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The Investment Strategies of Sovereign Wealth Funds[†]

Shai Bernstein, Josh Lerner, and Antoinette Schoar

Sovereign wealth funds have emerged as major investors in corporate and real resources worldwide. Estimates of their size are difficult, because disclosure regulations and practices differ widely from country to country. But in 2012, the Sovereign Wealth Fund Institute estimated that total assets of these funds were more than \$5 trillion: that is, more than double the \$2.1 trillion managed by hedge funds (as estimated by Hedge Funds Research Inc., accessed July 21, 2012), although it is only 2.3 percent of the \$212 trillion in total global financial assets (as estimated by McKinsey Global Institute 2011).

At first blush, sovereign wealth funds might seem an excellent opportunity for nations with high variance in public revenues to ensure steady cash flow levels and provide resources for long-term investments: for example, countries relying on commodity trade that occasionally encounter windfalls of natural resources. Such countries, without a fund to direct investments, could otherwise fall prey to the “Dutch disease” and squander short-lived windfalls from natural resources in a way that weakens the economy’s long-run potential. But sovereign wealth funds also have limitations, since they may create economic distortions. For example, there are concerns about lack of transparency and political capture: funds with political leaders on their boards may be tempted to shore-up domestic firms as they succumb to political pressure, passing up on high net present value investments in other

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firms and creating product market distortions by favoring connected or poorly performing firms. Similarly, as the interaction between sovereign wealth funds and political agenda grows, opportunities for nepotism increase, potentially reducing the overall skill of sovereign wealth fund managers relative to professionals and diluting the returns.

Thus, sovereign wealth funds are particularly interesting because of the potential interactions between mission and ownership structure. Their investment charters usually state that the fund seeks to maximize financial returns for the benefit of long-term public policies, such as retiree benefits or economic development needs. But the quasi-public nature of these funds means that they are exposed to political influences, often with more short-term goals.

This article will review several of the central issues that face sovereign wealth funds. After an overview of their magnitude, we will then consider the institutional arrangements under which many of the sovereign wealth funds operate and how such arrangements might influence the effectiveness of their investment policies. We focus on a specific set of agency problems that is of first-order importance for these funds: that is, the direct involvement of political leaders in the management process. We show that sovereign wealth funds with greater involvement of political leaders in fund management are associated with investment strategies that seem to favor short-term economic policy goals in their respective countries at the expense of longer-term maximization of returns. In particular, sovereign wealth funds where political involvement is more prevalent tend to support domestic firms by investing in segments and markets where valuation levels are inflated (as measured by price/earnings ratios), and subsequently see a reversal in these price/earnings ratios. The opposite patterns hold for funds that rely on external managers. While we are not able to disentangle causality with our existing data, the associations are striking.

Sovereign wealth funds face several other issues, like how best to cope with demands for transparency, which can allow others to copy their investment strategies, and how to address the problems that arise with sheer size, like the difficulties of scaling up investment strategies that only work with a smaller value of assets under investment. In the conclusion, we discuss how various approaches cultivated by effective institutional investors worldwide—from investing in the best people to pioneering new asset classes to compartmentalizing investment activities—may provide clues as to how sovereign wealth funds might address these issues.

An Overview of Sovereign Wealth Funds

Depending on how one counts, there are between 40 and 70 different sovereign funds, run by political entities as disparate as New Mexico and Kazakhstan. Table 1 lists the 20 largest sovereign wealth funds and estimates of their holdings: the funds on this list comprise about 90 percent of the total assets of sovereign wealth funds. The wealth within these funds has differing origins. In many of the most visible cases, such as Abu Dhabi, petroleum has been the source of abundant wealth. Other

Table 1
Leading Sovereign Wealth Funds

<i>Country</i>	<i>Fund Name</i>	<i>Assets (billions of dollars)</i>	<i>Inception</i>	<i>Origin of wealth</i>
UAE – Abu Dhabi	Abu Dhabi Investment Authority	627	1976	Oil
Norway	Government Pension Fund – Global	593	1990	Oil
China	SAFE Investment Company	568	1997	Non-commodity
Saudi Arabia	SAMA Foreign Holdings	533	N/A	Oil
China	China Investment Corporation	440	2007	Non-commodity
Kuwait	Kuwait Investment Authority	296	1953	Oil
China – Hong Kong	Hong Kong Monetary Authority Investment	293	1993	Non-commodity
Singapore	Government of Singapore Investment Corporation	248	1981	Non-commodity
Singapore	Temasek Holdings	158	1974	Non-commodity
Russia	National Welfare Fund	150	2008	Oil
China	National Social Security Fund	135	2000	Non-commodity
Qatar	Qatar Investment Authority	100	2005	Oil
Australia	Australian Future Fund	80	2006	Non-commodity
UAE – Dubai	Investment Corporation of Dubai	70	2006	Oil
UAE – Abu Dhabi	International Petroleum Investment Company	65	1984	Oil
Libya	Libyan Investment Authority	65	2006	Oil
Kazakhstan	Kazakhstan National Fund	58	2000	Oil
Algeria	Revenue Regulation Fund	57	2000	Oil
UAE – Abu Dhabi	Mubadala Development Company	48	2002	Oil
South Korea	Korea Investment Corporation	43	2005	Non-commodity

Note: This information about the 20 largest sovereign wealth funds is compiled from the Sovereign Wealth Fund Institute, <http://www.swfinstitute.org/fund-rankings/> (accessed July 21, 2012).

commodities, from diamonds to copper or phosphates, have been the foundation of other funds, like the Chilean sovereign fund (though none of these funds made it onto the list of the top 20 funds). Still others have been primarily funded from the proceeds from the sale of state-owned properties or businesses. Other funds, such as those of China and Singapore, have their origin in trade surpluses.

