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Abstract

This paper examines investment patterns of 50 sovereign wealth funds (SWFs) in nations around the world. We study investment by SWFs in 903 public and private firms over the period 1984-2009. As expected, we observe SWFs investments are more often in private firms when the market returns of target nations are negatively correlated to the market returns of the SWF nations. But counter to expectations, the data indicate that SWFs are more likely to invest in private firms of target nations with weaker legal conditions, and when the legal differences between the SWF country and the target country are more pronounced. This evidence is consistent with strategic rationales for investment and potential corporate governance conflicts.

Key words: Sovereign wealth fund; private equity; international financial markets, legality, government policy and regulation.

1. Introduction

The "[g]overnments of emerging markets [have] become major shareholders of firms in industrialized countries." Zhendai (2008)

Sovereign wealth funds ("SWFs") are nation-owned or nation-controlled pools of funds that invest in stocks, bonds, real estate and other financial instruments in target nations. Since the first SWF, Kuwait Investment Authority, was established in 1953, SWFs have increased in size significantly in the past decade (Johnson (2007)). In number alone, since 2005, at least 17 new SWFs have been created.[1] According to most reports, SWFs are expected to grow at an even more impressive rate going forward. Currently, there is approximately $2 ~ $3 trillion being managed by SWFs. Some experts estimate that this will increase to approximately $9 ~ $15 trillion by 2012, although other studies find that estimates may be misleading due to inconsistent accounting of SWF assets (Jen (2007) and Balding (2008)). It is understandable how the increasing sway these funds have over international investments have created much interest in determining factors influencing SWF investment decisions. Anecdotal evidence suggests that SWFs are diversifying from their preference of investing in publicly listed firms in target nations and increasingly investing in direct private equity.

In this paper we examine the factors that lead SWFs to invest in privately versus publicly traded held firms. Our central hypothesis is based on the legal conditions. SWFs make investments in public and private firms for both financial and non-financial, more strategic reasons. Investments in privately held firms are however riskier. If SWFs have purely financial motives for investment, we would expect SWFs to invest in private firms based in nations with stronger legal environments to mitigate idiosyncratic risk. If, however, SWFs invest for strategic reasons in ways that enable them to take advantage of corporate governance conflicts, we would expect SWFs to invest in private firms based in weaker legal environments. In assessing these competing propositions we consider other factors that drive private versus public investment, including market conditions, the source of funds, and the political relations between the acquiring SWF and the target nation.

We test the drivers of private versus public SWF investment in this paper by examining investment patterns of 50 SWFs around the world in 903 public and private firms over the period 1984-2009. The data show SWFs investments are more often in private firms when the market returns

[1] Sovereign Wealth Fund Institute at www.swfinstitute.org/

of target nations are negatively correlated to the market returns of the SWF nations, as expected. But counter to expectations, the data indicate that SWFs are more likely to invest in private firms of target nations with weaker legal conditions, and when the legal differences between the SWF country and the target country are more pronounced. The evidence presented in this paper is consistent with the view that strategic rationales dominate SWF investment and as such there are pronounced potential corporate governance conflicts.

While we know that decisions to invest in target nations or withdraw from target nations may be based on geopolitical reasons (Knill *et al.* (2009b)), we know little else about the investment patterns of SWFs. It is for these reasons that we are analyzing the factors contributing to recent increased activity of SWFs in direct private equity investment (we refer to the SWF investment in private firm securities as direct private equity to differentiate it from investments made in private equity funds). Our evidence adds to other SWF literature and their overriding strategic reason for carrying out cross-jurisdictional investments (Dewenter, Han, and Malatesta (2010); Knill, Lee, and Mauck (2009a); Kotter and Lel (2009); Bortolotti et al. (2009)). This is of significant interest as evidence leads us to believe that such strategic reasons may be as innocent as piggy-backing on existing firms to develop skills in acquirer nations to the slightly more suspicious such as obtaining defense related technology which may otherwise not be availed to such nations or access to scarce resources or vital infrastructure.[2] Likewise, SWFs' strategic focus appears to come at a cost of sacrificed financial returns. Our first look at drivers of public versus private SWF investment suggests distorted motivations for private investment in relation to legal conditions, and as such, further evidence on SWF conflicts of interest is warranted.

This paper is organized as follows. The next section introduces the hypotheses and a theoretical framework for analyzing SWF investment in direct private equity. Thereafter we present the data, the empirical method and the multivariate analyses. Policy implications and further research is discussed in the latter part of this paper.

[2] The most widely known example involves the purchase of assets by UAE-owned Dubai Ports World that led to its control of U.S. ports. There was immediate concern about this pending acquisition by some Americans due to perceived national security risks.

2. Hypotheses

In this section we conjecture that the propensity of the acquiring SWF to invest in direct private equity instead of a public firm in a target nation depends on four general factors: (1) financial - the market conditions of the target nation and the source of funds, (2) source of funds- the investment of oil-revenues versus other resources, (3) legality-the legal environment of the target nation and the legal differences between SWF and target nation, and (4) political- the bilateral political relations between the acquiring SWF and the target nation. Below, we develop hypotheses that relate to each of these characteristics.

SWFs are nation-owned or nation-controlled pools of funds that invest in stocks, bonds, real estate and other financial instruments in target nations. There are five identifiable underlying SWF objectives: (1) to insulate the acquirer nation's budget and economy against resource price and supply swings; (2) to convert revenues from non-renewable resources such as oil or minerals into a more diversified portfolio of assets for use by future generations; (3) to increase the earnings on foreign currency reserves; (4) to provide budgetary support for potential unfunded contingent pension liabilities or other monetary requirements , and (5) to increase political influence by making strategic foreign investments (Knill *et al* (2009b)).[3] While the objectives listed above are primarily financial in nature, there may be more strategic, non-financial objectives, as discussed below.

