THE RISE OF SOVEREIGN WEALTH FUNDS: DEFINITION, ORGANIZATION, AND GOVERNANCE[1]

Bernardo Bortolotti
Università di Torino
Sovereign Investment Lab, Paolo Baffi Centre, Università Bocconi
(bernardo.bortolotti@unibocconi.it)

Veljko Fotak
Assistant Professor
University at Buffalo (SUNY)
Sovereign Investment Lab, Paolo Baffi Centre, Università Bocconi
(veljkofo@buffalo.edu)

William L. Megginson
Professor and Rainbolt Chair in Finance
University of Oklahoma
Saudi Aramco Chair Professor in Finance
King Fahd University of Petroleum & Minerals
(wmegginson@ou.edu)

Abstract

This paper addresses the difficulties of accurately defining a SWF, discusses the evolution of the original SWFs from stabilization to wealth funds, and examines how SWFs are organized and funded. We also detail the key measures developed to assess the operational and informational transparency and institutional quality of different fund by comparing the organizational structures, corporate governance systems, and investment patterns observed for SWFs with those documented empirically for other internationally active institutional investors.

JEL Classification: G32, G15, G38
Keywords: Sovereign wealth funds, International financial markets, Government policy and regulation

[1] We benefited from comments offered by Mohammed Alzahrani, Chris Balding, Ginka Borisova, Narjess Boubakri, Marie Brière, Craig Brown, Gilles Chemla, Rebel Cole, Serdar Dinç, Elroy Dimson, Mandy Duan, Louis Ederington, Nuno Fernandes, Chitru Fernando, Edith Ginglinger, Janya Golubeva, Kate Holland, Jason Kotter, Carl Linaburg, Stefano Lugo, Stefanie Kleimeier, April Knill, Ugur Lel, Diego Lopez, Stefano Lugo, Nathan Mauck, Aline Muller, Matthias van Randenborgh, Jay Ritter, Patrick Schena, Samer Sourani, Manuchehr Sharokhi, Aidan Vining, Vincenzo Verdoliva, Pradeep Yadav, by participants in the 2013 ECCE-USB Financial Globalization and Sustainable Finance conference in Cape Town, South Africa (keynote speech), the 2014 Global Finance Conference in Dubai (keynote speech), the 2014 Sovereign Investment Laboratory Sovereign Wealth Fund Conference (Florence), and seminar presentations at Université Paris Dauphine, Saudi Aramco headquarters (Dhahran, Saudi Arabia), King Fahd University of Petroleum and Minerals, the University of Liege, Università degli Studi di Napoli, and the European School of Management and Technology (Berlin).

The economic role of governments has, of course, been evolving rapidly over the past several decades. States have always and everywhere regulated private businesses to a greater or lesser degree, but many also chose to enter business as owners. Mostly from the Great Depression onwards, governments around the world launched (or nationalized) companies that produced goods and services sold to the nation's populaces, often under monopolistic regimes [Shleifer (1998), Megginson (2005)]. As these state-owned enterprises (SOEs) spread and citizens experienced the often poor quality of their output, disillusion with SOEs prompted governments to adopt a new policy of privatization. Since its introduction by Britain's Thatcher government in the early 1980s to a then-skeptical public, privatization now appears to be accepted as a legitimate—often a core—tool of statecraft by many of the world's over 190 national governments. Since 1977, governments around the world have raised over $2.5 trillion by selling state-owned enterprises to private investors and corporations [Megginson (2013)].

The historic rise of privatization as a core state policy has thus been well documented. As noted, what is far less well known is the frequency with which governments have been buying equity in listed and unlisted private firms. Contrary to public perceptions and despite the worldwide success of state privatizations, over the 2001-2012 period governments acquired more assets through stock purchases ($1.52 trillion) than they sold through share issue privatizations and direct sales ($1.48 trillion).[2] Much of this state investment was channeled through SWFs and, as we describe in detail below, the vast bulk of these stock purchases have been cross-border transactions.

In many ways, this surge is government stock investment is puzzling, since a huge volume of published research on government ownership documents dramatic performance improvements for privatized enterprises, suggesting that states should be reducing their ownership of corporate equity, rather than increasing it. A large segment of this research, summarized in Shirley and Walsh (2001), Megginson and Netter (2001), Djankov and Murrell (2002), Sun and Tong (2003), and Estrin, Hanousek, Kočenda, and Svejnar (2009), suggests that governments are usually bad operating *managers* and that firm performance improves with privatization, while another stream of literature has looked at "mixed ownership" firms [Boardman and Vining (1989); Shirley and Walsh (2001); Lin and Su (2008); Borisova, Brockman, Salas, and Zagorchev (2012)], generally finding that mixed ownership also has a negative impact on firm value. The world has thus been witnessing two powerful, simultaneous, and apparently contradictory economic phenomena over recent years: continuing sales of state-owned assets and enterprises to private investors by some governments, coupled with increasingly large purchases of private, often listed, corporate equity by other governments.

---

[2] Reported in Megginson (2013, Figure 3), based on data from the Thomson Reuters SDC Platinum M&A database and Privatization Barometer (http://www.privatizationbarometer.net). During 2013, state asset sales (privatizations) reverted to the pre-2001 historical pattern, exceeding state purchases by more than $50 billion.

The key innovation that explains these apparent contradictions is that the recent government purchases of equity have been conducted mostly by state entities acting as investors rather than owners, buying non-controlling stakes in foreign and domestic companies in order to realize a long-term financial return, rather than to own and operate these businesses as state enterprises. This phenomenon can be called the rise of the fiduciary state, and sovereign wealth funds are the single most important expression of this force, as, over the past decade, their total assets have grown to exceed those of hedge funds and private equity combined. What makes this phenomenon especially important, and perplexing, is the aforementioned fact that most government equity purchases have been acquisitions in foreign companies, where the state purchaser cannot exercise any sovereign regulatory or supervisory power. These state shareholders have no more authority to monitor target firm managers than do private investors—and may well have less ability to do so, if they are politically constrained from being too pushy.

Two economic phenomena have promoted the growth of SWFs since 1999. The first is the massive accumulation of foreign (mostly dollar-denominated) official reserves by central banks that was prompted by the devastating 1997–98 East Asian financial crisis. As Figure 1 shows, governments have built up increasingly massive foreign exchange reserve holdings over the past fifteen years—reaching $12.338 trillion at year-end 2012, according to the World Bank—and this has prompted them to reallocate some assets to SWFs, to seek a commercial return without having to convert out of dollars. The second major force fueling the recent growth of SWFs has been the nearly inexorable rise in the world price of oil, which, as Figure 3 shows, increased from barely $10 per barrel in 1998 to over $148 a decade later, before stabilizing between $90–110 per barrel since 2010.

****** Insert Figure 1 about here ******

As discussed more fully in the following section, all of the largest SWFs receive their funding either from transfers of oil (and natural gas) revenues earned by national energy companies or from transfers of excess foreign exchange reserves earned from exports and managed by the national central bank or Treasury. For this reason, SWFs are referred to as either “oil based” or “trade surplus based,” and we will follow that nomenclature throughout this survey. However, we also stress another important method of classifying SWFs, which our reading of the empirical evidence suggests may in fact be even more relevant for explaining their investing behavior, operating philosophy, and how they are received by nations targeted for SWF investment— whether the funds are sponsored by democratic or non-democratic nations and, closely related, whether the funds operate in a transparent or non-transparent manner.[3] We

[3] Other researchers have classified SWFs in different ways. A common alternative is to classify funds according to the purpose for which they were launched. This approach is summarized in Bortolotti (2013), distinguishing between inter-generational saving funds, aimed at investing incomes gained from harvesting finite resources such as oil and gas, funds aimed at diversifying national reserves, and funds aimed at economic development.

further note that there is tremendous heterogeneity among funds, and thus any attempt to neatly "classify" SWFs should be viewed with caution.

The overarching question/theme we address in this survey is whether SWFs are fundamentally different in organization, behavior, and/or investment objectives from other types of large, internationally active institutional investors that are operated by or for private owners [Chen, Harford, and Li (2007); Ferreira and Matos (2008); Cronqvist and Fahlenbrach (2009); Aggarwal, Erel, Ferreira, and Matos (2011)]. The answer to this question should guide all optimal public policy and financial valuation responses to the rise of SWFs. On one hand, SWFs resemble other internationally active investment vehicles such as pension funds, buy-out funds, and mutual funds that have been extensively researched by financial economists. SWFs are particularly similar in structure and expressed objectives to hedge funds, as described by Klein and Zur (2009); Brav, Jiang, Partnoy, and Thomas (2008); and Becht, Franks, Mayer, and Rossi (2009), in that SWFs are also stand-alone, unregulated pools of capital, managed by investment professionals, which often acquire large equity stakes in publicly traded companies. If SWFs are really just large, commercially minded financial investors, there is no compelling reason to establish regulatory barriers to their inward investments, demand greater disclosures from them than from other investors, or assess their financial performance any differently than one would a private institutional investor. However, if SWFs are inherently different because of their state ownership, as Truman (2008, 2011) and others suggest, then these funds will inevitably be viewed and regulated differently than other large institutional investors.

