

Volume III - Issue 2

WORLDVIEW

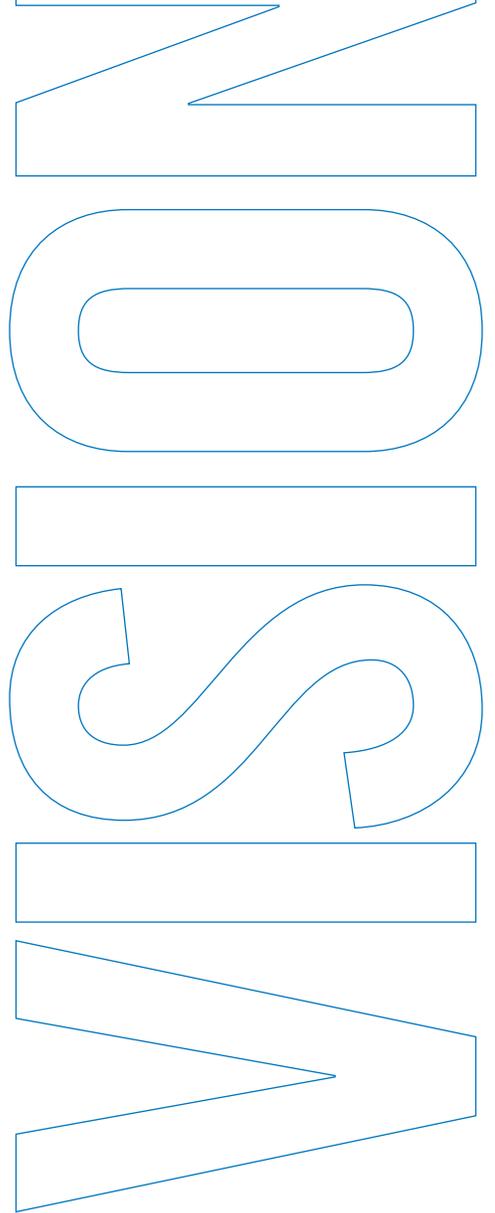
SOVEREIGN WEALTH FUNDS

Assessing the Impact



STATE STREET

Volume III · Issue 2



**SOVEREIGN
WEALTH FUNDS**

Assessing the Impact



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Country Abbreviations

CN	China	MY	Malaysia
HK	Hong Kong	SG	Singapore
JP	Japan	TW	Taiwan
KR	Korea		

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Andrew Rozanov is head of Sovereign Advisory and a managing director at State Street Global Markets, the investment research and trading arm of State Street Corporation. For the last four years, he has been advising and servicing central banks and sovereign wealth funds on various aspects of reserve management. In the past, Mr. Rozanov worked in State Street's Japan office as a fund manager and product engineer, focusing on global fixed income, currency and asset allocation. Mr. Rozanov also worked as a director in the Equity Capital Markets Group at UBS Investment Bank in Tokyo, originating and executing equity block trades and convertible bond transactions for Japanese corporate clients. He has a master's degree in oriental studies, with a concentration in Japan, from Moscow University. He lived, studied and worked in Japan for 20 years and is fluent in English, Russian and Japanese. He earned the Chartered Financial Analyst designation charterholder and also holds designations of Financial Risk Manager (FRM) from the Global Association of Risk Professionals and Chartered Alternative Investment Analyst (CAIA) from the CAIA Association. In 2005, Mr. Rozanov introduced the term "sovereign wealth funds" in one of his articles. His work has been published in *The Wall Street Journal*, *Central Banking Quarterly Journal*, *The World Today* and *Vedomosti Financial Daily*. His research has been quoted or referenced in *Euromoney*, *The Economist*, *Finance Asia*, *Les Echos*, *Smart Money* and *RGE Monitor*.

Foreword

In recent years, cross-border investments by sovereign wealth funds (SWFs) have become increasingly important and visible in the global capital markets, raising a host of questions and provoking a flood of commentary from legislative bodies, policy analysts and the media. While largely unheard of just a few years ago, today SWFs are a topic that regularly graces the pages of global media, a further signal that interest in these large pools of capital is growing.

