The Sovereign Wealth Funds Risk Premium: Evidence from the Cost of Debt Financing*

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Abstract:

We build on recent SWF literature that documents an equity discount for SWF investments and extend it to bond markets to investigate whether SWFs represent a threat or an opportunity to bondholders. We test two competing hypotheses: the political agenda hypothesis that advocates that SWFs pursue a non-value maximization agenda, hence suggesting that SWF ownership increases the cost of debt for target firms, and the superior monitor hypothesis that claims that SWFs could mitigate agency problems, hence resulting in lower cost of debt for target firms. We find robust evidence supporting the political agenda hypothesis which suggests the existence of a "SWF bond premium". Our results show that the presence of a SWF as shareholder as well as the magnitude of its ownership stake increase the target firm bond spreads. Furthermore, this SWF bond premium is larger during non-crisis periods, for foreign SWFs, and for those originating from autarchic countries. Interestingly, we find strong evidence that SWFs may signal a passive investment stance and reduce the SWF bond premiums by: i) investing through separate investment vehicles, ii) targeting firms where insiders own a controlling stake of the firm, iii) improving their internal governance, iv) and increasing their transparency.

Keywords: Sovereign wealth fund; cost of debt; bond spreads

JEL Classification: G32, G15, G34, G38

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1. Introduction

Despite the multiple worldwide privatization waves since the 1980s, recent researches highlight the growing role of governments in the economy. Megginson and Fotak (2015) report that, while governments privatized about $ 1.48 trillion of their assets between 2001 and 2012, they have also acquired $ 1.52 trillion of new stocks during the same period. What changed is probably the vehicles that government is now using to preserve an active role in the economy. Among these vehicles, Sovereign Wealth Funds (SWF) have received increasing attention during the past several decades, as unique institutional investors with sovereign nature and gigantic assets under management. Bortolotti, Fotak, and Loss (2017) report that the aggregated assets under management of all SWFs is around $8 trillion in 2017, compared to about $2.5 trillion for private equity funds and $3.2 trillion for hedge funds. Additionally, their assets under management have dramatically increased by more than 16 times between 2003 and 2018, from $0.5 trillion to $8 trillion, according to the Sovereign Wealth Fund Institute.

A large body of the literature on SWFs has extensively investigated the impact of SWF investments on target firms. The main question was to investigate whether SWFs represent a danger or, on the contrary, offer an opportunity to their target firms. To borrow the terminology of Truman (2010), are SWFs a threat or a salvation. Empirical studies have offered mixed answers to this question. Despite the apparent consensus on the positive short-term market reaction following SWFs purchases, there is very little unanimity with respect to long-term effects of SWF investments.[1] A remarkably important recent study by Bortolotti, Fotak, and Megginson (2015), reports that market reactions to SWF equity investments are positive but lower than those of comparable private institutional investors by approximately 1.31%. The authors also find that this "SWF equity discount" is larger when the SWFs acquire controlling ownership stakes and when they take seats on the target firms' boards. More findings on this matter have been

[1] Megginson and Gao (2019) and Fotak, Gao, and Megginson (2017) offer excellent literature reviews of recent SWF studies on target firms performance.

provided by Bortolotti, Fotak, and Loss (2017) in a follow-up paper. According to this study, the SWF equity discount is larger for domestic SWF investments and for SWFs originating from autarchic countries. This suggests that the discount is caused by the threat of political interference. Since SWFs from non-democratic countries are expected to pursue politically-motivated agendas, they can mitigate the adverse impact of their investments (and thus reduce the SWF equity discount) by signaling passive investment approaches. They can do that by buying smaller stakes, avoiding controlling stakes, and investing indirectly via subsidiaries or other investment vehicles (Bortolotti, Fotak, and Loss, 2017).

Our paper builds on the study of Bortolotti, Fotak, and Megginson (2015) and proposes to investigate the impact of SWF investments on target firm valuations from the perspective of the bond market. In other words, we aim to answer the following question: Do SWFs represent a threat or an opportunity to bondholders? We investigate this question within the framework of the current finance literature and advance two competing hypotheses: the political agenda hypothesis (PAH) and the superior monitor hypothesis (SMH).

On the one hand, SWFs might pursue home-country non-value maximizing political agenda that could exacerbate the agency problems, destroy firm value, and increase the firm default risk. Consequently, bondholders would require higher yields from SWF target firms. On the other hand, SWFs might have the incentive and capability to monitor their target firms resulting in less agency costs and better firm performance. As a result, one would expect bondholders to require lower cost of debt financing from SWF target firms.

We empirically test these two competing hypotheses using a manually constructed dataset of 2,128 bonds issued by 347 SWF target firms that were subject to acquisitions by 12 SWFs from 11 countries. We document strong and robust evidence that firms targeted by SWFs exhibit significantly higher bond spreads. On average, we find evidence that the SWF target firm cost of debt (i.e. the average bond spreads beyond the government yields) increases by a premium of approximately 1.48% (that we label a “SWF bond premium”), after that a SWF acquires a stake in the company. Moreover, a 1% increase in the

ownership stake of the SWF in the target firm causes bondholders to require additional 5.6 bps risk premium. These results are statistically significant and robust to alternative specifications. In particular, our findings are robust to several controls for firm and country-level characteristics, after isolating the effect the recent financial crisis period, and after using various approaches to tackle potential endogeneity problems. We also use a standard error estimation methodology to control for heteroskedasticity and account for time series dependence and also adjust for triple clustering on our panel dimensions (at the firm, country, and year levels) and for quadruple clustering (at the firm, country, year, and industry levels).

Our finding generally supports the political agenda hypothesis and suggests that investments by SWFs are perceived as threats by bondholders since they could result in lower firm (asset) values and higher risks. This finding is also consistent with Bortolotti et al. (2015) who document comparable pattern, labeled in their case SWF discount, with respect to equity markets.

Given our strong documented evidence on the existence and magnitude of the SWF bond premium, we next explore the determinants of such premium and question whether SWFs can mitigate this negative bond market perception and insulate themselves from the political interference fear. First, we find strong evidence that the SWF bond premium is larger during non-crisis periods, for foreign investments, and in autarchic countries. The results with respect domestic/foreign SWFs is of particular importance. While Bortolotti and al. (2017) report that stockholders are more skeptical about domestic SWFs (as they find a higher SWF equity discount for domestic SWFs), our results suggest that bondholders seem to prefer local SWFs as, in such case, the SWF bond premium turns to be a discount (negative premium meaning a higher domestic SWF ownership is associated with lower cost of debt). This finding, which is partially supporting the government implicit guarantee these, could be explained by the fact the bondholders, contrary to equity holders who are residual claimants, would benefit the most from the SWF investment (and government involvement in general) in case of financial distress. In distressed times, governments are more likely to rescue local firms, which makes local SWF investments more desired by bondholders.

Second, prior literature suggests that SWFs can mitigate the SWF bond premium by either adhering to a better quality (internal) governance policies or by signaling a passive approach in the management of the target firms (Bortolotti et al., 2017). We explore various possible mitigation mechanisms and find strong evidence that SWFs may signal a passive investment stance and reduce the SWF bond premiums by investing through separate investment vehicles (i.e. indirectly), targeting firms where insiders own a controlling stake of the firm, by improving their internal governance, and by increasing their transparency (i.e. reducing their opacity).

Our paper directly contributes to the finance literature in many ways. First, our study significantly adds to the literature on the market perception of the SWF investments. Contrary to prior studies, we explore the impact of the SWF investments on firm valuation from the bond market perspective. The paper aims to answer an interesting question as to how bondholders—as an important group of claimholders in the firm's capital structure—view SWFs. Our results suggest that SWFs represent a threat to bondholders, further supporting the political agenda thesis that is expected to be the main motive behind the SWF investments. To the best of our knowledge, this is the first study that tries to assess investors' perception, other than shareholders, with respect to SWF investments.

Second, our empirical findings provide a solid ground to better understand investments by this type of institutional investors, SWFs, and how their investments affect other stakeholders' wealth. Indeed, most of the existing opinions, judgments, and critiques to SWFs remain hypothetical and lack strong empirical support. Our study adds to the existing empirical studies on SWFs and contributes to forming a better idea about such a unique institutional investor.

Third, we contribute to the literature on how corporate ownership structure affects the cost of debt financing. Many studies have analyzed the impact of ownership structure on the cost of debt (Boubakri and Ghouma, 2010; Anderson, Mansi, and Reeb, 2003; Bhojraj and Sengupta, 2003), but only few analyzed the impact of government ownership (Borisovaand Megginson, 2011; Borisova et al., 2015). In particular, our study differs from these latter, as we are the first to directly assess the market perception of a new wave of

state involvements in the economy through SWF investments. Our findings suggest that the new state investment vehicle, namely the SWFs, generally represents a political interference fear to bondholders. We also provide venues on how this fear could ultimately be mitigated.

The remainder of the paper proceeds as follows: section 2 develops our main hypotheses. In section 3, we present the sample selection and describe the empirical design. Section 4 discusses the results. In section 5 we discuss the determinants of the SWF bond premium and the possible mitigating mechanisms. Finally, section 6 concludes.

2. Hypotheses development

2.1. SWFs and the political agenda hypothesis (PAH)

Shleifer and Vishny (1997) argue that large shareholders might seek to expropriate wealth from minority shareholders and pursue private benefits of control. Controlling shareholders can obtain private benefits by engaging in firm's wealth transfer and expropriating minority shareholder benefits (Shleifer and Vishny, 1986; Johnson et al., 2000). Several studies have empirically investigated the relationship between tunneling and firm value and have concluded that tunneling activity is negatively associated with firm value (Morck et al., 1988; Stulz, 1988; McConnell and Servaes, 1990; Lins, 2003; Claessens et al., 2002; Jiang et al., 2010).

The literature on shareholders expropriation and ownership structure has also been extended to investigate the impact of various shareholding patterns on bondholders wealth. For example, Friedman et al. (2003) note that, in emerging markets, many corporate failures and collapses exhibit looting by controlling shareholders at the expense of debtholders. The authors develop a model that suggests that, if the firm encounters a large negative shock, the entrepreneur loots the firm causing its collapse. Boubakri and Ghouma (2010) investigate the effect of expropriation by controlling shareholder on the cost of debt financing in an international context. Their findings suggest that high voting/cash-flow rights wedge (a proxy for large shareholder expropriation) results in higher bond yield-spreads and lower bond ratings.

From this risk of expropriation point of view, the impact of SWF investments on the wealth of other investors (minority shareholders and debtholders) could even be more

pronounced. Many reasons could support this conjecture. First, and contrary to other ordinary institutional investors, SWFs are typically known by their opacity. SWFs are generally assimilated to black boxes and release little financial and governance information to the public causing investors and other stakeholders to question the real motives behind their investments (Megginson and Gao, 2015). The problem of a SWF deliberately hiding its financial and operational choices from the public can be worrisome to many investors, to say the least, as it could be motivated by private benefits and expropriation agendas. As suggested by many researches (Luft 2008; Truman 2008, among others), when SWFs opt to be less transparent and do not follow clearly specified governance processes, they exacerbate concerns about their intentions to serve home countries' political agendas and extract undue benefits (Wang and Li, 2016). As a result, creditors might see in that a signal of potential expropriation of their wealth, leading to higher cost of debt.

In their fourth SWF scoreboard, Stone and Truman (2016) evaluate the transparency and accountability of 60 SWFs. They report that most of SWFs have a level of transparency and accountability below of what is expected (and practiced) within their countries or by the international community. Although transparency varies widely across SWFs, the authors' findings generally suggest a progress and improvement in the SWF transparency scores over the past decade. Furthermore, Wang and Li (2016) argue that SWFs from more autocratic countries are more opaque (have less transparent governance rules) than SWFs from democratic countries.

The SWFs political agenda and non-value maximization objectives are even more of concern to investors with the SWFs' superior informational status as a result of their close relationship with the government (Dewenter, Han, and Malatesta, 2010; Bu, 2010;and Slawotsky, 2015). This asymmetric information in favor of SWFs might allow them to know, for instance, future regulatory changes prior to other investors. They can trade and impact corporate decisions based on their inside information resulting in expropriating other stakeholders' wealth. Supporting this idea, Hua, In, Do and Zhang (2015) document an increased information asymmetry following SWF investments, which resulted in a subsequent reduction in the target firm's stock liquidity. This superior information,

coupled with a potential hidden political agenda, make of SWF a threat to bondholders causing them to ask for higher premium to hold the firm's debt.

Pursuing a hidden political agenda may also result in inefficient outcomes. Shleifer and Vishny (1994) argue that "*public enterprises are highly inefficient, and that inefficiency is the result of political pressures from the politicians who control them.*" SWFs inefficiency in monitoring managers could occur because of the political appointments and the lack of skills and/or incentives to play a leading role in disciplining underperformers. SWF ownership could also inhibit other monitoring mechanisms such as the market for corporate control which in turn might increase the cost of debt as documented by Qiu and Yu (2009). Furthermore, the implicit government guarantee (to bailout their investees) could also discourage other shareholders to play an active monitoring role resulting in a free-rider problem.

