tsai, 1999, Improved methods for tests of long-run abnormal stock returns, *Journal of Finance* 54: 165-201.

Mandelker, Gershon, 1974, Risk and Return: The Case of Merging Firms, *Journal of Financial Economics* 1: 303-335.

Megginson, William and Jeffrey Netter, 2001, From state to market: A survey of empirical studies on privatization, *Journal of Economic Literature* 39: 321-389.

Megginson, William, Robert Nash, Jeffrey Netter, Annette Poulsen, 2004, The choice of public versus private markets: Evidence from privatizations, *Journal of Finance* 59: 2835-2870.

Mehropouya, Afshin, Chaoni Huang, and Timothy Barnett, 2009, An Analysis of Proxy Voting and Engagement Policies and Practices of Sovereign Wealth Funds, RiskMetrics Group Report.

Miracky, William and Bernardo Bortolotti, 2009, *Weathering the Storm: Sovereign Wealth Funds in the Global Economic Crisis of 2008*, Report, Monitor Group and Fondazione Eni Enrico Mattei.

Miracky, William, Davis Dyer, Drosten Fisher, Tony Goldner, Loic Lagarde, and Vicente Piedrahita, 2008, Assessing the Risks: The Behaviors of Sovereign Wealth Funds in the Global Economy, Report, Monitor Group.

Morck, Randall, Deniz Yavuz, and Bernard Yeung, 2011, Banking system control, capital allocation, and economy performance, *Journal of Financial Economics* 100: 264-283.

Parrino, Robert, Richard Sias, and Laura Starks, 2003, Voting with their feet: Institutional ownership changes around forced CEO turnover, *Journal of Financial Economics* 68: 3-46.

Petersen, Mitchell, 2009, Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches, *Review of Financial Studies* 22: 435-480.

Puri, Manju, Jörg Rocholl, and Sascha Steffen, 2011, Global retail lending in the aftermath of the US financial crisis: Distinguishing between supply and demand effects, *Journal of Financial Economics* 100: 556-578.

Rose, Paul, 2008, Sovereign Wealth Funds: Active or Passive Investors?, *Yale Law Journal Pocket Part* 118: 104.

Rozanov, Andrew, 2005, Who Holds the Wealth of Nations, *Central Banking Journal* 15.

Qian, Jun and Philip Strahan, 2007, How Laws and Institutions Shape Financial Contracts: The Case of Bank Loans, *Journal of Finance* 62: 2803-2834.

Saigol, Lina, 2009, November 6, Back in business, *Financial Times*.

Santos, João, 2011, Bank corporate loan pricing following the subprime crisis, *Review of Financial Studies* 24: 1916-1943.

Sapienza, Paola, 2004, The effects of state ownership on bank lending, *Journal of Financial Economics* 72: 357-384.

Sargan, John, 1958, The Estimation of Economic Relationships Using Instrumental Variables, *Econometrica* 26: 393-415.

Setser, Brian and Rachel Ziemba, 2009, GCC sovereign funds: Reversal of fortune, Report, Council on Foreign Relations, Center for Geoeconomic Studies.

Shirley, Mary and Patrick Walsh, 2000, Public vs Private Ownership: The Current State of the Debate, Working Paper, World Bank Group.

Shleifer, Andrei, 1998, State versus Private Ownership, *The Journal of Economic Perspectives* 12: 133-150.

Shleifer, Andrei and Robert Vishny, 1986, Large shareholders and corporate control, *Journal of Political Economy* 94: 461-488.

Shleifer, Andrei and Robert Vishny, 1994, Politicians and Firms, *Quarterly Journal of Economics* 109: 995-1025.

Shleifer, Andrei and Robert Vishny, 1998, *The Grabbing Hand: Government Pathologies and Their Cures*, Cambridge, MA: Harvard University Press.

Skinner, Chris, D. Holt, and Fred Smith, 1989, *Analysis of Complex Surveys*, New York, NY: John Wiley & Sons.

Stein, Jeremy, 2003, Agency, information and corporate investment, *Handbook of Corporate Finance*, Volume 1, Part 1: 111-165.

Stiglitz, Joseph, 1993, The Role of the State in Financial Markets, Proceedings of the World Bank Annual Conference on Economic Development: 19-56.

Stiglitz, Joseph, Jaime Jaramillo-Vallejo, and Yung Park, 1993, The role of the state in financial markets, World Bank Research Observer, Annual Conference on Development Economics Supplement: 19-61.

Stigliz, Joseph and Andrew Weiss, 1981, Credit Rationing in Markets with Imperfect Information, *American Economic Review* 71: 393-410.

Sufi, Amir, 2009, Bank Lines of Credit in Corporate Finance: An Empirical Analysis, *Review of Financial Studies* 22: 1057-1088.

Sun, Qian and Wilson Tong, 2003, China's share issue privatization: The extent of its success, *Journal of Financial Economics* 70: 183-222.

Truman, Edwin, 2008, A blueprint for sovereign wealth fund best practices, Peterson Institute for International Economics Policy Brief.

Walking, Ralph, Jacqueline Garner, and Jie Cai, 2009, Electing Directors, *The Journal of Finance* 64: 2389-2421.

Woidtke, Tracie, 2002, Agents watching agents? Evidence from pension fund ownership and firm value, *Journal of Financial Economics* 63: 99-131.

Wolf, Christian, 2009, Does ownership matter? The performance and efficiency of state oil vs. private oil (1987-2006), *Energy Policy* 37: 2642-2652.

Wolf, Christian and Michael Pollitt, 2008, Privatising national oil companies: Assessing the impact on firm performance, Working Paper, University of Cambridge.

Table 1. Variable Definitions, Chapter 1

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

Variable Name	Definition	Source
Government Presence		
Lender All Gov	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
Lender Domestic Gov	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
Lender Foreign Gov	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
Arranger (ALL/Domestic/Foreign) Gov	Binary variable, equal to one, if the lead arranger of the loan is government owned.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
Syn (ALL/Domestic/Foreign) Gov	Binary variable, equal to one if one or more of the syndicate members (excluding the lead arranger) are government owned.	DealScan, Monitor-FEEM SWF database, Bocconi Sovereign Investments Lab data, firm disclosures
Sole Lender (ALL/Domestic/Foreign) Gov	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
Share (ALL/Domestic/Foreign) Gov	Proportion of the loan retained by lenders that are majority owned, directly or indirectly, by a sovereign entity, coded 1-100.	DealScan
Loan Characteristics		
Loan Size/Log Loan Size	Total value of the loan, in 2011 USD (adjusted using CPI).	DealScan
Maturity	Loan duration at inception, in months.	DealScan
Number of Lenders	Number of lenders participating in a loan syndicate	DealScan
Spread	The amount the borrower pays (in basis points) over LIBOR for each dollar drawn down, including bother the spread of the loan and any annual or facility fee paid.	DealScan
Securitized	Binary variable, equal to one if the loan is securitized.	DealScan
Senior	Binary variable, equal to one if the loan is senior.	DealScan
Covenant	Binary variable, equal to one if the loan contract includes financial covenants.	DealScan

Table 1 – Variable Definitions, Chapter 1, Continued

Variable Name	Definition	Source
Country Characteristics		
Size of the Government	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)
Property Rights	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)
Investment Profile	An index measuring factors affecting the risk to investment, based on the subcomponents: 'Contract Viability/Expropriation', 'Pofits Repatriation' and 'Payment Delays'.	International Country Risk Guide
GDP Growth	Percentage change in gross domestic product, yearly.	World Bank
Common Law	Binary variable, equal to one if the country of borrower headquarters is of common law origin.	La Porta et al. (2002)
Crisis	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		
Gov Borrower	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
Previous Private Loan N	The number of private-sector loans to the borrower over the previous five years.	DealScan
Previous Gov Loan N	The number of government loans to the borrower over the previous five years.	DealScan
Financial Borrower	Borrowers with primary SIC code 6000-6500.	DealScan
Regulated Borrower	Borrowers with primary SIC code 4000-5000.	DealScan
Publicly Traded Borrower	Binary variable, equal to one if the borrower is publicly traded.	Worldscope
TA/Log TA	Total Assets, in 2011 USD (adjusted using CPI).	Worldscope
DTOA	Debt to Assets.	Worldscope
ROA	Return on Assets.	Worldscope
QR	Quick Ratio: (Cash and Cash Equivalents+Marketable Securities+Accounts Receivable)/(Current Liabilities)	Worldscope
TQ	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			
Lender All Gov	10,560	7.11%	148,511
Lender Domestic Gov	4,819	3.24%	148,511
Lender Foreign Gov	6,455	4.35%	148,511
Arranger Gov	3,572	2.41%	148,511
Arranger Domestic Gov	2,248	1.51%	148,511
Arranger Foreign Gov	1,468	0.99%	148,511
Syn Gov	6,375	4.29%	148,511
Syn Domestic Gov	2,413	1.62%	148,511
Syn Foreign Gov	4,532	3.05%	148,511
Single lender Gov	613	0.41%	148,300
Single lender Domestic Gov	158	0.11%	148,300
Single lender Foreign Gov	455	0.31%	148,300
Loan			
Single lender	13,839	9.33%	148,300
Collateralized	13,029	8.77%	148,511
Covenant	27,185	18.31%	148,511
Senior	146,924	98.93%	148,510
Borrower			
Foreign Lender	87,165	58.69%	148,511
Financial Borrower	11,700	8.37%	139,799
Regulate Borrower	21,894	15.66%	139,799
Gov Borrower	3,254	2.19%	148,511
Publicly Traded Borrower	37,421	25.20%	148,511
Country			
Crisis	18,628	12.54%	148,511
Common Law	103,102	71.37%	144,467

Panel B – Continuous Variables

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

Table 3. Univariate Analysis of Loans by State-Owned Lenders

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							
Spread	213.55	138.28	*<0.0001*	127.47	*<0.0001*	142.81	*<0.0001*
Number of Lenders	6.40	12.86	*<0.0001*	11.17	*<0.0001*	14.65	*<0.0001*
Collateral	8.47%	12.71%	*<0.0001*	11.37%	*<0.0001*	13.37%	*<0.0001*
Covenants	18.86%	11.10%	*<0.0001*	10.33%	*<0.0001*	11.12%	*<0.0001*
Senior	98.92%	99.03%	*0.3624*	98.59%	*0.1003*	99.41%	*<0.0001*
Sole Lender	9.60%	5.81%	*<0.0001*	3.28%	*<0.0001*	7.06%	*<0.0001*
Maturity	51.27	65.94	*<0.0001*	73.61	*<0.0001*	60.55	*<0.0001*
Foreign Lender	56.86%	82.66%	*<0.0001*	62.00%	*0.0006*	100.00%	*NA*
Loan Size (USD)	246,706,874	307,484,248	*<0.0001*	208,700,967	*<0.0001*	397,967,096	*<0.0001*
Country Characteristics							
Government Size	6.56	6.62	*0.0002*	6.57	*0.68*	6.69	*<0.0001*
Property Rights	7.92	6.68	*<0.0001*	6.58	*<0.0001*	6.75	*<0.0001*
Investment Profile	10.30	9.73	*<0.0001*	9.83	*<0.0001*	9.65	*<0.0001*
Common Law	73.14%	44.18%	*<0.0001*	34.83%	*<0.0001*	50.98%	*<0.0001*
Crisis	12.68%	10.81%	*<0.0001*	9.79%	*<0.0001*	10.98%	*0.0031*
GDP Growth	2.75%	5.19%	*<0.0001*	6.13%	*<0.0001*	4.48%	*<0.0001*
Borrower							
TA (USD)	7,546,534	14,120,081	*<0.0001*	9,415,248	*0.1968*	18,032,275	*<0.0001*
DtoA	0.64	0.66	*0.0031*	0.62	*0.0083*	0.68	*<0.0001*
QR	1.41	1.49	*0.4975*	1.64	*0.2005*	1.36	*0.6318*
ROA	3.61%	4.71%	*<0.0001*	4.77%	*0.0029*	5.11%	*<0.0001*
TQ	1.40	1.13	*<0.0001*	1.07	*<0.0001*	1.20	*<0.0001*
Publicly Traded Borrower	25.53%	20.80%	*<0.0001*	20.96%	*<0.0001*	20.42%	*<0.0001*
Previous Gov Loans	0.08	0.79	*<0.0001*	0.80	*<0.0001*	0.81	*<0.0001*
Previous Priv Loans	1.79	1.06	*<0.0001*	0.71	*<0.0001*	1.28	*<0.0001*
Financial Borrower	7.69%	17.18%	*<0.0001*	6.95%	*0.0007*	24.36%	*<0.0001*
Regulated Borrower	15.16%	22.13%	*<0.0001*	24.22%	*<0.0001*	20.66%	*<0.0001*