To understand direct private equity investment by SWFs, it is necessary to determine the extent to which financial objectives relate to investment decisions. Recent studies on SWFs find evidence that would imply that SWF motivations may be non-financial; direct evidence is likewise provided by Chhaochharia and Laeven (2009). A 2008 survey of sovereign wealth funds and investors, private equity managers and funds, financial institutions and corporate entities determined that 36.4% of respondents identified "potential strategic benefit/investment for relevant wealth fund jurisdiction" as the most important investment criterion and only 35.5% identified "the highest economic return" as the most important investment criterion. While survey evidence finds that strategic reasons may be the main overriding investment objective, anecdotal evidence still provides that the main investment objectives of SWFs are financial objectives. If financial reasons are the overriding investment objectives, then the move from investments in public firms to direct private equity may be financially motivated as SWFs underperform in the public markets (Bortolotti *et. al* (2009)). For example, the SWFs may be more

[3] See Sovereign Wealth Funds--A Work Agenda 5, International Monetary Fund (2008) p.5, available at http://www.imf.org/external/np/pp/eng/2008/022908.pdf

interested in increasing earnings by investing in riskier, potentially high-yielding direct private equity in addition to further diversifying their portfolio holdings.

The main concerns raised by the potential divergence between purely financial and more strategic objectives for investments are related to the potential distortion public-ownership brings to the market economies as nation-based SWFs increasingly carry out direct private equity investments. The relative opacity of SWFs has not so far been deemed to be an insurmountable problem in view of SWF investments in public firms as the firms themselves are bound by relatively stringent disclosure requirements. However, in light of increasing direct investments in equally opaque private firms by SWFs (see Figure 1), it is possible that strategic geo-political objectives may lead to an exacerbation of corporate governance conflicts as corporate level decisions are made with more non-financial objectives in mind.[4] As target nations and regulators are becoming increasingly observant of the effect of SWFs on local markets, could SWFs be using this form of direct private equity investment to further their non-financial strategies under their radar? If the increased investment in direct private equity is mainly to facilitate their strategic objectives and not to pursue pure financial gain, or for other legal reasons, then it could be the case that target nations may have to consider the effect the additional agency costs will have on existing corporate governance regimes and revaluate their positions on SWF investments (Kotter and Lel (2008)).

[Insert Figure 1 here]

SWFs are nation-owned or nation –controlled investment funds from nations with different legal environments and systems. Chhaochharia and Laeven (2009) find that SWFs exhibit a home bias and tend to invest in countries with similar cultures to their own. In line with this, we would expect SWFs to invest in target nations that have similar or at least familiar legal environments, especially as they are investing in higher risk direct private equity. SWFs however could also prefer to invest in direct private equity within more sophisticated legal jurisdictions to take advantage of more stringent corporate governance regimes to mitigate the risk of investing in private versus public firms. On the other hand, SWFs may seek to take advantage of weaker legal environments to fulfill their strategic objectives more easily. The target nations whose assets were being acquired by SWFs are, understandably, skeptical of the underlying objectives of such SWFs and the differences in legal environments further exacerbates this underlying suspicion.

[4] Kuwait Investment Authority, China Investment Corporation and Dubai World have all publicly objected to increased attempts to force transparency. See also Gilson and Milhaupt (2008), p.17.

Hypothesis 1a. *SWFs are more likely to invest in private firms in more legally sophisticated target nations for purely financial reasons. SWFs are also more likely to invest in public firms when the legal environment of target nation is dissimilar relative to the environment of the SWF nation.*

Hypothesis 1b. *SWFs are more likely to invest in private firms in more legally unsophisticated target nations to further strategic objectives.*

Further to our proposition that SWFs prefer to invest in direct private equity of target nations with similar or more sophisticated legal regimes, we test the proposition that SWFs tend to invest in target nations with which they have relatively weak political relations. Indeed, in a study examining United Nations voting records, Knill *et al.* 2009b examine whether investment by SWFs is related to bilateral political relations and find evidence (both contemporaneous correlation and Granger causality) that SWFs tend to invest in nations when political relations deteriorate. Analogously, one could imagine a scenario where SWFs, who are sometimes blocked from investing in large, public firms, seek to invest "below the radar", that is, take advantage of public versus private regulatory arbitrage by investing in the less scrutinized private equity. Put more formally:

Hypothesis 2. *SWF's are more (less) likely to invest in private firms in target nations when there is a(n) deterioration (improvement) in political relations with target nations.*

Investment in privately held firms offers diversification benefits. Given the illiquidity of private investments and the lengthy period before a realization of a private investment, we would expect direct private equity investments to be more common among nations that exhibit low correlation with the SWFs home nation`s public markets.

Hypothesis 3. *SWFs are more likely to invest in private firms in target nations when the market returns of target nation are negatively correlated to the market returns of the SWF nation.*

The source of funds for the SWF may also determine investment pattern as liquidity concerns may be factor to be considered. For example, the mandates of early SWFs such as Kuwait Investment Authority, established in 1953, and The Government Pension Fund-Norway, established in 1967,[5] were to

[5] Formerly known as The Petroleum Fund of Norway. It changed its name to The Government Pension Fund-Norway in January

invest oil-revenue.[6] More recently however, SWFs from non-resource export oriented nations have been mandated to invest excess foreign exchange reserves that they have either accumulated from trade surplus or have hoarded to hedge against foreign exchange shortages. As each acquirer nation's rationale for creating SWFs and investing in cross-border assets may of course differ, we divide source of funds into two categories, oil reserves or non-oil foreign exchange reserves that nations have either accumulated from trade surplus or have hoarded to hedge against foreign exchange shortages. Oil funds are usually accumulated as foreign currency savings and not required to meet balance of payment needs and thus may be invested in less liquid direct private equity investments.