Sovereign wealth funds are growing quickly. They increased ten-fold in the last two decades: from \$500 billion in 1990 to more than \$5 trillion today. Over the past three years, they have achieved a 24 percent annual growth rate. Much of this growth has been driven (not surprisingly) by the rising price of petroleum, and has been concentrated in producer nations such as Norway, the United Arab Emirates, and Kuwait. But other important players include nations such as China that pile up foreign currency because they run persistent, large trade surpluses. These countries less and less often put these reserves “under a mattress”—that is, holding safe but low-return US Treasury bonds—and are instead seeking broader portfolios.

Sovereign funds frequently have multiple goals, which different organizations emphasize to varying extents. There are three distinct roles sovereign wealth funds

can play. First, they can serve as a source of capital for future generations, especially in countries where future generations may no longer be able to rely on commodities for a steady stream of revenue. For example, the nation of Kiribati is a collection of islands in the Pacific Ocean (formerly known as the Gilbert Islands) with a population of under 100,000 residents. For many decades, the dominant export from the country was guano, bird droppings used for fertilizer. The island's leaders set up the Kiribati Revenue Equalization Reserve Fund in 1956, and imposed a tax on production by foreign firms. The last guano was extracted in 1979, but the fund remains a key economic contributor. At \$600 million, it is ten times the size of the nation's gross domestic product, and the interest generated by the fund represents 30 percent of the nation's revenue. Such a use is similar to that of a university that receives a major bequest: typically, these funds are not spent immediately, but instead added to its endowment so it can benefit many cohorts of students. Second, sovereign wealth funds can play a stabilizing role by reducing the volatility of government revenues. Countries that depend on commodities for the bulk of their exports can be whipsawed by shifts in prices, as, for instance, many oil exporters were in the mid-1980s and late 1990s. Finally, these funds can serve as holding companies, in which the government places its strategic investments. Public leaders may see fit to invest in domestic or foreign firms for strategic purposes, and the sovereign funds provide a way to hold and manage these stakes.

The Mixed Legacy

Many nations have failed to save the wealth created by developing natural resources. Consider, for instance, the experience of Norway in the 1970s and 1980s (for more details, see Pope 1995; Gjedrem 2005). In the oil surge of those years, the government received a tremendous windfall of funds from its numerous rigs in the North Sea. While efforts were made to enact legislation that set aside money for the future, most of the money was spent immediately. Some of the spending benefited physical and social infrastructure: Norway rebuilt its excellent system of roads and bridges and provided free health care and higher education to all residents. But other expenditures were less beneficial for long-term growth. For example, minimum wages were set extremely high, which rendered a number of economic sectors uncompetitive in global markets, and industries were subsidized. Much of the funding for industry was earmarked for dying sectors, such as shipbuilding. This support allowed facilities to remain open for a few years more, but could not reverse the inexorable decline of such industries. Much of the funding for new ventures went to friends or relatives of parliamentarians or of the bureaucrats responsible for allocating the funds. Moreover, Norway's policy of aggressively spending the government's petroleum revenues brought chaos to public and private finances when oil prices plunged in the mid-1980s. The government's oil revenue dropped from about \$11.2 billion in 1985—or about 20 percent of Norway's gross domestic product—to \$2.4 billion in 1988. The resulting retrenchment of public

spending and tightening of credit led numerous banks to fail, as well as bringing an unprecedented wave of bankruptcies by private citizens.

Nor was Norway the first nation to struggle with the influx of wealth. Back in the 1970s, *The Economist* magazine coined the term “Dutch Disease” to describe the economic malaise that gripped the Netherlands when it experienced an influx of natural gas royalties during the 1960s. An example much further back in time, documented by historian David Landes (1998), would be the corrosive effects that the tremendous wealth generated by Spain’s overseas conquests had on that nation’s economy.

Sovereign wealth funds can address these downsides of a sudden accumulation of natural wealth in two ways. First, by not spending the gains from natural resources (or other sources) immediately, but rather preserving them for future generations, the distorting impact of the windfall is reduced. Had the Norwegian government kept public spending in check during the 1970s and 1980s, it is unlikely that the disruptions in subsequent years would have been as severe. Second, earmarking a percentage of windfall revenues into an investment fund may reduce the risk that government officials will spend these revenues in an unwise or corrupt manner—assuming, of course, the sovereign fund is run in a professional manner. In an ideal world, a soundly managed sovereign fund can address some of the macroeconomic problems that an influx of funding may cause, such as inflation and exchange rate overvaluation (see the discussion in Ang 2010 for an exploration of these issues).