Table 4. Determinants of State-Owned Lenders Participation

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**	
Intercept	**-0.5483**	**-4.4937**	**-0.9396**	**-3.8099**	**-1.1128**	**-5.1099**
	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
Property Rights	**-0.214**	**-0.1443**	**-0.1809**	**-0.1818**	**-0.1942**	**-0.0926**
	<.0001	*0.0003*	*<.0001*	*0.0009*	*<.0001*	*0.04*
Common Law	**-0.2281**	**-0.3524**	**-0.4175**	**-0.9435**	-0.0181	-0.0145
	<.0001	*0.003*	*<.0001*	*<.0001*	*0.5764*	*0.91*
Crisis	**0.139**	0.1053	**0.1812**	0.1017	0.0425	0.088
	<.0001	*0.2724*	*<.0001*	*0.6135*	*0.1812*	*0.3911*
Government Size	**0.048**	**0.1369**	**0.0325**	**0.1543**	**0.0683**	**0.1064**
	<.0001	*0.002*	*0.0352*	*0.0048*	*<.0001*	*0.0481*
GDP Growth	**0.0679**	**0.0764**	**0.0716**	**0.084**	**0.0451**	**0.062**
	<.0001	*<.0001*	*<.0001*	*0.0039*	*<.0001*	*0.0041*
Financial Borrower	**0.272**	-0.0811	**-0.234**	**-3.2205**	**0.4202**	-0.0445
	<.0001	*0.769*	*<.0001*	*<.0001*	*<.0001*	*0.8725*
Regulated Borrower	**0.1149**	-0.1191	**0.1233**	-0.0231	**0.0879**	-0.126
	<.0001	*0.1266*	*0.0002*	*0.8705*	*0.0015*	*0.1157*
Previous Gov Loan N	**0.2238**	**0.1587**	**0.1671**	**0.1368**	**0.1785**	**0.1664**
	<.0001	*<.0001*	*<.0001*	*0.0005*	*<.0001*	*<.0001*
Previous Priv Loan N	**-0.0414**	**-0.0628**	**-0.0855**	**-0.146**	**-0.0251**	**-0.0456**
	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
Gov Borrower	**0.3488**		**0.2735**		**0.401**	
	<.0001		*<.0001*		*<.0001*	
Publicly Traded Borrower	0.0081		-0.039		0.0233	
	0.7008		*0.2164*		*0.298*	
Log TA		**0.2342**		**0.1632**		**0.2429**
		<.0001		*<.0001*		*<.0001*
DtoA		-0.0056		0.3504		-0.1568
		0.9663		*0.1599*		*0.2772*
ROA		0.0026		0.0060		0.0033
		0.5272		*0.4371*		*0.4736*
QR		0.0059		0.0082		0.0022
		0.6111		*0.5942*		*0.8571*
TQ		**-0.1894**		-0.1225		**-0.1915**
		0.0002		*0.2730*		*0.0003*
ID Risk		0.0002		**0.0014**		-0.0002
		0.4562		*0.0006*		*0.4981*
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. Determinants of the Role of State-Owned Lenders

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**
Intercept	-0.4956	0.0737	**-2.2844**	-2.0034	**-1.1505**	-0.5216
	0.1912	*0.9146*	*0.0027*	*0.2152*	*0.0243*	*0.5048*
Property Rights	**-0.1354**	**-0.3944**	0.0248	-0.0822	**-0.1131**	**-0.3132**
	<.0001	*<.0001*	*0.7543*	*0.5776*	*0.0102*	*<.0001*
Common Law	**-0.3475**	**-0.4227**	**-0.5281**	**-0.7671**	-0.184	**-0.3882**
	0.0011	*0.0092*	*0.0034*	*0.0441*	*0.2008*	*0.095*
Crisis	**0.7373**	0.1152	**1.0641**	**0.7204**	**0.6678**	-0.1344
	<.0001	*0.5212*	*<.0001*	*0.0343*	*<.0001*	*0.5668*
Government Size	**0.1055**	0.0758	**0.345**	0.1984	**0.0869**	0.0274
	0.0026	*0.1957*	*<.0001*	*0.1304*	*0.075*	*0.6675*
GDP Growth	**0.0323**	**-0.0613**	**0.0682**	-0.0646	-0.00517	**-0.0509**
	0.0135	*0.0051*	*0.0071*	*0.1216*	*0.7614*	*0.0678*
Financial Borrower	**-0.7104**	**-0.8042**	**-0.571**	**-1.1536**	**-0.3915**	**-0.5999**
	<.0001	*<.0001*	*0.0017*	*0.0075*	*0.0014*	*0.0057*
Regulated Borrower	0.1185	-0.1496	0.1257	0.1678	0.0509	**-0.3272**
	0.2226	*0.3072*	*0.3876*	*0.508*	*0.7233*	*0.0976*
Gov Borrower	**0.3585**	**0.3047**	0.2678	0.0541	**0.3386**	0.1403
	0.0009	*0.0849*	*0.1789*	*0.9017*	*0.0129*	*0.5751*
Previous Gov Loan N	**0.1333**	**0.0693**	**0.105**	-0.0233	**0.1198**	0.0528
	<.0001	*0.0509*	*0.0051*	*0.6755*	*<.0001*	*0.4314*
Previous Priv Loan N	**-0.1241**	-0.0251	**-0.072**	**0.1363**	**-0.1123**	-0.0465
	<.0001	*0.3417*	*0.0946*	*0.0051*	*<.0001*	*0.2237*
Publicly Traded Borrower	**-0.3008**	-0.2005	0.0213	-0.1395	**-0.4977**	-0.00184
	0.0008	*0.1827*	*0.8867*	*0.617*	*<.0001*	*0.9921*
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. Determinants of the Share of the Loan Retained by State-Owned 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**	
Intercept	26.6708	**50.6338**	-49.2008	**30.6167**	5.7900	**9.4391**
	0.6252	*<.0001*	*0.3959*	*<.0001*	*0.7931*	*0.0127*
Property Rights	**-31.3098**	**-1.9861**	**-12.1041**	**-1.5773**	**-13.3905**	0.0612
	<.0001	*0.0005*	*0.0405*	*<.0001*	*<.0001*	*0.8248*
Common Law	-2.8051	-2.4411	**24.7537**	**2.2089**	-0.1014	**-1.2720**
	0.8326	*0.1116*	*0.0052*	*0.0188*	*0.9890*	*0.0849*
Crisis	0.6401	-3.8779	**31.8019**	-2.2496	-0.4267	0.5448
	0.9627	*0.1318*	*<.0001*	*0.5789*	*0.9640*	*0.5095*
Government Size	**-13.9550**	**1.1385**	**-7.8538**	**-0.6119**	**-3.9853**	**0.7398**
	0.0012	*0.0161*	*0.0415*	*0.0596*	*0.0452*	*0.0001*
GDP Growth	**3.6513**	0.1441	1.1874	-0.0989	-0.5129	0.0824
	0.0273	*0.4301*	*0.4733*	*0.2872*	*0.5364*	*0.2990*
Financial Borrower	-6.9027	NA	-19.1034	NA	0.3281	NA
	0.5676	*NA*	*0.3183*	*NA*	*0.9645*	*NA*
Regulated Borrower	0.8438	-0.8434	-7.0202	-0.9322	0.0110	**1.0414**
	0.9524	*0.5342*	*0.5825*	*0.2662*	*0.9989*	*0.0337*
Previous Gov Loan N	**5.9204**	0.0090	1.1433	**0.5093**	2.1055	-0.0801
	0.0437	*0.9801*	*0.6546*	*0.0085*	*0.1997*	*0.5717*
Previous Priv Loan N	**-5.1373**	**-0.4813**	-0.8629	-0.0509	-0.6879	**-0.2095**
	0.0029	*0.0410*	*0.7769*	*0.8864*	*0.4740*	*0.0050*
Gov Borrower	-1.4306		-6.3960		1.2579	
	0.9279		*0.7436*		*0.8748*	
Publicly Traded Borrower	-4.0855		**-39.5053**		-1.6012	
	0.7508		*0.0002*		*0.8163*	
Log TA		**-2.3572**		-0.3957		**-0.6406**
		<.0001		*0.1578*		*<.0001*
DtoA		**6.5143**		2.1980		0.3346
		0.0309		*0.3482*		*0.7690*
ROA		-0.0110		0.2173		0.0357
		0.9499		*0.0789*		*0.6431*
QR		-0.1058		-0.0579		**0.0477**
		0.1458		*0.4624*		*0.0651*
TQ		**-2.3001**		**-1.0300**		**-0.6441**
		0.0008		*0.0124*		*0.0088*
ID Risk		**0.0344**		-0.0001		**0.0090**
		<.0001		*0.9747*		*0.0169*
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. Characteristics of Loans by State-Owned Lenders, 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	*p*-value	N Obs
Number of Lenders	15.66	9.21	**6.45**	<.0001	1,216
Maturity (months)	53.97	49.93	**4.04**	0.0032	1,134
Loan Size (USD)	586,984,649	579,109,309	7,875,340	0.858	1,203
Covenants	26.07%	25.66%	0.41%	0.8459	1,216
Senior	99.01%	99.34%	-0.33%	0.3932	1,216
Collateralized	17.19%	22.70%	**-5.51%**	0.0023	1,216
Spread (bps)	128.03	148.94	**-20.91**	0.0291	482
Foreign Lender	92.19%	80.92%	**11.27%**	<.0001	1,216

Panel B – Domestic Government Loans

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

Table 7 (Continued). Characteristics of Loans by State-Owned Lenders, Propensity Score Matching

Panel C – Foreign Government Loans

	Mean	Matched Sample Mean	Difference	*p*-value	N Obs
Number of Lenders	17.43	9.29	**8.14**	<.0001	829
Maturity (months)	50.73	49.39	1.34	0.3716	781
Loan Size (USD)	685,315,385	566,675,771	**118,639,614**	0.0217	826
Covenants	35.34%	28.95%	**6.39%**	0.0193	829
Senior	99.88%	99.88%	0.00%	1.0000	829
Collateralized	19.30%	23.04%	**-3.74%**	<.0001	829
Spread (bps)	119.53	152.69	**-33.15**	0.0008	374
Foreign Lender	100.00%	79.01%	**20.99%**	<.0001	829

Panel D – Weak Property Rights

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

Panel E – Strong Property Rights

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

Table 8. Characteristics of Loans by State-Owned Lenders, Same Borrower and Year

Table 8 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	*p*-value	N Obs
Number of Lenders	12.89	7.34	**5.55**	<.0001	1,505
Maturity (months)	63.30	57.81	**5.49**	<.0001	1,306
Loan Size (USD)	374,686,221	327,320,599	**47,365,622**	0.0042	1,495
Covenants	10.30%	8.24%	**2.06%**	0.001	1,505
Senior	98.80%	98.07%	0.73%	0.109	1,504
Collateralized	16.81%	17.14%	-0.33%	0.7162	1,505
Spread (bps)	138.33	138.66	-0.33	0.9241	537
Foreign Lender	88.11%	85.65%	**2.46%**	0.0149	1,505

Panel B – Domestic Government Loans

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

Panel C – Foreign Government Loans

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

Table 9. Predictions of SWF Impact on Publicly-Traded Firms

This table lists our predicted hypothesis and the testable implications of those. For the event study, we indicate whether the hypothesis predicts positive or negative abnormal returns. For the cross-sectional analysis, we report whether the hypothesis predicts a positive, negative or null impact of the relevant explanatory variable in cross-sectional analysis of abnormal returns.

	Active Monitoring	**Reduced Financial Constraints**	**Political Interference**	**Constrained Foreign State Investor**	**Stock Picking**
Event Study					
Abnormal Returns	(+)	(+)	(-)	(-)	?
Cross-Section					
SWF Government Involvement	0	0	(-)	0	0
SWF Passive Stance	(-)	0	0	(-)	0
Norway	0	0	(+)	(+)	0
OECD	(-)	(-)	(+)	(-)	0
Strategic Target	0	0	(-)	0	0
SWF Age	0	0	0	0	(+)
Capital Infusion	0	(+)	0	0	0
Stake Owned	(+)	0	(-)	(-)	0
Foreign	(-)	0	(+)	(-)	0
Market Value	0	(-)	(+)	(-)	0
Leverage	(-)	(+)	(+)	0	0
Liquidity	(+)	(-)	(-)	0	0
BoD	(+)	0	(-)	(-)	0

Table 10. SWF Descriptive Data

This table lists the 33 funds that meet the Monitor-FEEM definition of a SWF, and offers information regarding country of origin; fund name; the estimated fund size in USD billion as of March 23, 2010 and the year in which the fund was established.