Hypothesis 4. *SWFs that source their investment funds from oil revenues are more likely to invest in private firms in target nations.*

The next section introduces the data used to test Hypotheses 1-4 and provides summary statistics. Thereafter multivariate analyses are provided. In the multivariate analyses we also include control variables for market conditions generally, such as stock market returns over the period of investment. Further details are provided below.

[Table 1 about Here]

3. Data

3.1. *Data collection*

We obtained data on SWF investments from two sources. First, we conducted a search of all known SWFs and their subsidiaries in Lexis Nexis to identify transactions involving SWFs. Second, we used acquisitions with the "SWF flag" in SDC platinum. The resulting combined sample consists of over 900 acquisitions of public and private target firms by 50 SWFs over the period 1984-2009, which is

2006.

[6]As of 19 October 2010, the value of the Norwegian SWF is US$512 billion, and it holds 1% of global equity markets.See "Fund Tops 3 Trillion Kronor For First Time" at http://www.nbim.no/en/press-and-publications/News-List/2010/fund-tops-3-trillion-kroner-for-first-time/ and also *Government Pension Fund Global Annual Report 2009*, Oslo: Norges Bank Investment Management, 2010-03-05, pp. 18–19, ISSN 1891-1323.

considerably larger than the sample size used in other SWF studies.[7] By including direct private equity transactions, we are able to expand our sample and conduct a broader analysis.

3.2. *Determinants of private targets in SWF portfolios*

We use a *Legality* index to determine its impact on SWF investment in direct private equity. We follow Berkowitz *et al.* (2003) in calculating this index as the weighted average of following factors: efficiency of judicial system, rule of law, corruption, risk of expropriation, risk of contract repudiation, shareholder rights (as per La Porta *et al*., 1997, 1998). Where the weighted average is not available, especially for less developed nations, an approximate index is derived by multiplying the nation's GNP per population with a constant variable obtained by carrying out a regression of the legality indices available. Higher numbers indicate 'better' legal systems. The log of this variable is used in the empirics to account for a diminishing effect with larger numbers.

Following Gupta and Yu (2007), our proxy for political relations is based on United Nations voting records.[8,9] The motivation for this proxy is that nations with more (less) closely related votes in the UN General Assembly are likely to have stronger (weaker) political relations. We quantify the degree to which countries' votes are similar using the Gartzke's "S" measure (Gartzke, 1998), where "S" is the proxy for bilateral political relations (PR).[10] Specifically, we calculate the proxy using the equation:

$$PR = 1 - [2 * d / dmax] \quad (1)$$

[7] All SWF empirical papers face concerns over limited sample size. This sample size is comparable to other SWF working papers. For instance, Bortolotti *et al.* (2009) have a sample of 202 investments in their analysis of one-year return performance. Chhaochharia and Laeven (2009) use a large sample of holdings for determinants analysis, but do not perform transaction level analysis. Kotter and Lel (2009) use a sample of 184 matched pair purchases in their cross-sectional analysis, and Dewenter, Han, and Malatesta (2010) use a sample of 178 for their analysis of one-year return performance. Differences among the samples are likely due to the inclusion or exclusion of certain funds in the search criteria.

[8] UN voting records have also been used as a political relations proxy in, among others, Mansfield, Milner, and Pevehouse (2008).

[9] A second proxy for political relations, based on event data provided by Gary King's website (http://dvn.iq.harvard.edu/dvn/dv/king) uses as its basis a conflict cooperation scale to convert Integrated Date for Event Analysis event codes (provided by Virtual Research Associates) into a numerical score for political relations. The limited coverage of this proxy (1990-2004) constrains our sample of SWF investments significantly. As a result, the proxy is only used for robustness. For brevity, these results are omitted from the analysis but are available upon request.

[10] A comprehensive list of all UN General Assembly votes from 1946 to 2008 is provided by Erik Voeten's website (http://dvn.iq.harvard.edu/dvn/dv/Voeten).

where *PR* is the bilateral political relations, *d* is the sum of the distance between votes for a given bilateral pair and year, and *dmax* is the maximum possible distance between votes for a given bilateral pair and year. The distance between votes is calculated by first classifying "Yes" votes equal to one and "No" votes equal to zero.[11] For each vote the distance is calculated as the absolute value of the difference in votes. Thus, if both nations vote the same (opposite) way, the distance is zero (one) for that vote. This distance measure is then cumulated over the year for each bilateral pair. Thus, our *PR* measure ranges from -1 (all votes are different) to +1 (all votes are the same), which represents weak and strong political relations, respectively. A political relations proxy based on UN voting is desirable due to the continuous nature of the measure and because it is based on official government action.

Other determinants include *MarketCorr* and *SourceFunds*. The correlation of the market returns is an annual measure based on the returns of the local market index provided by DataStream. Source of funds is an indicator variable which takes on a value of one if the SWF nation is an oil-producing nation, thus indicating the source of funds is most likely oil revenue, and zero otherwise.

In addition, we gather data on other variables likely related to SWF investment. We follow Karolyi and Liao (2009) in constructing the control variables. The details of the variable construction relating to differences in return, exchange rate return, GDP, GDP growth, self-dealing index, accounting disclosure, are found in Appendix B. Further, we employ the following variables as control variables. We include a proxy related to the political system of a given nation based on a scale of democratization from the Polity IV database.[12] We include an indicator variable which takes on a value of one if the investment is between nations in close proximity. We include an indicator variable which takes on a value of one if the investment is between nations which are major trade partners. Finally, we include the age and the opacity of the SWF.[13]

[Table 2 about Here]

3.2. *Univariate comparison*

To provide some insight as to what we might expect in our main analysis, we perform a difference-in-means analysis for the variables set forth in the hypothesis section of the paper. This analysis is provided in Table 3.