This survey is structured as follows. Section 1 addresses the difficulties of accurately defining a SWF, discusses the evolution of the original SWFs from stabilization to wealth funds, and examines how SWFs are organized and funded. Section 2 describes how SWFs are organized and operated, and details the key measures developed to assess the operational and informational transparency and institutional quality of different funds. This section concludes by comparing the organizational structures, corporate governance systems, and investment patterns observed for SWFs with those documented empirically for other internationally active institutional investors, both state-owned and private. Section 3 concludes and points to issues that future researchers sorely need to address.

1. What are Sovereign Wealth Funds, and Why do We Care?

There is no consensus, in either the academic or practitioner literature, on exactly what constitutes a sovereign wealth fund. While SWFs are a heterogeneous group, most of the larger and more established SWFs evolved from funds set up by governments with revenue streams dependent on the value of one underlying commodity and who wished to diversify investments to stabilize revenues. Accordingly, most SWFs have been established in countries that are rich in natural resources, with oil-related SWFs being the most common and largest group. These include the funds sponsored by the Arab Gulf countries, Russia and the ex-Soviet republics, Malaysia, Brunei, and Norway. A newer set of funds has recently been established in response to discoveries of major new resource endowments—particularly natural gas, but also oil, coal, diamonds, copper, and other minerals. A second important group of SWFs includes those financed out of accumulated foreign currency reserves resulting from persistent and large net exports, especially the funds based in Singapore, Korea, China, and other East-Asian exporters.

Because definitions vary and because few funds have disclosed key organizational details, heterogeneous funds are often grouped into the SWF category, even though there are significant differences between funds with respect to organizational structure (separately-incorporated holding companies versus pure state ministries), investment objectives (preservation of wealth versus wealth diversification and growth), compensation policies and status of fund managers (incentivized professionals versus fixed-wage bureaucrats), and degree of financial transparency (Norway's Government Pension Fund-Global and Australia's Future Fund versus almost all other large funds).

Most definitions of SWFs suggest these are state-owned investment funds (not operating companies) that make long-term domestic and international investments in search of commercial returns.[4] Some definitions are broader than this, as in Truman (2008), who defines a sovereign wealth fund as "a separate pool of government-owned or government-controlled financial assets that includes some international assets." Consistently, Balding (2008) shows that an expansive definition encompassing government-run pension funds, development banks, and other investment vehicles would yield a truly impressive total value of "sovereign wealth."[5]

In this survey, we use the definition of a sovereign wealth fund employed by the Sovereign Investment Lab: (1) an investment fund rather than an operating company; (2) that is wholly owned by a sovereign government, but organized separately from the central bank or finance ministry to protect it from excessive political influence; (3) that makes international and domestic investments in a variety of risky assets; (4) that is charged with seeking a commercial return; and (5) which is a wealth fund rather than a pension fund—meaning that the fund is not financed with contributions from pensioners and does

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

[5] In ongoing research employing the Thomson Reuters Securities Data Corporation Mergers and Acquisitions database and other databases, we identify over 12,100 investments, worth over $1.67 trillion, just in listed-firm stocks by state-owned investment companies, stabilization funds, commercial and development banks, pension funds, and state-owned enterprises. If we add state purchases of government and corporate bonds, plus SWF holdings and foreign exchange reserves of roughly $12 trillion, the total value of state-owned financial assets may already exceed $25 trillion. David Marsh writes that global public investors now own about $30 trillion of assets worldwide. See David Marsh, "Sovereign-wealth funds must move out of shadows," MarketWatch (March 10, 2014, http://www.marketwatch.com/story/sovereign-wealth-funds-must-move-out-of-shadows-2014-03-10).

not have a stream of liabilities committed to individual citizens.[6] While this sounds clear-cut, ambiguities remain. Several funds headquartered in the United Arab Emirates are defined as SWFs, even though these are organized at the emirati rather than the federal level, because the emirates are the true decision-making administrative units.[7] Table 1 presents the 33 SWFs that meet these criteria, the countries that sponsor the funds, their year of inception, their principal source of funds, and estimates of the current value of assets under management (AUM). We also include Saudi Arabian Monetary Agency (SAMA) in this listing, since the Saudi government announced in June 2014 that it would establish a large SWF, partly encompassing SAMA's foreign assets.

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

There is some controversy regarding which is the largest SWF. Historically, the Abu Dhabi Investment Authority (ADIA) has been awarded that title, but that was mostly because the fund has never reported its assets under management, and commentators assumed that Abu Dhabi's massive oil export revenues must translate into an equally massive fund, with AUM estimates often exceeding $800 billion. The Sovereign Wealth Fund Institute estimates that ADIA has AUM of about $773 billion, which places it second in size behind Norway's Government Pension Fund-Global. The GPFG is growing very rapidly and has reported AUM of $840.8 billion as of March 17, 2014. If the Saudi Arabian Monetary Agency is re-classified as a SWF, it will be third largest, with foreign assets of $663.3 billion, but the China Investment Corporation (CIC, AUM of $575.2 billion at year-end 2012) is now the third largest SWF, as defined by the Sovereign Investment Laboratory. Significantly smaller is fourth-ranked Kuwait Investment Authority (KIA, estimated AUM of $410.0 billion), which is also the oldest SWF having been founded in 1953.[8] Amazingly, the small city state of Singapore itself sponsors the fifth and sixth largest SWFs, the Government of Singapore Investment Corporation (GIC, estimated AUM of $285.0 billion), which is charged primarily with international investing, and Temasek Holdings (AUM of $173.3 billion as of March 31, 2013), which focuses on domestic and regional investments. The United Arab Emirates alone accounts for six of the 33 SWFs on this list, and other Arabian Gulf states account for another four. Only four funds are from western-style democracies (Norway, Australia, New Zealand, Ireland), though

[6] For a comparison of SWFs with state-run pension funds, see Blundell-Wignall, Hu, and Yermo (2008).They conclude that SWFs and public pension reserve funds (PPRFs) are similar in some ways, but differ significantly with respect to objectives, investment strategies, sources of financing, and transparency requirements.

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

[8] The Kuwaiti SWF is also unusual among large funds in that it is funded based on a formulaic percentage of the sales of Kuwait National Oil Company. The fund is automatically granted 10% of the oil revenues of the state, and the finance ministry recently approved increasing the allocation to 25%. See Henny Sender, Kuwait Investment Authority: Integrity and caution are no handicap, *Financial Times* (April 24, 2013).

many others are sponsored by countries meeting most definitions of being democratic (Korea, Malaysia, Singapore, Russia).[9] No fewer than 19 of the 33 funds have been launched since January 2000.

The eighteen SWFs that are financed principally from oil revenues have combined AUM of \$3.228 trillion, or about 68 percent of the \$4.756 trillion total for all funds, while trade-surplus-financed SWFs account for most of the rest. It should be noted that this fairly restrictive definition of SWFs yields a smaller number and total AUM value than do most other classifications. For example, the Sovereign Wealth Fund Institute lists 64 SWFs with AUM of \$6.357 trillion in March 2014. However defined, these funds have been growing much more rapidly over the past several years than have hedge funds, pension funds, and other private institutional investors.