Country	Fund Name	AUM (USD billion)	Launch Year	Source of Funds
Norway	Government Pension Fund – Global	560.50	1990	Oil
UAE/Abu Dhabi	Abu Dhabi Investment Authority	395.00	1976	Oil
China	China Investment Corporation	332.40	2007	Trade Surplus
Kuwait	Kuwait Investment Authority	296.00	1953	Oil
Singapore	Government of Singapore Investment Corporation	220.00	1981	Trade Surplus
Singapore	Temasek Holdings	133.00	1974	SOEs
Russia	National Wealth Fund	94.30	2008	Oil
Qatar	Qatar Investment Authority	80.00	2003	Oil
Australia	Australian Future Fund	77.20	2006	Various Commodities
Libya	Libyan Investment Authority	53.30	2006	Oil
UAE-Abu Dhabi	International Petroleum Investment Company	49.70	1984	Oil
Kazakhstan	Kazakhstan National Fund	41.90	2000	Oil
Brunei	Brunei Investment Agency	39.30	1983	Oil
Republic of Korea	Korea Investment Corporation	37.60	2005	Trade Surplus
Malaysia	Khazanah Nasional Berhard	36.50	1993	SOEs
UAE-Abu Dhabi	Mubadala Development Company PJSC	27.60	2002	Oil
Azerbaijan	State Oil Fund of Azerbaijan	25.80	1999	Oil
UAE-Dubai	Investment Corporation of Dubai	19.60	2006	SOEs
Bahrain	Mumtalakat Holding Company	13.70	2006	SOEs
UAE-Dubai	Istithmar World	11.50	2003	SOEs
UAE-Abu Dhabi	Abu Dhabi Investment Council	10.00	2007	Oil
UAE-Federal	Emirates Investment Authority	10.00	2007	Oil
Oman	State General Reserve Fund	8.20	1980	Oil & Gas
East Timor	Timor-Leste Petroleum Fund	5.30	2005	Oil & Gas
UAE-Ras Khaimah	Ras Al Khaimah (RAK) Investment Authority	2.00	2005	Oil
Vietnam	State Capital Investment Corporation	0.60	2005	Trade Surplus
Kiribati	Revenue Equalization Reserve Fund	0.39	1956	Phosphates
São Tomé & Principe	National Oil Account	0.01	2004	Oil
Oman	Oman Investment Fund	N/A	2006	Oil & Gas
UAE-Dubai	DIFC Investments (Company) LLC	N/A	2006	SOEs
Angola	Fundo Soberano Angolano	N/A	2009	Oil
Equatorial Guinea	Fund for Future Generations	N/A	N/A	Oil
Gabon	Fund for Future Generations	N/A	1998	Oil
	Total Oil & Gas Related	**1,618.91**		
	Total Other	**805.291**		
	TOTAL	**2,424.20**		

Table 11. Characteristics of the Sample of SWF Investments in Publicly-Traded Firms

This table characterizes the sample of 802 sovereign wealth fund investments in listed companies between 1985 and November 2009. Panel A describes the number, total value, and average size of investments each year from 1985 through 2009. Panel B describes the funds for which investments are recorded and the total number, total value, and average value (both in USD millions) made by each fund. Panel C describes the industrial distribution of SWF investments in listed companies, and Panel D describes the geographic distribution of these investments.

Panel A. Annual distribution of SWF Investments in Listed firm stocks

Year	Number of Investments	Total Value (USD mil)	Average Value (USD mil)
1985	1	24	24
1987	1	--	--
1988	3	1,952	1,952
1990	1	24	24
1991	2	112	58
1992	2	65	33
1993	3	713	357
1994	9	373	41
1996	4	75	24.9
1997	2	100	100
1998	1	--	--
1999	4	116	39
2000	7	360	72
2001	13	850	95
2002	17	978	109
2003	20	5,641	313
2004	32	2,621	175
2005	42	4,337	181
2006	49	11,492	328
2007	198	61,162	336
2008	340	61,306	191
2009	50	29,306	733
1985-2009	**802**	**181,606**	**266**

Table 11 (Continued). Characteristics of the Sample of SWF Investments in Publicly-Traded Firms

Panel B. Investments by Individual Sovereign Wealth Funds

Fund Name	Country	Number of Investments	Total Value (USD mil)	Average value (USD mil)
Government Pension Fund – Global	Norway	403	4,762	12
Temasek Holdings	Singapore	132	42,375	441
Government Investment Corporation (GIC)	Singapore	79	22,571	364
Khazanah Nasional Berhard	Malaysia	32	3,240	154
Qatar Investment Authority (QIA)	Qatar	31	15,297	1,177
Kuwait Investment Authority (KIA)	Kuwait	19	13,235	1,018
China Investment Corporation (CIC)	China	18	38,933	2,781
Abu Dhabi Investment Authority (ADIA)	UAE-Abu Dhabi	18	8,518	710
Libyan Investment Authority	Libya	17	1,519	127
Istithmar World	UAE-Dubai	16	2,788	232
Mubadala Development Company PJSC	UAE-Abu Dhabi	11	2,618	436
International Petroleum Investment Company	UAE-Abu Dhabi	10	14,651	1,628
Dubai International Financial Center	UAE-Dubai	6	2,386	477
Investment Corporation of Dubai	UAE-Dubai	4	6,430	1,607
Brunei Investment Agency	Brunei	2	112	112
Oman Investment Fund	Oman	2	2	2
Korea Investment Corporation	Korea	1	2,000	2,000
Mumtalakat Holding Company	Bahrain	1	170	170

Table 11 (Continued). Characteristics of the Sample of SWF Investments in Publicly-traded Firms

Panel C. Industrial distribution of SWF investments in listed firm stocks

Industry	Number of Investments	Total Value (USD mil)	Average value (USD mil)
Banking	77	55,243	1,228
Real estate development and services	46	49,782	1,158
Financial services	59	43,322	850
Oil and gas producers	33	6,918	239
General industrials	10	5,850	585
Chemicals	24	5,807	264
Technology hardware and equipment	29	4,434	153
Construction and materials	17	3,740	249
Automobiles and parts	22	3,048	160
Electricity	20	2,609	137
Mining	10	2,424	269
General retailers	22	2,376	113
Industrial transportation	30	2,025	78
Real estate investment trusts (REIT)	20	1,791	90
Fixed line telecommunications	19	1,753	117
Unclassified	11	25, 308	48
Others (23 industries)	376	11,275	35

Panel D. Geographic distribution of SWF investments in listed firm stocks

Country of Target Firm	Number of Investments	Total Value (USD mil)	Average value (USD mil)
United States	426	58,336	140
China	43	32,049	916
Singapore	39	10,936	377
Malaysia	38	2,195	100
India	34	1,386	53
United Kingdom	28	20,883	906
Canada	19	5,517	307
Indonesia	16	3,758	470
Italy	15	1,092	135
Thailand	10	2,458	351
France	10	2,376	396
Australia	9	1,026	128
Qatar	7	1,085	362
Sweden	6	5,238	1,310
United Arab Emirates	6	2,810	937
Switzerland	5	12,839	3,210
OECD countries	560	120,207	232
Non-OECD countries	242	61,399	372
BRIC countries	85	34,166	502
Foreign (cross-border) investments	723	141,252	224
Domestic (home country) investments	79	40,351	761

Table 12. SWF Target-Firm Abnormal Stock Price Performance, Pre-Investment

This table reports cumulative abnormal stock returns for target firms preceding the announcement of investment by a SWF. *Interval* indicates the length of the time interval of interest ending on the day prior to the date of the announcement of the SWF investment. *N* reports the number of observations. *Mean Compounded Abnormal Return* and *Median Compounded Abnormal Returns* report, respectively, average and median abnormal compounded returns. *Positive* and *Negative* report, respectively, the number of positive and negative cumulative abnormal returns for the period of interest. *Bootstrapped, Skewness Adjusted t* presents the p-value associated with the bootstrapped, skewness adjusted t-statistic employed by Hall (1992). *Generalized Sign Z* reports the p-values of a generalized nonparametric sign test, and *Wilcoxon Signed Rank Test* reports the p-values associated with this alternative non-parametric test of significance. The significance levels are denoted as follows: "*" indicates significance at the 0.10 level; "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level. Panel A includes all announcements of SWF investments in publicly traded companies, Panel B reports the same values for all investments announcements, excluding those made by Norway's SWF.

Panel A: All Observations

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted t	Generalized Sign Z	WSR
1 Year	638	17.09%	1.35%	329	309	< 0.01 ***	0.32	0.19
6 Months	638	3.83%	-2.14%	300	338	< 0.01 ***	0.52	0.48
3 Months	635	2.11%	-1.29%	306	329	0.01 **	0.42	0.84
1 Month	635	1.31%	0.44%	329	306	< 0.01 ***	0.24	0.67
1 Week	635	-0.05%	-0.17%	307	328	0.43	0.02	0.21
1 Day	634	-0.20%	-0.09%	307	326	0.13	0.11	0.23

Panel B: Excluding Norway

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted t	Generalized Sign Z	WSR
1 Year	277	20.99%	-0.85%	137	140	< 0.01 ***	0.32	0.19
6 Months	277	6.67%	-1.46%	134	143	< 0.01 ***	0.52	0.48
3 Months	274	2.58%	-0.92%	134	140	0.03 **	0.42	0.88
1 Month	274	2.26%	0.02%	137	137	0.01 **	0.24	0.67
1 Week	274	0.46%	0.36%	147	127	0.10	0.02 **	0.21
1 Day	273	0.41%	0.15%	140	132	0.03 **	0.11	0.23

Table 13. Variable Definitions, Chapter 3

We report the source of the each variable we use (and, where appropriate, the name or identifying code of the variable in the original database) and a brief definition of each variable employed in our study. Definitions of Worldscope variables are included in the Worldscope Database Datatype Definitions Guide (www.thomson.com/financial).

Variable	Source	Definition
BoD (Board of Directors)	Monitor - FEEM SWF Database	Binary variable set equal to one if the SWF acquires one or more seats on the board of directors of the investment target
Book Value of Equity	Worldscope, WC03501	Common shareholders' investment in a company
Capital Infusion	Monitor - FEEM SWF Database	If the transaction is a capital infusion, this variable is set equal to the size of the stake acquired; if the transaction is not a capital infusion, it is set to zero
Cash Over Total Assets	Worldscope, WC08111	Cash and Equivalents as a percentage of total' assets
Dividend Yield	Worldscope, WC09404	Annual divideds per share divided by price per share
Foreign	Monitor - FEEM SWF Database	Binary variable, set equal to one if the target firm headquarters are in a different country than the country of origin of the investing SWF
Leverage (Debt over Assets)	Worldscope, (WC02999-WC03501)/WC02999	Debt over total assets
Liquidity (Quick Ratio)	Worldscope, WC08101	Cash and Equivalents plus net receivables, divided by total current liabilities
Market Value	Worldscope, WC08001	Aggregate market capitalization of the firm, including all common and/or ordinary shares
Market to Book Ratio (Firm)	Worldscope, WC09704	Market capitalization of the firm divided by common equity
Marke to Book Ratio (Security)	Datastream, MTBV	Market value of the individual security, divided by adjusted common equity
Norway	Monitor - FEEM SWF Database	Binary variable, set equal to one if the acquiring SWF is the Norwegian Government Pension Fund Global
OECD	Monitor - FEEM SWF Database	Binary variable, set equal to one if the target firm headquarters are in an OECD-member country
Return - daily	Datastream, RI	Daily percentage change in the total return index (RI), in USD
Return - monthly	Datastream, RI	Monthly percentage change in the total return index (RI), in USD
ROA	Worldscope, WC08326	Te exact definition varies by industry; please refer to the Worldscope Database Datatype Definitions Guide, available at www.thomson.com/financial
ROE	Worldscope, WC08301	Te exact definition varies by industry; please refer to the Worldscope Database Datatype Definitions Guide, available at www.thomson.com/financial
Stake Owned	Monitor - FEEM SWF Database	Size of the stake owned by the SWF in the investment target after the transaction
Strategic Target	Monitor - FEEM SWF Database	Binary variable, set equal to one if the target firm's primary industrial sector is either Aerospace and Defense, Energy, Utilities, Telecom, or Information Technology
SWF Age	Monitor - FEEM SWF Database	Years since SWF inception, at the time of the investment
SWF Government Involvement	Truman (2008)	One minus the score given by Truman (2008) to question (10): "Are decisions on specific investments made by the managers?"
SWF Passive Stance	Truman (2008)	The sum of the scores given by Tuman (2008) to question (29): "Does the SWF have limits on the size of its stakes?" and question (30): "Does the SWF not take controlling stakes?"
Tobin's Q	Worldscope, (WC08001+WC02999-WC03501)/WC02999	Market Value of Common Equity plus Total Assets minus Book Value of Common Equity, divided by Total Assets

Table 14. SWF Target Firm Characteristics, Pre-Investment

The variables of interest are as defined in Table 13. *N* reports the number of observations, *Mean* and *Median* report, respectively, the mean and median value of the variable of interest as of Dec. 31 of the year preceding the SWF investment. *% Above Industry Median* reports the proportion of SWF investment targets for which the value of the variable of interest exceeds the median value of the same variable for all firms from the same country (same *Market*) and with the same primary industrial sector (same FTSE level 3 industrial sector classification) on the same date. *WSR p-value* reports the probability of rejecting the null hypothesis that *% Above Industry Median* is equal to .5 based on a Wilcoxon sign rank test. Significance is denoted as follows: "*" indicates significance at the 0.10 level; "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level.