Many recent studies support this view of the inefficiency of government, in our case via SWFs, as an investor. Ben-Nasr et al. (2012) report that government residual ownership in newly privatized firms exhibit a higher cost of equity financing. The authors explain their finding by the risk of resource tunneling from the firm and by inefficient decisions by the government as a major shareholder. As concerns SWF ownership, Boubaker et al. (2018) investigate the impact of the SWF investment on the implied cost of equity capital of SWF target firms. Their results support the inefficiency thesis of government ownership and suggest a higher cost of equity financing for SWF target firms after the announcement date.

In the same context, inefficient government ownership has also been associated with debtholders wealth deterioration. Borisova and Megginson (2011) find that the cost of debt of fully privatized European firms is lower than partially privatized firms. They attribute the difference to the better profitability and efficiency of fully privatized companies after the disengagement of the government. More recently, Borisova et al. (2015) investigate how government equity shareholding affects the cost of corporate debt. Their results suggest that government ownership is generally associated with a higher cost of debt financing which is consistent with state-induced investment distortions.

Based on the above arguments, the first political agenda hypothesis (PAH) suggests that SWFs, with their superior informational status and non-financial or non-value

maximization objectives, could represent a source of risk for bondholders resulting in a higher cost of debt financing. We state our PAH as follows:

H1: *The SWF ownership increases the target firm's cost of debt financing*

2.2. SWFs and the superior monitor hypothesis (SMH)

This second competing hypothesis could simply be summarized as follows: as active institutional investors with strong government backup, SWFs could discipline underperforming managers, solve many of the agency problems, and create value in the target firms. Consequently, bondholders will be facing lower default risk, and hence require lower premiums.

According to the agency theory thesis, managers are believed to adopt non value-maximizing behaviors as they are not perfect agents for shareholders. Their behaviours can reduce the firm value and exacerbate its default risk. According to Shleifer and Vishny (1986), large shareholders as well as institutional investors in general have incentives to monitor the managers and alleviate the agency problems within the firm. By doing so, they can strengthen internal corporate governance mechanisms and, hence, enhance firm values. For instance, McConnell and Servaes (1990) report a positive relationship between the ownership of institutional investors and the firm's Tobin's Q. Similarly, Attig, Cleary, Ghoul, and Guedhami (2013) find that the presence of institutional investors with long-term investment horizons is associated with lower cost of equity capital.

By disciplining managers and increasing firm's value, major shareholders and institutional investors can also reduce the agency cost of debt. Large and institutional shareholders could constrain managerial propensities toward overinvestment (Gugler et al., 2008), mitigate their tendencies for empire building (Jensen and Meckling, 1976 Jensen, 1986), limit managerial myopia (i.e. their preferences for short-term projects; Stein, 1989; Jensen, 2005), and curb their entrenchment activities. Reducing these agency costs would result in higher firm value (so higher liquidation values) and lower (unnecessary) risk. As a consequence, creditors would demand lower risk premiums. In this context, Ashbaugh et al. (2006) report that corporate bond ratings (as a proxy for the cost of debt) are negatively related to ownership concentration. Moreover,

Bhojraj and Sengupta (2003) document a negative (positive) relationship between bond yields (ratings) and institutional ownership suggesting that firms with higher institutional ownership enjoy lower cost of debt financing. These findings are further confirmed by Elyiasiani et al. (2010). The authors also document a negative relationship between the stability of institutional ownership and the cost of debt. Finally, Boubakri and Ghouma (2010) report that control in the hands of widely held financial firms has a positive effect on bond ratings suggesting that financial institutions could play a key role in resolving the agency problems of debt.

SWFs, as a unique group of institutional investors can also fulfill this monitoring role. By virtue of their large stockholdings, their long investment horizon, and their strong government financial back up, SWFs have even greater incentives to mitigate agency costs, discipline underperformers, and create more value. Many studies reached the conclusion that target firm short-term stock price positively reacts to SWF equity investments (Dewenter et al., 2010; Bortolotti et al., 2015; Hua, 2015; Karolyi and Liao, 2017; Kotter and Lel, 2011; Sojli and Tham, 2011; and Megginson, 2017). For example, Dewenter et al. (2010) report a significant positive abnormal return of 1.5% following a SWF acquisition announcement and a negative average abnormal return equal to 1.4% following a SWF divestment announcement. Few other studies have also documented long-term improved operating performance of SWF target firms (Fernandes, 2014; Sojli and Tham, 2011; among others). Such empirical evidences support the active monitoring role of SWFs.

Furthermore, Dewenter et al. (2010) suggest other ways for SWFs to enhance value and argue that SWFs might use their status as government insiders or their special relationships with different government agencies to act effectively as lobbyists on behalf of their target firms. Thus, the ability of SWFs to influence government decisions and access to private information offer to them additional tools to enhance their monitoring activities and add more values to the firms in which they invest.

Finally, one could also argue that SWF target firms could benefit from an implicit government guarantee which could ultimately protect the firm in case of distress. Borisova et al. (2015) argue that governments ownership can implicitly carry an option to guarantee the debt of the firm. Governments are generally unwilling to allow firms

(especially those they invest in) to default because of the government political or social goals, and also by the natural reluctance to be associated with a failed investment. This might be of value to investors, particularly debtholders, which could lead to a reduced cost of debt. Boubaker et al. (2018) provide some empirical evidence on this conjecture in the context of cost of equity financing. The authors report that, due to the implicit bailout guarantee, SWF domestic acquisitions result in a lower cost of equity capital for target firms.

In conclusion, according to the SWFs superior monitor hypothesis, holders of the bonds of SWF target firms might be facing less default risk resulting in lower cost of debt financing. Hence our second hypothesis H2:

H2: *The SWF ownership reduces the target firm's cost of debt financing*

3. Sample selection and empirical design

3.1. Sample selection

We used multiple sources to collect the data. Our starting point is the *Sovereign Wealth Fund Institute Database* which reports 11,205 SWF transactions between 1974 and 2014. Given the difficulties to collect financial data on private companies, we limited our study to SWF investments targeting listed firms. After eliminating transactions with missing information on the identity and country of the SWFs and the target firms, the transaction announcement dates, the acquired percentages, the total SWF ownerships before and after the acquisitions, and the $ value of the transactions, we left with 8,665 transactions that took place between 1996 and 2014.

We further tried to increase the size of the sample and searched is the SWF websites and in other databases such as *SDC Platinum Mergers & Acquisitions*, *Zephyr Mergers & Acquisitions*, *Factiva*, and *Lexis Nexis*. This additional search, while increased our sample to 8,749 SWF transactions, it has also ensured the accuracy of data collected from the *SWF Institute Database* as we were able to cross-check many of the transactions.

We then collected financial and other data on the target firms from known databases such as *SDC*, *Compustat* and *Datastream*. Unfortunately, *SWF Institute Database* does not provide firm identifiers to allow for easy matching with other finance databases. We

hand-collected identifiers such as CUSIPs, SEDOLs, and ISINs for our initial firms, and as a result our sample dropped to 2,863 SWF target firms for which we searched for public bond issuances in *SDC New Issues* database. After keeping only fixed-coupon rate bond issues with complete issue and issuer characteristics, our search yielded a sample of 3,125 bonds issued between 1996 and 2012 by 347 target firms that were subject to acquisitions by 12 SWFs from 11 countries. The target firms are from 17 countries and represent three different geographical regions (Asia, Europe, and America).[2]

Out of these 3,125 bonds, 2,128 bonds were issued by 347 firms after that a SWF had acquired a stake in their capitals. These bond issuances (2,128) will represent our main sample that we are going to use to test whether the magnitude of the SWF ownership affects the cost of corporate debt financing. The remainder other 997 bonds (i.e. 3,125 – 2,125) were issued before that a SWF had joined the ownership structures of the target firms. It happened that these 997 bonds were issued by 113 target firms who also issued 268 bonds *after* that a SWF had become a shareholder. This sub-sample of 113 firms with bond issuances before and after that a SWF becomes an owner, offers an extremely interesting opportunity to check: i) whether the presence of a SWF in the shareholding of the target company has affected their bond issuance activities (in terms of number of issuances), and ii) whether there is a difference in the cost of bond before and after the SWF becomes a shareholder. In other worlds, this sub-sample of 1,265 bonds (i.e. 997 bonds issued before plus the 268 bonds issued after the SWF acquisition date) would allow us to analyze the bond issuance patterns for *the same group of firms*, which will eventually reduce any comparison bias that we might face in case we use a comparable (matching) group of firms as a benchmark.

Appendix A reports how our sample was selected, and **Table 1** presents a description of our final sample across years, SWF countries of origin, SWF target firm countries, and SWF target firm industries.

Panel A of **Table 1** shows that around 16.25% of our overall bonds in the sample were issued during 2007 and 2008, i.e. when the international markets started feeling the impact of the sub-prime financial crisis. Moreover, the highest number of bond issuances

[2] It is worth mentioning that there were bonds issued by target firms before 1996 and after 2012. Nevertheless, and due to our selection constraints, only 3,125 survived our criteria. For instance, we were able to identify few bond issuances between 2012 and 2014, but unfortunately there were eliminated because of lack of data on either the issue or the issuer characteristics.

happened in 2012 (240 bonds). Furthermore, Panel B of **Table 1** shows that the distribution of the bond issuances across target firm nations. The sample covers 17 countries with the vast majority of the bonds have been issued by US-based target firms (90.91%). This finding is indeed expected since most of the 347 target firms (76.5%) are US-based companies.

3.2. Empirical specifications

To test the relation between the SWF ownership and the cost of debt financing, we follow existing literature (Sengupta, 1998; Anderson et al., 2003; Boubakri and Ghouma, 2010) and use the following specification:

Bond spreads = f (SWF ownership variables, control variables)

We use a standard error estimation methodology to control for heteroskedasticity and account for time series dependence. We also follow Petersen (2009), Thompson (2011), and Borisova et al. (2015) and adjust for triple clustering on our panel dimensions (at the firm, country, and year levels) and for quadruple clustering (at the firm, country, year, and industry levels). We further include country, year, and industry fixed effects to account for country, time, and industry-invariant characteristics in the regression analysis.

3.3. Variables

3.3.1. Cost of debt financing variables

We follow prior studies (Qiu and Yu, 2009; Boubakri and Ghouma, 2010; Borisova et al., 2015; Ghouma, 2017) and proxy for the cost of debt using the bond credit spread (*Spread*). The bond credit spread is calculated as the difference between the corporate bond's yield to maturity and that of the US government with the closest maturity (Boubakri and Ghouma, 2010; Anderson et al., 2003; among other studies). Boubakri and Ghouma (2010) argue that using US Treasury Bond yields to calculate the spread might have many merits. First, the purpose of the study is to detect/estimate potential risk premiums due to SWF ownership. As we know in finance literature, risk premium is usually calculated with respect to a riskless asset, and there is no doubt that the US

government has the lowest probability of default than any other country. Second, using a unique benchmark in estimating the spreads allows for better comparison because of the common basis (i.e. same reference). To these, we add two other arguments in favor of using the US treasury rates to estimate the spreads. First, data on US bonds are available and exhibit the best accuracy and quality compared to data on other government' bonds. Compared to the quality of reported yield data, for instance for the Colombian or the Mexican governments (both nations are in our sample), one would favor the quality of the US yield data. Second, and more specific to our study, around 90% of the SWF acquisitions are in the U.S.A, hence minimizing any potential bias.

Despite all these arguments, we also check the robustness of our findings by calculating spreads using the yields on domestic treasury bonds for each country. As it will be discussed later in the text, our main results remain overall unchanged.

3.3.2. SWF ownership variables

We use two proxies for the SWF ownership. The first proxy is *SWF_Dummy*, which is a dummy variable taking the value of one if the bond was issued while there was a SWF as an owner during a specific year, and zero otherwise. This proxy is important as it would allow us to compare the cost of debt financing before and after the SWF becomes a shareholder. It is indeed important to see, for the SWF target firms of our sample, whether the cost of debt financing has increased or decreased after the SWF equity purchase. We note here that this variable is only available for a sub-sample of 1,265 bond issues (issued by 113 separate target firms) since it requires that the target firm has outstanding bonds both before and after the SWF acquisition.

Our second proxy for the SWF ownership is the percentage held by the SWF in the capital of the target firm after the acquisition (*SWF_own*). This proxy allows us to apprehend to what extent the engagement of the SWF, as mirrored by the stake it holds in the ownership of the target firm, would influence the cost of debt financing.

3.3.3. Other control variables

In addition to our main explanatory variable, the SWF ownership, the cost of debt financing could also be affected by a long list of other control variables. These control variables could be classified into four major categories. The first category includes variables reflecting the characteristics of the bond issue, namely: the bond maturity

(*Maturity*), the issue size (*Issue_size*), callable bond feature (*Call*), whether the bond is senior or subordinate (*Sub*), and whether the bond is convertible or not (*Conv*).[3]

The second category of control variables consists of factors reflecting the issuing firm characteristics, namely: the firm size (*Firm_size*) as measured by the natural logarithm of the sum of the firm's debt plus equity, firm performance as measured by its return on assets (*ROA*), firm leverage calculated as the ratio of total debt to total assets (*Leverage*), and the firm operational risk measured by the natural logarithm of the five-year standard deviation of the net sales (*Risk*).