1.1. The Historical Evolution of SWFs—From Stabilization to Financial Investor

Most of the well-established SWFs evolved in some way from commodity stabilization fund precursors. The main purpose of a stabilization fund is to offset revenue declines due to falling commodity prices or production levels, and most such funds are employed by countries whose budgets are highly dependent on natural resources, such as oil, copper, diamonds, or other commodities. A large portion of the existing literature regarding commodity stabilization funds has focused on their efficiency and on the related size question—that is, on whether current stabilization funds are under- or over-capitalized.[10] As Balding (2012) discusses in detail, the early pre-1980s stabilization funds often suffered from poor management and from the constant danger of politicians succumbing to the temptation to promote excessive domestic spending. A significant evolution was marked by the Chicago School economists charged with reforming the Chilean economy in the mid-1980s, who established the Chilean Social and Economic Stabilization Fund in 1985 with partial funding from the World Bank. The fund incorporated many of the characteristics of a modern SWF and, importantly, benefited from an independent board setting target levels of accruals and withdrawals, with the goal of minimizing political interference with the fund and thus restraining public spending. The subsequent success of the Chilean fund led the World Bank to advise other states to replicate this model. While the evolution from stabilization funds to SWFs was thus a gradual process, Balding (2012) notes that stabilization funds aim at promoting local development (by smoothing spending booms and busts related to volatile commodity prices), while SWFs aim at financial returns. As a consequence, stabilization funds tend to invest

[9] It is perhaps no surprise that so many oil-funded SWFs are from non-democratic countries, since it is well established that abundant oil reserves (which promote large SWFs) and the evolution of democratic societies are natural enemies. Tsui (2009) finds that discovering 100 billion barrels of oil (approximately the initial endowment of Iraq) pushes a country's democracy level almost 20 percentage points below trend after three decades. Wolf and Pollitt (2008) and Wolf (2009) also show clearly that national oil companies are significantly less efficient and innovative than privately-owned international oil companies—and thus document the scale of value-destruction associated with state ownership/control of petroleum reserves and production.

[10] Commodity stabilization funds are discussed and analyzed in Arrau and Claessens (1992) while the U.S. equivalent, state "rainy day" funds, are described in Douglas and Gaddie (2002).

domestically, while SWFs attempt to diversify revenue streams by investing mostly abroad. In part, this foreign focus is also a result of governments using SWFs to reinvest commodity-originated funds abroad, perhaps to prevent the local currency from appreciating and, in general, to avoid what has come to be known as "Dutch disease"—or an overheating of the local economy that could hurt the development of other, non-commodity, sectors.[11] Yet we need to recognize that many of the modern SWFs, implicitly or explicitly, carry at least a partial stabilization mandate, as the domestic financial-sector recapitalizations seen in 2008 and 2009 attest. As we have seen, the consensus in SWF-related corporate and institutional research is that much of the growth in SWFs will originate from a reallocation of assets from stabilization funds; accordingly, the issue of optimal size of stabilization funds is very relevant to the overall discussion of SWFs.

While the older SWFs evolved out of stabilization funds, those established since 2000 were mostly created as *de novo* SWFs, even though the term itself had not yet been coined in many cases. However created, SWFs grew quietly but steadily until 2005. Since the start of 2006, SWF total AUM have grown very rapidly, due to a shift in world trading patterns and the large rise in world oil prices that fueled dollar-denominated surpluses for mostly Asian countries running large trade surpluses and oil exporters in the Arabian Gulf, Asia and Europe. As noted in the Introduction, Andrew Rozanov coined the term "sovereign wealth fund" in 2005, which caught on slowly but inexorably.[12]

1.2. The Evolving Political Response to Cross-Border SWF Investments

SWFs first entered popular discourse during early 2007, when the newly-formed China Investment Corporation (CIC) purchased a $3 billion, non-voting equity stake in Blackstone Group immediately prior to the group's highly touted (but subsequently under-performing) initial public offering. Later that same year, and again in early 2008, SWFs surged to the forefront of financial policy discussions when several, mostly Arabian Gulf-based SWFs effectively rescued the western banking system by purchasing some $60 billion worth of newly issued stock in large American and European banks at the height of the subprime mortgage crisis. In total, SWFs invested almost $90 billion in the stock of U.S. and European financial institutions between July 2005 and October 2008, and CIC injected an additional $40 billion into recapitalizing two Chinese state-owned banks in late 2007 and 2008. These funds have thus collectively invested more new capital into the world's financial institutions recently than any other single entity except the entire United States government.

[11] We thank Matthias Van Rendenborgh for his discussion on the topic. Kalter and Schena (2013) offer an in-depth analysis of emerging market economies needing to balance SWF asset growth, domestic development, and the risks related to recycling SWF assets domestically.

[12] The slow take-up of "sovereign wealth fund" is illustrated by noting that the *Financial Times* first used the term on May 17, 2007, two years after Rozanov's article was published. Once the phrase reached a critical mass of usage—and the *FT* began employing the term—usage quickly became universal, to the point where a search of the *Financial Times* website (www.ft.com) on March 26, 2014 yielded 5,607 hits for "sovereign wealth fund".

These episodes highlighted both the sheer financial firepower of SWFs and just how dependent on them western financial economies had become, and vice versa [Kunzel, Lu, Petrova, and Pihlman (2011); Bolton, Samama, and Stiglitz (2012)]. Early comments by public officials and analyses in the popular press tended to be very hostile towards SWFs, emphasizing perceived problems associated with their growth.[13] Political opposition to SWFs was exemplified by German Chancellor Angela Merkel who, in June 2007, publicly complained about Russian SWFs buying pipelines and energy infrastructure in Europe, and by a surge of discussions regarding SWFs in the U.S. Congress.

The issues raised by the early critics of SWFs included: (1) the possibility that their capital could be used to further political purposes and to acquire stakes in strategic industries; (2) the risk of equity price bubbles due to the sheer size of their investments and the related decline in demand for Treasury bonds; (3) the risk of an increase in volatility of financial markets; (4) the possibility that SWFs might have a detrimental effect on corporate governance because of political motives or lack of sophistication; and (5) the risk of the emergence of a new form of financial protectionism as a reaction to SWFs. The criticism most often mentioned was (6) the lack of transparency by SWFs—and this is one criticism that lingers to the present day. There was also great concern (7) that SWFs were growing at what appeared to be an exponential rate. By far the most important fear regarding SWFs was, and to some extent remains, (8) that as state-owned funds they would not act as strictly commercially-minded investors, seeking only the highest possible financial return, but would instead be forced to invest strategically by home-country governments seeking political influence or access to foreign technology. Most of these fears have proven groundless, as there have been no major documented cases of SWFs investing abroad as political agents of home-country governments; quite the reverse—SWFs have proven to be passive and non-confrontational with target firm managers almost to a fault. As foreign, state-owned investment funds, any posture that SWFs take other than being purely passive investors might generate political pressure or a regulatory backlash from recipient-country governments (Dinç and Erel, 2013).[14] Even when SWFs do take majority stakes—which Miracky, Dyer, Fisher, Goldner, Lagarde, and Piedrahita (2008) show occurs almost exclusively when SWFs invest in domestic companies—the funds rarely seem to challenge incumbent managers [Mehropouya, Huang, and Barnett (2009)]. English, Smythe, and McNeil (2004) and Woitdke (2002) find similar behavior by U.S. public-sector pension funds and by California Public

[13] See Lawrence Summers, "Sovereign wealth funds shake the logic of capitalism," *Financial Times*, July 30, 2007; Steven R. Weisman, "Concern about 'sovereign wealth funds' spreads to Washington," *International Herald Tribune*, August 20, 2007, and Krishna Guha, "Warning over sovereign wealth funds," *The Financial Times*, June 22, 2007.

[14] Active foreign government involvement in a domestic target is usually met with significant public opposition, and so governments often choose to be passive investors, especially in their foreign holdings. Prabakhar (2009), Masters (2013), and Jackson (2014) all show that involvement of a foreign state-owned entity in a large acquisition of a US company is certain to prompt scrutiny by the Committee on Foreign Investment in the United States (CFIUS).

Employee Retirement System (CalPers) managers, respectively. More positively, SWFs provided invaluable liquidity to both global and domestic capital markets during the Financial Crisis of 2008-09. Today, most governments actively court SWF investment, with Britain being the most successful by far.

1.3. Countries Proposing or Launching SWFs Recently

Despite the ambiguous political reaction to SWFs in the West, and notwithstanding the meager empirical evidence supporting their effectiveness (which we survey in section 4), many countries have launched or proposed new funds in recent years. The Sovereign Wealth Fund Institute (SWFI) reports that 32 SWFs were created between 2005 and 2012, and that there were about 70 funds in existence in October 2013 with assets of nearly $5.5 trillion.[15] Table 2 describes 26 new SWFs that have been announced since January 2008. In most cases, the funds were proposed immediately after a major new natural resource reserve was discovered, or when administration of an existing resource base was restructured. Examples of countries that proposed or established a SWF after a new resource was proven include Brazil, Israel, Papua New Guinea, and Mongolia. These governments respectively proposed new SWFs after large oil deposits were discovered off Brazil's coast by Petrobras; after two immense natural gas fields were proven within Israel's Mediterranean territory; in anticipation of windfall payments—that ultimately might exceed 10 times Papua New Guinea's annual GNP—from a newly-built liquefied natural gas export project; and after mining concessions were granted to foreign companies to develop Mongolia's huge new mineral deposits. Much the same experience motivated the governments of Ghana, Liberia, Sierra Leone, and Tanzania to propose new SWFs after new natural resource bases were proven. Greenland and Lebanon showed even greater anticipation, and proposed new SWFs after likely new natural gas fields in their territories were identified, but before their full commercial potential was even proven.