But the structure of sovereign wealth funds can face two serious agency problems. First, the political process can introduce short-run pressures on sovereign wealth funds to financially support local firms or subsidize industrial policies within the country. There are two opposing views of the consequences of these investment pressures. Advocates for government-directed investments often argue that financial markets in these countries can be underdeveloped or myopic or both, and thus leave profitable investment opportunities on the table (Atkinson and Stiglitz 1980; Stiglitz 1993). The opposing, less-sanguine view of politically directed investments suggests that political involvement can either lead to misguided policy attempts to prop up inefficient firms or industries or engage in investment activities in industries, sectors, or geographies that are “hot” (Shleifer and Vishny 1994; Banerjee 1997; Hart, Shleifer, and Vishny 1997).

This conceptual framework suggests some testable implications. If the benevolent view of sovereign wealth funds is accurate, we would expect to find that government investments in local firms are directed at industries that face financial constraints and subsequently perform very well. If the latter view is true, we would predict the opposite: investments would be disproportionately directed to local firms, follow a pro-cyclical trend, and subsequently perform poorly. In addition, if sovereign wealth funds are run by politically connected but financially inexperienced managers, we might expect that not only would they make poor choices in their home and foreign investments, but would also display poorer stock-picking ability even looking solely at the international portfolio of the fund.

Political Involvement and Investment Distortions

There has been relatively little empirical analysis of agency problems at sovereign funds, largely due to data restrictions.¹ Recent papers by Gompers and Metrick (2001), Lerner, Schoar, and Wongsunwai (2007), and Hochberg and Rauh (2011) have highlighted the heterogeneity in investment strategies, and ultimately returns, across different types of institutional investors.² Because we are interested in understanding the extent to which the investment behavior of sovereign wealth funds is shaped by short-term political considerations, we focus on the funds' long-term investments—acquisitions, purchases of private equity, and structured equity positions in public firms—on the grounds that these distortions should be most evident in these areas.

Descriptive Statistics

To analyze the investment strategies of sovereign wealth funds, we combine data from a number of publicly available sources. Here, we offer an overview of the sources for this data: for details, please see the online Appendix available with this article at <http://e-jep.org>.

First, we look at information on the funds themselves, starting with profiles of the funds published by J.P. Morgan (Fernandez and Eschweiler 2008) and Preqin (Friedman 2008). The key variables collected at the fund level are assets under management, the presence of politicians in the managing bodies of the funds, reliance on external managers, and whether the stated investment goals are “strategic.” By “strategic,” we mean that the investments are related to the country's long-term industry development strategy rather than simply aiming to maximize the financial returns of the portfolio. We categorize a fund as “strategic” if its stated investment goals are the management of the government's physical assets, the acquisition of strategic assets, or domestic development. We categorize a fund as “nonstrategic” if its stated goals are investment of oil/commodity revenues, currency reserve management, or pension funding. These measures of the characteristics of the funds are admittedly crude characterizations of organizational structures: these are recorded

¹ Several papers conduct event-study analyses of how the stock market reacts when sovereign wealth funds make investment announcements. The reactions are usually positive, at least in the short term (Kotter and Leil 2008; Dewenter, Han, and Malatesta 2010; Bortolotti, Fotak, Megginson, and Miracky 2010; Knill, Lee, and Mauck 2010). Chhaochharia and Laeven (2009) show that sovereign wealth funds largely invest in countries that share the same ethnicity, language, and religion. Fernandes (2011) and Dyck and Morse (2011), rather than exploring transactions, focus on holdings of sovereign wealth funds (that is, the stock rather than the flow of investments). The latter paper, which is most complementary to the analysis below, finds that many holdings by these funds can be explained by financial return maximization or state planning motives, demonstrating the tension between the two objectives.

² While the Santiago principles of the International Working Group of Sovereign Wealth Funds state that “relevant financial information regarding the SWF should be publicly disclosed” (<http://www.iwg-swf.org/pubs/gapplist.htm>; accessed December 22, 2012), consistent return data for most sovereign funds is hard to come by. For instance, the Abu Dhabi Investment Authority in recent annual reports has reported its aggregate returns over 20- and 30-year time horizons; aggregate returns over shorter horizons have not been disclosed, much less those of individual asset classes.

as binary variables, rather than as continuous variables that we might be able to analyze more carefully. Moreover, these measures are reported as of 2008: we do not have a time series on the governance structure or types of advisors involved in the funds.

Second, we examine the direct investments that the funds made, relying on reporting from Dealogic's M&A Analytics, SDC's Platinum M&A, and Bureau van Dijk's Zephyr. Transactions included in the database encompass outright acquisitions, venture capital and private equity investments, and structured minority purchases in public entities (frequently called PIPEs, or "private investments in public entities"). The databases do not include investments into hedge, mutual, or private equity funds or open market purchases of minority stakes in publicly traded firms.

Finally, we want to look at the investment climate around the time of the transaction and to measure investment performance. Because many investments are in private firms, price/earnings ratios determined in public equity markets are not available. As a proxy, we use the price/earnings ratios of firms traded in stock markets in the target company's industry and nation, where the price/earnings ratios are weighted by the size of the firms in the industry. We construct this price/earnings measure both for the time when the sovereign wealth fund first makes the acquisition, and for a year later, which give us an admittedly approximate performance measure for each deal.