[11] For robustness we also compile results defining "Yes" votes equal to one, "Abstain" votes equal to two, and "No" votes equal to three. Results are similar and therefore omitted for brevity. These results are available upon request.

[12] This data is used in Martin, Mayer, and Thoenig (2008).

[13] Opacity score is from Truman (2007).

[Table 3 about Here]

First, the results suggest that SWFs invest significantly more in direct private equity as a proportion of all target firms in nations that have a legality index lower than in the SWF nation. This result is consistent with H1b which suggests that SWFs that invest for strategic reasons are more likely to invest in nations with less sophisticated legal systems.

Second, contrary to our prior hypothesis that SWFs may be investing in private firms in nations with which that have inferior political relations (to remain under the "radar"), the results suggest that SWFs invest in a higher percentage of private firms versus public firms when political relations are better than the median.

Third, the results suggest that SWFs invest in a larger proportion of private firms in nations where there is negative market correlation. This result is consistent with H3 and suggests that SWFs are more likely to diversify their investments into direct private equity in target nations with which there is a diversification advantage (i.e., negative market return correlation).

4. Empirical Method

To analyse the impact of our variables of interest on the proportion of private targets, we collapse our SWF investment data to country-pairs for each year. Analysing country-pairs is necessary to calculate the bilateral "difference" control variables as well as the dependent variable. To ascertain the impact of legality on the proportion of private targets for a country (H1), we analyse the following robust ordinary least squares regression:

$$(\Pr ivTgt / \Pr ivTgt + PublTgt))_t^{i,j} = \gamma_{i,0} + \gamma_{i,1} Legal_t^{i,j} + \gamma_{i,2} X_{i,t} + e_{i,t}, \quad (2)$$

where Private/Total Targets reflects the percent of total targets represented by firms that are not publicly listed on any stock exchange. $X_{i,t}$ is a vector of control variables mainly taken from Karolyi and Liao (2009) including controls for differences in stock market return (*Return Difference*), exchange rates (*Exchange Rate Difference*), and Democracy (*Democracy Difference*) as well as other controls such as the proximity of the two nations (*Close*), the correlation in the two stock markets (*Market Correlation*), an indicator variable describing whether or not the two nations are trade partners (*Trade Partner*), the

number of years since the inception of the SWF (*SWF Age*) and the opacity level as defined by Truman (2007) (*SWF Opacity*).

To ascertain the impact of changes in bilateral political relations on the proportion of private targets for a country (H2), we analyse the following robust ordinary least squares regression:

$$(\Pr ivTgt/(\Pr ivTgt + PublTgt))_t^{i,j} = \gamma_{i,0} + \gamma_{i,1}\Delta PR_t^{i,j} + \gamma_{i,2}X_{i,t} + e_{i,t}, \quad (3)$$

where ΔPR refers to the change in bilateral political relations as calculated using the Gartske's S score. This measure was used in Knill *et al.* (2009b).

To ascertain the impact of correlation of the stock markets between the SWF (i.e., acquiring) nation and the target nation on the proportion of private targets for a country (H3), we analyse the following robust ordinary least squares regression:

$$(\Pr ivTgt/(\Pr ivTgt + PublTgt))_t^{i,j} = \gamma_{i,0} + \gamma_{i,1}MktCorr_t^{i,j} + \gamma_{i,2}X_{i,t} + e_{i,t}, \quad (4)$$

where *MktCorr* is the correlation between the returns of the SWF nation's stock market and that of the target nation. All other variables are as defined in equation (2).

Finally, to ascertain the impact of source of funds for the SWF (i.e., acquiring) nation on the proportion of private targets for a nation (H4), we analyse the following robust ordinary least squares regression:

$$(\Pr ivTgt/(\Pr ivTgt + PublTgt))_t^{i,j} = \gamma_{i,0} + \gamma_{i,1}SourceFunds_t^{i,j} + \gamma_{i,2}X_{i,t} + e_{i,t}, \quad (5)$$

where *SourceFunds* indicates the source of the funds the SWF invests, for example, oil, trade surplus, other resources, etc. All other variables are as defined in equation (2).

5. Multivariate Analysis

The empirical analysis is structured so that we might understand better the determinants of SWF investment in direct private equity. To that end, we examine separately each of the hypothesized determinants in the model set forth in the empirical method section. We culminate the analysis looking at a horserace of sorts of the four determinants.

Table 4 (Panel A) displays the results of equation (2) in analysing the impact of legality on the proportion of SWF investment in private targets. The univariate analysis in specification (1) suggests that, consistent with H1b, SWFs are more likely to invest in private firms when the target nation's legality index is low. Although we may expect SWFs to prefer to invest in nations with better legal protection, given that foreign investors are thought to have inferior information to domestic investors (Dvorak, 2005), we find the opposite. Our results are consistent with strategic objectives for SWFs. The economic significance of the marginal effect is such that a one-unit improvement in the legality index decreases the proportion of private targets in the SWF's portfolio by on average (across all specifications) of 1.9%.

Control variables from Karolyi and Liao (2009), save one, enter as statistically insignificant. The exception is market correlation. As one of the variables of interest, it enters the regression as negative and statistically significant at the 5% level. This variable will be discussed below.

In Panel B of Table 4, the definition of legality is changed to acknowledge the difference in the legality index between the two nations. Specifically, it is the acquiring (SWF) nation's legality index minus the target nation's legality index. The results in Panel B suggest that as this difference becomes larger, SWFs are more likely to allocate a larger chunk of their portfolio to private firms. This is once again consistent with H1b and meshes nicely with the results in Panel A. Marginal effects are similar if not slightly more impressive at 2.2% for a one-unit increase in the legality index difference.