Angola, Chile, Iran, Nigeria, and Russia all launched new or restructured SWFs as a way to change how an existing stream of royalty payments would be administered. The stated rationales varied; Angola and Nigeria set up new funds to increase transparency and ensure that the nation's resource wealth would not be misappropriated; Iran set up a fund to help it circumvent international sanctions; and Chile and Russia re-oriented existing funds more towards making international investments.

A third common motivation for launching a SWF has been to allow "excess" foreign exchange reserves held by the central bank to be channeled away from static holdings of low-yielding sovereign (usually U.S. government) bonds and into higher-return equity and corporate debt investments. This impulse to "sweat" excess reserves motivated the governments (or at least governing parties) of India, Japan, Panama, Saudi Arabia, and South Africa to propose new SWFs.

[15] These aggregate SWF data are from Javier Blas, "Protecting Nigeria oil SWF is no easy task," *Financial Times* (October 10, 2013). The recent surge in setting up African SWFs is described in Triki and Faye (2011).

Three patterns stand out regarding all of the instances of new and proposed SWFs described above. First, these governments usually proposed setting up a wealth fund to preserve and protect new monetary inflows, rather than using the new monies to launch spending programs or to channel windfall funds through existing state-owned financial entities. Relatedly, all these proposals reflect a strong desire to ensure that new resource flows would be channeled through a transparent, accountable, and professionally managed investment company rather than through existing—and often quite corrupt—state investment vehicles or state-owned banks.[16] Third, almost without exception, these new funds are being modeled after Norway's GPFG with respect to organizational design, transparency and managerial professionalism, and investment preference for listed shares and bonds of international companies.

2. How are Sovereign Wealth Funds Organized and Operated?

All modern governments play leading roles in their nations' economic affairs, and they conduct direct financial interventions through a wide range of entities. At one extreme are official state ministries, such as the Treasury and the Finance Ministry, while at the other extreme are legally separate, individually incorporated state owned enterprises (SOEs) through which states exert influence as the controlling shareholder. In between these organizational poles lie regulatory agencies, boards and commissions (such as the U.S. Securities and Exchange Commission and the Social Security Administration); state-owned but separately capitalized commercial and development banks (such as Brazil's BNDES and Germany's KfW); and, most important of all, central banks, which are integrated organs of government, even when granted substantial operating autonomy. There is a wide variation in the degree to which these institutions are under the direct political control of the national government, how much operational discretion the entity's managers exercise, and even whether the entity's workers are state employees with civil service protection or are part of the private-sector workforce.

As described in Das, Lu, Mulder, and Sy (2009); Jain (2009); and Al-Hassan, Papaioannou, Skancke, and Sung (2013), governments wishing to set up a SWF must confront all of these organizational, ownership, and personnel issues, beginning with the optimal degree of separation between the new SWF and the existing central bank and Finance Ministry. Stabilization funds and foreign exchange reserve management groups tend to be fairly tightly bound within existing entities, but when these funds evolve into SWFs most governments deliberately separate them—either legally or

[16] The existing evidence examining the performance of state-owned investment vehicles is indeed quite damning. In particular, their investments in target firms' are generally found to be associated with lower target firm valuations [Jiang, Lee, Yue (2010); Lin, Ma, Malatesta, Xuan (2011)]. State-owned banks have also been documented to act and lend differently than do privately owned banks, and this generally is associated with poor aggregate economic performance and value reductions at specific target firms [LaPorta, Lopez-de-Silanes, Shleifer (2001); Sapienza (2004); Brown and Dinç (2005); Dinç (2005); Morck, Yavuz, Yeung (2010); Houston, Lin, Ma (2011); Gropp, Hakenes, Schnabel (2011); Bailey, Huang, Yang (2011); Karolyi and Taboada (2011); Mohsi and Otchere (2013); and Iannotta, Nocera, Sironi (2013)].

operationally, or both—from other ministries and agencies in order to shield the funds' managers from direct political pressure. There is, however, great variation between countries in how effectively SWFs are shielded from politics, and this is especially problematic for funds based in non-democratic countries and kingdoms. At one extreme lies Norway's GPFG, wherein investment policy is set by an independent board of experts based on strategic guidelines established by the nation's legislature (Towner 2013). The fund's managers are fully protected from partisan political pressures, even though the fund is administered by Norges Bank (the central bank). At the other extreme (among large funds) lie Abu Dhabi's ADIA and Singapore's Government Investment Company, both of which report only to the nation's rulers and refuse to disclose even such basic information as total AUM. Other funds fall somewhere in between with respect to reporting lines of authority and mandated levels of disclosure. Figure 2 presents a stylized representation of how a new fund might be organized, funded, staffed, and operated. The nation's culture and political philosophy will be expressed through decisions regarding each variable in this flow diagram. Open, democratic societies typically establish funds through explicit legislation, endow them with financing from a dedicated revenue source, provide specific operating and investment objectives, mandate high standards of employee professionalism and information disclosure, and frequently also give them a mandate to invest ethically (Dimson, Karakaş, and Li, 2013). Less democratic societies make different choices at these margins when establishing their funds, with varying emphasis being placed depending on the goals of the sponsoring regime.

****** Insert Figure 2 about here ******

2.1. The Internal Governance and Staffing of SWFs – Why it Matters

A key fact about all the larger SWFs is that they tend to have very small staffs, even though many funds control assets worth more than \$100 billion. Norway's GPFG, China's CIC, and Abu Dhabi's ADIA collectively have fewer than 3,000 employees, yet have combined AUM of over \$1.1 trillion. In comparison, privately-owned Fidelity Investments manages a comparable amount of its clients' assets, but employs 38,000 people. These meager SWF staffing levels have two important implications for fund operations and investment management. First, most large funds employ numerous external managers to actually invest the funds' money and oversee segments of their portfolios, as described in Clark and Monk (2009), Dixon and Monk (2013), and Al-Kharusi, Dixon and Monk (2014).[17] As in many other areas, Norway's GPFG and ADIA represent polar examples of this tendency. Since GPFG follows an almost purely index-matching investment strategy, it manages over 95 percent of its investment portfolio

[17] Dixon and Monk (2013) and Al-Kharusi, Dixon and Monk (2014) also describe why many SWFs in distant (from major financial centers) regions might choose to set up satellite offices in financial centers or establish formal ties with asset managers located therein. Dixon and Monk note that many SWFs have grown disillusioned with paying high fees for mediocre returns; in their delicious phrase(page 42), "they [SWFs] were, and in most cases still are, paying for alpha but only receiving beta returns."

in-house (through Norges Bank Investment Management, or NBIM), whereas ADIA farms out over two-thirds of its total portfolio to external management.

The second key implication of the fact that even large SWFs have small professional staffs is that these funds cannot play any important direct corporate governance role in the companies in which they invest. At any point in time, Norway's GPFG owns stock in over 8,000 companies, so it is unable to assign staff to sit on corporate boards or interact individually with investee firm managers—even if it wished to do so. Other funds, which do not spread their equity investments as broadly as GPFG, can sometimes assign staff to sit on the boards of a few large investee firms, but almost always in domestic rather than foreign companies. Bortolotti, Fotak, and Megginson (2010) find that SWFs acquire seats in only 53 of 355 cases (14.9%) where director identities of investment targets could be verified, and most of these were domestic companies. Even in those cases, the funds are much more likely to nominate an employee of a fund subsidiary company than from the parent fund itself.

2.2. Widely Varying Transparency Measures and Recent Changes

SWFs have long fascinated corporate governance researchers, since their rise to global prominence brought forth a unique new class of major international investors: state-owned investment funds with massive capital bases, with demonstrated tastes for purchasing listed shares across borders, and with no real need to make liquid investments. Various measures of the transparency and internal corporate governance of SWFs have been suggested, but two have been embraced universally enough to be considered standards. The first measure is the Linaburg-Maduell Transparency Index, which was developed by Carl Linaburg and Michael Maduell and is used by the Sovereign Wealth Fund Institute (Maduell is the SWFI's founder and current CEO). The second measure is the SWF Scoreboard, popularly called "Truman Scores" after Edwin Truman (2008, 2011), who defined and popularized the Scoreboard.