Variable	**N**	**Mean**	**Median**	**% Above Industry Median**	**WSR**	***p*-value**
Book Value of Equity (USD mil)	744	4,021	890	86.73%	20.30 ***	< 0.01
Market Cap (USD mil)	636	7,898	2,270	89.59%	19.80 ***	< 0.01
Total Assets (USD mil)	743	53,000	2,795	87.93%	20.39 ***	< 0.01
Market to Book Ratio	652	3.47	2.26	65.54%	10.73 ***	< 0.01
Debt over Assets	743	63.07%	61.65%	55.51%	3.50 ***	< 0.01
Cash Over Total Assets	561	36.72%	29.81%	48.12%	2.80 ***	< 0.01
Quick Ratio	566	1.55	1.03	47.95%	2.55 **	0.01
ROA	698	5.43%	6.10%	69.37%	11.94 ***	< 0.01
ROE	705	6.56%	15.32%	65.16%	10.23 ***	< 0.01
Tobin's Q	636	1.96	1.40	50.31%	2.94 ***	< 0.01
Dividend Yield	648	1.71%	0.87%	49.41%	8.58 ***	< 0.01

Table 15. Short-term Market Reaction to Announcements of SWF Investments

This table reports cumulative abnormal stock returns for target firms on the days surrounding the announcement of investment by a SWF. *Interval* indicates the time interval of interest relative to the date of the announcement of the SWF investment (day 0). *N* reports the number of observations. *Mean Cumulative Abnormal Return* and *Median Cumulative Abnormal Return* report, respectively, average and median abnormal cumulative returns. *Positive* and *Negative* report, respectively, the number of positive and negative cumulative abnormal returns for the period of interest, *Patell z* reports *p*-values of Patell's z-scores computed to test the statistical significance of the mean cumulative abnormal return relative to the period of interest, and *CDA t* the *p*-value associated with a *t*-test based on the portfolio time-series standard error computed with the 'crude dependency adjustment' proposed by Brown and Warner (1985). *Generalized Sign z* reports the *p*-value of a generalized nonparametric sign test, and *Wilcoxon Signed Rank Test* reports the *p*-values associated with this alternative nonparametric test of significance. The significance levels are denoted as follows: "*" indicates significance at the 0.10 level; "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level. Panel A includes all announcements of SWF investments in publicly traded companies, Panel B reports the same values for all investments announcements, excluding those made by Norway's SWF, while Panel C presents only investment announcements associated with the Norwegian fund.

Panel A. All Observations

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive	Negative	Patell Z	CDA t	Generalized Sign Z	WSR
(-1,+1)	688	1.25%	0.17%	368	320	< 0.01 ***	< 0.01 ***	< 0.01 ***	0.05 **
(0,0)	688	1.10%	0.00%	342	344	< 0.01 ***	< 0.01 ***	0.10	0.19
(0,+1)	688	1.29%	0.15%	358	329	< 0.01 ***	< 0.01 ***	< 0.01 ***	0.04 **

Panel B: Excluding Norway

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive	Negative	Patell Z	CDA t	Generalized Sign Z	WSR
(-1,+1)	293	2.91%	0.37%	168	125	< 0.01 ***	< 0.01 ***	< 0.01 ***	< 0.01 ***
(0,0)	293	2.14%	0.01%	148	143	< 0.01 ***	< 0.01 ***	0.07 *	0.08 *
(0,+1)	293	2.70%	0.56%	163	129	< 0.01 ***	< 0.01 ***	< 0.01 ***	< 0.01 ***

Panel B: Norway Only

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive	Negative	Patell Z	CDA t	Generalized Sign Z	WSR
(-1,+1)	395	0.02%	2.00%	200	195	0.66	0.97	0.23	0.90
(0,0)	395	0.32%	-1.00%	194	201	0.01 **	0.24	0.56	0.83
(0,+1)	395	0.25%	-2.00%	195	200	0.28	0.52	0.49	0.76

Table 16. Long-Term Impact of SWF Investments, Buy-and-Hold Abnormal Returns

Interval indicates the time interval of interest, starting on the day following the SWF investment. *N* reports the number of observations. *Mean Compounded Abnormal Return* and *Median Compounded Abnormal Returns* report, respectively, average and median abnormal compounded returns. *Positive* and *Negative* report, respectively, the number of positive and negative cumulative abnormal returns for the period of interest. *Bootstrapped, Skewness Adjusted t* presents the p-value associated with the bootstrapped, skewness adjusted t-statistic employed by Hall (1992). *Generalized Sign Z* reports the p-values of a generalized nonparametric sign test, and *Wilcoxon Signed Rank Test* reports the p-values associated with this alternative non-parametric test. In Panel A, abnormal returns are market-adjusted against a local-market total return index. Panel B and C reports the same values for all investments announcements, with abnormal returns computed versus matching firms; in Panel B, matching is on country, exchange, size and book-to-market ratios. In Panel C, matching is on country, exchange, industry, and pre-event performance. Panels D, E, and F present similar analysis excluding observations for Norway's sovereign fund. The significance levels are denoted as follows: "*" indicates significance at the 0.10 level; "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level.

Panel A. Local Index

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	631	-1.36%	-3.13%	276	355	0.20	0.13	< 0.01 ***
1 year	617	-1.32%	-6.00%	275	342	0.25	0.27	< 0.01 ***
2 years	366	-4.50%	-8.51%	153	213	0.19	0.11	< 0.01 ***
3 years	165	-4.61%	-12.75%	71	94	0.32	0.88	0.02 **

Panel B. Matched Firms, Country, Exchange, Size and Market-to-Book

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	584	-1.86%	-2.75%	275	313	0.19	0.39	0.20
1 year	576	-3.68%	-2.02%	281	293	0.05 *	0.84	0.10
2 years	294	-6.37%	-11.82%	148	197	0.17	0.05 **	< 0.01 ***
3 years	128	-21.88%	-16.73%	61	97	0.04 **	0.02 **	0.03 **

Panel C. Matched Firms, Country, Exchange, Industry and Pre-event Performance

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	546	-3.74%	-2.40%	262	284	0.05 **	0.85	0.13
1 year	532	-8.39%	-2.50%	249	283	< 0.01 ***	0.51	0.08 *
2 years	325	-5.10%	-6.68%	145	180	0.26	0.22	0.06 *
3 years	149	-12.13%	-0.96%	74	75	0.16	0.71	0.74

Table 16 (Continued). Long-Term Impact of SWF Investments, Buy-and-Hold Abnormal Returns

Panel D: Local Index, Excluding Norway

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	236	-2.94%	-4.17%	98	138	0.09 *	0.22	< 0.01 ***
1 year	222	-3.67%	-10.09%	91	131	0.15	0.18	0.01 **
2 years	201	-5.65%	-13.85%	80	121	0.26	0.11	< 0.01 ***
3 years	157	-4.22%	-12.04%	68	89	0.31	0.47	0.03 **

Panel E: Matched Firms, Country, Exchange, Size and Market-to-Book, Excluding Norway

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	227	-0.83%	-4.09%	101	126	0.37	0.31	0.30
1 year	213	-1.58%	-5.43%	97	116	0.32	0.52	0.39
2 years	190	-4.37%	-16.07%	79	111	0.36	0.09 *	0.03 **
3 years	150	-22.19%	-16.73%	59	91	0.06 *	0.03 **	0.04 **

Panel F: Matched Firms, Country, Exchange, Industry and Pre-event Performance, Excluding Norway

Interval	N	Mean Compounded Abnormal Return	Median Compounded Abnormal Return	Positive	Negative	Bootstrapped, Skewness Adjusted *t*	Generalized Sign *z*	Wilcoxon Sign Rank Test
6 months	213	-2.43%	-1.78%	103	110	0.18	0.99	0.61
1 year	199	-7.98%	-2.34%	96	103	0.07 *	0.99	0.33
2 years	177	-3.96%	-5.32%	83	64	0.42	0.75	0.27
3 years	141	-10.07%	-0.96%	70	71	0.23	0.73	0.88

Table 17. Long-Term Impact of SWF Investments, Cumulative Abnormal Returns and Calendar-Time Abnormal Returns

Interval indicates the time interval of interest, starting on the day following the SWF investment. *N* reports the number of observations. *Mean Compounded Abnormal Return* and *Median Compounded Abnormal Returns* report, respectively, average and median abnormal compounded returns. *Calendar Time Abnormal Returns* and the related *Calendar Time t* are computed using the calendar-time methodology presented in Jaffe (1974) and Mandelker (1974). *Positive* and *Negative* report, respectively, the number of positive and negative cumulative abnormal returns for the period of interest, and *CDA t* the p-value associated with a t-test based on the portfolio time-series standard error computed with the 'crude dependency adjustment' proposed by Brown and Warner (1985). *Generalized Sign Z* reports the p-values of a generalized nonparametric sign test, and *Wilcoxon Signed Rank Test* reports the p-values associated with this alternative nonparametric test of significance. Panel A reports mean and median cumulative abnormal monthly returns following SWF investments, where abnormal returns are market adjusted against a local-market total return index. Panel B reports the same values for all investments announcements, with abnormal returns computed versus matching firms where matches are made based on country, exchange, size and book-to-market ratios. Panel C presents similar values computed versus a matching set of firms matched on country, exchange, industry, and pre-event performance. Panels D, E, and F present measures corresponding to Panels A, B, and C, respectively, but excluding observations for Norway's sovereign fund. The significance levels are denoted as follows: "*" indicates significance at the 0.10 level; "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level.