The third group of control variables is related to the macroeconomic conditions of the countries of the target firms. Particularly, we control for the country level of inflation (*Inflation*), the annual growth rate in the country GDP per capita (*GDP*), and the size of the bond market within the country measured as the annual ratio of the market value of all outstanding corporate bonds to GDP (*Bond_Mrkt*).We further control for the availability of credits to businesses within the country (*Cred_Avail*) using the IMD World Competitiveness Center index. The index ranges from 0 (low credits availability) to 10 (high credits availability). The index is expected to be negatively associated with the cost of debt as higher scores mean that firms have more sources of funding and, hence, enjoy more bargaining power.

Finally, the fourth last category of control variables aims to control for the quality of investor protections in the country. We use a creditor rights index (*Cred_Rights*) to control for the level of protection of creditor rights, the existence of credit public registries in the country (*Pub_Regsitry*), the level of efficiency of the country bankruptcy process (*Eff_Bnkrcy*), the level of corruption in the country (*Corruption*), and whether the country has a civil or common law heritage (*Civil*).

Appendix B reports the list of all variables we use in this research, their descriptions, and their sources.

4. Results

4.1. Descriptive statistics

[3] Later in our analysis, we also include the S&P bond rating (*Rating*) as a robustness check. This variable was excluded from our initial regressions to avoid potential multicollinearity problems (Ghouma and Boubakri, 2010; Anderson et al., 2003).

Table 2 reports descriptive statistics for our sample. Credit *Spread* has an average value of 197.49 basis points and a median value of 140 bps. A bond issuance from our sample also has an average (median) *Maturity* of 6.9 years (5.03) and an average (median) *Rating* of 15.8 (16), which is approximately equivalent to A- (A-) in the S&P original rating scale.

As regards the SWF ownership variables, the mean for the first proxy *SWF_Dummy* is 0.21 suggesting that 21% of the bonds in our bonds sample were issued in the presence of a SWF (i.e. after that a SWF had acquired a stake in the issuing company) while 79% were issued before. We should note here that *SWF_Dummy* is calculated for the subsample of 113 firms (with a total of 1,265 bonds) who issued bonds both *before* and *after* the SWF acquisitions.[4]

One interesting question that one could ask in this context is whether the target firms have changed their bond issuance activities (in terms of issuance frequency) with the advent of a SWF. Based on this subsample of the 113 SWF target firms, we note that these firms issued a total of 1,265 bonds with 997 bonds (i.e. 79%) issued before that a SWF becomes a shareholder, and 268 bonds (i.e. 21%) issued after. In other words, it seems at glance that the presence of a SWF has dramatically reduced the bond market activities for this group of 113 firms by more than 73%.

One could also say few words about the remaining 234 target firms for which we were not able to find any bonds issued before that a SWF acquires a stake in the firm. For this group, 1,860 out of 2,128 bonds (i.e. more than 87%) were apparently issued *for the first time* after that a SWF becomes a shareholder. Contrary to the first 113 firms, this could suggest that the presence of a SWF has stimulated the bond market activities for this group.

In total, this preliminary analysis of the initial data suggests that the presence of a SWF might have a positive or a negative impact of how active the target firm could be in the bond market. Though explaining this pattern and identifying its main drivers set beyond the scope of this research, one could advance few possible explanations.[5]

[4] As explained in the sample selection section, our main sample consists of 2,128 bond issuances issued after that the firms were acquired by SWFs. Out of this number, there are 268 bonds issued by 113 firms who also have issued 997 bonds before the SWF acquisition date. Appendix A describes details of our sample selection.

[5] Note that the objective of our study is to explore the cost of bond issuances after that a SWF acquires a stake in the company. This means that we are investigating the market perception of such institutional ownership rather than the frequency of bond market

For the group of 234 firms with bonds issued only after that a SWF becomes a shareholder, one might argue that these firms want to leverage on the implicit guarantee that the government (via its SWF) might offer. From this perspective, the SWF ownership can be considered as an incentive or a facilitator to build a bond market experience for the target firm. In the contrary, for the group of 113 firms with less bonds issued after the acquisition of the SWF, this could be seen as a consequence to the opacity of SWFs which might have resulted in target firms preferring to deal with institutional lenders (such as banks) rather than public debt issuances (as the latter might imply higher disclosure requirements). Another explanation could be that, as noted by Borisova et al. (2015), governments (hence SWFs in our case) are generally considered as deep-pocketed investors who could provide their target firms with easy access to preferential state-owned banks or other financing. This will reduce the SWF target firms' reliance on bond issuances to finance their projects.

We also note from **Table 2** that the average (median) of *SWF_own*, our second SWF ownership proxy, in the sample of 2,128 bond-years is around 1.5% (0.4%). This percentage is relatively lower compared to what was reported in previous studies. For instance, Bortolotti et al. (2015) report a stake of 8.45% mean and 1.23% median for their sample. Many reasons could explain the difference. First, as previously mentioned, most of firms targeted by SWFs in our sample (90.51%) are in the USA, where ownership concentration tends to be more diffuse making small ownership stakes a rule. LaPorta et al (1998) report that at 10% control threshold, 80% of the American firms are considered widely held (with no controlling shareholder) and the rest 20% are mainly under the control of families. Moreover, at the same control threshold, the percentage of American firms controlled by the State or by other institutional investors is almost nil. This is also confirmed by Demsetz and Lehn (1985) who report that in the U.S., the top five institutional investors owns on average (all together) 18% of the firm's capital.

Second, the structure of our data shows that the largest four SWFs represent approximately 86% of our sample. Indeed, the Korea Investment Corporation (KIC), the Government Pension Fund of Norway (GPFG), the Temasek Holdings Private Limited

activities of the target firms. Indeed, the cost of debt reflects whether the bonds market perceives SWF as a threat or opportunity, while the frequency of bond issuances mostly reflects the firm internal policy which may or may not be influenced by the SWF.

from Singapore, and the China Investment Corporation (CIC) represent 36.14%, 21.10%, 14.66%, and 14.19% of total observations, respectively and have on average 2.32% ownership stake (*SWF_own*) in their target firms.[6] The GPFG of Norway is known by strategically holding minority ownership stakes in all its target firms. Indeed, Bortolotti et al. (2017) justify the small GPFG's average ownership stake (0.34% in their sample) by stating that: "*the strong preference for broad portfolio diversification by Norway's GPFG is reflected in the small stakes acquired*"[7].

As for the three other SWFs (KIC, Temasek, and CIC), they all share the same feature: they are all from Asia. Asian SWFs are known to be more opaque and pursue political agenda, thus raising many concerns about their political interference in the US markets which "*would likely to attract political scrutiny in Washington*."[8] For instance, Norris (2016) and Kaminsky (2017) find that Chinese SWFs are used by the government to control and access to natural resources. Furthermore, Korea Investment Corporation (KIC) has a very poor transparency score of 45 out 100 (Truman, 2008). The lack of transparency and the political agenda of the Asian SWFs, combined with their fear of the regulatory scrutiny in US, could justify the low ownership stakes these funds hold in their American target firms.

Finally, **Table 3** reports Pearson correlations between the variables used in this study. As we can see, both proxies for the SWFs ownership are positively and significantly related to the *Spread* suggesting that the target firms with SWF ownership exhibit higher cost of debt financing. The next sections will elaborate more on this result.

4.2. Main evidence

To empirically investigate the relationship between SWF ownership and the cost of debt financing of target firms, we first start by comparing between the costs of bonds in firms with, versus without, a SWF in their ownership structures. To run this first analysis, we use the sample of 113 SWF target firms for which we have bond issuances before and after that a SWF acquires a stake in the firm. Using this sample would ensure that any difference in the cost of bond is more likely to be the result of the SWF shareholding.

[6] These statistics are not tabulated for the interest of brevity.
[7] Bortolotti et al. (2017), p. 14.
[8] The Telegraph, December 14th, 2015.

Indeed, if we include firms that have bonds issued only after the SWF purchases, there could be a bias due to the fact that these firms are not perfectly comparable. Firms that issued bonds *before and after* that a SWF acquires a stake in their capitals, are firms that seem not to (dramatically) change their recourse to bonds market. This allows us to mainly focus on the cost of their issuances, resulting in a better understanding of the bondholders' perception of the SWF investment.

Panel A of **Table 4** reports results of differences in bond spread means. The average *Spread* for bonds issued by firms with a SWF as a shareholder (mean = 286.23bps) is higher than the average *Spread* of bonds issued by firms without such type of owner (mean = 137.81 bps). The 148.42 bps difference between the spreads of the two groups is very significant suggesting that the cost of bonds issued by target firms *after* the SWF acquisitions is significantly higher than the cost of bonds issued by these firms *before* the SWF acquisition. In other words, it appears from this analysis that the SWF acquisition causes the cost of debt to increase by 148.42 bps. This additional risk premium is significantly different from zero.

SWFs could selectively invest in certain target firms (Chhaochharia and Laeven, 2010; Bortolotti et al, 2015; among others) which might result in a reverse causality or a selection bias in our initial sample of SWF target firms. To address this potential issue, we also use another comparison method to compare the spreads: the Propensity Score Matching.[9] Propensity score matching is not new in the empirical corporate finance studies (see for instance Bortolotti et al., 2015; Fernandes, 2014). We first identify a sample of control firms that have not been a target to a SWF. In line with Fernandes (2014), we identify matched firms using industry, size, performance, leverage, and risk. For simplicity, we only search for firms operating in the USA and we expect that this choice will not have a significant effect on our results since the vast majority of our SWF target firms sample consists of US firms. For this group of matched firms, we searched for any outstanding bonds during the period of study using *SDC News Issues Database*. The outcome of this search is 7,869 bonds, with 3.397 bonds issued by firms targeted by

[9] We will discuss later on, in more details, any potential endogeneity problem and we will use more advanced techniques to address the reverse causality issue.

SWFs and 4,472 issued by firms with no SWF ownership.[10] To model SWF investment preferences, we run a probit regression where the response variable is binary variable that takes the value of one if firms is targeted by a SWF and 0 if not. We finally identify the sample of control firms based on the closest estimated probability score. This way, we are ensuring that firms of the control group share similar target characteristics to those of SWF target firms. Panel B of **Table 4** reports results of the differences in bond spread means between the group of SWF target firms and the control sample using the Propensity Score Matching technique. As we can see, the presence of a SWF as a shareholder in the target firm causes the cost of debt to be increased by an average of 381.98 bps. This increase is highly significant at less than 1% level, further confirming the additional bond premium associated with the SWF investment.

To further investigate the finding from this preliminary analysis, we now run a multivariate regression model. Once again, we are going to start by exploring whether the mere presence of a SWF as a shareholder affects the cost of debt financing. Models (1), (2), and (3) of **Table 5** report results when we use the sample of the 1,265 bonds issued by the group of 113 target firms (for which there are issuances before and after the SWF acquisition). Our SWF ownership proxy is *SWF_Dummy*. Model (1) presents the finding with heteroskedasticity-robust standard errors triple clustered by firm, country, and year. The main variable *SWF_Dummy* loads positively and significantly with a coefficient of 29.82 suggesting that the presence of a SWF leads to a higher cost of debt financing by approximately 30 bps. Furthermore, and as suggested by prior literature, the firm size (*Firm_size*), the firm performance (*ROA*), the issue size (*Issue_size*), and the existence of a conversion option (*Conv*) reduce the bond spreads, while the firm leverage (*Leverage*), its level of risk (*Risk*), the bond time to maturity (*Maturity*), the bond callability (*Call*), and the subordination status (*Sub*) increase the bond spreads. Moreover, consistent with prior researches, larger country bond markets size (*Bond_Mrkt*), higher GDP per capita (*GDP*), higher level of protection of creditor rights (*Cred_Rights*), more efficient bankruptcy process (*Eff_Bnkrcy*), and lower level of the country corruption decrease the spread.

[10] Note that we did not find exactly 2,128 bonds (which is the number of bonds in our final sample), because we kept any issuance with at least information on the spread. When we tighten the search and require other bond characteristics (which we would need for our multivariate analysis), the final sample drops to 2,128 bonds.

Model (2) of **Table 5** reports results after clustering standard errors at firm, country, year, and industry levels while in model (3) we report the findings after controlling for country, industry, and year fixed effects in addition to clustering of standard errors at the firm level. The results of these regressions are generally the same, with a particularly strong support for a positive relationship between the presence of a SWF and the cost of bond.