The result of this process is a sample of 29 sovereign wealth funds that carried out 2,662 transactions between January 1984 and December 2007. The assets of these funds, \$3.1 trillion, represent about 60 percent of the assets of sovereign wealth funds according to the Sovereign Wealth Fund Institute. The bulk of sovereign wealth funds that are not included are very new, very small, or have traditionally eschewed private equity investing (for example, the Norwegian Government Pension Fund and China's SAFE Investment Company).

Table 2 presents descriptive statistics for this sample. Panel A of Table 2 sorts the funds into three regions: seven funds in the Asian group, 15 funds in the Middle Eastern group, and seven funds in the Western group. The Western group includes funds from North America, Australia, and Europe. The sample of 2,045 transactions by the Asian funds is substantially larger than the 533 observations in the Middle Eastern group and the 84 of the Western group.³ While the sample consists of transactions between the years 1984 and 2007, transactions are more common

³ One possible explanation for these differences in sample size is that we have only partial coverage of the deals. We believe, however, that this can only explain part of the differences. More important, we believe, are the differences in fund sizes and the willingness to engage in direct investments. To estimate the coverage of our sample, we compare the aggregate transaction value of our sample to the estimate in a J.P. Morgan publication (Fernandez and Eschweiler 2008). They estimate outstanding investments by sovereign wealth funds in alternatives investments like hedge funds and private equity at the end of 2007 as \$316 billion. In our sample, the aggregate transaction value in the years 2003–2007 (excluding the public investments) is \$198 billion (expressed in 2008 US dollars). Given that we include direct private equity investments but exclude private equity partnerships and hedge fund investments while they include all three, the comparison suggests we have reasonable sample coverage.

Table 2
Descriptive Statistics

Panel A: Groups					
	<i>Funds</i>	<i>Transactions</i>	<i>External managers (%)</i>	<i>Politicians (%)</i>	<i>Average fund size in 2008 (billions of dollars)</i>
Asia group	7	2045	42.85	57.14	132.7
Middle East group	15	533	13.33	13.33	124.76
Western group	7	84	42.85	14.28	40.874

Panel B: Transactions					
	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev</i>	
Acquisition stake (%)	1,998	56.59	50.00	39.01	
Average deal size (million 2008\$)	1,743	158.23	67.50	256.24	
Home investment (%)	2,662	33.92	0.00	47.35	
Region Investment (%)	2,662	29.70	0.00	45.70	
P/E Level	2,642	25.60	21.46	13.48	
P/E Change (%)	2,632	-1.17	-0.01	11.19	
Market-adjusted Return	543	4.67	13.20	42.82	

Continued

in recent years: more than half of the Asian group transactions, 60 percent of the Middle Eastern group transactions, and 90 percent of the Western group transactions happened in the most recent five years of the sample.

Panel B shows that the average transaction size is \$158 million (in 2008 US dollars), although the median is much lower at \$67 million. The average stake acquired by the sovereign wealth funds is a majority interest of 56.6 percent. The average price/earnings level in the industry-country-year of the target of a transaction is 25.6, and the typical investment segment experiences a drop of -1.2 percent in the mean price/earnings ratio in the year after the investment. For approximately 20 percent of the investments that occurred in publicly traded firms, we also examine the market-adjusted returns in the six months after the transaction (as discussed further below). Sovereign wealth funds have played an important role in private equity investing.⁴

Panel C reports on the funds according to their governance structure. About 24 percent of the funds (20 percent of transactions) have politicians involved in the fund, and 28 percent of the funds (10 percent of transactions) rely primarily on

⁴ Over the years 2003 through 2007, the aggregate value of private equity transactions by sovereign wealth funds in our sample was \$198 billion (excluding investments by sovereign wealth funds in private equity partnerships). Based on estimates of Stromberg (2008) and the Private Equity Council, investments by sovereign wealth funds account for approximately 9.5 percent of the aggregate value of global private equity deals over a similar time period.

Table 2—continued

	<i>Politicians are involved in the management of the fund</i>			<i>Politicians are not involved in the management of the fund</i>			<i>External managers are involved in the management of the fund</i>			<i>External managers are not involved in the management of the fund</i>		
	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>
	Acquisition stake (%)	366	49.16	40.03	1,625	58.35	50.75	203	42.19	20.00	1,788	58.31
Average deal size (million 2008\$)	378	190.07	72.49	1,367	147.86	66.01	219	236.41	85.48	1,526	145.62	64.82
Home investment (%)	508	44.80	0.00	2,146	31.39	0.00	275	8.20	0.00	2,379	36.89	0.00
Region Investment (%)	508	31.80	0.00	2,146	29.32	0.00	275	44.02	0.00	2,379	28.17	0.00
P/E Level	506	25.29	21.66	2,128	25.70	20.51	272	19.68	21.52	2,362	25.57	21.46
P/E Change (%)	502	-2.62	-0.01	2,122	-0.82	-0.01	269	2.48	0.00	2,355	-0.82	-0.01

Panel D: Funds' stated investment objectives (Preqin 2008)

	<i>Investment of oil/commodity revenues</i>	<i>Currency reserve management</i>	<i>Pension funding</i>	<i>Management of government physical assets</i>	<i>Acquisition of strategic assets</i>	<i>Domestic development</i>
Number of funds	5	8	2	7	4	3
Number of transactions	73	1833	34	460	722	178
Home investment (%)	11	32	32	59	33	32