Panel A. Local Index, Market Adjusted

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	563	-1.35%	-1.27%	-1.80%	273	290	0.49	0.39	0.14	0.58
1 year	472	-2.24%	3.92%	-7.29%	247	223	0.34	0.05 *	0.68	0.97
2 years	282	7.82%	11.19%	0.72%	170	112	0.06 *	0.57	< 0.01 ***	< 0.01 ***
3 years	121	-2.06%	9.97%	-0.65%	69	52	0.81	0.29	0.18	0.91

Panel B. Local Index, Market Model

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	563	-7.99%	-3.97%	-11.05%	251	312	< 0.01 ***	< 0.01 ***	0.22	< 0.01 ***
1 year	472	-8.98%	-5.59%	-23.08%	212	260	< 0.01 ***	< 0.01 ***	0.31	0.01 **
2 years	282	-17.46%	-16.02%	-35.18%	116	166	< 0.01 ***	< 0.01 ***	0.05 *	< 0.01 ***
3 years	121	-56.39%	-40.35%	-59.62%	41	80	< 0.01 ***	< 0.01 ***	0.01 **	< 0.01 ***

Table 17 (Continued). Long-Term Impact of SWF Investments, Cumulative Abnormal Returns and Calendar-Time Abnormal Returns

Panel C. Matched Firms, Country, Exchange, Size, and Market-to-Book

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	540	-1.59%	-2.96%	-1.67%	252	288	0.46	0.34	0.01 **	0.26
1 year	453	-6.82%	-5.00%	-7.06%	206	247	0.02 **	0.02 **	< 0.01 ***	< 0.01 ***
2 years	270	-6.93%	-7.62%	-2.46%	121	149	0.21	0.05 **	0.03 *	0.04 **
3 years	113	0.11%	-3.63%	-4.08%	53	60	0.99	0.19	0.51	0.62

Panel D. Matched Firms, Country, Exchange, Industry, and Pre-event Performance

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	544	-5.54%	-2.40%	-2.43%	256	288	0.02 **	0.35	0.05 *	0.11
1 year	462	-8.83%	-2.17%	-7.90%	227	235	0.01 ***	0.06 *	0.42	0.04 *
2 years	275	-6.95%	-6.32%	-3.74%	126	149	0.28	0.34	0.06 *	0.20
3 years	121	2.78%	-7.83%	2.42%	56	65	0.16	0.97	0.21	0.83

Panel E. Local Index, Market Adjusted, Excluding Norway

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	210	-4.62%	-6.03%	-2.59%	89	121	0.16	0.33	0.05 **	0.03 **
1 year	202	-9.45%	-7.17%	-7.20%	89	113	0.02 **	0.03 **	0.15	0.01 **
2 years	169	-1.03%	2.16%	0.19%	91	78	0.86	0.29	0.31	0.80
3 years	121	-2.06%	9.97%	-0.65%	69	52	0.81	0.29	0.18	0.91

Table 17 (Continued). Long-Term Impact of SWF Investments, Cumulative Abnormal Returns and Calendar-Time Abnormal Returns

Panel F. Local Index, Market Model, Excluding Norway

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	210	-12.28%	-6.53%	-11.99%	86	124	< 0.01 ***	< 0.01 ***	0.17	< 0.01 ***
1 year	202	-22.74%	-14.78%	-23.45%	70	132	< 0.01 ***	< 0.01 ***	< 0.01 ***	< 0.01 ***
2 years	169	-37.53%	-28.38%	-36.84%	51	118	< 0.00 ***	< 0.00 ***	< 0.01 ***	< 0.00 ***
3 years	121	-56.39%	-40.35%	-59.62%	41	80	< 0.01 ***	< 0.01 ***	0.01 **	< 0.01 ***

Panel G. Matched Firms, Country, Exchange, Size, and Market-to-Book, Excluding Norway

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	210	-12.28%	-6.53%	-11.99%	86	124	< 0.01 ***	< 0.01 ***	0.17	< 0.01 ***
1 year	202	-22.74%	-14.78%	-23.45%	70	132	< 0.01 ***	< 0.01 ***	< 0.01 ***	< 0.01 ***
2 years	169	-37.53%	-28.38%	-36.84%	51	118	< 0.00 ***	< 0.00 ***	< 0.01 ***	< 0.00 ***
3 years	121	-56.39%	-40.35%	-59.62%	41	80	< 0.01 ***	< 0.01 ***	0.01 **	< 0.01 ***

Panel H. Matched Firms, Country, Exchange, Industry, and Pre-event Performance, Excluding Norway

Interval	N	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Calendar Time AR	Positive	Negative	CDA t	Calendar Time t	Generalized Sign Z	WSR
6 months	209	-4.51%	-2.95%	-2.29%	93	116	0.35	0.63	0.05	0.22
1 year	199	-11.31%	-2.26%	-8.37%	97	102	0.09 *	0.11	0.47	0.06 *
2 years	166	-5.41%	-3.98%	-4.22%	80	86	0.59	0.82	0.38	0.40
3 years	121	2.78%	-7.83%	2.42%	56	65	0.16	0.97	0.21	0.83

Table 18. Cross-Sectional Analysis of Long-Term Abnormal Returns of SWF Investment Targets
This table reports results from OLS regressions; the response variable is a market-adjusted abnormal return, with local total return indices as benchmarks, over the indicated post-investment event window. Variables are as defined in Table 13, with the exception of the *Pre-Event BHAR 1 Year*, which are buy-and-hold market adjusted abnormal returns computed over one year prior to the day on which the SWF investment was announced. *N* reports the number of observations and *R-sq* the R squared statistic. All regressions are estimated with heteroskedasticity robust standard errors clustered by target firm and year fixed effects. The table included parameter estimates and, in grey italicized font, related p-values. Significance is denoted as follows: "*" indicates significance at the 0.10 level "**" indicates significance at the 0.05 level; "***" indicates significance at the 0.01 level.

	6 months	**1 year**	**2 years**	**3 years**
SWF Government Involvement	-0.6348	-0.7802	-2.9666 **	-3.5149
	0.17	*0.25*	*0.03*	*0.29*
SWF Passive Stance	-1.0152 ***	-0.8160 *	-2.0815 **	-3.6491 **
	< 0.01	*0.07*	*< 0.01*	*0.04*
Norway	1.8663 ***	1.3386 *	2.8404 ***	6.0818 **
	< 0.01	*0.07*	*< 0.01*	*0.01*
OECD	-0.3975 ***	-0.2651	-0.4014	-1.2880 *
	< 0.01	*0.35*	*0.18*	*0.06*
Strategic Target	0.0489	0.0170	0.0400	0.2317
	0.39	*0.77*	*0.75*	*0.54*
SWF Age	-0.0202	-0.0249	-0.1060 **	-0.1346
	0.19	*0.32*	*0.02*	*0.22*
Capital Infusion	-0.2636	-1.1607	0.6369	2.1505
	0.81	*0.42*	*0.66*	*0.60*
Stake Owned	0.2014	-0.3595	-1.4052 **	-1.9523
	0.84	*0.69*	*0.01*	*0.39*
Foreign	0.0258	-0.3470 *	-0.7295 ***	-1.2867
	0.88	*0.08*	*< 0.01*	*0.11*
*Market Value (*1000)*	-0.0061	-0.0035	-0.0109 **	-0.0364
	0.15	*0.35*	*0.02*	*0.35*
Leverage	-0.1689	0.1111	-0.2385	1.0468
	0.29	*0.45*	*0.27*	*0.71*
Liquidity	0.0098	0.0116	-0.0015	0.1637
	0.18	*0.26*	*0.97*	*0.54*
BoD Dummy	-0.2133	-0.1105	-0.3535 **	-1.2034 *
	0.20	*0.40*	*0.03*	*0.08*
Pre-Event BHAR, 1 year	0.0020	-0.0534 **	-0.0571 ***	-0.1570
	0.91	*0.01*	*< 0.01*	*0.37*
Intercept	0.9741 ***	1.2707 ***	4.4350 ***	5.4758 *
	< 0.01	*< 0.01*	*< 0.01*	*0.08*
N	294	293	144	23
R-Squared	4.91%	4.37%	23.95%	73.13%

Table 19. Board of Director Seats Acquired by SWFs

This table presents details about how frequently individual SWFs assume seats on board of directors of target firms, with detail on domestic vs. foreign investment and with specific information concerning investments in OECD target firms.

			Acquired Seats				Did not Acquire Seats			
SWF	**Country**	**Obs**	**Total**	**Domestic**	**Foreign**	**OECD**	**Total**	**Domestic**	**Foreign**	**OECD**
International Petroleum Investment Company (IPIC)	Abu Dhabi	6	3	1	2	2	3	0	3	3
Abu Dhabi Investment Authority (ADIA)	Abu Dhabi	4	0	0	0	0	4	0	4	3
Temasek Holdings	Singapore	69	19	9	10	2	50	9	41	19
Brunei Investment Agency	Brunei	1	1	0	1	0	0	0	0	0
China Investment Corporation (CIC)	China	5	1	1	0	0	4	1	3	3
Dubai International Financial Centre (DIFC)	Dubai	3	0	0	0	0	3	0	3	3
Khazanah Nasional Bhd	Malaysia	18	11	9	2	0	7	4	3	0
Government of Singapore Investment Corporation (GIC)	Singapore	36	3	0	3	1	33	0	33	12
Investment Corporation of Dubai	Dubai	1	1	0	1	1	0	0	0	0
Istithmar	Dubai	9	4	0	4	2	5	0	5	3
Korea Investment Corporation (KIC)	Korea	1	0	0	0	0	1	0	1	1
Kuwait Investment Authority (KIA)	Kuwait	10	1	0	1	1	9	1	8	6
Libyan Investment Authority	Libya	10	2	0	2	2	8	0	8	6
Mubadala Development Company	Abu Dhabi	9	5	2	3	3	4	0	4	4
Mumtalakat Holding Company	Bahrain	1	0	0	0	0	1	1	0	0
Oman Investment Fund	Oman	1	0	0	0	0	1	0	1	1
Qatar Investment Authority (QIA)	Qatar	14	2	0	2	1	12	1	11	8
Government Pension Fund-Global	Norway	157	0	0	0	0	157	0	157	157
Grand Total		**355**	**53**	**22**	**31**	**15**	**302**	**17**	**285**	**229**
Total Excluding Norway		**198**	**53**	**22**	**31**	**15**	**145**	**17**	**128**	**72**

Table 20. Government Investments, Descriptive Statistics

The table details government investments from 293 transactions. It shows the number of deals, value of deals and percentage of deal value invested. The sample covers transactions from the period 1980-2010. Government investment is broken down by the year of transaction announcement in Panel A, by the percentage of government ownership in Panel B, by the country of the government acquirer in Panel C, by the country of the target in Panel D and by the target SIC in Panel E.

Panel A. Government Investment by Transaction Year (Announced)

Year	Deal Count	Deal Value USD (mil)	Proportion of Total (count)	Proportion of Total (value)
prior to 1990	20	6,138	7%	2%
1990	9	6,629	3%	2%
1991	13	1,387	4%	<1%
1992	5	1,094	2%	<1%
1993	10	820	3%	<1%
1994	5	11	2%	<1%
1995	9	23	3%	<1%
1996	9	860	3%	<1%
1997	9	4,495	3%	<1%
1998	11	17,012	4%	5%
1999	9	8,570	3%	3%
2000	6	4,708	2%	1%
2001	10	11,590	3%	3%
2002	13	2,846	4%	1%
2003	12	1,928	4%	1%
2004	14	1,486	5%	<1%
2005	14	34,365	5%	10%
2006	10	10,669	3%	3%
2007	23	36,230	8%	11%
2008	40	153,132	14%	46%
2009	32	28,027	11%	8%
2010	6	2,341	2%	1%
Totals	**289**	**334,361**	**100%**	**100%**

Panel B. Government Investment by Stake

Stake Owned	Deal Count	Deal Value USD (mil)	Proportion of Total (count)	Proportion of Total (value)
0%-10%	120	73,959	42%	22%
10%-25%	72	46,242	25%	14%
25%-50%	38	54,407	13%	16%
51%-75%	21	76,937	7%	23%
75%-99%	13	31,965	4%	10%
100%	25	50,851	9%	15%
Totals	**289**	**334,361**	**100%**	**100%**

Table 20 (Continued). Government Investments, Descriptive Statistics

Panel C. Government Investment by Acquirer Nation

Rank	Acquirer Nation	Deal Count	Deal Value USD (mil)	Proportion of Total (count)	Proportion of Total (value)
1	UK	13	98,724	4%	30%
2	Singapore	28	35,509	10%	11%
3	UAE	21	29,133	7%	9%
4	Russian Fed	13	24,385	4%	7%
5	Germany	9	23,438	3%	7%
6	Netherlands	8	18,433	3%	6%
7	France	31	17,381	11%	5%
8	China	7	13,831	2%	4%
9	Italy	10	12,655	3%	4%
10	Belgium	8	10,560	3%	3%
	OTHER	141	50,314	49%	15%
	Totals	**289**	**334,361**	**100%**	**100%**

Panel D. Government Investment by Target Nation

Rank	Target Nation	Deal Count	Deal Value USD (mil)	Proportion of Total (count)	Proportion of Total (value)
1	UK	23	120,120	8%	36%
2	United States	43	42,301	15%	13%
3	Germany	13	26,781	4%	8%
4	Russian Fed	15	23,331	5%	7%
5	Netherlands	5	18,691	2%	6%
6	Switzerland	3	15,045	1%	4%
7	Belgium	7	14,774	2%	4%
8	Italy	6	12,655	2%	4%
9	Australia	9	10,086	3%	3%
10	Sweden	8	9,103	3%	3%
	OTHER	157	41,474	54%	12%
	Totals	**289**	**334,361**	**100%**	**100%**

Table 20 (Continued). Government Investments, Descriptive Statistics

Panel E. Government Investment by Target SIC Group

Target SIC	Description of Target SIC	Deal Count	Deal Value USD (mil)	Proportion of Total (count)	Proportion of Total (value)
0	Agriculture, forestry, and fishing	3	2,250	1%	1%
1	Mining, construction	22	23,758	8%	7%
2	Manufacturing (food, fabric, wood, chemical)	23	19,661	8%	6%
3	Manufacturing (rubber, plastic, glass, metal; boat, rail, air equipment)	31	12,960	11%	4%
4	Transportation, communications, electric, gas, and sanitary service	86	96,658	30%	29%
5	Trade (wholesale, retail)	12	2,181	4%	1%
6	Finance, insurance, and real estate	98	174,249	34%	52%
7	Services (hotel, beauty, funeral, computer, car rental & repair, movie)	10	2,564	3%	1%
8	Services (doctor's offices, legal, schools, religious, accounting)	3	80	1%	0%
	Totals	**289**	**334,361**	**100%**	**100%**

Table 21. Variable Definitions, Chapter 4

Ownership data are from SDC Platinum (and integrated with information from available financial disclosures and news reports). Bond data are obtained from Bloomberg and DataStream. Financial data are obtained from the Worldscope database.