At their most basic, SWFs are institutions comprising sovereign-owned asset pools that are neither public pension funds nor traditional reserve assets. Institutions of this kind have existed since at least the 1950s, but never before with the aggregate financial resources — approaching \$3 trillion — that they now command.

The political economy of SWFs has attracted substantial debate. For some time now, several countries in the developed world — especially the United States — have run current-account deficits, and capital has flowed “uphill” from relatively poor economies to relatively rich ones to finance these deficits. This visible sign of a more general shift in the balance of economic power from the industrialized world to the developing world makes many people in industrialized countries uneasy. It is against this backdrop that SWFs have come into the spotlight.

In addition, and causing further opportunity for comment, governments own or control an increasingly substantial share of international wealth. The redistribution of wealth from private to public hands shifts decision-making from the traditional private-sector, market-oriented framework most familiar to the industrialized world. As a result, many in the West are asking whether governments or government-related entities should, indeed, own sizable stakes in private companies.

In response to these and other concerns, the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development are examining issues pertaining to government-controlled cross-border investment by developing voluntary best practices for both SWFs and the countries receiving their investments. These efforts — focused on transparency, governance and accountability, among other areas — should help to manage expectations about the activities of SWFs.

Perhaps reflecting the very diverse nature of SWFs, there is no common framework for reporting by these funds or for their accountability. In recognition of the growing importance of SWFs, the IMF has launched a “dialogue with countries to arrive at a voluntary set of best practices in the management of SWFs.”¹ At this writing, this IMF initiative is still in progress.

While political concerns surrounding SWFs have received significant media coverage in recent months, less attention has been paid to the impact of these funds on global equity values, currencies, inflation and the capital markets in general. As a financial services leader that has worked with sovereign clients and SWFs for more than two decades — providing a full array of investment servicing, investment management, and investment research and trading services — State Street is familiar with the operations of SWFs.

In 2000, State Street Global Advisors (SSgA), our investment management arm, established its Official Institutions Group (OIG), which oversees investment management services provided to sovereign clients such as central banks, government agencies and supranational institutions. The group uses its experiences with clients worldwide to provide technical and strategic advice and skills transfer to official-sector clients. As of the printing of this paper, the OIG manages more than US\$270 billion for more than 70 central banks and government clients worldwide.²

In addition, State Street’s investment servicing and trading business maintains relationships with 40 SWFs and central banks, including foreign exchange relationships with many of the world’s leading central banks. In fact, State Street provides flow-based investor behavior research to approximately 70 percent of the world’s central banks, including those in all G10 countries.

In this Vision paper, we look at SWFs through the lens of a market practitioner by bringing together views from three of our leading experts on SWFs and the global economy.

John Nugée is a managing director, head of the OIG at SSgA, and a member of SSgA’s Senior Management Group. He is responsible for managing relationships with State Street’s central bank and public sector clients, including the coordination of and advice on all of the services State Street offers to the official sector. Prior to joining SSgA, Mr. Nugée served as the executive director in charge of reserves management at the Hong Kong Monetary Authority, and as the chief manager of reserves management at the Bank of England. In “The Growing Role of Sovereign Wealth Funds,” he offers a definition of SWFs, discusses the market drivers that have brought them into prominence, and explores their current role in the marketplace.

¹ “IMF Intensifies Work on Sovereign Wealth Funds,” IMF Survey online, March 4, 2008.

² All numbers in this paper, unless otherwise stated, are as of March 31, 2008.

Andrew Rozanov is a managing director and head of Sovereign Advisory for State Street. He has devoted much of his career to advising and servicing central banks and SWFs on various aspects of reserve management. While many of those commenting on SWFs make generalizations about them, Rozanov insists that we distinguish among the very different types of funds falling under the single SWF rubric. His article, “A Liability-based Approach to Sovereign Wealth,” offers a framework for classifying funds and recognizing their distinguishing features.

George Hoguet is a managing director, senior portfolio manager and global investment strategist specializing in emerging markets at SSgA. He is a member of SSgA's Senior Management Group and he has been involved with the firm's active emerging markets strategy over the past 10 years. He has held various senior positions consulting to large institutional investors on a wide range of investment topics. Previously, Mr. Hoguet served the US Treasury Department, first as US alternate executive director to the World Bank and, subsequently, as principal deputy assistant secretary of the Treasury for International Affairs. In “The Potential Impact of Sovereign Wealth Funds on Global Asset Prices,” he discusses the overall investment objectives of SWFs and looks at the potential implications for global asset prices.