Notes: The sample consists of 2,662 investments by 29 sovereign wealth funds. It excludes transactions that were withdrawn or rejected. All descriptive statistics are equally weighted. *P/E Level* is the average of the price/earnings ratios of publicly traded firms in the industry, country, and year of the transaction. *Region Investment* equals 1 (100 percent) if investment was at the same region (Asia, Middle East, or Western countries) but not at home country. *P/E Change* is the change in the average of the price/earnings ratios of publicly traded firms in the industry and country of the transaction in the year after the deal. *Market-adjusted Return* is the difference between the return of the target in the six months after the transaction and the return of the corresponding benchmark over the same period. The deal size and the price/earnings ratio variables are winsorized.

outside managers. Both funds with political leaders and external managers tend to make larger investments. Interestingly, when politicians are involved, funds invest more in firms headquartered in the home country (45 percent of the deals in the sample) relative to funds without their involvement (only 31 percent of the transactions). Funds with primarily external managers invest less in the home country (only 8 percent) relative to funds that do not rely on external managers (these invest 37 percent in the home country).

The final panel of Table 2 reports the stated fund objectives. Currency reserve management is the objective associated with most funds and most transactions. Funds whose stated goal is the management of government physical assets have the largest share of domestic investments; those whose goal is the investment of oil/commodity revenues, the fewest.

Propensity to Invest at Home

We now document more systematically how the governance structures of sovereign wealth funds are associated with differences in their investment strategies. In particular, we investigate whether the involvement of external managers or that of politicians in investment management is correlated with outcomes. We analyze investment strategies of sovereign wealth funds looking at their propensity to invest at home, the industry-country price/earnings levels at the time of the investments, the subsequent changes in the price/earnings ratios, and the size of the acquisition stakes of their investments.

One of the important governance-related problems in the investment policies of sovereign wealth funds might be that their money is used to bail out underperforming firms or industries. To analyze how funds vary in their allocation of investments between the home nation and outside, we estimate a probit model. The dependent variable is a home investment dummy, which equals one if the target investment is made within the home nation of the sovereign wealth fund and zero otherwise. In Table 3, we regress the home dummy on indicator variables for the presence of political leaders in the management of the fund and the reliance on external managers. (We cluster the standard errors at the level of the country where the sovereign wealth fund is based.) The displayed coefficients are marginal effects. In the specifications where year dummies are added, the sample only includes transactions from 1991 onward.⁵

In the base specification, we employ no controls. In the second and subsequent regressions, we control for the geographic location of the sovereign wealth fund (Asian, Middle Eastern, and Western). The results in the first column show that in cases where political leaders are involved with the management of the funds, domestic investments are more common, while involvement of external managers is associated with fewer domestic investments. The magnitude of the effects is large: the coefficient on the politician dummy reflects a 41.3 percent increase in the likelihood of investing at home when politicians are involved. In comparison, the coefficient on the external manager dummy is equivalent to a 27.3 percent lower share of domestic investments when external managers are employed.

⁵ Regressions are weighted by winsorized transaction sizes (expressed in 2000 US dollars). Since we only have sizes for 67 percent of our transactions, we impute missing weights by constructing the fitted values from a regression of deal sizes on fixed effects for the investment year, target industry, target region, and fund. After adding imputed observations, we winsorize the deal size variable at the 5 percent and 95 percent level to reduce the effect of extreme observations.

Table 3
Sovereign Wealth Fund Behavior

	<i>Dependent variable</i>			
	<i>Home Dummy</i>		<i>P/E Levels</i>	<i>P/E Change</i>
	(1)	(2)	(3)	(4)
Politicians	0.413*** (0.107)		4.153*** (1.300)	-0.042*** (0.004)
External Managers	-0.273*** (0.058)		-4.562*** (1.307)	0.023*** (0.007)
Home P/E		0.006** (0.003)		
Outside P/E		-0.005* (0.003)		
Home Investment			-5.607* (2.625)	-0.017 (0.013)
Year dummies	No	No	Yes	Yes
Sovereign wealth fund region dummies	No	Yes	Yes	Yes
Target region dummies	No	No	Yes	Yes
R ²	0.128	0.097	0.167	0.128
N	2,618	2,618	2,533	2,524

Notes: The sample consists of 2,662 investments by 29 sovereign wealth funds. It excludes transactions that were withdrawn or rejected. The dependent variable *Home Dummy* is a dummy denoting whether the investment target was based in the same nation as the sovereign wealth fund; the dependent variable *P/E Levels* is the weighted (by firm value) average of the price/earnings ratios of publicly traded firms in the industry, country, and year of the transaction; the dependent variable *P/E Change* denotes a one year percentage change in the value of *P/E Levels* from the year of the transaction. *External Managers* is equal to 1 if external managers are involved in the management of the fund, zero otherwise. The *Politicians* variable is a dummy equal to 1 if politicians are involved in the management of the fund. The *Home P/E* variable is the country-level P/E ratio of home country. The *Outside P/E* variable is equal to the target country P/E ratio if investment is not in the sovereign wealth fund's home nation. If investment is at home, *Outside P/E* is equal to the average (weighted by the total transaction sizes of the sovereign wealth fund deals in the sample) P/E ratios of all other countries in which investments were made by sovereign wealth funds. *Home Investment* is a dummy variable which equals one if the target is based in the same country as the sovereign wealth fund. We include dummy variables for different regions, set equal to 1 when a fund or target is based in Asia or the Middle East. The estimation method in the first two regressions is a weighted probit model and in the second pair is weighted ordinary least squares, using in both cases as weights winsorized transaction sizes (converted to 2000 US dollars). The displayed coefficients are marginal effects. Standard errors are clustered at the sovereign wealth fund country. When year dummies are added, the sample only includes transactions from 1991 onward. ***, **, and * indicate levels of significance of 1, 5, and 10 percent, respectively.