We further assess the impact of the level of SWF engagement on the cost of bond financing. In models (4), (5), and (6) of the same **Table 5**, we use the SWF stake in the target firm ownership (*SWF_own*) as the main explanatory variable in addition to the same other control variables. As before, we first cluster standard errors at firm, country, and year levels (model (4) of **Table 5**), then at firm, country, year, and industry levels (model (5) of Table 5), to finally include country, industry, and year fixed effects. In all regressions, *SWF_own* loads positively and highly significant suggesting that an increase in the ownership stake of the SWF by 1% results in an increase of the bond spread by 5.6 bps (model 6 of **Table 5**).

Overall, there is evidence suggesting that the presence of SWFs and the level of their ownership stakes in the capitals of target firms increase the cost of debt financing for the target firms. This finding supports our first hypothesis H1, the political agenda hypothesis (PAH), suggesting that SWFs, with their superior informational status and non-financial or non-value maximization objectives, could represent an additional source of risk for bondholders leading to a higher cost of debt financing. This is consistent with state-induced investment distortions and supports prior researches that suggested that government ownership is generally associated with a higher cost of debt financing (Borisova et al., 2015) and implied cost of equity capital (Boubaker et al., 2018).

Bortolotti et al. (2015) find that SWF investment targets suffer from a "SWF discount" as they exhibit, on average, approximately 1.3 percent lower market reaction (abnormal return) to SWF investments than the reaction to investments from comparable private institutional investors. Our finding in this study adds to this SWF equity discount pattern and suggests that SWF target firms also suffer from a "SWF premium" that takes the form of higher cost of debt financing. In the next sections, we will further ensure the robustness of our results and then explore various venues to better explain this "SWF bond premium".

4.3. Robustness checks: addressing endogeneity concerns

Endogeneity could constitute a critical problem for empirical research in finance as it might compromise key conditions for claiming causality between variables. A failure to consider and correct for endogeneity in our research can lead to biased results, and poses the risk of drawing inaccurate conclusions about cause and effect relationships between the SWF ownership and the cost of debt financing.

Existing literature advances three main reasons causing endogeneity to occur: simultaneous causality, omission of variables, and errors-in-variables (Wooldridge, 2002). In our empirical setup, these three instances where the condition of exogeneity could be violated are likely to happen. In this section, we will try to address these concerns and provide assurance that our main findings are not due to inaccurate estimations caused by simultaneous causality, omitted variables, or measurement errors.

4.3.1. Reverse causality

One could reasonably argue that reverse causality between *Spread* and *SWF_own* might be a source of concern in our empirical models. The possible simultaneity between the two variables might cause a serious endogeneity problem. In addition to the above-documented effect that SWF ownership has on the cost of debt, it is reasonable to argue that the SWF ownership stake is also affected by the variable *Spread* via certain firm characteristics such as leverage, performance, or financial distress. Prior researches have shown that these characteristics are directly or indirectly associated to the cost of debt financing. Indeed, empirical studies report that SWFs increased their investments during the recent financial crisis probably due to additional financing needed by target firms or a lower local political opposition during that period (Bortolotti et al, 2015, Bortolotti, Fotak, Megginson, and Miracky, 2010). Moreover, other studies report that SWFs tend to target financially constrained firms, with higher leverages and weak stock price performances (Kotter and Lel, 2011; In Park, Ji, and Lee, 2013; Chhaochharia and Laeven, 2010). This potential reverse causality between *Spread* and *SWF_own* may thus introduce biases into our analysis. To address this issue we use an instrumental variables regression.

The 2SLS technique could be a powerful tool to solve the endogeneity problem. Nevertheless, its main drawback lies on the difficulty to find appropriate instruments especially in studies relating to corporate finance. In the first-stage regression of the 2SLS technique, we use many (candidate) instruments based on previous literature. First, one can reasonably expect that the size of the SWF has a direct positive impact on the volume of the fund's investments. Larger SWFs tend to invest more and purchase larger stakes in target firms. Thus, we use the SWF assets under management (*SWF_AUM*) prior to acquisition year (in US $ from the Sovereign Wealth Fund Institute) as our first instrument. Second, the experience and expertise of the SWF seem also to affect their investment decisions. Indeed, less experienced SWFs are expected to be more reluctant to take larger positions in some investments or shy away from investing in certain industries, countries, or periods. Hence, we use the age of the SWF, which is the number of years between the inception of the SWF and the acquisition date, as a proxy for the fund's experience and employ it as our second instrumental variable (*Experience*).

Third, SWFs from countries with larger balance of payment surpluses might have more incentives to invest than SWFs from countries with balance of payment deficits or smaller surpluses. This is because a country with more exports than imports will receive more capitals (i.e. net inflows), which could increase its reserves. Megginson and Gao (2019) argue that SWFs benefit majorly from commodity sales and foreign currency reserves from trade surplus. The authors also note that the recent decrease in the trade surplus of certain commodity-based SWF countries has limited the government's ability to inject sufficient funds to their SWFs. We expect that a country's trade surplus to signal a higher propensity for the SWF to invest more in order to fructify the reserves. We thus define our third instrument (*Net-Trade*) as the SWF country's net trade in goods and services (in USD from International Monetary Fund, Balance of Payments Statistics Yearbook and data files) one year before the acquisition date.[11]

Finally, prior research suggests that the level of fiscal incitation to foreign investors have a direct effect on the investments and ownership stakes of foreign investors (Loree and Guisinger, 1995). We then define a fourth instrument (named *Incentive*) which is an index

[11] We also used the amount of the country's total reserves (holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities) and the country's total reserves excluding golds as other instruments instead of net trades in goods and services and results are qualitatively the same.

ranging from 0 to 10 assessing the level of investment incentives given to foreign investors by the target country (from IMD World Competitiveness Center Database).

We run our first-stage regression by regressing *SWF_own* on the list of the candidate instruments discussed above in addition to the other firm characteristics as in model (1) of **Table 5**. Results, reported in model (7) of **Table 5**, show that all the suggested instruments are significant with their expected signs in the first stage regression.[12] Particularly, the ownership stake of the SWF is significantly and positively affected by the size of the SWF (*SWF_AUM*), its experience (*Experience*), the magnitude of the its country's net trade surplus (*Net-Trade*), and the level of investment incentives offered by the host country (*Incentive*). From this first-stage regression, we also note that SWFs seem to invest more in larger, more profitable, more leveraged, and riskier firms. This finding can (partially) be in line with studies that document that SWFs tend to target financially constrained firms and firms with higher leverages (Kotter and Lel, 2011; In Park, Ji, and Lee, 2013). One should note though that there is no consensus in the SWF literature on what could be considered as an ideal financial profile of a SWF target firm. This is mainly because SWFs are continuously changing their risk-taking behavior and asset allocation policies "*in exchange for higher returns to surmount the economic pressures under new global economic and political situations*".[13]

In our second-stage regression, we re-run our basic model while using the fitted values of *SWF_own* as our main independent variable. As reported in model (8) of **Table 5**, the SWF ownership stake in the target firm significantly increases the spread by 9.25 bps, further confirming our main evidence that SWF ownership increases the cost of debt financing for target firms.

4.3.2. Omitted variable concerns

Endogeneity may also be caused by the omission of variables in our model. In our basic *Spread* regression models, we did include as many potential explanatory variables as possible. However, any omitted variables that are correlated with *SWF_own* could

[12] We also run a joint significance test of all the instruments and unreported results confirm that all the instruments are jointly affecting the SWF ownership stakes in target firms.

[13] Megginson and Gao, 2019, page 7. For more details about his trend, see "Hunting Unicorns: Sovereign Wealth Fund Annual Report 2016," by SIL and "Dealing with Disruption: IFSWF Annual Review 2017," by IFSWF. Megginson and Gao (2019) provide an excellent summary of the SWF new trends reported in these two reports.

result in an endogeneity problem. To address this potential problem, we first use a general approach and follow Callen and Fang (2013, 2017) and Bae et al. (2011) among other studies, and implement firm fixed-effect regressions. Firm fixed effects remove the omitted time-invariant firm characteristics that could potentially cause spurious correlations between cost of debt and SWF ownership proxies. Model (9) of **Table 5** reports regression results of our firm fixed-effects regression. As we can see, the findings are in line with our core evidence suggesting the robustness of our results.

We, second, devote a special attention to an explanatory variable that we have so far intentionally excluded from the matrix of explanatory variables in all our previous models: it is the bond rating. The rationale behind excluding rating lies on the fact that bond ratings and yields to maturity (hence Spreads) are basically determined by the same set of variables. Thus, adding the bond rating, as an additional explanatory variable, could bias results as it could create multi-collinearity and double count the same information (Boubakri and Ghouma, 2010).

Nevertheless, there is a risk that there could be other (unobservable) variables that affect the rating but we failed to control for in the spread models. To directly tackle this problem and count for such potential omitted effect, we follow prior studies (Borisova et al., 2015; Liu and Thakor, 1984; Klock, Mansi, and Maxwell, 2005; Borisova and Megginson, 2011) and include in the spread model a new variable, *Rating*, which is the orthogonalized value of an ordinal transformation scale of S&P credit ratings, as an additional explanatory variable. Each of the 22 S&P credit quality letters was assigned an ordinal numerical value ranging from 1 to 22, with 22 represents the best credit quality letter (AAA) and 1 represents the poorest credit rating quality letter (D). The basic idea here is that we would like to include only the portion of bond rating that is not explained by the list of the other explanatory variables captured in the initial spread model.

Model (10) of **Table 5** reports the results of this robustness check. As we can see, we obtain qualitatively the same results as in our basic model. Moreover, the new *Rating* variable is negatively and significantly related to the bond spread. More importantly, the *SWF_own* remains positive and highly significant in the model, confirming our main evidence that higher ownership stake of the SWF leads to higher cost of debt financing.

4.3.3. Other proxies for the cost of debt and the SWF ownership

Another major source of endogeneity is errors in measuring the variables (Wooldridge, 2002). This refers to the problem that arises when the true values of the variables are unobserved leading to them being imperfectly measured. Our two main variables, namely *Spread* and *SWF_own*, could indeed represent imperfect proxies for the cost of debt and the level of engagement of the SWF respectively. To address any potential endogeneity concern due to these measurement errors we use other proxies for the cost of debt and the ownership of the SWF.

For the cost of debt financing, we first use the S&P rating of the bond (as defined in the previous section) as our dependent variable and run probit regressions using the same set of explanatory variables in addition to the two main proxies for the SWF (*SWF_Dummy* and *SWF_own*). Results of these regressions are reported in **Table 5** where model (11) is for the *SWF_Dummy* variable and model (12) is for *SWF_own*. We obtain qualitatively the same results as in our initial regressions. Particularly, in model (11) the mere existence of a SWF seems to reduce the probability of getting higher S&P rating. Furthermore, this probability also seems to further decrease for every 1% increase in the ownership stake of the SWF as shown by the coefficient of *SWF_own* in model (12). This, once again, confirms the previous finding that the cost of debt financing is adversely affected by the ownership of the SWF.

Second, we use the difference between the corporate bond yield to maturity and the target firm domestic bond yields (rather than the US treasury rate) with the closest maturity as another proxy for the cost of debt. Recall that in our initial model we calculated the spread as the difference between the corporate bond's yield to maturity and that of the US government with the closest maturity. In addition to the many merits of this proxy as outlined before in the variables definition section, we believe that our results will not be significantly affected by this choice as approximately 90% of the bonds in our sample were issued by US-based target firms. Nevertheless, we run a robustness check while using each target country yields to calculate the spread. Model (13) of **Table 5** presents the results, and confirms that our main findings remain unchanged.

Finally, recall that we used the total ownership stake of the SWF after the acquisition as our main proxy for the SWF ownership. We now propose to use two other proxies to test the robustness of our findings. The first proxy is the percentage of ownership acquired during the transaction. The second proxy is the amount, in million

USD, exchanged during the transaction. The results (untabulated for brevity) of using each of this proxy as an independent variable (instead of *SWF_own*) confirm our main finding that higher SWF investments significantly increase the cost of debt financing for the SWF target firms.

4.4. Other robustness checks

As stated before and shown in the descriptive statistics table, our sample of bonds issued by SWF target firms is dominated by the USA (90%). To test whether such weight of US issues affects our findings, we rerun our model while excluding observations from the USA. Results are reported in model (14) of **Table 5** and still support our first political agenda hypothesis (PAH) H1 and suggests that SWFs represent a source of risk for bondholders leading them to ask for a higher cost of debt financing.

It is not surprising that more than 30% of our sample consists of bond issued by SWF target firms from the finance industry. Indeed, SWF existing literature suggests that SWF usually target firms in strategic industries such as the financial sector (Chhaochharia and Laeven, 2010; In, Park, Ji, and Lee, 2013, among other studies). We further check the robustness of our findings and exclude issuances by financial sectors. Untabulated regression results after excluding the finance sector still strongly support our main evidence that SWFs are seen as a threat to bondholders' rights, leading to a positive premium.