The two measures are quite similar in stressing how transparent the funds are with respect to their internal organization, the amount of information they disclose about fund investments, and their political distance from the host/sponsoring government. In constructing the index, Truman (2011) links together the following elements into four categories: "(1) structure of the fund, including its objectives, links to the government's fiscal policy, and whether the fund is independent from the countries' international reserves; (2) governance of the fund, including the roles of the government, the board of the fund and its managers, and whether the fund follows guidelines for corporate responsibility; (3) accountability and transparency of the fund in its investment strategy, investment activities, reporting, and audits; and (4) behavior of the fund in managing its portfolio and its risk management policies, including the use of leverage and derivatives" (http://www.iie.com/publications/briefs/truman4983.pdf). The maximum possible Truman score is 100 and the highest score assigned in 2011 (the last year available) is 96, for

Norway's GPFG. The lowest assigned score is 15, for both Istithmar World and the Qatar Investment Authority (QIA).

Truman added another transparency/governance measure after 2008—how well individual SWFs complied with the "Santiago Principles" agreed to in September of that year by members of the International Working Group on Sovereign Wealth Funds at an IMF-sponsored conference in Chile (http://www.iwg-swf.org/pubs/gapplist.htm). This working group evolved into the International Sovereign Wealth Fund Forum, and includes the largest SWFs, as well as 25 host and sponsor countries. As with the Truman scores, the maximum "Santiago Principles" value is 100 and Norway's GPFG received a 96 score in 2011, while Qatar Investment Authority (QIA) came in last with a score of 15.

The Linaburg-Maduell Index (http://www.swfinstitute.org/statistics-research/linaburg-maduell-transparency-index/) is based on "ten essential principles that depict sovereign wealth fund transparency to the public." A value of either zero (absent) or one (present) is assigned for each essential principle for each fund, so the best score attainable is 10. The SWF Institute (sponsors and publishers of the index) recommends that a fund must have a minimum value of 8 to be considered adequately transparent, and 24 of the 53 SWFs to which the Institute assigns an Index value in April 2014 have scores of 8 or higher. Ten funds have Index values of 10, while six have Index values of only 1. Table 3 summarizes the most recent Linaburg-Maduell and Truman scores for 25 of the largest SWFs. We complement these fund scores with two measures of transparency and economic freedom for the countries that sponsor the funds, the Transparency International 2013 Corruption Perception Index and the Heritage Foundation's 2014 Economic Freedom Index. As the name implies, the Corruption Perception Index measures how honest, transparent and corruption-free a country is perceived to be, while the Economic Freedom Index essentially measures how "capitalist" a country is, or how closely that nation's economy approximates a free market.

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

Much of what can be deduced from studying Table 2 will be unsurprising. In general, democratic countries such as Norway, New Zealand, Ireland, Australia, and Canada rank very highly on the Corruption Perception Index, and their SWFs rank equally highly on the SWF Scoreboard and Linaburg-Maduell Index. Likewise, relatively non-transparent societies such as Kuwait, China, the United Arab Emirates, Russia, Oman, and Brunei rank quite low on the Corruption Perception Index, while the SWFs they sponsor rank similarly low on the transparency indices. Countries that are both transparent and free market-oriented (that rank high on the Economic Freedom Index)—such as New Zealand, the United States, Ireland, Australia, and Canada—also have very good Corruption Perception scores and their funds rank near the top in terms of transparency. On the other hand, countries with closed or state-dominated economies (Kuwait, UAE, China, Russia, Malaysia, Brunei) score poorly on both the national and the fund-specific indices.

But there are also surprises imbedded in Table 3's data. Singapore ranks as one of the world's least corrupt and most open countries, but its two main funds, Temasek and GIC, rank mid-range at best on the SWF Scoreboard measure (Truman score) and GIC ranks in the bottom half of Linaburg-Maduell Index scores with a value of 6. Korea also ranks fairly high (upper-quartile) on the national measures of corruption and economic freedom measures, but Korea Investment Corporation has an unimpressive SWF Scoreboard value of 60, though it scores higher (9) on the Linaburg-Maduell Index. However, the greatest surprises of all involve how two countries, East Timor and Azerbaijan, with quite poor (generally bottom quartile) national scores for both corruption perception and economic freedom have been able to establish SWFs that have SWF Scoreboard values of 85 and 76 and Linaburg-Maduell Index values of 8 and 10, respectively. These contradictory findings demonstrate that a particular fund's level of operational and disclosure transparency need not be a mechanical reflection of the openness or free-market orientation of the sponsoring nation. Instead, sponsoring countries can establish funds that are either more or less transparent than the society from which they emerged and for which they act as fiduciaries.

2.3. How Do SWFs Differ from Other Large, Internationally Active Institutional Investors

As discussed in the introduction, the key question regarding SWFs is whether they truly differ in form, motive, and effect from other large, internationally active institutional investors. In many ways, this question cuts across this survey and is reprised in each section. For example, an analysis of SWF portfolio allocations requires a private-sector comparison group, as in Chhaochharia and Laeven (2009), who compare SWFs to pension funds, and Avendaño and Santiso (2012), who compare SWFs to mutual funds; a discussion of the impact of SWFs on the behavior and governance of investment targets requires a private-sector benchmark, as in Karolyi and Liao (2011), or Bortolotti, Fotak, and Megginson (2014).

Yet, we would like to briefly summarize here the main characteristics that make SWFs truly distinct and that carry important implications of potential interest to academic observers. In this respect, the defining characteristic of SWFs is their state ownership. On the positive side, in terms of social welfare, governments could have broader goals than simple wealth maximization at the firm level—for example, the maximization of employment levels and promotion of broad national industrial interests. On the negative side, politicians might distort priorities through their rent-seeking influence and because they impose on enterprises multiple, perhaps conflicting objectives. As state-owned actors, SWFs might suffer from such deviations from the set of objectives normally associated with private-sector investors, and this, in turn, might translate political influence onto their investment targets. In this sense, SWFs investments suffer from the same problems of "multiple principals" and cognitive dissonance described in the "mixed ownership" by Boardman and Vining (2012) and Vining, Boardman, and Moore (2014). Yet, while many other examples of mixed ownership result in opaque entities, SWFs often apply mixed ownership to publicly traded, and hence transparent, firms allowing for a more data-rich investigation of the impact and efficiency of government investments. Whether this mixed ownership, as Vining, Boardman and Moore (2014) put it, results in the "best of both worlds"—merging government's concern for social welfare to private sector efficiency—or in the "worst of both worlds" (crony capitalism) is one of the lessons we can draw by investigating the impact of SWFs on their investment targets.

Second, SWFs, with rare exceptions, have no explicit liabilities—unlike, for example, heavily levered hedge funds or pension funds that have to budget for periodic cash outflows. In this sense, they have the potential to be true long-term shareholders, with very long investment horizons and very low liquidity requirements, possibly the most effective monitors as in Chen, Harford, and Li (2007). Of course, whether that potential is realized or hampered by low staffing levels, political objectives, and a mistrust of a foreign government as a shareholder is a matter of empirical inquiry.

3. Conclusions

The research published so far has led to some important lessons. First of all, though large, SWFs should not be frightening. Their assets under management, at $4.5 trillion, while large in absolute terms, are still only a small fraction of the total value of financial assets worldwide, estimated at $212 trillion. Further, while commentators often point out that SWFs are much larger than most hedge funds, they often fail to note that SWFs are dwarfed by banks, mutual funds, and insurance companies. Also, SWFs are often too politically constrained to be a serious financial threat, mostly due to the geopolitical goals of their governments that, far from pushing for influence abroad, often constrain their activities. Finally, SWFs are not only operationally and financially similar to other institutional investors, but often behave like big, passive pools of capitals (what cynics might call "big, dumb capital") due to low levels of internal staffing—or, as in the case of Norway, due to an explicit investment strategy aimed precisely at preventing undue influence and the resulting foreign backlash.

A second lesson emerging from this literature is that SWFs are not homogeneous—and should not be treated as such. Norway's GPFG stands apart, not just as the largest SWF, but also as the most transparent and diversified fund. GPFG has emerged as a true alternative to the "Yale Model" of endowment fund management, by limiting its investments to small stakes in a large number of firms diversified in both geography and industry. Qatar's fund, on the other hand, is the champion of a much more active role of SWFs, making fewer, large and visible investments both in equities and, even more, in iconic real-estate deals—and even playing the part of the deal-maker, as in the recent Glencore acquisition of Xstrata. Yet, to gain insight into SWF behavior, we should not be fooled by this heterogeneity, as SWFs are not idiosyncratic either; certain systemic differences can be identified and used to classify them into distinct groups. SWFs differ principally on funding source—with commodity-based funds on one side, clustering geographically around the Gulf area and trade-imbalance funds more common in East Asia—and on sponsor-country characteristics. While many funds originate from non-democratic regimes, there are big exceptions as well. Finally, we find substantial differences in transparency levels.