In column 2 of Table 3, we repeat the regression from column 1, but add measures of the price/earnings level of the sovereign wealth fund's nation (*Home P/E Level*) and of the price/earnings level of the country in which the fund invests (*Outside P/E Level*). The results show that there is a significant correlation between higher price/earnings levels in the other countries and a lower propensity to invest at home. An increase in one standard deviation of *Outside P/E* decreases

the likelihood of investing at home by 3.11 percent, while that of *Home P/E* increases it by 4.5 percent.

The cross-sectional results suggest that sovereign wealth funds invest more at home if their local equity markets have relatively high price-to-earnings levels and similarly they are less likely to invest at home if foreign markets are valued highly. One possible explanation for this pattern might be that sovereign funds try “correctly” to invest in markets that have high option values, high price-to-value levels.⁶ But an alternative interpretation would be that they choose investments that are overvalued. Given the return dynamics which we present in the next section, it rather appears that the results are more consistent with sovereign wealth funds engaging in “trend chasing,” that is, they gravitate to markets where equity values have already been bid up highly.

Valuation Levels

In a second step, we examine whether there are significant differences in the market timing of the transactions undertaken by sovereign wealth funds that have involvement of politicians compared to those run by professional managers. In the third column of Table 3, we rerun the same regression as before but the dependent variable is the weighted average (by firm value) of the price-to-earnings ratios of publicly traded firms in the industry, country, and year of the transaction. We find that having politicians involved is strongly associated with investments in higher-priced sectors (a premium of three-to-four times earnings), while external managers are associated with investments in lower-valued sectors.

Investment Performance

To understand the propensity of sovereign wealth funds with political involvement to invest in industries with high valuations as measured by price/earnings ratios, we now look at the later performance of these industries. On the one hand, investments in high price-to-earnings industries could be a sign that politicians favor industries with attractive investment opportunities as argued, for example, in Gordon (1959) and Bekaert, Harvey, Lundblad, and Siegel (2007). On the other hand, investments in industries with high price-to-earnings ratios might suggest that sovereign wealth funds engage in trend chasing and buy into inflated valuations, as discussed in Lakonishok, Shleifer, and Vishny (1994). If the first interpretation is true, we should see that sovereign wealth funds outperform in home investments, while the opposite would hold under the second explanation.

The regression in the fourth column in Table 3 is structured to be parallel to the first three columns, but now the dependent variable is the percentage change in the average price-to-earnings ratio of firms in that country and industry in the year following the investment. By looking at the subsequent performance

⁶ High price to value means that the market values the company much higher than its assets in place. The only reason that is rational is if the market expects this firm to have great returns in the future. This is exactly the option value that is priced into the firm's stock.

of the sector, we can address some of the interpretative challenges highlighted above. As in the previous section, we use a transaction size-weighted ordinary least squares specification.

We see here that sovereign wealth funds where political leaders play a role select sectors with significant drops in price-to-earnings ratios going forward (−4.2 percent). This is in contrast to the case when external managers are involved, where price-to-earnings values increase in the year following the investment (+2.3 percent).⁷ The analysis suggests that sovereign wealth funds with politician involvement do not select high price-to-earnings sectors because they have better private information about investment opportunities (as the finding of home bias in investments might initially suggest). Rather, it seems to reflect a willingness to trend chase and overpay for investments. The analysis suggests, at least weakly, that these effects are stronger when it comes to domestic investments.

In unreported regressions, we verify that these results also hold if we use data at the deal level for the subset of firms that were publicly traded at the time of investment. We obtain the information from Datastream for all target companies that were publicly traded and calculate the cumulative abnormal returns relative to the local market benchmark in the six months after the transaction. We find once again that in the basic specifications, politician-influenced sovereign wealth funds are associated with lower returns. These transactions significantly underperform, generating 16 percent lower returns in the six months after the investments. The home investment dummy now has a significantly negative coefficient, suggesting underperformance among domestic investments. While the sample of publicly traded transactions is considerably smaller, the similarity to the results reported in Table 3 is reassuring.⁸

Overall, our results lend support to the hypothesis that funds exposed to political influences show major deviations from long-run return maximization. Sovereign wealth funds with politician involvement are more likely to invest domestically, while those sovereign wealth funds where external managers play an important role are more likely to invest internationally. Politically influenced sovereign wealth funds also concentrate their funds in sectors that both have high price-to-earnings levels

⁷ When interactions with home investments are added in unreported regressions, the interaction term between politician influence and home investments is negative and significant, reflecting a decline of 6.8 percent in returns when investing at home.