Variable	Definition
Govt presence	Takes a value of 1 if the company currently has some government ownership, and 0 otherwise.
Govt ownership (%)	Percentage of the company owned by the government. Obtained from Thomson ONE Banker ownership module, company financial reports, and press releases.
Fin. crisis	Takes a value of 1 for the years 2008, 2009 and 2010, and 0 otherwise.
Rating	The natural log of Standard and Poor's bond rating, after conversion to an ordinal scale. (AAA = 22, AA+ = 21, etc.)
Age	The time since the issue date, in days.
Maturity	The time till maturity, in days.
Euro	Takes a value of 1 if the bond issue is euro-denominated, and 0 otherwise.
Leverage	(Total assets – Stockholders equity) / Stockholders equity
Market-to-book	(Total shares * Closing share price) / Stockholders equity
Size	The natural log of total assets.
ROE	Net income / Stockholders equity
Bank	Takes a value of 1 if the target company is a bank, and 0 otherwise.
Central govt	Takes a value of 1 if the investing entity is a central government, and 0 otherwise.
Govt financial institution	Takes a value of 1 if the investing entity is government-owned financial institution (e.g. Central Bank), and 0 otherwise.
Local/regional govt	Takes a value of 1 if the investing entity is a local or regional government, and 0 otherwise.
Pension fund	Takes a value of 1 if the investing entity is a government-owned public pension fund, and 0 otherwise.
SOE mixed	Takes a value of 1 if the investing entity is a government-controlled enterprise that is now at least partially owned by non-government investors, and 0 otherwise.
SOE full	Takes a value of 1 if the investing entity is a 100% state-owned enterprise, and 0 otherwise.
SWF	Takes a value of 1 if the investing entity is a sovereign wealth fund, and 0 otherwise.

Table 22. Sample Descriptive Statistics, Government Ownership and Cost of Debt

The table describes the number, mean, standard deviation, 25th, and 75th percentiles of the variables used in the analysis. Variable definitions are provided in Table 21. The sample covers the period 1990-2010. Credit spreads in the top and bottom 1% of all observations are dropped. Panel A reports descriptive statistics for continuous variables, while Panel B contains descriptive statistics for binary variables. Bond-years can be associated with more than one state investment vehicle type listed in Panel B.

Panel A. Continuous Variables

Continuous Variables	Count	Mean	Median	Standard deviation	25th percentile	75th percentile
Credit spread	5,126	214.39	133.9	236.63	67.8	271.3
Government Variables						
Govt ownership	5,126	13.67	2.29	22.47	0	15.29
Govt ownership > 0	3,148	22.26	10.74	25.12	3.66	31.9
Bond Variables						
Rating	5,126	15.87	16	3.18	14	18
Age (days)	5,126	1,644	1,310	1,371	604	2,309
Maturity (days)	5,126	2,809	1,857	3,188	968	3,248
Firm Variables						
Leverage	5,126	11.39	3.81	13.42	1.62	19.69
M_B	5,126	1.86	1.63	1.34	1.09	2.24
Size	5,126	10.96	10.64	2.44	9.25	13.16
ROE	5,126	7.47%	0.11	34.18%	5.49%	16.96%

Panel B. Binary Variables

Binary Variables	Count	Yes (1)	No (0)
Government Variables			
Govt presence	5,126	3,148	1,978
Central govt		581	
Govt fin. institution		212	
Local/regional govt		77	
Pension fund		784	
SOE mixed		1,649	
SOE full		913	
SWF		897	
Bailed out	5,126	479	4,647
Fin. crisis	5,126	1,834	3,292
Foreign govt investor	5,126	1,358	3,768
Firm Variables			
Bank	5,126	1,300	3,826

Table 23. Credit Spreads and Government Ownership, Mean Difference Tests

The following table presents two-tailed tests of differences in means for companies with and without government ownership for the dependent variable (*Credit spread*) and the major independent variables. Variable definitions are provided in Table 21. For the comparison of foreign and domestic government ownership, firms are grouped based on whether the majority of their government ownership is held by a domestic state entity or a foreign one. The sample covers the period 1990–2010. The *p*-value shows the significance level of the two-tailed difference in means test, with standard errors clustered at the firm level (as in Skinner, Holt and Smith, 1989).

Sample	**All Firms**	**Gov Presence**	**No Gov Presence**	***p*-value**	**Count**
Entire Period	214.39	225.14	197.27	0.359	5,126
1990-2007	146.07	167.25	117.94	0.017	3,292
2008-2010	337.02	310.76	396.15	0.084	1,834
2008-2010, Excluding Bailouts	356.95	340.68	399.33	0.358	1,530
	Gov Presence	**Majority Foreign Gov**	**Majority Domestic Gov**		
Entire Period	225.14	293.51	200.38	0.03	3,148
1990-2007	167.25	270.38	147.17	0.033	1,878
2008-2010	310.76	306.85	313.57	0.913	1,270
	All Firms	**Banks**	**Non-Banks**		
Credit spread (with govt presence)	225.14	163.63	244.69	0.009	3,148
Credit spread (without govt presence)	197.27	184.77	201.97	0.603	1,978
Credit spread (1990-2007, without govt presence)	117.94	79.93	130.87	0.005	1,414
Credit spread (2008-2010, without govt presence)	396.15	391.56	398.33	0.927	564

Table 24. Government Ownership, Credit Spreads, and the 2008 Financial Crisis

Year fixed effects (v_t) regression analysis with heteroskedasticity-robust and firm-clustered standard errors is performed on the following model: $y_{it} = \alpha + \theta X_{it} + \gamma \hat{\zeta}_{it} + v_t + \eta_{it}$. The dependent variable, credit spread (y_{it}), is the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. α represents the intercept, and η_{it} is the error term. Orthogonalized values of the log of the bond's rating after conversion to an ordinal scale, ***Rating*** ($\hat{\zeta}_{it}$), are used. The explanatory variables included in X_{it} are described in Table 2. ***Bank * Leverage*** is an interaction of the variables described in Table 21, and ***Fin. Crisis*** is interacted with each of the government owner types. The data are annual and cover the period 1990-2010. Panel A looks at government presence, and Panel B uses government ownership stakes. The models control for bond collateral/instrument type, bond currency, and issuer country. Coefficients are listed below, with t-statistics in gray italics. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Panel A. Government Ownership Presence

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Govt presence	51.82***							
	3.436							
*Govt presence * Fin. crisis*	-76.24**							
	-2.195							
SWF		72.37						
		1.577						
*SWF * Fin. crisis*		-24.2						
		-0.552						
Central govt			0.555					
			0.017					
*Central govt * Fin. crisis*			-95.33					
			-1.58					
Local/regional govt				86.92***				
				2.609				
*Local/regional govt * Fin. crisis*				-134.4**				
				-2.049				
SOE full					18.36			
					1.043			
*SOE full * Fin. crisis*					-48.18			
					-1.563			
SOE mixed						38.87**		
						2.165		
*SOE mixed * Fin. crisis*						-85.58***		
						-2.896		
Pension fund							71.38***	
							4.589	
*Pension fund * Fin. crisis*							-0.57	
							-0.017	
Govt financial institution								131.7***
								2.795
*Govt financial institution * Fin. crisis*								-117.7**
								-2.417

Table 24 (Continued). Government Ownership, Credit Spreads, and the 2008 Financial Crisis.

Panel A (Continued). Government Ownership Presence

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Fin. crisis	424.8***	383.1***	417.3***	413.5***	422.5***	410.5***	417.6***	414.5***
	10.979	*11.302*	*14.184*	*13.934*	*13.252*	*12.709*	*13.604*	*13.767*
Rating	-420.3***	-417.3***	-418.5***	-420.5***	-419.8***	-416.4***	-417.1***	-418.8***
	-6.626	*-6.542*	*-6.436*	*-6.468*	*-6.462*	*-6.474*	*-6.504*	*-6.464*
Maturity	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	4.982	*4.977*	*4.753*	*4.921*	*4.965*	*5.015*	*4.741*	*4.968*
Age	0.0013	0.0028	0.0024	0.0022	0.0022	0.0014	0.0032	0.0028
	0.405	*0.887*	*0.762*	*0.702*	*0.716*	*0.470*	*0.969*	*0.892*
Leverage	1.338**	0.848	0.897	0.912	0.948	1.073*	1.016	1.008
	2.054	*1.310*	*1.400*	*1.407*	*1.459*	*1.675*	*1.610*	*1.544*
*Bank * Leverage*	-2.541**	-1.317	-1.598	-1.487	-1.681	-2.094**	-1.583	-1.708
	-2.338	*-1.153*	*-1.502*	*-1.361*	*-1.545*	*-1.995*	*-1.512*	*-1.527*
Bank	25.56	4.294	8.901	7.456	13.11	18	9.47	11.26
	1.198	*0.183*	*0.391*	*0.324*	*0.576*	*0.831*	*0.437*	*0.482*
Market-to-book	-16.91***	-15.91***	-15.46***	-15.30***	-15.37***	-15.69***	-14.30***	-15.53***
	-3.470	*-3.287*	*-3.155*	*-3.127*	*-3.123*	*-3.226*	*-2.936*	*-3.125*
Size	-11.70***	-13.32***	-12.51***	-12.22**	-12.27***	-13.12***	-12.12***	-13.18***
	-2.684	*-2.788*	*-2.679*	*-2.595*	*-2.628*	*-3.104*	*-2.680*	*-2.798*
ROE	-34.23*	-32.8	-40.56**	-40.82**	-39.06*	-34.85*	-40.37**	-39.63**
	-1.666	*-1.568*	*-2.055*	*-2.070*	*-1.947*	*-1.718*	*-2.012*	*-2.025*
Constant	229.7***	273.0***	238.3***	225.5***	225.4***	254.3***	213.5***	241.1***
	3.556	*3.717*	*3.523*	*3.321*	*3.334*	*3.996*	*3.198*	*3.517*
Observations	4647	4647	4647	4647	4647	4647	4647	4647
R-squared	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56

Table 24 (Continued). Government Ownership, Credit Spreads, and the 2008 Financial Crisis.

Panel B. Government Ownership Stake

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Govt stake (%)	-0.136							
	-0.370							
*Govt stake (%) * Fin. crisis*	-1.063*							
	-1.801							
SWF		4.803*						
		1.844						
*SWF * Fin. crisis*		-0.728						
		-0.389						
Central govt			-0.243					
			-0.359					
*Central govt * Fin. crisis*			-1.828*					
			-1.826					
Local/regional govt				2.446				
				1.524				
*Local/regional govt * Fin. crisis*				-2.732				
				-1.636				
SOE full					-0.917			
					-1.303			
*SOE full * Fin. crisis*					-2.805			
					-1.587			
SOE mixed						-0.180		
						-0.300		
*SOE mixed * Fin. crisis*						-1.827**		
						-2.496		
Pension fund							1.312	
							0.532	
*Pension fund * Fin. crisis*							3.329	
							1.457	
Govt financial institution								13.72***
								4.744
*Govt financial institution * Fin. crisis*								-1.808
								-0.416

Table 24 (Continued). Government Ownership, Credit Spreads, and the 2008 Financial Crisis.