Collectively, these results suggest that the level of legality in the target nation, in both absolute and relative terms, is a significant determinant of SWF investment in private targets as a proportion of their total portfolio. These results suggest that in this regard, SWF's invest strategically in nations with less developed legal systems.

[Table 4 about Here]

Table 5 displays the results of the analysis of bilateral political relations on SWFs' propensity to invest in private firms relative to all equity investments in their portfolios. Results suggest that there is weak evidence to support H2. As political relations increase (decrease), SWFs are more likely to invest in public (private) firms, holding their portfolio size constant. Though weak with regard to statistical significance, these results are consistent with H3 and Knill *et al.* (2009b), who cannot rule out nonfinancial motives (i.e., political) for SWF investment.

[Table 5 about Here]

The results displayed in Table 6 speak to the influence of market correlation in the weight of private equity in SWF portfolios. The results suggest fairly consistently that as market correlation increases, SWF's are less likely to invest in a higher proportion of private equity. Put slightly differently, consistent with H3, SWFs are more likely to take advantage of diversification benefits when market return correlations are less (or even negative).

[Table 6 about Here]

As evidenced by the results found in Table 7, the source of funds is inconsequential to the weight of direct private equity in the SWF portfolio. This suggests that SWFs in oil-producing nations are no more likely to invest in private firms than those in non-oil producing nations. These results coupled with those in Table 5 suggest that the argument for protectionist measures against SWF investment to prevent potential target nation volatility that may result from differing SWF liquidity requirements may not hold.
.

[Table 7 about Here]

Finally, Table 8 provides the results of a horse race of sorts for the four determinants outlined in this paper. Legality and market correlation emerge as the clear winners. Though we see statistical significance in all four determinants in specification (2), specification (1) demonstrates significance for only two of the variables with market correlation having the greatest economic impact. Specifically a one-unit improvement in market correlation leads to a 29% reduction in the weight of private equity in the SWF portfolios in our sample. In specification (2), the change in political relations has the greatest economic impact (albeit with inferior statistical significance) at -101.4% for a one-unit increase in political relations. Market correlation follows at -29.3% for a one-unit increase in market correlation and source of funds is a close third. Given that source of funds was not a statistically significant determinant in any of the specification in Table 7, we take this result lightly.

[Table 8 about Here]

6. Conclusions

In this paper we examine the determinants of a SWF's weight of direct private equity in their overall portfolio. We find evidence that suggests that the legality of the target nation, the difference the levels of legality of the SWF and target nation, the change in political relations, and the market correlation significantly influence the proportion of the SWF investments that are earmarked for direct private equity versus public equity.

SWFs act as other investors in that they take advantage of opportunities to diversify their portfolio in nations that have lower market correlation with their domicile nation. However, SWFs appear to invest strategically with respect to the legal environment of the target country. SWFs are more likely to invest in private firms in countries that have less developed legal systems. Therefore, consistent with the work of Knill *et al.* 2009, we cannot rule out motivations that are nonfinancial. Additionally, we find some evidence that SWFs are more likely to invest in private firms in nations where political relations are deteriorating. This suggests that nations that are wary of SWF investment should consider heavily current political relations with the domicile nation of the SWF. Put differently, policies should not be universal. Rather, openness to SWF investment should be determined on a case-by-case basis.

Appendix A: Funds in sample; 50 Funds; 903 Public and Private Investments

No	Sovereign Wealth Fund Name	# Private	# Public
1	1MDB	0	1
2	Abu Dhabi Investment Authority	6	22
3	Advanced Tech Invest Co LLC	0	1
4	Alaska Permanent Fund Corp	0	1
5	Abu Dhabi Investment Authority Abu Dhab	2	0
6	Abu Dhabi Investment Co Abu Dhabi Inves	1	0
7	Alaska Permanent Fund Corp	1	0
8	Brunei Investment Agency	4	3
9	Bulgarian Acquisition Co II State Gene	1	0
10	CalPERS	16	17
11	China Investment Corp{CIC}	18	28
12	DIFC	9	6
13	Dubai International Capital	17	3
14	Fond Natsional'nogo Blagososto	6	1
15	Future Fund Mgmt Agcy	1	4
16	GIC	24	43
17	GIC Future Fund Mgmt Agcy	1	0
18	GIC GIC Real Estate Pte Ltd	5	26
19	GIC GIC Real Estate Pte Ltd Temasek Hol	0	1
20	GIC Real Estate Pte Ltd GIC	12	20
21	GIC Real Estate Pte Ltd GIC Temasek Hol	0	1
22	GIC Temasek Holdings(Pte)Ltd	0	1
23	GIC Temasek Holdings(Pte)Ltd GIC Real E	0	2
24	Hong Kong Monetary Authority	0	1
25	ICD	1	2
26	IPIC	11	20
27	Istithmar PJSC	10	16
28	Istithmar PJSC Mubadala Development Co	0	1
29	Istithmar PJSC Temasek Holdings(Pte)Ltd	0	2
30	KIA	1	5
31	KIA CalPERS	1	0
32	Khazanah Nasional Bhd	38	39
33	Korea Investment Corp	1	1
34	Korea Investment Corp Temasek Holdings	0	1
35	LIA	0	2
36	Libyan Arab African Investment	1	0
37	Libyan Arab Foreign Invest Co	4	3
38	Mineral Resources Dvlp Co Pty	1	2
39	Mubadala Development Co	9	9
40	National Pensions Reserve Fund	0	1
41	NZ Superannuation Fund	1	0
42	Oman Investment Fund	4	4
43	Qatar Investment Authority	19	29
44	RAK Investment Authority	3	1
45	Seletar Invest Pte Ltd Temasek Holdings	1	1
46	State General Reserve Fund	1	0
47	TT International Ltd	6	3
48	Temasek Holdings(Pte)Ltd	148	187
49	Temasek Holdings(Pte)Ltd Seletar Invest	2	1
50	Temasek Holdings(Pte)Ltd Seletar Invest	0	4
	Total	387	516
	Combined Total (Private + Public)	903	