⁸ In an unreported regression, we also consider a benchmark that matches to the type of security. We use as the dependent variable the percentage change in the weighted (by firm value) average EBITDA/assets ratio of all publicly traded firms if the target is public, or if the target is private, all privately held firms in the corresponding three-digit SIC industry, country, and year of the target in the transaction. We determine the ratios for the corresponding firms from the 2009 edition of the Orbis database from Bureau van Dijk, which includes financial information about private firms for many nations. The important advantage of Orbis is that it includes data on both public and private firms (in fact, most of the firms in this database are private). Unfortunately, in many cases, the information is quite scanty, so we can only obtain a ratio for the corresponding industry, country, and year for 796 firms—far fewer than for the price-to-earnings ratio, where we have a benchmark for 2,553 firms. The results are quite weak. In the basic regressions, the *Politicians* variable retains a negative coefficient and the *External Managers* a positive one, but neither are statistically significant.

and then experience a drop in these levels, especially in their domestic investments, patterns that do not hold in funds that rely on external managers. Political pressures seem to force these sovereign wealth funds to use their funds to support underperforming local industries rather than build a savings buffer for the long run. The performance gap between domestic and international investments when more political appointees are on the board also supports the interpretation that politically connected managers are not purely making poor decisions when investing but that there is a strategic component.

Stated Investment Objective

Some sovereign wealth funds profess a desire to focus on more short-term strategic objectives, such as the acquisition of useful companies or domestic industrial development. Others aim more at the long-term return goals that are akin to those of a university endowment.

In Table 4, we repeat the analyses of Table 3, but look specifically at the role that investment objectives play. Recall that we define funds' objectives to be "strategic" if stated goals include management of government physical assets, acquisition of strategic assets, or domestic development. We consider the rest of the objectives as "nonstrategic" (investment of oil/commodity revenues, currency reserve management, or pension funding).⁹ We employ the same sample, number of observations, and dependent variables as those reported in Table 3. The independent variables change slightly across the four regressions and we add the independent variable *Strategic Objectives* and as well as the interaction of *Strategic Objectives* with *Politicians* (*Politicians* \times *Strategic Objectives*). In the regression analyses of the decision to invest at home, we find that when political leaders are involved, those funds that have strategic objectives show a significantly higher probability of investing at home. Meanwhile, the coefficients on *Strategic Objectives* or *Politicians* as separate variables are either insignificant or of reduced statistical significance. In the other two regressions, the interaction between the strategic objective measure and politicians are insignificant. As before political leader-influenced investments are associated with high prices and subsequent underperformance regardless of their stated strategic objectives.

Robustness

One could be worried that our results might be driven either by some of the smaller deals or the valuation trends in the years immediately before the financial crisis. Alternatively, one might worry that there is a sample selection bias, which is doubtless a greater problem among the smaller transactions. To verify that our

⁹ Most funds include multiple goals, which typically fall under the same broad category. In 220 investments, fund goals included both strategic and nonstrategic objectives. We included all these transactions in the nonstrategic group, and verified that results are similar when these are included in the strategic group instead.

Table 4
Investment Objectives

	<i>Dependent variable</i>			
	<i>Home Dummy</i>		<i>P/E Levels</i>	<i>P/E Change</i>
	(1)	(2)	(3)	(4)
Politicians	0.192 (0.128)	0.199* (0.103)	3.630*** (0.900)	-0.038*** (0.012)
Strategic Objectives	-0.086 (0.077)	-0.069 (0.154)	2.261* (1.249)	-0.015 (0.009)
Politicians × Strategic Objectives	0.477*** (0.176)	0.454* (0.245)	-0.993 (2.504)	0.014 (0.013)
External Managers	Yes	Yes	Yes	Yes
Home P/E	No	Yes	No	No
Outside P/E	No	Yes	No	No
Home Investment	No	No	Yes	Yes
Year dummies	No	No	Yes	Yes
Sovereign wealth fund region dummies	No	Yes	Yes	Yes
Target region dummies	No	No	Yes	Yes
R^2	0.142	0.014	0.169	0.128
N	2,618	2,618	2,533	2,524

Notes: The four regressions are very similar to those reported in Table 3. The main changes are the addition of *Strategic Objectives* and the interaction of *Strategic Objectives* with *Politicians* (*Politicians* × *Strategic Objectives*). Robust standard errors, allowing for data clustering by the countries in which the sovereign wealth funds are based, are shown in parenthesis.

***, **, and * indicate levels of significance of 1, 5, and 10 percent levels, respectively.

results are robust to these concerns, we undertake a number of additional tests that examine different subsets of the data.

We repeated all the regressions presented in this paper using two subsamples, one which includes the largest 75 percent of the deals, and the other with the largest 50 percent of the deals. Even after removing the smaller half of the transactions, the remaining transactions maintain the same distribution across the groups. And in both subsamples, the results remained similar to the ones reported in the paper. We also run the regressions without winsorizing the data (without trimming the outliers). We repeat our analysis excluding either the last two years or the last year of the sample and find that the results remain unchanged. Finally, we conduct simple weighted mean tests and run unweighted regressions to explore the robustness of the results. The results exhibit similar patterns to the ones described in the analyses above.