Third, while it would be naïve not to recognize that SWFs are state-owned entities that often make politicized capital allocations, we need to be mindful of the fact that no evidence exists, to date, of political interference in the behavior of the foreign targets in which SWFs invest. Of course, the same cannot be said for their domestic investments—but it is the foreign actions of these state-owned vehicles that trigger most fearful responses. Accordingly, while we recognize the need to keep monitoring and studying the behavior of these state-owned investment vehicles in foreign markets, the evidence to date does not justify the protectionist response that so many commentators and politicians have been advocating.

In some sense, SWFs are a "second best" organizational form as fiduciaries. As state-owned entities, they are constrained in their ability to invest abroad and to improve the governance of their investment targets through active monitoring, as other institutional investors have been shown to do. Small, under-motivated staffs, often associated with state-owned institutions, frequently compound the lack of activity induced by those constraints. As a result, while no definite statements can be made due to the distinctive lack of transparency of SWFs, what data is available indicates that private funds out-perform SWFs across the board in their investments. Extant research has amply shown that state ownership leads to a dramatic deterioration in efficiency, as SOEs are often managed by teams that are either under-motivated and "captured," at best, or incompetent and corrupt at worst. SWFs, when properly organized, can insulate investment targets from political oversight and influence and, in this way, mitigate some of the problems that plague SOEs. In some sense, a properly structured SWF—and Norway is the model, with its management team well insulated (but, even then, not completely insulated) from political pressures—is a hybrid structure, allowing for government ownership without government management. In societies in which the state plays a dominant economic role, SWFs might be the only real, feasible alternative to full governmental control.

References

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

Al-Hassan, Abdullah, Michael Papaioannou, Martin Skancke, and Cheng Chih Sung, 2013. Sovereign wealth funds: Aspects of governance structures and investment management. International Monetary Fund working paper WP/13/231.

Al-Kharusi, Qais A., Adam D. Dixon, and Ashby H.B. Monk, 2014. Getting closer to the action: Why pension and sovereign funds are expanding geographically. Working paper, Stanford University.

Arrau, Patricio and Stijn Claessens, 1992. Commodity stabilization funds. World Bank Policy Research Working Paper Series 835.

Avendaño, Rolando, 2012. SWF Investments: Firm-level preferences to natural endowments. Working paper, Paris School of Economics.

Avendaño, Rolando and Javier Santiso, 2011. Are sovereign wealth funds politically biased? A comparison with other institutional investors. In Narjess Boubakri and Jean-Claude Cosset, eds., *Institutional Investors in Global Capital Markets* (Emerald Group Publishing Limited 12), 313-353.

Avsar, Veysel, Cem Karayalcin, and Mehmet Ali Ulubasoglu, 2013. State-owned enterprises, political ideology, and redistribution. *Economics & Politics* 25, 387-410.

Bailey, Warren, Wei Huang, Zhishu Yang, 2011. Bank loans with Chinese characteristics: Some evidence on inside debt in a state-controlled banking system. *Journal of Financial and Quantitative Analysis* 46, 1795-1830.

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

Balding, Christopher and Yao Yao, 2011. Portfolio allocation for sovereign wealth funds in the shadow of commodity-based national wealth. In Narjess Boubakri and Jean-Claude Cosset, eds., *Institutional Investors in Global Capital Markets* (Emerald Group Publishing Limited 12), 293-312.

Balding, Christopher, 2012. *Sovereign Wealth Funds: The New Intersection of Money and Politics* (First Edition, New York: Oxford University Press 2012).

Becht, Marco, Julian Franks, Colin Mayer, and Stefano Rossi, 2009. Returns to shareholder activism: Evidence from a clinical study of the Hermes UK Focus Fund. *Review of Financial Studies* 22, 3093-3129.

Blundell-Wignall A., Yu-Wei Hu, and Juan Yermo, 2008. Sovereign wealth and pension fund issues. OECD Working Papers on Insurance and Private Pensions 14.

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

Boardman, Anthony E. and Aidan R. Vining, 2012. The political economy of public-private partnerships and analysis of their social value. *Annals of Public and Cooperative Economics* 83, 117-141.

Bolton, Patrick, Frederic Samama, and Joseph E. Stiglitz, eds., 2012. *Sovereign Wealth Funds and Long-Term Investing*. Columbia University Press, New York.

Borisova, Ginka, Paul Brockman, Jesus Salas, and Andrey Zagorchev, 2012. Government ownership and corporate governance: Evidence from the EU. *Journal of Banking and Finance* 36, 2917-2934.

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

Borisova, Ginka, Veljko Fotak, Kate Holland, and William Megginson, 2014. Government ownership and the cost of debt: Evidence from government investments in publicly traded firms. Working paper, University of Oklahoma.

Bortolotti, Bernardo, Veljko Fotak, and Laura Pellizzola, 2013. SWF investment in 2013, in *Cautious Change--Sovereign Wealth Fund Annual Report 2012*. Sovereign Investment Lab, Università Bocconi, Milan, Italy.

Bortolotti, Bernardo, Veljko Fotak, and William Megginson, 2010. Quiet leviathans: Sovereign wealth fund investment, passivity, and the value of the firm. Working paper. University of Oklahoma and Sovereign Investment Lab.

Bortolotti, Bernardo, Veljko Fotak, and William Megginson, 2014. The sovereign wealth fund discount: Evidence from public equity investments. Working paper. University of Oklahoma and Sovereign Investment Lab.

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

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

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

Chhaochharia, Vidhi and Luc Laeven, 2009. Sovereign wealth funds: Their investment strategies and performance. Working Paper, International Monetary Fund.

Clark, Gordon and Ashby Monk, 2009. The Oxford survey of sovereign wealth funds' asset managers. Working Paper, University of Oxford.

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

Das, Udaibir, Yinqiu Lu, Christian Mulder, and Amadou Sy, 2009. Setting up a sovereign wealth fund: Some policy and operational considerations. IMF Working Paper WP/09/179.

Dimson, Elroy, Oğuzhan Karakaş, and Xi Li, 2013. Active ownership. Working paper, London Business School.

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

Dinç, I. Serdar and Isil Erel, 2013. Economic nationalism in mergers and acquisitions. *Journal of Finance* 68, 2471-2514.

Dixon, Adam D. and Ashby H.B. Monk, 2013. Will collaboration and co-investment gain ground? In *Cautious Change--Sovereign Wealth Fund Annual Report 2012*, Sovereign Investment Lab, Università Bocconi, Milan, Italy.

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

Douglas, James W. and Ronald K. Gaddie, 2002. State rainy day funds and fiscal crises: Rainy day funds and the 1990-1991 recession revisited. *Public Budgeting & Finance* 22, 19–30.

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

Ferreira, Miguel A., Massimo Massa, and Pedro Matos, 2010. Shareholders at the gate? Institutional investors and cross-border mergers and acquisitions. *Review of Financial Studies* 23, 601-644.

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

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

Houston, Joel F., Chen Lin, Ping Lin, and Yue Ma, 2010. Creditor rights, information sharing, and bank risk taking. *Journal of Financial Economics* 96, 485-512.

Iannotta, Giuliano, Giacomo Nocera, and Andrea Sironi, 2013. The impact of government ownership on bank risk. *Journal of Financial Intermediation* 22, 152-176.

Jackson, James K., 2014. The Committee on Foreign Investment in the United States (CFIUS). Congressional Research Service Report (January 2).

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

Kalter, Elior and Patrick Schena, 2013. Into the institutional void: managing sovereign wealth of emerging economies. In Kamar Jaffer, ed., *Investing in emerging and frontier markets* (Euromoney Books, London, UK).

Karolyi, Andrew and Rose Liao, 2011. What is different about government controlled acquirers in cross-border acquisitions? Working paper, Cornell University.

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

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

Kunzel, Peter, Yinqiu Lu, Iva Petrova, and Jukka Pihlman, 2011. Investment objectives of sovereign wealth funds—A shifting paradigm. IMF Working Paper WP/11/19.

La Porta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998. Law and finance. *Journal of Political Economy* 106, 1113-1150.

La Porta, Rafael, Florencio López-de-Silanes, and Andrei Shleifer, 2001. Government ownership of banks. *Journal of Finance* 56, 265-301.

Megginson, William, 2005. *The Financial Economics of Privatization* (First edition, New York: Oxford University Press, 2005).

Megginson, William, Matthias van Randenborgh and Robert C. Nash, 1994. The financial and operating performance of newly-privatized firms: An international empirical analysis. *Journal of Finance* 49, 403-452.

Megginson, William, 2013. Privatization trends and major deals of 2012 and 1H2013. *Privatization Barometer 2012 Report. Privatization Barometer* (http://www.privatizationbarometer.net). Milan.