Appendix B. Variable definitions

Variable	Variable Definition	Source
Legality	The weighted average of following factors: efficiency of judicial system, rule of law, corruption, risk of expropriation, risk of contract repudiation, shareholder rights.	Berkowitz et al., 2003; La Porta et al., 1997, 1998
PR	The distance between UN General Assembly votes for a given bilateral pair and year. Specifically, we calculate PR using PR = 1 – [2 * d / dmax] where d is the sum of the distance between votes for a given bilateral pair and year, and dmax is the maximum possible distance between votes for a given bilateral pair and year. The distance between votes is calculated by first classifying "Yes" votes equal to one and "No" votes equal to zero. Then for each vote the distance is calculated as the absolute value of the difference in votes.	Gartzke (1998)
Market Correlation	The correlation between annual market returns for the SWF and target nation. (From Karolyi and Liao (2009))	Datastream
SourceFunds	An indicator variable which takes on a value of one if the source of funds is oil and zero otherwise	LexisNexis; SDC Platinum
Return Difference	The annual difference in real stock market return between the SWF and target nation Return data is gathered in the local currency and deflated using 2000 Constant Price Index (CPI). (From Karolyi and Liao (2009))	Datastream
Exchange Rate Difference	The annual difference in U.S. dollar exchange rate returns between the SWF and target nation. (From Karolyi and Liao (2009))	Datastream
Close	A dummy variable that indicates whether countries are close in proximity to the acquiring nation. We define "close" as within 500 miles of each other.	Gleditsch and Ward (2001)
Trade Partner	PARTNER, a dummy variable equal to one if the target nation is identified as an "important" trade partner of a given SWF in the CIA World Factbook , and equal to zero otherwise.	CIA World Factbook
SWF Opacity	A dummy variable equal to one if the SWF is below the median disclosure score from Truman (2007) and zero otherwise.	Truman (2007)
Private Target	A dummy variable equal to one if the target is a private firm and zero otherwise.	SDC Platinum
Public Target	A dummy variable equal to one if the target is a publicly listed firm and zero otherwise.	SDC Platinum

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Table 1
Sample Characteristics

This table displays characteristics of the data. Panel A displays the industry composition. Panel B displays the breakdown of private versus public by acquiring (SWF) nation.

Panel A: Industry Composition

FF Industry	Private Freq.	Public Freq.	% Private
Con. Non-durable	15	26	36.59%
Con. Durable	3	15	16.67%
Manufacturing	20	48	29.41%
Energy	9	27	25.00%
Hi-Tech	42	59	41.58%
Telecom.	24	58	29.27%
Retail	25	24	51.02%
Healthcare	13	17	43.33%
Utilities	2	30	6.25%
Other	234	433	35.08%
Total	387	737	34.43%

Panel B: Acquiring (SWF) nation target type

	Private Freq.	Public Freq.	% Private
Australia	6	17	26.09%
Austria	1	0	100.00%
Bahamas	0	1	0.00%
Belgium	0	1	0.00%
Bermuda	0	2	0.00%
British Virgin	0	1	0.00%
Brunei	3	3	50.00%
Canada	0	1	0.00%
Cayman Islands	0	2	0.00%
China	15	31	32.61%
Denmark	0	1	0.00%
France	9	2	81.82%
Germany	2	6	25.00%
Guernsey	1	0	100.00%
Hong Kong	6	13	31.58%
India	6	4	60.00%
Indonesia	7	9	43.75%
Ireland	0	1	0.00%
Israel	0	1	0.00%
Kazakhstan	5	3	62.50%
Kuwait	2	8	20.00%
Libya	5	7	41.67%
Luxembourg	1	0	100.00%
Macau	1	0	100.00%
Malaysia	36	58	38.30%
Mauritius	7	11	38.89%
Netherlands	1	2	33.33%
New Zealand	3	0	100.00%
Oman	5	3	62.50%
Pakistan	2	3	40.00%
Papua New Guinea	1	2	33.33%
Qatar	10	32	23.81%
Russian Fed	1	0	100.00%
Singapore	150	365	29.13%
South Africa	1	0	100.00%
South Korea	2	3	40.00%
Spain	0	1	0.00%
Sweden	8	6	57.14%
Switzerland	1	0	100.00%
United Kingdom	11	14	44.00%
United States	28	39	41.79%
Utd Arab Emirates	49	83	37.12%
Vietnam	1	0	100.00%
Average			44.05%

Table 2
Summary Statistics

This table displays summary statistics for the data used in this analysis. Variable definitions are in the Appendix.

Variable	Obs	Mean	Median	Min	Max	Std. Dev.
PrivTgt/(PrivTgt+PublTgt)	140	0.35	0	0	1	0.42
Legality	140	17.32	19.67	8.51	21.78	4.10
Legality Difference	111	2.46	1.91	-11.28	11.69	4.43
ΔPR	131	-0.01	0	-0.26	0.23	0.08
Source of Funds = oil	140	0.26	0	0	1	0.44
Return Difference	140	0.17	0.002	-0.72	4.11	0.82
Exchange Rate Difference	140	0.02	0.006	-0.19	0.68	0.09
Close	140	0.18	0	0	1	0.38
Market Correlation	140	0.41	0.47	-0.45	1	0.33
Democracy Difference	140	10.87	12	0	20	4.71
Trade Partner	140	0.52	1	0	1	0.50
SWF Age	140	27.77	32.5	3	57	11.09
SWF Opacity	140	0.92	1	0	1	0.27

Table 3
Difference in means

This table displays univariate comparison tests for the determinants of target type including legality index, difference in legality index, political relations, changes in political relations, correlation between the markets of the acquiring (SWF) nation and the target nation, and whether the source of funds is oil or not.