Finally, we exclude bonds issued by firms targeted by Korea Investment Corporation and Government Pension Fund of Norway as they together represents more than 57% of our sample (36.14% and 21.10% respectively). Once again, our findings remain unchanged.[14]

Overall, based on the various robustness checks conducted in this section, we have strong evidence that bonds issued by firms with a SWF as a shareholder exhibit a higher cost of bond issuance. Our analysis also suggests a robust evidence that the higher bond spread due to the SWF ownership, which we call a "SWF premium", increases with the magnitude of the SWF ownership stake in the target firm. The existence of this SWF premium provides strong supports to the political agenda hypothesis. Indeed, SWFs, with

[14]Regression results are untabulated in the interest of brevity.

their superior informational status and non-financial (i.e. non-value maximization) objectives, seem to represent a source of risk for bondholders. As consequence, bondholders require an additional premium to hold bonds issued by firms that exhibit such a "SWF risk".

In the next sections, we explore the determinants of this SWF premium. In other words, we will try to investigate what are the channels or the features that exacerbate or attenuate such SWF premium.

5. Further analyses

Thus far, evidence from Panel A of **Table 4** suggests that the mere presence of a SWF as an owner results in a 1.48% SWF premium in the cost of bond with comparison to bonds issued before that a SWF becomes an owner. Furthermore, each 1% increase in the ownership stake of the SWF causes bondholders to require additional 5.6 bps risk premium (see model (6) of **Table 5**). These findings are consistent with Bortolotti et al. (2015) who documented similar results with respect to equity markets. The authors report that the average market reaction to a SWF acquisition is lower than the reaction to acquisitions by other institutional investors by 1.31 %. This equity SWF discount is also inconsistent with the superior monitor hypothesis (SMH) and somehow consistent with the political agenda hypothesis. In a follow-up study, Bortolotti, Fotak, and Loss (2017) investigate the determinants of the SWF equity discount. Their findings suggest that the discount is larger for SWF domestic acquisitions and for SWFs from non-democratic countries. This conclusion suggests that the threat of political interference is the main driver behind the SWF discount.

In this section, we first aim to identify the channels through which SWF investments affect the target firm bond spreads, and second we discuss what possible mitigating mechanisms that SWFs could use to signal a passive investment approach and attenuate the effect of their investments on the target firms cost of debt financing.

5.1. Channels through which SWF investments affect bond spreads

5.1.1. SWF investment during crisis

The political agenda hypothesis (PAH) states that SWFs pursue non-financial or non-value maximization objectives and may use their superior informational status to extract private benefits and expropriate other stakeholders' wealth. However, one could argue that this hypothesis might not always be true, especially in periods of crisis, when ownership by institutional investors and particularly by sovereign and quasi-sovereign entities could be most desired. This reminds us with the implicit guarantee hypothesis which suggests that governments could ultimately protect the firm in the case of distress. Borisova et al. (2015) argue that government ownership can implicitly carry an option to guarantee the debt of the firm as governments are generally reluctant to be associated with failure. This might suggest that the ownership of a SWF could actually be a valuable feature during the period of crises, resulting in bondholders requiring lower spreads from firms having a SWF as a shareholder. We test this conjecture by running our model while including a variable to control for the crisis (*Crisis*). We follow Magud et al., 2014, Klapper and Love, 2011, and Murtinu and Scalera (2016) and define *Crisis* as a dummy variable (*Crisis*) that takes the value 1 for the recent financial crisis years (i.e. 2009 – 2012) and zero otherwise. We also include the interaction of this variable with the SWF ownership stake (*SWF_own* x *Crisis*). Model (1) of **Table 6** reports the results. As we can see, the coefficient of *SWF_own* remains positive and highly significant at less than 1% level. More importantly, the results also provide evidence that during the financial crisis, the SWF risk premium is less pronounced. Indeed, the impact of a 1% increase in the SWF ownership stake (*SWF_own*) results in an increase of the spread by 10.11 bps during the non-crisis period and by only 4.146 bps during the period of crisis.[15] As an alternative way to control for the crisis period, we also use Laeven and Valencia (2013) crisis classification which identifies, during a specific year, whether the country went through a banking crisis or not (*Bank_Crisis*). For each country, in every year, *Bank_Crisis* takes the value of 1 if the country was classified as being in a banking crisis by Laeven and Valencia (2013) that year, and zero otherwise. Model (2) of **Table 6** shows the results of our regression, which are similar to model (1).[16]

[15]From model (1) of Table 6, the effect of the SWF ownership stake on spread is given by: $\frac{\partial(Spread)}{\partial(SWF\_own)} = 10.11 + (-5.964).Crisis$ which is equal to 10.11 bps if *Crisis*=0 (no crisis) and 4.146 bps if *Crisis* =1 (during a period of crisis).

[16] In untabulated regressions, we also defined the variable *Crisis* as equal one during 2008-2010 and 0 otherwise and results remain qualitatively comparable.

In conclusion, though the SWF risk premium remains significantly positive during and outside financial crisis periods (hence still supporting the political agenda hypothesis), it has much lower magnitude during the non-crisis period. This partially supports the idea that the SWF investments, though they represent a threat to bondholders, they are less unwanted during the periods of crisis, possibly because of the higher likelihood to exercise the implicit guarantee option.

5.1.2. Foreign Vs. domestic investments and SWF bond premium

Botolotti et al. (2015) note that investors might be more suspicious of SWF investments if the SWF is owned by a foreign government. This is because of the opaque political agenda that the SWF might have, which is not necessary a value-maximizing one. This suggests that SWF investments should have less pronounced adverse impact (i.e. less to no SWF premium) on domestic target firms' cost of debt. Eventually, this effect on debt cost of domestic firms could even become positive, which means that bondholders of firms targeted by domestic SWF appreciate domestic SWF investmnets, which partially supports the implicit guarantee thesis, at least under these circumstances. However, an adverse impact could also happen. Bortolotti et al. (2017) argue that political interference is less likely to take place when the SWF target firm is foreign as the incentive and the ability to influence a foreign company are lower. Their results on stock market reaction supports this thesis since they find that the SWF equity discount is larger for domestic investments. If this is true, then bondholders might also require larger bond risk premium for bonds issued by SWF domestic target firms. Which effect will prevail remains an open empirical question that this section aims to answer.

To compare the effect of SWF ownership on the cost of debt for domestic versus foreign target firms, we include in our regression a new variable, *Domestic*, which is a dummy variable that takes the value of 1 if the bond is issued by a firm targeted by a domestic SWF, and 0 otherwise.[17] We also include the interaction term between *SWO_own* and *Domestic* to directly measure the magnitude of any difference in spreads

[17]In our sample of 2,128 bonds, we have 360 bonds (or 17% of the total sample) issued by SWF target domestic firms, and 1,768 (i.e. 83% of the sample) bonds issued by target foreign firms.

due to the target firm being domestic or foreign. Model (3) of **Table 6** reports results for this analysis. As before, the variable *SWF_own* loads positive (8.52) with a very high significance level. Moreover, the coefficient of the interaction term (*SWF_Own* x *Domestic*) is -13.51, which is negative and highly significant at less than 1% level. Hence, the impact of a 1% increase in the SWF ownership stake (*SWF_own*) leads to an increase of 8.52 bps in the spread for bonds issued by foreign SWF target firms. Surprisingly, the overall impact of the SWF ownership stake on the spread of domestic target firms is negative. Indeed, an increase in the SWF ownership stake (*SWF_own*) in domestic target firms by 1% leads to a reduction in their bond spread by approximately 5 bps (8.52 bps – 13.51 bps). This finding does not echo the same stockholders' reaction to domestic SWF investments as documented by Bortolotti et al. (2017)'s SWF discount that suggests that SWF equity discount is larger for domestic investments. Their results is explained by the more threat that domestic SWFs (governments) represent since foreign governments usually do not have the incentive nor the capability to pursue private agendas and expropriate shareholders' wealth. It is interesting to try to understand here why would bondholders, contrary to shareholders, prefer local SWFs.

While our finding refutes the political agenda hypothesis for domestic SWF investments, it could provide some support to the implicit guarantee hypothesis for local SWF acquisitions. Indeed, unlike stockholders who are residual claimants, bondholders might be more appreciative of local SWFs (thus local government) than equity holders because if the government decides to step-in and save distressed target firms, creditors would be the first to be paid back. Since this implicit guarantee is more likely to happen for local companies rather than for foreign ones (as governments are naturally supposed to develop local economies and save local jobs), bondholders would prefer local SWFs, resulting in smaller bond premiums.

5.1.3. Democracy and SWF bond premium

Wang and Li (2016) argue that SWFs from autocratic countries tend to be more opaque and have weaker governance rules. Such countries are known by the absence of democratic institutions and transparent systems to restrict the ability of politicians to divert funds. This leads funds from those countries to behave in a way that only serves

their home countries' political agendas hence exacerbating the fear of investors (including bondholders) in the target countries. This conjecture was directly tested by Bortolotti et al. (2017) who find that the SWF equity discount is associated with the level of democracy of the SWF country. The authors report that the discount is larger for SWFs from autarchic countries than for those from democratic countries.

Accordingly, we test whether the SWF bond risk premium is specific to (or exacerbated by) SWFs originating from autarchic countries. To identify the type of the SWF's country (whether it is democratic or not), we use Polity data series (2015) and define a dummy variable (*Autarchic*) that takes the value of 1 if the SWF is from a non-democratic country, and 0 otherwise. Model (9) of **Table 6** provides the regression results when including both *Autarchic* and its interaction with *SWF_own* as additional explanatory variables. While the sign and the significance level for the SWF ownership stake remain as documented before, it is interesting to note that the impact of *SWF_own* on spread is significantly larger for firms acquired by non-democratic funds, i.e. from autarchic countries. The net impact of an increase of 1% of an autarchic SWF stake results in an increase of the bond spread by approximately 9 bps (5.043 bps + 3.903 bps) compared to only an increase of 5.043 bps premium for firms targeted by democratic SWFs. This finding is consistent with the higher political threat that autarchic SWFs represent as documented by Bortolotti et al. (2017) who comparably find that the SWF equity discount is higher for autarchic funds.

In conclusion, our findings suggest that there are three main channels that lead to the higher SWF risk premium: investment during a non-crisis period, investing in a foreign country, and investments by SWFs originating from autarchic countries. In the next section, we explore other factors that could possibly signal a passive stance of the SWFs in order to reduce the negative perception of the bond market and consequently attenuate the adverse effect of the SWF on the cost of bond.

5.2. Mitigating the SWF risk premium

Given the above-documented strong evidence on the SWF risk premium for bond spreads, we now question whether SWFs can adopt certain characteristics in order to

mitigate this negative bond market perception and insulate themselves from the political interference fear.

5.2.1. SWF bond premium and the investment vehicle

Murtinu and Scalera (2016) find that opaque and politicized SWFs are more likely to invest indirectly via investment vehicles (or subsidiaries). In such a case, the vehicle serves as an additional layer to insulate the target firm from the SWF political interference. Bortolotti et al. (2017) support this view and report that SWFs who signal a passive stance by investing via a vehicle (i.e. indirectly) could mitigate the equity SWF discount. Translated to our bondholders' context, one could expect that spreads of bonds issued by firms that are indirectly acquired by SWFs exhibit lower SWF bond premiums. This is because, the political interference that has caused the higher spreads documented thus far in this study would be mitigated by the SWF passive investment approach (via an investment subsidiary or vehicle).

To test this conjecture, we include in our regression model a new variable, *Vehicle*, defined as a dummy variable that takes the value of 1 if the SWF invests through an investment vehicle, 0 otherwise.[18] We also include the interaction term with *SWF_own*, *SWF_Own* x *Vehicle*. As we can see in model (4) of **Table 6**, *SWF_own* still loads positive and significant at less than 1% level. The interaction between *SWF_Own* and *Vehicle* term is negative, but marginally significant at 9% significance level. This suggests that, for bonds issued by SWF-directly-acquired firms (i.e. with no investment vehicle), a 1% increase in the SWF ownership stake leads to an additional bond premium of 8.8 bps. Interestingly, at 10% significance level, for bonds issued by indirectly-acquired SWF target firms (i.e. acquired using an investment vehicle), a 1% increase in the SWF ownership stake leads to a *reduction* in the bond spread (i.e. a negative SWF premium) by 5.4 bps (8.8 bps -14.18 bps). This result is consistent with the finding of Bortolotti et al. (2017) for the SWF equity discount, and further strengthens the idea that SWFs could

[18]In our sample of 2,128 bonds, we have 558 bonds (or 26.2%) were issued by firms that are acquired indirectly by SWFs using investment vehicles, and 1,570 bonds (or 73.8%) that were issued by firms directly acquired SWFs (without any investment vehicle).

mitigate negative market reactions by signaling a passive approach, in this case using an investment vehicle to attenuate political interference fear.

5.2.2. SWF bond premium and the presence of other major shareholders

Another way for SWFs to mitigate the bond market negative reaction following their investments, is to be associated with other major shareholders. By targeting firms where certain types of investors own a major stake in the firm, such as founding families, institutional investors, financial institutions, etc., SWFs could signal an intention to act as passive shareholders and hence reduce any fears of expropriation and mitigate the SWF risk premium documented thus far. Anderson et al. (2003) find that founding family ownership is associated with a lower cost of debt financing suggesting that US family firms are seen as a protector of bondholders' rights. This finding has been echoed later by Ellul et al. (2005). Furthermore, Bhojraj and Sengupta (2003) document lower cost of debt financing for firms with larger institutional ownership.