Panel B (Continued). Government Ownership Stake

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Fin. crisis	428.2***	404.6***	415.1***	412.7***	416.3***	422.4***	407.5***	412.7***
	13.341	*13.509*	*14.110*	*13.871*	*13.860*	*13.792*	*13.743*	*13.679*
Rating	-417.3***	-417.4***	-418.0***	-420.8***	-419.1***	-418.0***	-418.6***	-419.0***
	-6.418	*-6.469*	*-6.428*	*-6.482*	*-6.453*	*-6.423*	*-6.457*	*-6.475*
Maturity	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	5.215	*4.567*	*4.776*	*4.872*	*4.997*	*5.003*	*4.721*	*5.274*
Age	0.0026	0.0026	0.0026	0.0023	0.0026	0.0022	0.0025	0.0027
	-0.846	*-0.832*	*-0.810*	*-0.724*	*-0.835*	*-0.698*	*-0.773*	*-0.897*
Leverage	0.938	1.011	0.977	0.924	0.93	0.934	0.925	0.958
	1.457	*1.548*	*1.510*	*1.423*	*1.449*	*1.442*	*1.420*	*1.460*
*Bank * Leverage*	-1.481	-1.461	-1.626	-1.512	-1.544	-1.381	-1.485	-1.612
	-1.390	*-1.338*	*-1.547*	*-1.378*	*-1.428*	*-1.264*	*-1.359*	*-1.473*
Bank	11.29	8.365	9.908	7.986	11.36	10.44	7.884	8.15
	0.498	*0.366*	*0.437*	*0.346*	*0.502*	*0.456*	*0.346*	*0.352*
Market-to-book	-14.36***	-17.39***	-15.50***	-15.57***	-15.59***	-14.24***	-15.29***	-15.51***
	-2.959	*-3.573*	*-3.162*	*-3.176*	*-3.176*	*-2.872*	*-3.107*	*-3.121*
Size	-13.51***	-14.03***	-13.24***	-12.27***	-11.67**	-13.95***	-12.42***	-13.26***
	-2.926	*-2.930*	*-2.784*	*-2.615*	*-2.536*	*-3.199*	*-2.660*	*-2.826*
ROE	-41.85**	-31.31	-40.64**	-40.79**	-40.42**	-40.28**	-41.72**	-40.09**
	-2.090	*-1.526*	*-2.053*	*-2.070*	*-2.016*	*-2.001*	*-2.120*	*-2.059*
Constant	245.0***	253.1***	246.3***	232.4***	226.0***	246.8***	232.8***	243.6***
	3.640	*3.715*	*3.594*	*3.426*	*3.316*	*3.767*	*3.444*	*3.558*
Observations	4647	4647	4647	4647	4647	4647	4647	4647
R-squared	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56

Table 25. Domestic and Foreign Government Ownership and Credit Spreads

Year fixed effects (v_t) regression analysis with heteroskedasticity-robust and firm-clustered standard errors is performed on the following model: $y_{it} = \alpha + \theta X_{it} + \gamma \hat{\zeta}_{it} + v_t + \eta_{it}$. The dependent variable, credit spread (y_{it}), is the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. α represents the intercept, and η_{it} is the error term. Orthogonalized values of the log of the bond's rating after conversion to an ordinal scale, ***Rating*** ($\hat{\zeta}_{it}$), are used. The explanatory variables included in X_{it} are described in Table 2. ***Bank * Leverage*** is an interaction of the variables described in Table 21, and ***Leverage*** is interacted with each of the government owner types. The data are annual and cover the period 1990-2010. The models control for bond collateral/instrument type, bond currency, and issuer country. Panel A looks at government presence, and Panel B uses government ownership stakes. Coefficients are listed below, with t-statistics in gray italics. *** denotes significance at the 1% level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.

Panel A. Domestic and Foreign Government Ownership Presence

	1990-2010	**1990-2010**	**1990-2007**	**1990-2007**	**2008-2010**	**2008-2010**
Domestic govt presence	8.404		5.267		-55.77**	
	0.626		*0.540*		*2.043*	
Foreign govt presence		16.65		37.01		16.33
		1.046		*1.533*		*0.824*
Rating	-432.1***	-431.2***	-361.7***	-358.2***	-533.1***	-536.9***
	-6.794	*-6.794*	*-4.797*	*-4.853*	*-5.680*	*-5.649*
Maturity	0.00348***	0.00344***	0.00733***	0.00731***	-0.00181	-0.0017
	4.019	*4.031*	*8.306*	*8.221*	*-1.078*	*-0.954*
Age	0.00254	0.00265	0.00316	0.00308	-0.00186	-0.00105
	0.834	*0.882*	*0.831*	*0.834*	*-0.488*	*-0.273*
Leverage	1.195*	1.137*	1.018*	0.981*	5.925**	5.994**
	1.824	*1.721*	*1.749*	*1.656*	*2.167*	*2.141*
*Bank * Leverage*	-3.304***	-3.207***	-0.549	-0.383	-12.60***	-13.46***
	-2.977	*-2.794*	*-0.585*	*-0.382*	*-3.308*	*-3.438*
Bank	52.32**	51.04**	-9.241	-14.11	204.1***	209.6***
	-2.113	*-2.050*	*0.465*	*0.655*	*-3.460*	*-3.572*
Market-to-book	-17.25***	-17.30***	-8.642*	-8.213	-25.95**	-26.68**
	-3.460	*-3.481*	*-1.728*	*-1.627*	*-2.165*	*-2.179*
Size	-15.40***	-15.86***	-10.80***	-10.65***	-18.44*	-13.3
	-3.411	*-3.467*	*-3.071*	*-3.086*	*-1.955*	*-1.261*
ROE	-47.24**	-44.88**	-100.9**	-103.2**	68.78	72.07
	2.171	*2.024*	*2.540*	*2.552*	*-1.560*	*-1.590*
Constant	271.3***	283.9***	267.2***	280.4***	363.2**	260.3
	4.219	*4.275*	*5.418*	*5.370*	*2.143*	*1.462*
Observations	5126	5126	3292	3292	1362	1362
R-squared	0.551	0.551	0.469	0.47	0.53	0.527

Table 25 (Continued). Domestic and Foreign Government Ownership and Credit Spreads

Panel B. Domestic and Foreign Government Ownership Stake

	1990-2010	1990-2010	1990-2007	1990-2007	2008-2010	2008-2010
Domestic govt stake (%)	-0.432		-0.338		-1.086**	
	-1.219		*-0.818*		*-2.464*	
Foreign govt stake (%)		0.444		1.249*		-0.503
		-0.551		*-1.730*		*-0.595*
Rating	-431.0***	-432.1***	-360.1***	-359.9***	-533.0***	-538.1***
	-6.760	*-6.766*	*-4.785*	*-4.793*	*-5.591*	*-5.676*
Maturity	0.00351***	0.00344***	0.00737***	0.00726***	-0.00147	-0.00171
	4.106	*4.033*	*8.179*	*8.255*	*0.850*	*0.961*
Age	0.00287	0.00256	0.00342	0.00296	-0.000144	-0.00155
	0.947	*0.860*	*0.922*	*0.802*	*-0.038*	*-0.401*
Leverage	1.194*	1.142*	1.008*	0.912	5.784**	5.931**
	1.796	*1.735*	*1.722*	*1.546*	*2.078*	*2.130*
*Bank * Leverage*	-3.151***	-3.194***	-0.346	-0.351	-12.69***	-13.28***
	-2.798	*-2.800*	*-0.376*	*-0.360*	*-3.230*	*-3.390*
Bank	51.63**	50.48**	-11.82	-14.09	206.1***	210.4***
	2.074	*2.031*	*-0.581*	*-0.678*	*3.542*	*3.591*
Market-to-book	-17.31***	-17.47***	-8.813*	-8.657*	-26.12**	-25.29**
	-3.455	*-3.503*	*-1.757*	*-1.729*	*-2.148*	*-2.075*
Size	-16.25***	-15.65***	-11.00***	-10.29***	-16.05	-12.28
	-3.552	*-3.465*	*-3.051*	*-2.924*	*-1.550*	*-1.175*
ROE	-47.65**	-46.55**	-101.4**	-101.5**	63.64	65.76
	-2.204	*-2.117*	*-2.533*	*-2.517*	*1.394*	*1.433*
Constant	280.8***	275.8***	270.3***	263.2***	332.1*	242.4
	4.307	*4.265*	*5.285*	*5.354*	*1.842*	*1.372*
Observations	5126	5126	3292	3292	1362	1362
R-squared	0.551	0.551	0.469	0.47	0.528	0.527

Table 26. Non-Investment-Grade Bonds, Domestic and Foreign Government Ownership, and Credit Spreads

Year fixed effects (v_t) regression analysis with heteroskedasticity-robust and firm-clustered standard errors is performed on the following model: $y_{it} = \alpha + \theta X_{it} + \gamma \hat{\zeta}_{it} + v_t + \eta_{it}$. The dependent variable, credit spread (y_{it}), is the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. α represents the intercept, and η_{it} is the error term. Orthogonalized values of the log of the bond's rating after conversion to an ordinal scale, ***Rating*** ($\hat{\zeta}_{it}$), are used. The explanatory variables included in X_{it} are described in Table 2. ***Bank * Leverage*** is an interaction of the variables described in Table 21, and ***Leverage*** is interacted with each of the government owner types. The data are annual and cover the period 1990-2010. The models control for bond collateral/instrument type, bond currency, and issuer country. Only observations using non-investment grade bonds are used in this table. Panel A looks at government presence, and Panel B uses government ownership stakes. Coefficients are listed below, with t-statistics in gray italics. *** denotes significance at the 1% level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.

Panel A. Junk Bonds--Domestic and Foreign Government Ownership Presence

	1990-2010	1990-2010	1990-2007	1990-2007	2008-2010	2008-2010
Domestic govt presence	-72.50*		-46.04		-133.0*	
	-1.937		*-1.010*		*-2.001*	
Foreign govt presence		143.2***		209.5***		143.1**
		2.787		*3.554*		*2.364*
Rating	-280.6**	-264.9**	-320.4***	-293.2***	-565.4***	-550.6***
	-2.599	*-2.551*	*-2.833*	*-2.667*	*-3.496*	*-3.684*
Maturity	-0.00146	0.000164	-0.00247	-0.00178	0.00786	0.0107
	-0.303	*-0.035*	*-0.374*	*-0.270*	*-0.958*	*-1.320*
Age	0.00507	0.0101	0.0124	0.0145	-0.00741	0.00147
	0.480	*0.937*	*0.926*	*1.064*	*0.487*	*0.105*
Leverage	9.644***	7.750**	11.42***	7.934***	11.75	8.711
	2.723	*2.463*	*3.109*	*2.802*	*0.649*	*0.540*
*Bank * Leverage*	6.326	1.198	7.512	-0.704	-119.8***	-117.7***
	0.948	*0.194*	*1.096*	*0.097*	*-2.729*	*-2.793*
Bank	-290.4***	-174.8**	-280.6**	-135.6	875.5***	1009***
	-2.869	*-1.998*	*-2.008*	*-1.392*	*3.000*	*3.315*
Market-to-book	-53.30***	-47.66***	-69.40***	-59.55***	-38.55	-31.85
	-2.761	*-2.823*	*-3.399*	*-3.407*	*-0.681*	*-0.645*
Size	-19.88	-29.46*	-7.366	-16.33	-53.42	-65.63
	-1.182	*-1.720*	*-0.432*	*-0.940*	*-1.362*	*-1.633*
ROE	-50.57	-59.5	-107.4	-104.8*	185.8	155.5
	-0.968	*-1.268*	*-1.527*	*-1.696*	*0.817*	*0.746*
Constant	1568***	1740***	747.0***	864.8***	2229***	1949***
	9.405	*9.481*	*3.017*	*3.765*	*3.699*	*3.162*
Observations	732	732	450	450	255	255
R-squared	0.468	0.479	0.459	0.492	0.443	0.448

Table 26 (Continued). Non-Investment-Grade Bonds, Domestic and Foreign Government Ownership, and Credit Spreads