	Number of private targets	Number of public targets	Private targets/ total targets
Above median legality	1.35	1.48	0.38
Below median legality	1.31	1.54	0.38
Difference	0.04	0.06	0.00
Above median legalitydiff	1.39	1.56	0.42
Below median legalitydiff	1.13	1.40	0.28
Difference	0.26*	0.16	0.14**
Above median political relations	1.33	1.54	0.43
Below median political relations	1.34	1.47	0.32
Difference	-0.01	0.07	0.11*
Above median changepr	1.00	1.08	0.45
Below median changepr	1.38	1.55	0.37
Difference	-0.38*	-0.47*	0.08
Positive market correlation	1.35	1.50	0.36
Negative market correlation	1.20	1.63	0.56
Difference	0.15	0.13	-0.20*
Oil Producing	1.35	1.38	0.38
Non-oil producing	1.32	1.56	0.38
difference	0.03	-0.18	0.00

Table 4
Legality and the proportion of private targets

This table displays the results of the following regression: $\Pr ivTgt/(\Pr ivTgt + PublTgt)_t^{i,j} = \gamma_{i,0} + \gamma_{i,1} Legal_t^{i,j} + \gamma_{i,2} X_{i,t} + e_{i,t}$, where PrivTgt/(PrivTgt+PublTgt) is the proportion of private targets in total targets. Legal is a legality index in Panel A and the difference in the value between the acquiring (SWF) nation and the target nation in Panel B. $X_{i,t}$ is a vector of control variables including Return Difference, Exchange Rate Difference, Close, Market Correlation, Democracy Difference, Trade Partner, SWF Age and SWF Opacity. Variable definitions are in the Appendix.

Panel A: Legality

Dependent Variable = Private Targets/(Private Targets + Public Targets)						
	1	2	3	4	5	6
Legality	-0.016**	-0.015*	-0.022**	-0.022**	-0.018**	-0.021**
	[0.008]	[0.009]	[0.009]	[0.009]	[0.008]	[0.011]
Return Difference		0.024				0.019
		[0.044]				[0.048]
Exchange Rate Difference		-0.112				-0.126
		[0.373]				[0.397]
Close			-0.015			-0.001
			[0.105]			[0.121]
Market Correlation			-0.233**			-0.259
			[0.117]			[0.158]
Democracy Difference				0.005		-0.003
				[0.006]		[0.013]
Trade Partner				0.051		0.053
				[0.066]		[0.077]
SWF Age					-0.004	0.002
					[0.003]	[0.004]
SWF Opacity					-0.052	0.132
					[0.107]	[0.171]
Constant	0.635***	0.609***	0.824***	0.652***	0.830***	0.644**
	[0.144]	[0.157]	[0.181]	[0.145]	[0.208]	[0.262]
Observations	184	156	153	173	168	140
R-squared	0.02	0.02	0.06	0.04	0.03	0.06
Model F	3.95**	1.03	2.89**	2.18***	1.84	0.86

Panel B: Difference in Legality

Dependent Variable = Private Targets/(Private Targets + Public Targets)						
	1	2	3	4	5	6
Legality Difference	0.022**	0.021**	0.025***	0.024**	0.020**	0.022*
	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]	[0.012]
Return Difference		0.041				0.021
		[0.127]				[0.129]
Exchange Rate Difference		-0.002				-0.096
		[0.401]				[0.417]
Close			0.011			0.021
			[0.114]			[0.142]
Market Correlation			-0.301*			-0.439**
			[0.169]			[0.209]
Democracy Difference				0.005		-0.015
				[0.009]		[0.023]
Trade Partner				0.025		0.109
				[0.077]		[0.098]
SWF Age					0.005	0.016*
					[0.008]	[0.009]
SWF Opacity					-0.087	0.111
					[0.136]	[0.245]
Constant	0.290***	0.291***	0.422***	0.226**	0.220	-0.027
	[0.041]	[0.043]	[0.083]	[0.110]	[0.243]	[0.284]
Observations	127	120	119	124	119	111
R-squared	0.05	0.05	0.08	0.05	0.05	0.11
Model F	6.57***	1.83	3.46**	2.29*	2.00	1.45

Table 5
Bilateral political relations and the proportion of private targets

This table displays the results of the following regression: $\Pr ivTgt/(\Pr ivTgt + PublTgt)_t^{i,j} = \gamma_{i,0} + \gamma_{i,1}PR_t^{i,j} + \gamma_{i,2}X_{i,t} + e_{i,t}$, where PrivTgt/(PrivTgt+PublTgt) is the proportion of private targets in total targets. PR is the political relations index.. $X_{i,t}$ is a vector of control variables including Return Difference, Exchange Rate Difference, Close, Market Correlation, Democracy Difference, Trade Partner, SWF Age and SWF Opacity. Variable definitions are in the Appendix.