To test this conjecture we hand collect data on ownership structure from *Osiris* and define a new variable, *Major_shareholder*, which is a dummy variable that is equal to 1 if the target firm has at least one shareholder who owns 5% or more of the firm at the time of the SWF acquisition, and 0 if not. We also define other dummy variables, namely *Family*, *Insider*, and *Finance* to further capture the identity of the major owner being either a family, an insider (i.e. a manager or a board member), or a financial institution, respectively. We separately include each dummy variable and its interaction with *SWF_own* in our regression model, and results are reported in models (5), (6), (7), and (8) of **Table 6**. In all models, the variable *SWF_own* loads positive and significant as documented before. The magnitude of its impact on the cost of debt financing seems to only be attenuated, and even offset, in the case where the major shareholder is an insider, i.e. a manager or a board member. Indeed, among the interaction terms from the 4 models (5, 6, 7, and 8), only the interaction of the variable *Insider* with *SWF_own* loads negatively and significant at less than 1% level. This means that an increase of the *SWF_own* by 1% reduces the cost of debt financing by approximately 1% (8.229 bps -

112.6 bps) in SWF target firms with a major shareholder who is an insider. In other words, only ownership by insiders could play a role in mitigating the SWF bond premium.

5.2.3. SWF bond premium and the fund governance quality

Adherence to best governance standards could play a key role in signaling to the bond market participants that the SWF is not pursuing a political agenda or seeking to expropriate investors' wealth. We apprehend the governance quality of the SWF along two dimensions: the quality of the governance of the SWF and its level of transparency. We use an overall SWF governance score (*Governance*) from Bagnall and Truman (2013) as a proxy for the SWF governance quality.[19] Bagnall and Truman (2013) governance score, which is an updated version of Truman (2008)'s initial score, assesses the quality of the SWF governance policies and practices. It ranges from a minimum score of 0 to a maximum of 100. Transparency of the SWF (*Transparency*) is measured using a dummy variable that is equal to 1 if the SWF's transparency score (as reported by Bagnall and Truman, 2013), is higher than their sample mean (which is 54), and 0 otherwise.[20]

We separately include the two new variables, *Governance* and *Transparency*, in our regressions models, in addition to their interactions with *SWF_own*. The results reported in **Table 6** (model (10) for *Governance* and model (11) for *Transparency*) show that both the quality of the SWF governance and the level of SWF's transparency contribute to mitigating the SWF bond risk premium as both interactions (*SWF_Own* x *Governance*) and (*SWF_Own* x *Transparency*) load negative and highly significant. Remarkably, the transparency of the fund seems to be more important in mitigating such premium as shown by its higher (negative) coefficient when interacted with *SWF_own*. This reflects the importance that bondholders give to the opacity of the SWF.

5.2.4. SWF bond premium and control

Another way for the SWF to signal a passive investment approach is to refrain from holding a major block in the target firm. By avoiding owning a major stake, the SWF would also avoid reporting requirements by most jurisdictions, which will further decrease the media pressure (Bortolotti et al., 2017). This would ultimately mitigate the

[19] In untabulated results, we also use an index that reflects the level of adherence of the SWF to the Santiago principles (from Bagnall and Truman, 2013) as another proxy of the quality of the SWF governance. Our conclusions remain unchanged.
[20] In untabulated results, we also directly use Bagnall and Truman (2013)'s transparency score and we find similar results.

negative perception that the bondholders might have, resulting in lower SWF bond premiums.

We define a new variable *Block* that takes the value 1 if the SWF acquires 5% stake or more in the target company, 0 otherwise. Model (12) of **Table 6** reports results. While the *SWF_own* variable remains positive and significant in the model, the variable *Block* and the interaction term are not statistically different from zero. This suggests that bondholders do not consider acquiring a smaller stake as a mitigating approach that could signal the passivity of the SWF.

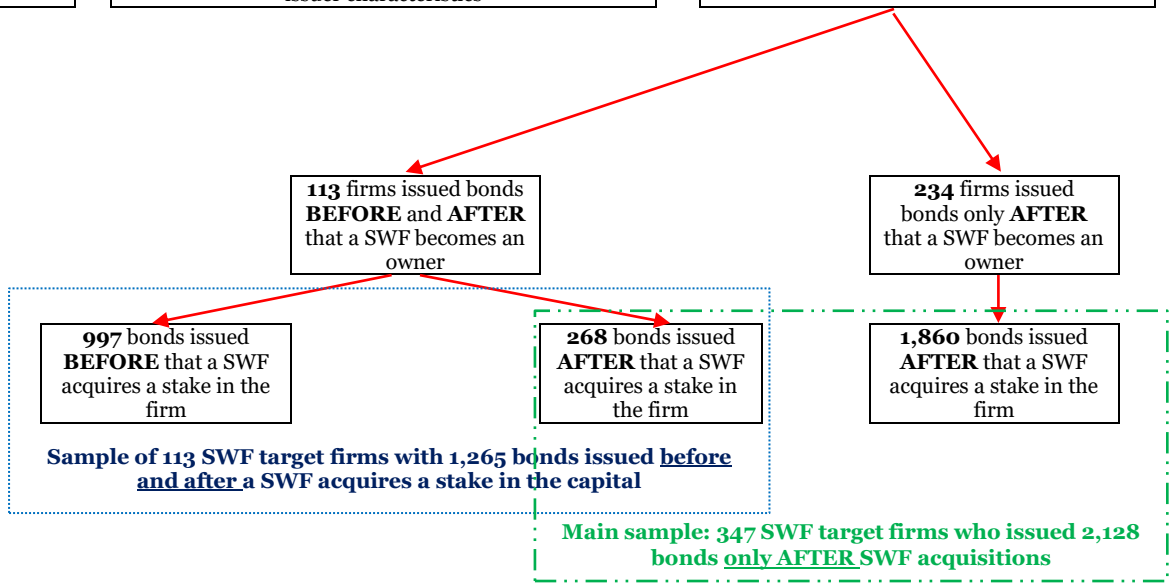
1. Conclusion

Recent researches by Bortolotti, Fotak, and Megginson (2015) and Bortolotti, Fotak, and Loss (2017) suggest the existence of a SWF equity discount, i.e. stock market reactions to SWF investments are positive but lower than those of comparable private investments. We build on this finding in the equity markets and extend the analysis to bond markets. We find strong evidence that there is also a SWF bond premium: SWF target firms pay higher spreads than comparable firms without a SWF as a shareholder. This SWF bond premium is larger during non-crisis periods, for foreign investments, and in non-democratic countries. We also find that while this adverse reaction is increasing in the magnitude of the SWF ownership stake, it can be mitigated when SWFs invest through separate investment vehicles and target firms with insiders as major owners. The SWF bond premium could also be mitigated by improving the SWF internal governance and reducing the fund's opacity.

The impact of SWF investments on the target firms remains an open empirical debate. Most of the opinions, judgments, and critiques discussed in this context remain hypothetical and still lack strong empirical supports. While there have been more empirical researches recently which contributed to a relatively better understanding of the behaviors of SWFs, their objectives, and influences on target firms, there is still need for more research to be done. This need is motivated by the heterogeneity between the SWFs themselves, but also the differences between the target firms, their industries, and countries.

Appendix A: Sample selection

Steps	Tasks	Outcomes
Step 1:	Obtain all SWF acquisitions from SWF Institute Database	**11,205** transactions covering the period from **1974** to **2014**
Step 2:	Delete private firm acquisitions and transactions with no details on the identity of the SWF, the date and the amount of the acquisition, the percentage owned, etc.	**8,665** transactions covering the period from **1974** to **2014**
Step 3:	Increase the sample by searching for other SWF acquisitions in SWF websites, SDC Platinum Mergers & Acquisitions, Zephyr Mergers & Acquisitions, Factiva, and Lexis Nexis	Increase the sample to **8,749** transactions covering the period from **1974** to **2014**
Step 4:	Identify CUSIPs in order to collect financial data on the SWF target firms using SDC, Compustat, and DataStream	**2,863** unique CUSIPs with available data covering the period **1996-2014**
Step 5:	Collect bond data: Match the SWF target firms data with SDC New Issues Database and keep all public fixed-coupon rate bond issues with complete issue and issuer characteristics	**2,128** bonds issued between **1996** and **2012** by **347** SWF target firms that were subject to acquisitions by 12 SWFs from 11 countries.



Appendix B: Variable definitions and sources

Variables	Description	Data sources
SWF variables:		
SWF_Dummy	Dummy variable equals to 1 if the bond is issued after the SWF acquisition date; 0 if before.	SWFs Transaction Database, SDC Platinum M&A database, Bureau van Dijk (Zephyr), SWFs web sites, Lexis-Nexis, Factiva et SDC Global New Issues database
SWF_Own	The post-transaction total percentage of shares acquired by the sovereign wealth fund.	SWFs Transaction Database, SDC Platinum M&A database, Bureau van Dijk (Zephyr), SWFs web sites, Lexis-Nexis et Factiva
Domestic	Dummy variable equal to 1 if the investment of the sovereign fund is domestic; 0 if the investment is abroad	SWFs Transaction Database, SDC Platinum M&A database, Bureau van Dijk (Zephyr), SWFs web sites, Lexis-Nexis, Factiva et SDC Global New Issues database,
Block	Dummy variable that takes the value of 1 if the SWF % of acquisition is equal to 5% or more; 0 otherwise.	SWFs Transaction Database, SDC Platinum M&A database, Bureau van Dijk (Zephyr), SWFs web sites, Lexis-Nexis et Factiva
Vehicle	Dummy variable equals to 1 if the SWF invests through an investment vehicle, 0 otherwise	SWFs Transaction Database, SDC Platinum M&A database, Bureau van Dijk (Zephyr), SWFs web sites, Lexis-Nexis et Factiva
Transparency	Dummy variable that takes the value 1 if the Truman SWF transparency score is greater than 54, 0 if lower	Bagnall and Truman (2013)
Governance	Truman index for SWF governance quality	Bagnall and Truman (2013)
Autarchic	Dummy variable that takes the value 1 if the SWF country is authoritarian; 0 if it's a democracy	Polity data series (2015)
Experience	The number of years of experience of the SWF measured by the difference between the year of the acquisition and the year of establishment of sovereign wealth funds	Sovereign Wealth Fund Institute
SWF_AUM	Assets under management of SWF (in billions of US dollars)	Sovereign Wealth Fund Institute
Net-Trade	The SWF country's net trade in goods and services (in USD) one year before the acquisition date.	International Monetary Fund, Balance of Payments Statistics Yearbook and data files
Incentive	An index ranging from 0 to 10 assessing the level of investment incentives given to foreign investors by the target country	IMD World Competitiveness Center Database
Bond variables:		
Spread	The difference between the corporate bond's yield to maturity and that of the yield to maturity on a US treasury bond with the closest maturity (in basis points)	SDC Global New Issues Database – Worldscope Database
Rating	The rating of the bond. It is the S&P ordinal transformation variable ranging from 1 (equivalent to S&P rating letter D) to 22 (equivalent to S&P rating letter AAA).	SDC Global New Issues database
Issue_size	The bond issue offering amount in US $1m000	SDC Global New Issues database
Maturity	Bond years to maturity	SDC Global New Issues database
Call	Dummy variable equals to 1 if the bond is callable; 0 otherwise	SDC Global New Issues database
Sub	Dummy variable equals to 1 if the bond is subordinated; 0 otherwise	SDC Global New Issues database
Conv	Dummy variable equals to 1 if the bond is convertible; 0 otherwise	SDC Global New Issues database