Panel B. Junk Bonds--Domestic and Foreign Government Ownership Stake

	1990-2010	1990-2010	1990-2007	1990-2007	2008-2010	2008-2010
Domestic govt stake (%)	-2.080***		-0.906		-7.019***	
	-2.703		*-0.864*		*-5.520*	
Foreign govt stake (%)		1.417		4.242**		-2.981
		1.106		*2.433*		*-1.278*
Rating	-276.8**	-287.8**	-325.6***	-318.7***	-344.4**	-580.0***
	-2.542	*-2.599*	*-2.866*	*-2.816*	*-2.349*	*-3.418*
Maturity	-0.00002	0.00054	-0.00173	-0.00134	0.01010	0.00915
	-0.004	*0.115*	*-0.244*	*-0.197*	*1.304*	*1.106*
Age	0.00569	0.00631	0.0124	0.0103	0.00759	-0.00762
	0.536	*0.612*	*0.956*	*0.810*	*0.522*	*-0.514*
Leverage	9.679***	9.694***	11.63***	11.54***	6.568	5.474
	2.718	*2.761*	*3.040*	*3.094*	*0.426*	*0.314*
*Bank * Leverage*	6.49	4.614	5.178	5.59	-115.5***	-108.2**
	1.025	*0.703*	*0.748*	*0.783*	*-2.758*	*-2.577*
Bank	-300.3***	-255.8**	-249.6*	-258.1**	637.8**	917.8***
	-3.056	*-2.556*	*-1.991*	*-2.042*	*2.164*	*3.108*
Market-to-book	-52.09***	-51.66***	-69.25***	-69.47***	-57.74	-8.757
	-2.707	*-2.699*	*-3.325*	*-3.417*	*-1.111*	*-0.169*
Size	-19.79	-26.04	-6.358	-8.482	-38.2	-53.86
	-1.188	*-1.523*	*-0.370*	*-0.491*	*-1.152*	*-1.314*
ROE	-46.28	-47.35	-103.9	-100.5	141.5	154.2
	-0.916	*-0.925*	*-1.520*	*-1.484*	*0.680*	*0.701*
Constant	1564***	1644***	718.2***	783.4***	2010***	2750***
	9.597	*9.547*	*2.869*	*3.131*	*3.900*	*3.933*
Observations	732	732	450	450	255	255
R-squared	0.47	0.465	0.46	0.466	0.465	0.446

Table 27. Government Ownership and Credit Spreads: Robustness Tests

Year fixed effects (v_t) regression analysis with heteroskedasticity-robust and firm-clustered standard errors is performed on the following model: $y_{it} = \alpha + \theta X_{it} + \gamma \hat{\zeta}_{it} + v_t + \eta_{it}$. The dependent variable, credit spread (y_{it}), is the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. α represents the intercept, and η_{it} is the error term. Orthogonalized values of the log of the bond's rating after conversion to an ordinal scale, ***Rating*** ($\hat{\zeta}_{it}$), are used. The explanatory variables included in X_{it} are described in Table 21. ***Bank * Leverage*** is an interaction of the variables described in Table 2, and ***Leverage*** is interacted with each of the government owner types. The data are annual and cover the period 1990-2010. The models control for bond collateral/instrument type, bond currency, and issuer country. Model 1 uses a banking crisis indicator based on Laeven and Valencia (2010). Model 2 interacts the presence of central government ownership with leverage. Models 3-8 compare the effects of government ownership presence and amounts among different state entities over during periods. Coefficients are listed below, with t-statistics in gray italics. *** denotes significance at the 1% level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.

	Model 1 1990-2010 Presence Binary	**Model 2 1990-2007 Presence Binary**	**Model 3 1990-2010 Presence Binary**	**Model 4 1990-2010 Stake %**	**Model 5 1990-2007 Presence Binary**	**Model 6 1990-2007 Stake %**	**Model 7 2008-2010 Presence Binary**	**Model 8 2008-2010 Stake %**
Govt presence	39.34***							
	3.168							
*Govt * Banking Crisis*	-54.66*							
	-1.966							
Banking crisis	68.43***							
	2.843							
Central govt presence		17.71						
		0.656						
*Central govt * Leverage*		-1.904**						
		-2.358						
SWF			14.95	2.718*	71.67	4.111	32.49	1.461
			0.667	*1.939*	*1.378*	*1.586*	*1.439*	*0.627*
Central govt			-1.876	-0.745	-7.609	-0.689	-75.66**	-1.211**
			-0.105	*-1.471*	*-0.283*	*-1.112*	*-2.349*	*-2.473*
Local/regional govt			27.44	-0.0128	9.541	-0.189	-38.91	-0.35
			-1.509	*-0.036*	*0.347*	*-0.317*	*-1.301*	*-0.654*

Table 27 (Continued). Government Ownership and Cost of Debt: Robustness

	Model 1 1990-2010 Presence Binary	Model 2 1990-2007 Presence Binary	Model 3 1990-2010 Presence Binary	Model 4 1990-2010 Stake %	Model 5 1990-2007 Presence Binary	Model 6 1990-2007 Stake %	Model 7 2008-2010 Presence Binary	Model 8 2008-2010 Stake %
SOE full			7.918	-0.0353	19.06	0.977	18.59	-2.531**
			0.487	*-0.041*	*1.094*	*0.891*	*0.873*	*-2.086*
SOE mixed			10.3	-0.894*	36.37**	-0.0416	-90.39***	-2.231**
			0.533	*-1.835*	*2.272*	*-0.092*	*-2.755*	*-2.466*
Pension fund			67.49***	2.588	22.15	-6.470*	54.87	4.770***
			4.304	*1.086*	*1.276*	*-1.854*	*1.571*	*2.994*
Govt financial			21.71	9.171***	90.41	9.108*	86.04**	16.54***
institution			*0.744*	*2.666*	*1.644*	*1.915*	*2.363*	*3.187*
Rating	-434.4***	-369.9***	-428.3***	-426.4***	-356.4***	-356.4***	-530.0***	-535.0***
	-6.880	*-4.850*	*-6.812*	*-6.686*	*-4.922*	*-4.720*	*-5.322*	*-5.157*
Maturity	0.0036***	0.0073***	0.003***	0.0034***	0.0071***	0.0072***	-0.0007	-0.0009
	4.109	*8.417*	*3.766*	*3.922*	*7.712*	*8.102*	*-0.375*	*-0.515*
Age	0.0033	0.0035	0.0037	0.0038	0.0032	0.0031	0.0018	0.0007
	1.037	*0.958*	*1.189*	*1.273*	*0.837*	*0.857*	*0.458*	*0.182*
Leverage	1.258*	1.221**	1.257*	1.316*	1.210**	1.043*	4.550*	5.616*
	1.935	*2.085*	*1.924*	*1.920*	*2.115*	*1.775*	*1.657*	*1.957*
*Bank * Leverage*	-3.628***	-0.107	-3.143***	-3.572***	-0.929	-0.165	-11.89***	-12.87***
	-3.173	*-0.132*	*-2.749*	*-3.281*	*-0.951*	*-0.179*	*-3.091*	*-3.291*
Bank	50.34**	-10.66	55.05**	56.91**	-4.899	-13.71	187.0***	225.1***
	1.978	*-0.540*	*2.181*	*2.391*	*-0.239*	*-0.650*	*3.213*	*3.809*
Market-to-book	-17.27***	-9.126*	-18.51***	-16.53***	-8.453*	-9.031*	-25.10**	-23.94*
	-3.713	*-1.801*	*-3.670*	*-3.295*	*-1.677*	*-1.789*	*-2.087*	*-1.825*
Size	-14.33***	-11.77***	-18.64***	-15.43***	-11.39***	-13.07***	-20.47*	-19.81*
	-3.299	*-3.411*	*-4.158*	*-3.544*	*-3.264*	*-3.444*	*-1.952*	*-1.860*
ROE	-39.07*	-102.9**	-42.03*	-44.39**	-97.56**	-98.09**	55.54	62.79
	-1.848	*-2.575*	*-1.872*	*-1.985*	*-2.578*	*-2.441*	*1.257*	*1.337*
Constant	263.8***	271.5***	302.5***	261.5***	298.0***	298.6***	403.3**	366.0*
	4.192	*5.310*	*4.589*	*3.957*	*4.830*	*5.529*	*2.196*	*1.937*
Observations	5126	3292	5126	5126	3292	3292	1362	1362
R-squared	0.558	0.477	0.553	0.553	0.48	0.474	0.536	0.536

Table 28. Factors Associated with Government Ownership

The following table shows probit regression results from a model describing factors associated with the presence of government ownership in a given firm-year. The dependent variable is ***Govt presence***, as defined in Table 21. This probit model serves as the first-stage regression for the treatment effects models used in Table 29. The first seven firm-level variables are linked to the bond-issuing target firms in our sample. The final three country-level factors are drawn from the nation of the investing government with the largest ownership percentage in the sample firm-year. For firm-years without government ownership, these country-level factors represent the home nation of the bond-issuing firm. The right-hand side variables are described in Table 21. ***Bank * Leverage*** is an interaction of the variables described in Table 21. The data are annual and cover the period 1990-2010. ***Political leadership left*** takes a value of 1 if the chief executive of a nation is part of a left-wing political party, and 0 otherwise; the variable is based on the Beck et al. (2001) database updated December 2010. ***Privatized target firm*** takes a value of 1 if the target company is a formerly state-owned company, and 0 otherwise. ***Civil law*** takes the value of 1 if the legal origin of the target country is 'civil law', and 0 otherwise; the variable is based on data by Djankov et al. (2008), available at http://www.economics.harvard.edu/faculty/shleifer/dataset.

Leverage	-0.0246***
	-8.979
Bank	-0.434***
	-4.326
*Bank * Leverage*	0.0530***
	11.964
Market-to-book	0.107***
	5.500
Size	-0.181***
	-13.249
ROE	-0.831***
	-12.327
Privatized target firm	0.474***
	9.080
Political leadership left	0.841***
	18.819
Civil law	1.329***
	25.399
GDP per capita growth	0.0131**
	2.011
Constant	1.382***
	10.074
Observations	5124
Pseudo R-squared	0.291

Table 29. Government Ownership and Credit Spreads: Two-Stage Models

Year fixed effects (v_t) regression analysis with heteroskedasticity-robust and firm-clustered standard errors is performed on the following model: $y_{it} = \alpha + \theta X_{it} + \gamma \hat{\varsigma}_{it} + v_t + \eta_{it}$. The dependent variable, credit spread (y_{it}), is the difference between the corporate bond's current yield to maturity and that of the government bond most closely matched by maturity. α represents the intercept, and η_{it} is the error term. Orthogonalized values of the log of the bond's rating after conversion to an ordinal scale, ***Rating*** ($\hat{\varsigma}_{it}$), are used. The variables included in X_{it} are described in Table 21. ***Bank * Leverage*** is an interaction of the variables described in Table 21. The data are annual and cover the period 1990-2010. The table reports second-stage results of a treatment effects regression, where ***Lambda*** represents the Inverse Mills Ratio (the first-stage results are presented in Table 28). Model 3 use a banking crisis indicator based on Laeven and Valencia (2010). The models control for bond collateral/instrument type, bond currency, and issuer country. Coefficients are listed below, with t-statistics in gray italics. *** denotes significance at the 1% level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.

	Model 1	**Model 2**	**Model 3**
Govt presence	44.98***	66.36***	27.85*
	3.247	*4.689*	*1.865*
*Govt ownership * Fin. crisis*		-81.73***	
		-7.98	
*Govt ownership * Banking crisis*			-53.60***
			-5.176
Fin. crisis		152.1	
		1.422	
Banking crisis			68.66***
			6.299
Rating	-425.3***	-423.3***	-429.1***
	-36.168	*-36.145*	*-36.673*
Age	0.0026	0.0016	0.0030*
	1.466	*0.919*	*1.702*
Maturity	0.0035***	0.0035***	0.0035***
	4.506	*4.497*	*4.553*
Leverage	1.336***	1.690***	1.145***
	3.807	*4.823*	*3.212*
Bank	57.60***	61.94***	47.82***
	4.537	*4.893*	*3.742*
*Bank * Leverage*	-3.793***	-4.294***	-3.358***
	-5.991	*-6.767*	*-5.224*
Market-to-book	-17.58***	-18.10***	-15.93***
	-8.045	*-8.189*	*-7.195*
Size	-13.68***	-14.49***	-14.77***
	-7.13	*-7.541*	*-7.624*
ROE	-40.54***	-39.53***	-43.68***
	-5.183	*-5.119*	*-5.653*
Lambda	-10.24	-5.189	7.545
	-1.174	*-0.593*	*0.825*
Constant	367.0***	379.5***	393.9***
	3.228	*3.356*	*3.476*
Observations	5124	5124	5124