Dependent Variable = Private Targets/(Private Targets + Public Targets)						
	1	2	3	4	5	6
ΔPR	-0.662*	-0.219	-0.341	-0.659*	-0.672*	-0.361
	[0.387]	[0.479]	[0.472]	[0.395]	[0.404]	[0.502]
Return Difference		0.001				0.023
		[0.044]				[0.049]
Exchange Rate Difference		0.093				-0.063
		[0.382]				[0.416]
Close			0.081			0.062
			[0.105]			[0.118]
Market Correlation			-0.260**			-0.342**
			[0.111]			[0.160]
Democracy Difference				-0.002		-0.010
				[0.006]		[0.011]
Trade Partner				0.023		0.019
				[0.065]		[0.074]
SWF Age					0.001	0.004
					[0.003]	[0.004]
SWF Opacity					-0.038	0.172
					[0.107]	[0.155]
Constant	0.366***	0.366***	0.455***	0.380***	0.406***	0.324
	[0.032]	[0.036]	[0.051]	[0.081]	[0.136]	[0.198]
Observations	187	158	158	178	172	146
R-squared	0.02	0.00	0.04	0.02	0.02	0.04
Model F	2.92*	0.08	1.96	1.15	1.08	0.62

Table 6
Market return correlation and the proportion of private targets

This table displays the results of the following regression: $\Pr ivTgt/(\Pr ivTgt + PublTgt)_t^{i,j} = \gamma_{i,0} + \gamma_{i,1} MktCorr_t^{i,j} + \gamma_{i,2} X_{i,t} + e_{i,t}$, where PrivTgt/(PrivTgt+PublTgt) is the proportion of private targets in total targets. MktCorr is the correlation between the markets of the acquiring (SWF) nation and the target nation. $X_{i,t}$ is a vector of control variables including Return Difference, Exchange Rate Difference, Close, Market Correlation, Democracy Difference, Trade Partner, SWF Age and SWF Opacity. Variable definitions are in the Appendix.

Dependent Variable = Private Targets/(Private Targets + Public Targets)						
	1	2	3	4	5	6
Market Correlation	-0.214**	-0.220**	0.000	-0.243*	-0.228**	-0.348**
	[0.096]	[0.097]	[0.108]	[0.126]	[0.109]	[0.155]
Return Difference		-0.015				0.017
		[0.044]				[0.048]
Exchange Rate Difference		0.091				-0.087
		[0.374]				[0.404]
Close			0.041			0.064
			[0.100]			[0.114]
Democracy Difference				-0.004		-0.010
				[0.008]		[0.011]
Trade Partner				0.046		0.026
				[0.067]		[0.071]
SWF Age					0.003	0.004
					[0.003]	[0.004]
SWF Opacity					0.114	0.170
					[0.129]	[0.148]
Constant	0.457***	0.459***	0.458***	0.470***	0.280*	0.326*
	[0.050]	[0.051]	[0.050]	[0.127]	[0.157]	[0.191]
Observations	172	172	172	164	162	155
R-squared	0.03	0.03	0.03	0.03	0.03	0.04
Model F	5.03**	1.72	2.59*	1.54	1.65	0.73

Table 7
Source of funds and the proportion of private targets

This table displays the results of the following regression: $\Pr ivTgt/(\Pr ivTgt + PublTgt)_t^{i,j} = \gamma_{i,0} + \gamma_{i,1} SourceFunds_t^{i,j} + \gamma_{i,2} X_{i,t} + e_{i,t}$, where PrivTgt/(PrivTgt+PublTgt) is the proportion of private targets in total targets. SourceFunds is an indicator variable which takes on a value of one if the source is oil and zero otherwise. $X_{i,t}$ is a vector of control variables including Return Difference, Exchange Rate Difference, Close, Market Correlation, Democracy Difference, Trade Partner, SWF Age and SWF Opacity. Variable definitions are in the Appendix.

Dependent Variable = Private Targets/(Private Targets + Public Targets)						
	1	2	3	4	5	6
Source of Funds = oil	-0.001	0.023	-0.053	-0.013	-0.016	0.069
	[0.066]	[0.077]	[0.079]	[0.074]	[0.086]	[0.117]
Return Difference		-0.005				0.015
		[0.045]				[0.048]
Exchange Rate Difference		-0.034				-0.079
		[0.383]				[0.405]
Close			0.042			0.058
			[0.101]			[0.115]
Market Correlation			-0.261**			-0.338**
			[0.115]			[0.156]
Democracy Difference				-0.002		-0.011
				[0.006]		[0.011]
Trade Partner				0.032		0.026
				[0.064]		[0.071]
SWF Age					-0.001	0.005
					[0.003]	[0.005]
SWF Opacity					-0.043	0.219
					[0.108]	[0.170]
Constant	0.380***	0.373***	0.483***	0.380***	0.461***	0.229
	[0.037]	[0.040]	[0.062]	[0.078]	[0.166]	[0.252]
Observations	209	175	172	191	192	155
R-squared	0.00	0.00	0.03	0.00	0.00	0.04
Model F	0.00	0.04	1.87	0.15	0.07	0.68

Table 8
Determinants of the proportion of private targets

This table displays the results of the following regression:

$\Pr ivTgt/(\Pr ivTgt + PublTgt)_t^{i,j} = \gamma_{i,0} + \gamma_{i,1} Legal_t^{i,j} + \gamma_{i,2} PR_{i,t} + \gamma_{i,3} MktCorr_t^{i,j} + \gamma_{i,4} SourceFunds_{i,t} + e_{i,t}$, where PrivTgt/(PrivTgt+PublTgt) is the proportion of private targets in total targets. Legal is a legality index in odd specifications and the difference in the value between the acquiring (SWF) nation and the target nation in even specifications. PR is the political relations index. MktCorr is the correlation between the markets in the acquiring (SWF) nation and the target nation. SourceFunds is an indicator variable that takes on a value of one if it is oil and zero otherwise. Variable definitions are in the Appendix.

Dependent Variable = Private Targets/(Private Targets + Public Targets)		
	1	2
Legality	-0.024***	
	[0.009]	
Legality Difference		0.029***
		[0.009]
ΔPR	-0.542	-1.014*
	[0.456]	[0.523]
Market Correlation	-0.290**	-0.293**
	[0.115]	[0.143]
Source of Funds = oil	-0.075	-0.247**
	[0.081]	[0.118]
Constant	0.884***	0.422***
	[0.181]	[0.080]
Observations	140	108
R-squared	0.07	0.15
Model F	2.72**	4.38***

Figure 1
Private targets as a proportion of all SWF targets over time