Target firm variables:		
Firm_size	Firm size for the year preceding the bond issue year, or last available. Calculated as the natural log of the sum of firm Debt plus equity.	Worldscope Database
ROA	Return on assetsfor the year preceding the bond issue year, or last available	Worldscope Database
Leverage	The firm leverage which is the ratio of total debts to total assets for the year preceding the bond issue year, or last available	Worldscope Database
Risk	The firm operational risk. Calculated as the natural log of standard deviation of the net sales for the five years preceding the bond issue year, or last available	Worldscope Database
Major_shareholder	A dummy variable that is equal to 1 if the target firm has at least one shareholder who owns 5% or more of the firm at the time of the SWF acquisition, and 0 if not	Osiris
Family	Dummy variable that takes the value 1 if the firm has a family as a major shareholder (owning at least 5% of the firm); 0 otherwise	Osiris
Insiders	Dummy variable that takes the value 1 if the firm has an insider (i.e. a manager, employee or a board member) as a major shareholder (owning at least 5% of the firm); 0 otherwise	Osiris
Finance	Dummy variable that takes the value 1 if the firm has a financial institution as a major shareholder (owning at least 5% of the firm); 0 otherwise	Osiris
Target country variables:		
Crisis	Dummy variable that takes the value 1 if the year of bond issue is 2009, 2010, 2011 or 2012; 0 otherwise	SDC Global New Issues database
Bank_ Crisis	Dummy variable that takes the value 1 if the year of bond issue is defined as crisis year by Laeven and Valencia (2013)	Laeven and Valencia(2013)
Inflation	Annual rate of inflation for the year preceding the bond issue (%)	World Bank
GDP	Annual % growth rate of per capita GDP for the year preceding the bond issue	World Bank
Bond_Mrkt	Size of the bond market for the year preceding the bond issue. It is calculated as the ratio of market capitalization of private bonds by GDP (%)	Data base of Demirguc-Kunt, Cihak, Feyen and Beck (2016) for world bank (http://data.worldbank.org/data-catalog/global-financial-development)
Cred_Rights	Aggregate index, ranging from 0 to 4, that measures the level of creditor protection in the country.	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)
Pub_Regsitry	Dummy variable equals 1 if a public credit registry operates in the country, 0 otherwise	Djankov, McLiesh and Shleifer (2007)
Eff_Bnkrcy	A score that measures the effectiveness of bankruptcy rights. The higher the values, the more effective the enforcement of bankruptcy rights	Djankov, Hart, McLiesh and Shleifer (2008)
Corruption	Corruption index for the year preceding the issue. It takes the value from 1 (high level of corruption) to 10 (low level of corruption)	IMD World Competitiveness Center DataBase
Civil	Dummy variable that takes the value 1 if the country is civil law; 0 if common law	Djankov, Hart, McLiesh and Shleifer (2008)
Cred_Avail	An index indicating if credit is easily available for business within the country. The index takes a value from 0 (low level of availability of credits for business) to 10 (credits are easily available for business)	IMD World Competitiveness Center DataBase

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Table 1: Sample Description

The sample consists of 2,128 bond credit spreads issued over 1996-2012 by 347 firms located in 17 countries targeted by 12 SWFs. This table provides a description of the frequency of issued bonds. Panel A presents bond issuances by years. Panel B presents bond issuances by issuing countries. Panel C presents bond issuances by target firm industries. Panel D presents bond issuances by SWFs countries of origin.

Panel A: Issues by year			**Panel B : Issues by issuing countries**		
Year	**N**	**%**	**Country**	**N**	**%**
1996	75	3.52	Australia	8	0.38
1997	71	3.34	Canada	33	1.55
1998	65	3.05	Colombia	1	0.05
1999	69	3.24	France	29	1.36
2000	60	2.82	Germany	6	0.28
2001	104	4.89	Ireland	16	0.75
2002	116	5.45	Italy	15	0.70
2003	114	5.36	Mexico	8	0.38
2004	100	4.70	Netherlands	5	0.23
2005	89	4.18	Norway	1	0.05
2006	137	6.44	Philippines	2	0.09
2007	202	9.49	Singapore	4	0.19
2008	143	6.72	Sweden	3	0.14
2009	173	8.13	Swiss	4	0.19
2010	164	7.71	Thailand	1	0.05
2011	206	9.68	United Kingdom	66	3.10
2012	240	11.28	United States	1,926	90.51
Total	2,128	100.00%	Total	2,128	100.00%

Panel C : Issues by target firm industries			**Panel D : Issues by SWF countries of origin**		
Industry	**N**	**%**		**N**	**%**
1 : Agriculture, Forestry, and Fishery	135	6.34	Canada	92	4.32
2 : Manufacturing (food)	437	20.54	China	306	14.38
3 : Others Manufacturing (electronic)	332	15.60	South Korea	769	36.14
4 : Transportation and Public Utilities	226	10.62	Kuwait	15	0.70
5 : Retail Trade	270	12.69	Norway	449	21.10
6 : Finance, Insurance and Real Estate	653	30.69	Qatar	5	0.23
7 : Services (hotels)	69	3.24	Singapore	326	15.32
8 : Other Services (health)	6	0.28	United Arab Emirates	109	5.12
			United States	57	2.68
Total	2,128	100.00	Total	2,128	100.00%

Table 2: Descriptive Statistics

This table reports summary statistics. The sample consists of 2,128 bond credit spreads issued over 1996-2012 by 347 firms located in 17 countries targeted by 12 SWFs. Variable descriptions are reported in Appendix B.

Variable	N	Mean	Median	St. Dev	Min	Max
Spread	2128	197.49	140	199.27	-284.0	1276.0
SWF_Dummy	1265	0.21	0	0.408	0	1
SWF_own	2128	1.50	0.4	2.92	0.01	18.6
Firm_size	2128	7.25	7.23	0.85	3.12	8.97
ROA	2128	6.08	5.5	7.76	-76.85	103.4
Leverage	2128	0.30	0.27	0.18	0.00	1.64
Risk	2128	-0.38	-0.26	0.73	-2.84	1.70
Issue_size	2128	0.80	0.5	2.98	0.00	55.00
Maturity	2128	6.91	5.03	6.28	0.01	60.13
Rating	2083	15.78	16	3.06	5.00	22.00
Call	2128	0.68	1	0.465	0	1
Conv	2128	0.03	0	0.183	0	1
Sub	2128	0.05	0	0.226	0	1
Inflation	2128	1.37	1.58	1.95	-0.85	35.00
Bond_Mrkt	2128	50.06	15.69	43.18	0.20	119.95
GDP	2128	1.12	1.50	1.80	-7.59	9.18
Crisis	2128	0.37	0	0.482	0	1
Bank_Crises	2128	0.09	0	0.288	0	1
Cred_Avail	2128	7.41	7.88	1.21	3.75	8.63
Cred_Rights	2128	1.10	1	0.57	0.00	4.00
Pub_Regsitry	2128	0.02	0	0.15	0.00	1.00
Eff_Bnkrcy	2128	85.10	85.8	6.11	17.50	95.10
Corruption	2128	6.15	6.37	1.10	1.20	8.76
Civil	2128	0.03	0	0.183	0	1

Table 3: Pearson Correlations

This table reports person correlation statistics. The sample consists of 2,128 bond credit spreads issued over 1996-2012 by 347 firms located in 17 countries targeted by 12 SWFs. Variable descriptions are reported in Appendix B. Bold values imply correlation is significant at 5% significance level or less.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Spread	1																				
SWF_Dummy	**0.278**	1																			
SWF_Own	**0.129**	**0.219**	1																		
Rating	**-0.343**	**-0.103**	**0.181**	1																	
Firm_Size	**-0.229**	**0.136**	**0.389**	**0.530**	1																
Roa	**-0.163**	-0.034	**-0.131**	**0.173**	**-0.054**	1															
Leverage	**0.213**	**0.124**	**0.354**	**-0.232**	0.000	0.005	1														
Risk	**0.243**	**0.123**	-0.011	**0.176**	**0.063**	0.006	**-0.063**	1													
Issue_size	**-0.116**	0.000	**0.056**	**0.116**	**0.168**	0.006	-0.011	0.042	1												
Maturity	**0.411**	**0.152**	-0.031	**-0.194**	**-0.178**	**-0.071**	0.013	**0.123**	-0.029	1											
Call	**-0.060**	0.005	**-0.186**	**-0.197**	**-0.131**	**0.102**	-0.032	-0.020	0.030	**0.088**	1										
Sub	**0.183**	**0.149**	**0.132**	**-0.111**	-0.009	**-0.088**	-0.010	0.020	-0.027	**0.072**	**-0.069**	1									
Conv	**-0.151**	-0.041	-0.033	**-0.247**	**-0.127**	**-0.056**	-0.036	**-0.078**	-0.015	**-0.067**	**0.056**	0.015	1								
Inflation	**0.492**	**-0.161**	**0.099**	**-0.243**	**-0.073**	**-0.069**	**0.149**	0.021	-0.010	**0.189**	**-0.087**	**0.085**	0.006	1							
Bond_Mrkt	**-0.573**	**-0.246**	**-0.081**	**0.311**	**0.129**	**0.077**	**-0.120**	**-0.082**	**0.070**	**-0.347**	**-0.081**	**-0.067**	**0.123**	**-0.274**	1						
GDP	**-0.521**	**-0.224**	**-0.122**	**0.177**	-0.041	**0.064**	**-0.140**	**-0.179**	0.019	**-0.266**	**-0.069**	**-0.093**	**0.054**	**-0.389**	**0.334**	1					
Cred_Rights	**-0.069**	**0.065**	**0.096**	**0.065**	0.028	-0.019	**-0.061**	**0.059**	-0.003	-0.028	-0.005	-0.001	-0.028	**-0.058**	**-0.118**	**0.054**	1				
Pub_Regsitry	-0.037	**0.118**	0.033	0.013	**0.091**	**-0.048**	0.040	0.006	0.006	-0.001	-0.029	-0.023	-0.025	-0.006	-0.023	-0.025	-0.038	1			
Eff_Bnkrcy	**-0.110**	**-0.101**	0.030	**0.086**	-0.031	0.006	-0.037	**0.064**	-0.003	-0.015	0.014	-0.027	-0.006	**-0.066**	0.010	**0.142**	**0.301**	0.011	1		
Corruption	**-0.372**	**-0.149**	-0.023	0.040	**-0.153**	**-0.043**	-0.019	**-0.151**	-0.028	**-0.172**	**-0.066**	**-0.043**	**0.049**	**-0.280**	**0.228**	**0.426**	**0.124**	**-0.150**	**0.304**	1	
Civil	-0.011	-0.007	0.027	-0.024	0.019	**0.058**	-0.013	-0.034	-0.008	-0.015	-0.034	0.000	-0.023	**0.079**	**-0.049**	0.003	**0.149**	0.018	**0.135**	**0.066**	1
Cred_Avail	**-0.349**	**-0.592**	-0.028	**0.141**	0.041	0.034	**-0.062**	**-0.183**	0.038	**-0.154**	-0.009	-0.010	**0.068**	**-0.053**	**0.237**	**0.266**	**-0.071**	**-0.217**	**0.090**	**0.275**	**-0.127**

Table 4: Spread mean difference tests

This table reports spread mean difference tests. The sample consists of 2,128 bond credit spreads issued over 1996-2014 by 347 firms located in 17 countries targeted by 12 SWFs. Variable descriptions are reported in Appendix B. Panel A reports t-tests using the subsample of 1,265 bonds issued by 113 firms. Panel B reports comparison tests using Propensity Score Matching.

Panel A: Spread Mean- comparisons test

Group	N	Mean	t-Statistic	Sig. [Pr(T < t)]
(1) Before (*SWF_Dummy* =0)	997	137.81	-14.15	0.0000
(2) After (*SWF_Dummy* =1)	268	286.23		
Combined	1,265	169.25		
Difference: (1) – (2)		-148.42		

Panel B: Spread Mean- comparisons test using Propensity Score Matching

Group	N	Difference: (1) – (2)	t-Statistic	Sig. [Pr(T < t)]
(1) Treatment group	3,397	381.98	14.57	0.0000
(2) Control group	4,472			