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

Megginson, William L., Miao You, and Liyan Han, 2013. Determinants of sovereign wealth fund cross-border investments. *Financial Review* 48, 539-572.

Mohsi, Sana and Isaac Otchere, 2013. Risk-taking behavior of privatized banks. Working paper, Carleton University.

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

Prabhakar, Rahul, 2009. Deal-breaker: FDI, CFIUS, and Congressional response to state ownership of foreign firms. Working paper (Harvard College).

Rose, Paul, 2013. Sovereign investing and corporate governance. Working Paper, Ohio State University Moritz

Rozanov, Andrew, 2005. Who holds the wealth of nations. *Central Banking Journal*, Volume XV, Number 4.

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

Shirley, Mary and Patrick Walsh, 2001. Public vs private ownership: The current state of the debate. Working paper, World Bank.

Shleifer, Andrei, 1998. State versus private ownership. *Journal of Economic Perspectives* 12, 133-150.

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

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

Truman, Edwin M., 2011. Are Asian sovereign wealth funds different? *Asian Economic Policy Review* 6, 249-268.

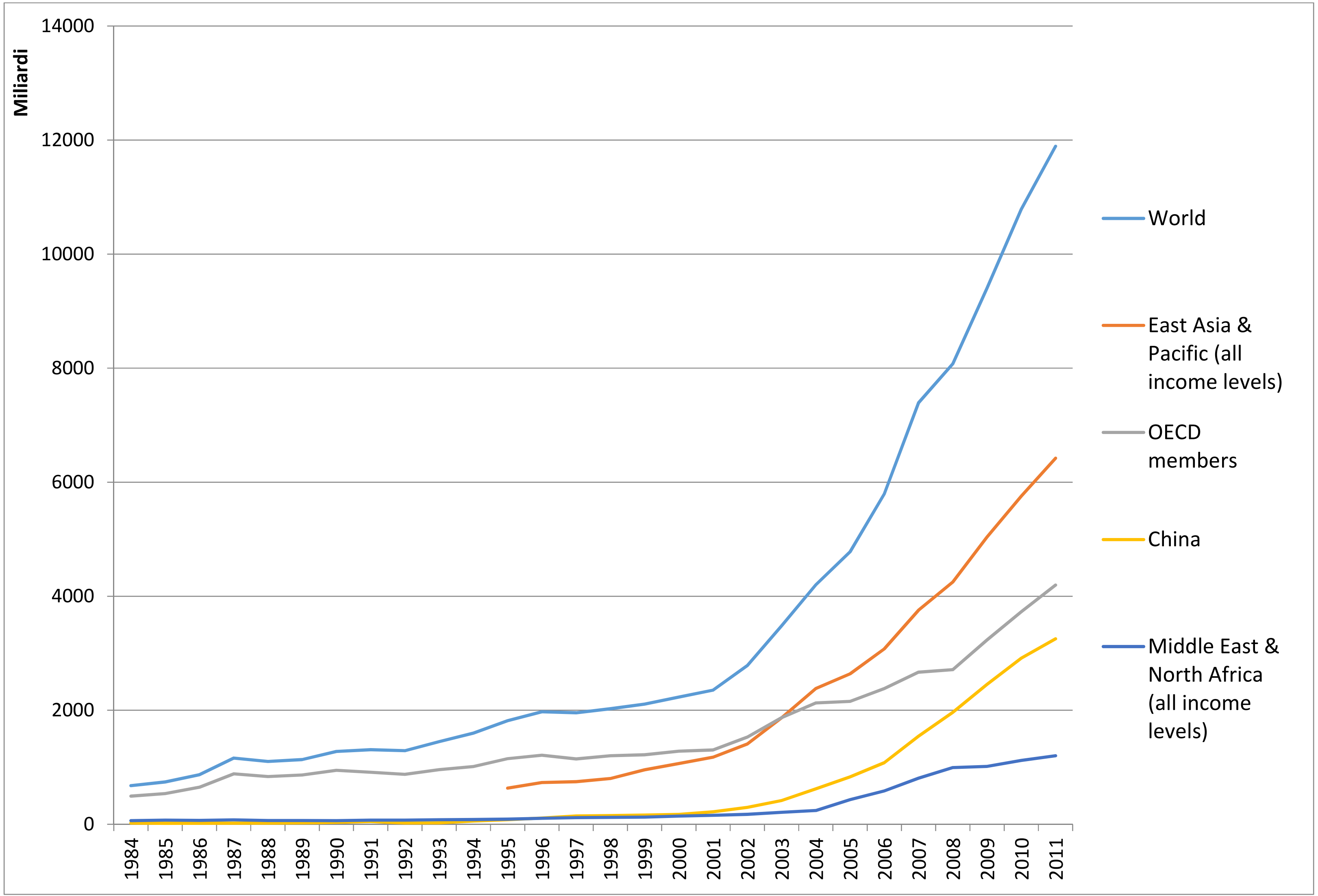
Tsui, Kevin K., 2010. More oil, less democracy: Evidence from worldwide crude oil discoveries. *Economic Journal* 121, 89-115.

Vining, Aidan R., Anthony E. Boardman, and Mark A. Moore, 2014. The theory and evidence pertaining to local government mixed enterprises. *Annals of Public and Cooperative Economics* 84: 53-86

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

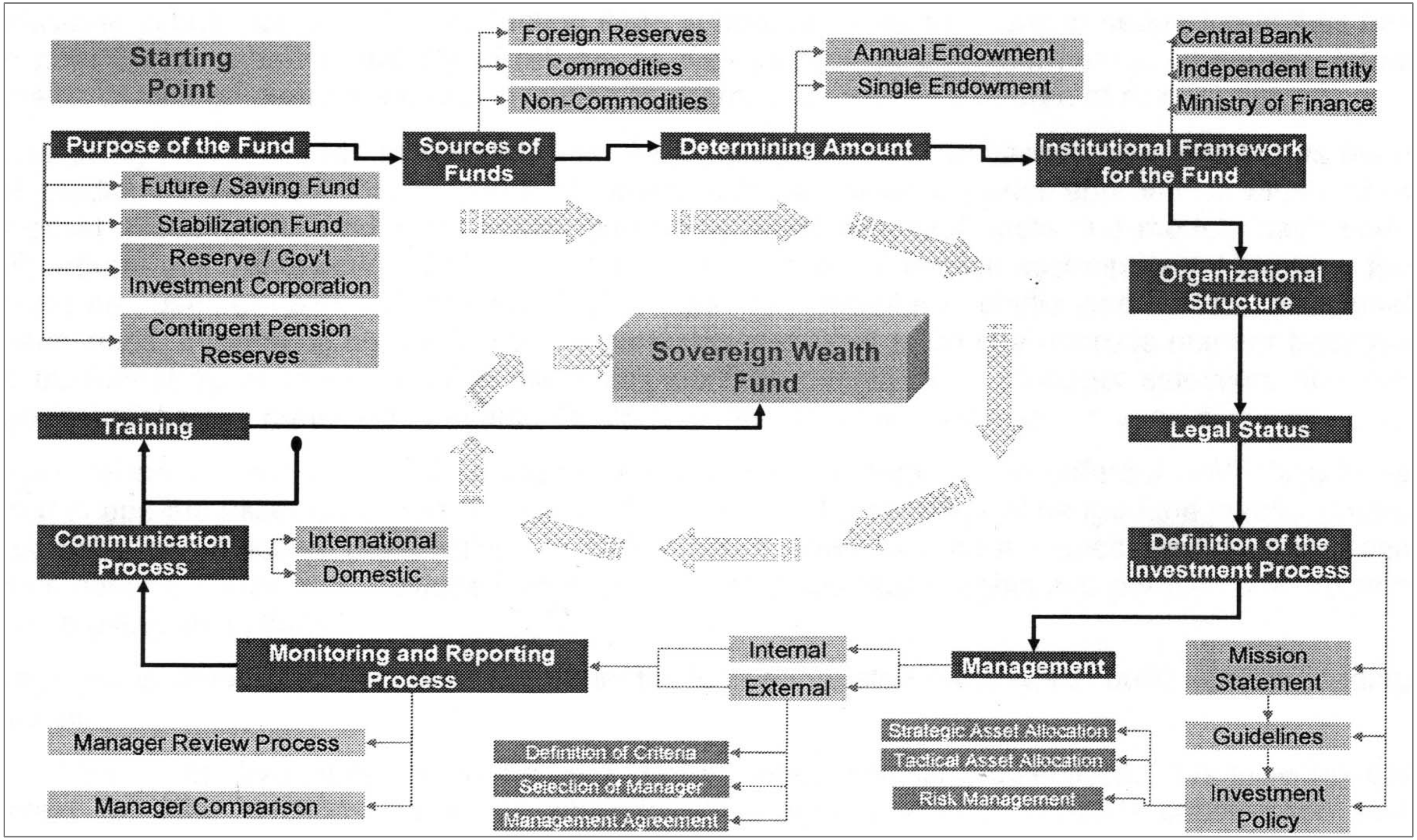
Wolf, Christian and Michael Pollitt, 2008. Privatising national oil companies: Assessing the impact on firm performance. Working paper, University of Cambridge.