In short, our results lend support to the hypothesis that funds, which are exposed to political influences, show major distortions from long-run return maximization. Sovereign wealth funds with politician involvement are more likely to invest domestically, while those funds where external managers play an important role are more likely to invest internationally. Politically influenced sovereign wealth

funds also concentrate their funds in sectors that both have high price/earnings levels and then experience a drop in these levels, especially in their domestic investments, while these patterns do not hold in funds that rely on external managers. Funds that have stated strategic goals are more likely to invest at home but only if politicians are involved.

Other Challenges: Transparency and Managing Growth

Although sovereign wealth funds have existed for six decades, they are facing increased political scrutiny in many nations both because of their accelerating growth and because of highly public transactions that drew them into the global spotlight, such as the \$7.5 billion investment in Citigroup in November 2007 by the Abu Dhabi Investment Authority. The controversies surrounding investments by sovereign funds are not new—witness the 1987 row over the Kuwait Investment Office’s purchase of a 20 percent stake in British Petroleum—yet the intensity of scrutiny in recent years has been unprecedented and seems unlikely to subside. In part, these concerns can be attributed to intense anxiety in many established economies about globalization and the changing global balance of power. But these fears can also be understood as a reaction to the intense secrecy that surrounds some of the activities of sovereign wealth funds. Greater visibility—publicizing the size of the pools, investment strategies, and particular investments—could help dispel at least part of the worries over sovereign funds. While the International Working Groups of Sovereign Wealth Fund’s 2009 Generally Accepted Principles and Practices (GAPP) (“Santiago Principles”) spoke of the desirability of transparency along a variety of dimensions, actual compliance with these principles has been quite limited.

The reluctance of sovereign wealth funds regarding disclosure may have two roots. First, too much disclosure can have real costs, since it can lead to increased imitation by other investors. The experience of American university endowments offers a useful object lesson here. In the past, a substantial lag typically occurred between the time a few university endowments first began investing in an asset class and the time other institutions followed. For instance, many of the Ivy League schools began investing in venture capital in the early 1970s, but most corporate and public pensions did not follow until the 1980s and 1990s, respectively. More recently, such lags are much shorter. Within a couple of years of Harvard’s initiating a program to invest in forestland, for instance, many other institutions adopted similar initiatives. In general, an investment by a prominent institution can trigger a rush of capital seeking to gain access to the same type of investment, thus, making it much harder for the investor to continue what might otherwise have been a successful strategy (for a further discussion of these issues, see World Economic Forum 2011).

Furthermore, even an aggressive policy of encouraging transparency will not solve all of the challenges that sovereign wealth funds face. Investment decisions that would seem unremarkable when made by an individual or institutional investor can become political hot potatoes when undertaken by a sovereign fund. Consider,

for instance, the experience of Norway's Government Pension Fund when the fund trimmed its portfolio of firms using child labor and thus sold \$400 million of Wal-Mart stock (based on reports that Wal-Mart was selling goods that had been produced in other countries for the firm using child labor). This decision triggered a diplomatic row with the American ambassador, who accused Norway of passing "essentially a national judgment on the ethics of the [company]" (as reported in Landler 2007). The fund pointed out that when it had shared with Wal-Mart its draft report presenting evidence about the company's labor practices, Wal-Mart ignored it. (For an overview of the dispute, see Pozen 2007). Similarly, when Norway's Government Pension Fund, along with many hedge funds, sold short the shares of Icelandic banks in 2006, it triggered a major diplomatic row with that nation (as reported in *The Economist*, 2008).

Another major challenge that sovereign wealth funds must address is how to ensure attractive investment returns as they grow. Strategies that work for a modest-sized institution may be difficult to scale up into a larger organization. For instance, it may be possible for a billion-dollar endowment to generate attractive returns from investments of \$10 million apiece in private equity funds or in developing markets. If a sovereign fund with 100 times the capital were to pursue a similar strategy, it would probably 1) be unable to find enough attractive investments to have a return that significantly boosts that of the overall fund; or 2) find that purchases of larger blocks of stock affect the market price to the extent that the strategy is far less profitable. For similar reasons, many university endowments have struggled to maintain their success as they have become larger. Thus, for the larger sovereign funds, generating attractive returns is by no means simple.

Sovereign wealth funds have adopted a range of approaches to deal with this issue. At one extreme is the Norwegian Sovereign Wealth Fund, which allocates almost no capital into alternative assets (private equity, hedge funds, or real estate investment) or illiquid markets. Instead the fund mainly invests into liquid and very transparent investments—like public debt and equity markets—outside of the home country.

This strategy minimizes the requirements on specialized knowledge of the investment staff and might allow the fund to maintain returns as it grows in size. At the other extreme are sovereign wealth funds like Temasek from Singapore that have heavily invested in private deals either via allocations to private equity or through direct investments in companies, often in other Asian economies. This latter strategy places much higher requirements on the investment office. Particularly in asset classes such as private equity and real estate, where funds and strategies often do not scale well, such strategies might ultimately be more difficult to continue as a fund grows in size.

Is there a way to overcome the diseconomies of scale that can drag down the returns of large institutional investors? One approach that the Government Investment Corporation of Singapore has tried has been to build an organizational structure in which a number of subsidiaries are managed separately. In this way, managers can make smaller investments. Such separate funds can also serve as

“laboratories”: successful approaches can be emulated by the other funds, while mistakes can be less costly since they affect only one subsidiary. It is an open research question whether such approaches allow sovereign wealth funds to continue to invest successfully as they grow.

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