Table 5: SWF and cost of debt – Main evidence & Robustness Checks

This table reports regression results for the effect of the SWF ownership on the cost of debt financing. The sample consists of 2,128 bond credit spreads issued over 1996-2012 by 347 firms located in 17 countries targeted by 12 SWFs. Variable descriptions are reported in Appendix B. In models (1) to (6), the depending variable is Spread. Model (7) and (8) are for the instrumental variable regressions. Model (9) reports results when we include Rating as a control variable. Models (10) and (11) are for ordered probit regressions where Rating is a dependent variable. Model (12) is using the spreads with local country yields as a dependent variable. Model (13) reports results when we exclude the US sample. *, **, *** indicate significance levels at the 10, 5 and 1% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7) First-stage regression *(Dep. Vble = SWF_Own)*	(8) Second-Stage regression	(9) Firm-Fixed Effects	(10) Including Bond Rating	(11) Probit regression (Dep. Vble= Rating)	(12) Probit regression (Dep. Vble= Rating)	(13) Spread with domestic yields	(14) Excluding US bond issues
SWF_Dummy	29.82***	29.82***	30.58***								-0.544***			
	(0.000)	(0.004)	(0.001)								(0.000)			
SWF_own				8.236***	8.236***	5.600***		9.254***	6.195***	3.839***		-0.106***	8.770***	11.56**
				(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.004)		(0.001)	(0.000)	(0.019)
Firm_size	-38.24***	-38.24***	-46.88***	-47.05***	-47.05***	-42.51***	1.037***	-48.40***	-40.64***	-17.56***	1.501***	1.277***	-48.64***	-39.32***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)
ROA	-13.97***	-13.97***	-6.773*	-17.46***	-17.46***	-11.37***	-0.227***	-18.01***	-10.30***	-13.17***	0.409***	0.481***	-20.46***	-28.50
	(0.000)	(0.000)	(0.068)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)	(0.000)	(0.000)	(0.000)	(0.244)
Leverage	31.33***	31.33***	24.34***	15.43***	15.43***	12.32***	0.842***	16.39***	9.991***	6.405*	-0.479***	-0.298***	15.16***	0.506
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.076)	(0.000)	(0.000)	(0.000)	(0.977)
Risk	25.05***	25.05**	25.90***	30.35***	30.35***	28.24***	0.228***	32.26***	28.84***	15.29**	-0.162***	-0.0494	33.98***	30.78
	(0.002)	(0.018)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.044)	(0.000)	(0.207)	(0.000)	(0.128)
Issue_size	-8.237***	-8.237***	-6.826***	-3.195***	-3.195***	-3.390***	-0.0265	-1.703	-3.185***	-4.465***	0.0793***	0.141***	-4.596***	-46.18
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.004)	(0.304)	(0.277)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.133)
Maturity	34.32***	34.32***	17.75***	4.341***	4.341***	2.098***	0.0200**	4.278***	2.141***	1.282*	-0.0878***	-0.0970***	4.035***	2.662
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.027)	(0.000)	(0.000)	(0.059)	(0.009)	(0.001)	(0.000)	(0.209)
Call	18.78***	18.78***	10.46**	38.70***	38.70***	31.70***	0.703***	38.61**	28.72***	31.09	0.00932	0.0808**	45.98***	14.25
	(0.000)	(0.000)	(0.036)	(0.000)	(0.000)	(0.003)	(0.000)	(0.024)	(0.000)	(0.037)	(0.794)	(0.015)	(0.000)	(0.435)
Sub	48.61***	48.61***	23.73**	64.18***	64.18***	59.55***	0.497**	65.93***	44.05***	50.63***	-0.00466	-0.173***	74.09***	-110.4
	(0.002)	(0.007)	(0.018)	(0.000)	(0.000)	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.926)	(0.001)	(0.000)	(0.301)
Conv	-16.02***	-16.02***	-16.89***	-128.6***	-128.6***	-126.6***	0.676**	-123.5***	-99.78***	-169.1***	--[a]	--[a]	-167.0***	--[a]
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.000)	(0.000)	(0.000)			(0.000)	
Inflation	14.32	14.32	32.33	36.16	36.16	53.00***	0.150***	36.42***	44.78***	36.61	-0.212***	-0.275***	26.13	2.129
	(0.483)	(0.485)	(0.178)	(0.240)	(0.264)	(0.006)	(0.009)	(0.003)	(0.000)	(0.187)	(0.000)	(0.000)	(0.394)	(0.849)
Bond_Mrkt	-0.888***	-0.888***	-0.766***	-1.241***	-1.241***	-1.025***	-0.00308**	-1.236***	-0.985***	-1.264***	0.113**	0.296***	-1.335***	-0.910
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)	(0.000)	(0.014)	(0.000)	(0.000)	(0.182)
GDP	-18.23***	-18.23***	-22.62***	-16.08***	-16.08***	-13.92**	-0.0968***	-15.66***	-17.00***	-17.52***	0.0242	0.0998**	-21.34***	-22.05***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.011)	(0.005)	(0.000)	(0.000)	(0.000)	(0.712)	(0.038)	(0.000)	(0.000)
Cred_Rights	-7.801**	-7.801**	35.80***	-26.91***	-26.91**	4.624	1.577***	-14.73*	-2.415	-20.41**	0.00602	0.105***	-31.18**	-30.60***
	(0.043)	(0.037)	(0.000)	(0.007)	(0.015)	(0.735)	(0.000)	(0.084)	(0.870)	(0.012)	(0.913)	(0.001)	(0.037)	(0.009)
Pub_Regsitry	-3.849	-3.849	41.59	-19.78**	-19.78**	-30.63***	0.102	-11.35**	-35.58**	-13.85*	0.447	0.0554	-16.40**	-7.119
	(0.638)	(0.527)	(0.012)	(0.034)	(0.041)	(0.000)	(0.200)	(0.015)	(0.005)	(0.053)	(0.279)	(0.383)	(0.015)	(0.483)
Eff_Bnkrcy	-14.44**	-14.44*	30.38	3.594	3.594	27.97	0.0117	-0.232	-37.32***	-1.574	0.0373	0.167**	6.828	-17.56***
	(0.036)	(0.055)	(0.000)	(0.691)	(0.696)	(0.000)	(0.865)	(0.969)	(0.000)	(0.838)	(0.765)	(0.017)	(0.710)	(0.001)
Corruption	-27.36***	-27.36***	-53.98***	-25.66***	-25.66***	-65.20***	0.0512	-28.33***	-63.51***	-19.04***	-0.0117	0.138*	-20.31***	5.297
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.351)	(0.000)	(0.000)	(0.000)	(0.893)	(0.085)	(0.009)	(0.760)

Civil	8.590	8.590	-26.94	-12.73	-12.73	-124.8***	-0.159**	-16.10*	1.359	-5.808	0.0125	0.192*	6.375	4.463
	(0.600)	(0.516)	(0.121)	(0.350)	(0.394)	(0.000)	(0.012)	(0.052)	(0.914)	(0.612)	(0.945)	(0.052)	(0.671)	(0.367)
Cred_Avail	-5.787	-5.787	-64.10***	-26.08***	-26.08***	-61.84***	-0.0822*	-26.25***	-55.12***	-14.19***	-0.0782	-0.115*	-20.74***	-0.382
	(0.348)	(0.524)	(0.000)	(0.000)	(0.000)	(0.000)	(0.072)	(0.002)	(0.000)	(0.010)	(0.201)	(0.069)	(0.006)	(0.979)
Country Dummies			*Yes*			*Yes*			*Yes*		*Yes*	*Yes*		
Industry Dummies			*Yes*			*Yes*			*Yes*		*Yes*	*Yes*		
Year Dummies			*Yes*			*Yes*			*Yes*		*Yes*	*Yes*		
SWF_AUM							0.0013***							
							(0.000)							
Incentive							0.902***							
							(0.000)							
Experience							0.009**							
							(0.011)							
Net_Tarde							0.005***							
							(0.000)							
Rating										-34.78***				
										(0.001)				
_cons	434.0***	434.0***	609.8***	645.4***	645.4***	119.9***	-6.269***	648.9***	1348.8***	529.7***			595.3***	301.4**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			(0.000)	(0.028)
Adj. R²	0.719	0.719	0.817	0.709	0.709	0.796	0.477	0.714	0.850	0.649	0.243[b]	0.241[b]	0.660	0.542
Sig.	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	1265	1265	1265	2128	2128	2128	1976	1976	2128	2080	1212	1588	2128	223

[a] : dropped for lack of variability; [b]: Pseudo R2

Table 6: Further Analyses

This table reports regression results to explore the determinants of the SWF bond premium and the mitigating mechanisms. The sample consists of 2,128 bond credit spreads issued over 1996-2012 by 347 firms located in 17 countries targeted by 12 SWFs. Variable descriptions are reported in Appendix B. The dependent variable is *Spread*. *, **, *** indicate significance levels at the 10, 5 and 1% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SWF_Own	10.11***	8.789***	8.518***	8.801***	8.706***	8.221***	8.229***	6.459***	5.043***	**21.43*****	**10.23*****	8.243***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.000)	(0.000)	(0.006)	(0.000)	(0.000)	(0.000)	(0.001)
Crisis	-13.62											
	(0.589)											
SWF_Own x Crisis	-5.964***											
	(0.000)											
Bank_Crisis		23.08*										
		(0.067)										
SWF_Own x Bank_Crisis		-4.463***										
		(0.000)										
Domestic			46.57***									
			(0.000)									
SWF_Own x Domestic			-13.51***									
			(0.000)									
Vehicle				20.19								
				(0.162)								
SWF_Own x Vehicle				-14.18*								
				(0.087)								
Major_shareholder					15.70*							
					(0.061)							
SWF_Own x Major_shareholder					1.028							
					(0.571)							
Family						-2.452						
						(0.577)						
SWF_Own x Family						11.72						
						(0.692)						
Insider							26.52*					
							(0.059)					
SWF_Own x Insider							-112.6***					
							(0.000)					
Finance								4.124				
								(0.554)				
SWF_Own x Finance								2.060				
								(0.433)				
Autarchic									19.90			
									(0.000)			
SWF_Own x Autarchic									3.909***			
									(0.000)			
Governance										0.518***		
										(0.000)		
SWF_Own x Governance										-0.224***		
										(0.000)		
Transparency											4.580	
											(0.356)	
SWF_OwnxTransparency											-8.127***	
											(0.000)	

Block												29.17
												(0.638)
SWF_Ownx Block												-2.746
												(0.712)
Firm_size	-46.64***	-47.19***	-46.78***	-46.60***	-48.84***	-46.95***	-47.10***	-47.17***	-46.73***	-47.35***	-48.62***	-47.20***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-17.74***	-17.50***	-17.15***	-17.34***	-17.04***	-17.41***	-17.44***	-17.46***	-17.71***	-16.73***	-17.13***	-17.42***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	14.27***	16.06***	15.18***	14.18***	14.07***	15.49***	15.43***	15.085***	14.98***	12.45***	11.84***	15.18***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Risk	30.31***	29.86***	30.47***	31.26***	29.52***	30.4***	30.29***	30.19***	28.85***	30.79***	29.65***	30.19***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Issue_size	-3.215***	-3.198***	-3.202***	-3.200***	-3.30**	-3.19**	-3.19**	-3.00**	-3.469***	-3.452***	-3.203***	-3.180***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.017)	(0.016)	(0.015)	(0.000)	(0.000)	(0.000)	(0.000)
Maturity	4.375***	4.294***	4.297***	4.442***	4.28***	4.33***	4.34***	4.32***	4.267***	4.344***	4.314***	4.341***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
call	38.45***	38.73***	39.37***	37.01***	38.92**	-38.59**	38.98**	38.65**	38.37***	38.28***	38.78***	38.67***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.042)	(0.047)	(0.045)	(0.046)	(0.000)	(0.000)	(0.000)	(0.000)
Sub	64.10***	64.54***	64.08***	69.06***	64.66***	63.83***	64.07***	65.34***	67.73***	65.67***	71.24***	64.45***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conv	-127.8***	-129.2***	-131.0***	-127.9***	-124.1***	-128.7***	--[a]	--[a]	-127.6***	-126.2***	-123.6***	-128.9***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation	31.80	35.76	35.83	34.84	36.12**	36.2**	36.13**	36.2**	35.69	34.95	35.12	36.19
	(0.304)	(0.247)	(0.242)	(0.265)	(0.042)	(0.038)	(0.039)	(0.039)	(0.238)	(0.244)	(0.247)	(0.241)
Bond_Mrkt	-1.269***	-1.243***	-1.238***	-1.238***	-1.227***	-1.241***	-1.241***	-1.238***	-1.257***	-1.208***	-1.212***	-1.239***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP	-18.40***	-16.16***	-16.04***	-16.45***	-16.23***	-16.10***	-16.10***	-16.08***	-15.85***	-16.77***	-16.76***	-16.11***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cred_Rights	-28.10***	-27.47***	-26.81***	-26.33***	-22.68**	-26.84***	-26.94***	-26.26**	-26.40***	-19.93*	-22.72**	-26.07***
	(0.005)	(0.006)	(0.006)	(0.006)	(0.025)	(0.007)	(0.006)	(0.012)	(0.008)	(0.050)	(0.026)	(0.009)
Pub_Regsitry	-131.9**	-122.8**	-19.89**	-18.46**	-22.35**	-19.84**	-19.79**	-19.64**	-19.04**	-18.65*	-17.88*	-19.82**
	(0.042)	(0.034)	(0.026)	(0.037)	(0.039)	(0.034)	(0.034)	(0.037)	(0.043)	(0.055)	(0.056)	(0.033)
Eff_Bnkrcy	4.524	3.482	3.475	2.424	2.888	3.577	3.581	3.560	3.603	4.103	3.746	3.673
	(0.613)	(0.697)	(0.699)	(0.778)	(0.746)	(0.692)	(0.691)	(0.695)	(0.688)	(0.655)	(0.681)	(0.686)
Corruption	-25.61***	-25.09***	-25.81***	-25.55***	-26.77***	-25.62***	-25.60***	-25.64***	-25.59***	-26.62***	-26.59***	-25.71***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Civil	-12.44	-12.70	-12.63	-11.88	-12.73	-12.92	-12.75	-12.59	-12.71	-13.95	-12.92	-12.74
	(0.343)	(0.347)	(0.352)	(0.380)	(0.346)	(0.340)	(0.349)	(0.354)	(0.343)	(0.322)	(0.366)	(0.347)
Cred_Avail	-30.27***	-26.65***	-25.95***	-25.49***	-25.95***	-26.11***	-26.09***	-26.10***	-25.35***	-25.72***	-25.90***	-26.05***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
_cons	689.7***	648.7***	644.7***	636.1***	629.6***	645.1***	645.5***	640.9***	633.4***	601.5***	640.7***	644.3***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
adj. R²	0.709	0.707	0.707	0.707	0.709	0.706	0.706	0.706	0.710	0.706	0.706	0.706
Sig.	126.4	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	2128	2128	2128	2128	2098	2128	2128	2128	2128	2067	2067	2128

[a] : dropped for lack of variability