Figure 1. Total Foreign Exchange Reserves, World and Country Groupings, US$ Billions, 1984-2011



Source: World Bank (http://data.worldbank.org/indicator/FI.RES.TOTL.CD). [2012 total $12.336 trillion]

Figure 2. The Sovereign Wealth Fund Objective, Funding, Organization, and Investing Process



Source: Sameer Jain, "Integrating Hedge Fund Strategies in Sovereign Wealth Portfolios," Citi Capital Advisors (November 2009), pg. 3.

Table 1. Sovereign Wealth Funds in the Sovereign Investment Lab SWF Transaction Database

This table lists the 33 funds that meet the Sovereign Investment Laboratory definition of a sovereign wealth fund (SWF), and offers information regarding country of origin; fund name; the year in which the fund was established; the principal source of funding for the fund; and estimated total assets under management in US$ billions as of March 17, 2014.

Country	Fund Name	Inception Year	Source of Funds	Total Assets US$ Billion
Norway	Government Pension Fund – Global	1997	Commodity (Oil)	$840.8
UAE-Abu Dhabi	Abu Dhabi Investment Authority	1976	Commodity (Oil)	773.0
Saudi Arabia	Saudi Arabian Monetary Agency Foreign Assets	1963	Commodity (Oil)	663.3
China	China Investment Corporation	2007	Trade Surplus	575.2
Kuwait	Kuwait Investment Authority	1953	Commodity (Oil)	410.0
Singapore	Government of Singapore Investment Corporation	1981	Trade Surplus	285.0
Russia	National Wealth Fund and Reserve Fund	2006	Commodity (Oil)	174.6
Singapore	Temasek Holdings	1974	Trade Surplus	173.3
China	National Social Security Fund	2000	Trade Surplus	141.4
Qatar	Qatar Investment Authority	1974	Government-Linked Firms	115.0
Australia	Australian Future Fund	2006	Non-Commodity	87.6
UAE-Dubai	Investment Corporation of Dubai	2006	Commodity (Oil)	70.0
Kazakhstan	Kazakhstan National Fund	1983	Commodity (Oil)	68.9
UAE-Dubai	International Petroleum Investment Company	1984	Commodity (Oil)	63.5
Libya	Libyan Investment Authority	2003	Commodity (Oil)	60.0
Republic of Korea	Korea Investment Corporation	2006	Government-Linked Comps	56.6
UAE-Abu Dhabi	Mubadala Development Company PJSC	1993	Commodity (Oil)	55.5
Brunei	Brunei Investment Agency	1983	Commodity (Oil)	40.0
Azerbaijan	State Oil Fund of Azerbaijan	1999	Commodity (Oil)	35.8
Malaysia	Khazanah Nasional Berhard	2000	Government-Linked Firms	31.7
Ireland	National Pension Reserve Fund	2001	Non-Commodity	27.7
New Zealand	New Zealand Superannuation Fund	2001	Non-Commodity	20.2
East Timor	Timor-Leste Petroleum Fund	2005	Commodity (Oil & Gas)	14.6
UAE-Dubai	Isthitmar World	2003	Government-Linked Firms	11.5
Bahrain	Mumtalakat Holding Company	2006	Government-Linked Firms	10.9
UAE	Emirates Investment Authority	2007	Commodity (Oil)	10.0
UAE-Abu Dhabi	Abu Dhabi Investment Council	2005	Commodity (Oil)	10.0
Oman	State General Reserve Fund	1980	Commodity (Oil & Gas)	8.2
UAE-Ras Al Khaimah	Ras Al Khaimah Investment Authority	2005	Government-Linked Firms	2.0
Vietnam	State Capital Investment Corporation	2005	Government-Linked Firms	0.6
Kiribati	Revenue Equalization Reserve Fund	1956	Commodity (Phosphates)	0.5
São Tomé & Principe	National Oil Account	2004	Commodity (Oil)	0.00063
Oman	Oman Investment Fund	2006	Commodity (Oil & Gas)	Unknown
Total, 18 oil-based funds (US$ billion)		**$3,298.2**		
Total, 15 non-oil based funds (US$ billion)		$1,539.2		
Total, all 33 funds (US$ billion)		**$4,837.4**		

† Sovereign Investment Laboratory estimate of assets under management (AUM).

* Sovereign Wealth Fund Institute (http://www.swfinstitute.org/fund-rankings) estimate of assets under management (AUM) as of March 17, 2014.

Table 2. Transparency, Economic Freedom, and Governance Scores for Fund-Sponsor Countries and Sovereign Wealth Funds

This tables details the Transparency International 2013 Corruption Perception Index (http://www.transparency.org/cpi2013/results) value [maximum = 100] and global rank [lowest = 175] and Heritage Foundation 2014 Economic Freedom Index (http://www.heritage.org/index/ranking?src=home) value [maximum = 100] and global rank [lowest = 179] for countries that sponsor major sovereign wealth funds, plus the funds names and assets under management values and corresponding SWF Scoreboard values from Truman (2011) and the Linaburg-Maduell Index values from the Sovereign Wealth Fund Index (http://www.swfinstitute.org/fund-rankings).

Country Information and Scores			Fund Information and Scores			
Country	**2013 Corruption Perception Index Value (Rank)**	**2013 Economic Freedom Index Value (Rank)**	**Sovereign Wealth Fund Name**	**Fund Assets, US$ Billion**	**SWF Scoreboard**	**Linaburg-Maduell Index**
Norway	86 (5)	70.9 (32)	Government Pension Fund – Global	$840.8	97	10
New Zealand	91 (2)	81.2 (5)	New Zealand Superannuation Fund	20.2	94	10
United States	73 (18)	75.5 (12)	Alaska Permanent Fund	49.5[†]	92	10
Ireland	72 (21)	76.2 (9)	National Pension Reserve Fund	27.7	86	10
East Timor	30 (119)	43.3 (169)	Timor-Leste Petroleum Fund	14.6	85	8
Australia	81 (9)	82.0 (3)	Australian Future Fund	87.6	80	10
Azerbaijan	28 (127)	58.9 (169)	State Oil Fund of Azerbaijan	35.8	76	10
Canada	81 (9)	80.2 (6)	Alberta Heritage Savings Trust Fund	16.4[†]	74	9
Singapore	86 (5)	89.4 (2)	Temasek Holdings	173.3	73	10
Chile	71 (22)	78.7 (7)	Economic and Social Stabilization Fund	15.2[†]	71	10
Kazakhstan	26 (140)	63.7 (67)	National Fund	68.9	65	8
Singapore	86 (5)	89.4 (2)	Government Investment Corporation	285.0	65	6
Kuwait	43 (69)	62.3 (76)	Kuwait Investment Authority	410.0	63	6
Republic of Korea	55 (46)	71.2 (31)	Korea Investment Corporation	56.6	60	9
UAE-Abu Dhabi	69 (26)	71.4 (28)	Mubadala Development Company PJSC	55.5	59	10
UAE-Abu Dhabi	69 (26)	71.4 (28)	Abu Dhabi Investment Authority	773.0[†]	58	5
China	40 (80)	52.5 (137)	China Investment Corporation	575.2	57	7
Russia	28 (127)	51.9 (140)	National Wealth Fund and Reserve Fund	174.6	50	5
Malaysia	50 (50)	69.6 (37)	Khazanah Nasional Berhard	31.7	44	5
Bahrain	48 (57)	75.1 (13)	Mumtalakat Holding Company	10.9	30	9
UAE-Dubai	69 (26)	71.4 (28)	International Petroleum Investment Company	63.5	26	9
Oman	47 (61)	67.4 (48)	State General Reserve Fund	8.2	26	1
Brunei	60 (38)	69.0 (40)	Brunei Investment Agency	40.0	21	1
UAE- Dubai	69 (26)	71.4 (28)	Investment Company of Dubai	70[†]	21	4
Qatar	68 (28)	71.2 (30)	Qatar Investment Authority	115.0	15	5
UAE-Dubai	69 (26)	71.4 (28)	Istithmar World	11.5	15	NR

[†] Source: Sovereign Wealth Fund Index (http://www.swfinstitute.org/fund-rankings)