These experts, who have been collectively working in the field of official sector asset management for more than 70 years, offer distinctive perspectives on some of the issues that surround SWFs, such as the lack of a universal definition, the debate regarding transparency, and the impact these large and fast-growing institutional investors are likely to have on the capital markets.

After exploring these and other issues, this paper highlights that SWFs reflect the changing structure of world output and reserve acquisition. These funds raise many issues of international economic policy, but critical to maintaining global prosperity and market efficiencies is maintaining the openness of host and recipient economies and financial systems to cross-border trade and investment. In particular, since World War II, successive rounds of trade liberalization have conferred substantial benefits to consumers and producers in the United States.³ Furthermore, according to Deputy US Treasury Secretary Robert Kimmitt, foreign-owned firms in the US account for roughly 19 percent of US exports and 13 percent of research and development spending, and pay more than 30 percent higher compensation on average than do their counterparts in the US economy.⁴ An open and expanding global trading and investment system can assist in accelerating world growth and per capita incomes.

³ Bradford, Scott, Paul Grieco and Gary Hufbauer. “The Payoff to America from Global Integration.” Peterson Institute for International Economics, pages 67–8. 28 December 2007.

⁴ Kimmitt, Robert M. “Public Footprints in Private Markets: Sovereign Wealth Funds and the World Economy.” *Foreign Affairs*, January/February 2008.



Chapter I

THE GROWING ROLE OF SOVEREIGN WEALTH FUNDS

by John Nugée

The Growing Role of Sovereign Wealth Funds

by John Nugée

The markets have always had a healthy respect for the activities of sovereign investors as they manage their national reserves. In the more distant past, most of the official wealth of nations was concentrated in their central banks, and the information released into the public domain on their activities was very limited and very strictly controlled. As a result, trying to determine what central banks were doing with their reserves was something of an art, while analyzing what they might do in the future was extremely difficult and beset with a lack of data.

In more recent years, there have been two developments — one helpful to analysts and one perhaps less so. First, central banks have in general become more open both in reporting activities that have taken place, and, to some extent, in giving information on their future intentions. It is now easier for analysts and central bank watchers to determine a pattern in official reserves management and to debate with more confidence the recent and future activities of these major investors. This is to be welcomed, because the activities of central bank reserves managers have growing influence on the markets in which they operate. For market analysts, taking central bankers' activities and future intentions into account has seldom been more important.

Alongside this move, there has been a rise in the number and wealth of Sovereign Wealth Funds (SWFs)⁵ — pools of national assets held outside the central banks in pure investment vehicles. These funds, which often have their origins in commodity surplus funds,⁶ are rapidly becoming very significant because they are large (a combined total approaching \$3 trillion and growing fast), because they typically hold more diverse assets than traditional central bank reserves, and, finally, because they are often at an earlier stage of transparency.

The continued growth in national reserves (whether held by central banks or by SWFs) and the increasingly diverse range of asset classes that they are being invested in are not particularly new trends. Both the rise in national assets and the diversification of investments have been features of the international financial markets for at least the last four years. Nor are the two unconnected: It is largely the pressure of greatly increased portfolios that has led to their diversification, as national authorities are forced to consider an ever wider range of asset classes for their reserves.

What is new, however, is the pace at which these changes are taking place and the impact they are beginning to have on the wider debate about the role of SWFs in the international financial system, the correct level of transparency regarding their activities, and even the appropriateness of some of their investments.

This paper seeks to establish a working definition of SWFs and to describe the key market drivers that have allowed them to come to the fore. It concludes by briefly widening the discussion to consider the debate about transparency.

Toward a Common Definition⁷

What, precisely, is a sovereign wealth fund? The US Treasury and the IMF have offered two very solid and well-thought-out analytical pieces on SWFs, but both propose definitions that are too narrow. In the former, the then acting under-secretary for international affairs, Clay Lowery, wrote:

“There is no universal, agreed definition of a sovereign wealth fund. I will use the term to mean a government investment vehicle which is funded by foreign exchange assets and which manages those assets separately from official reserves.”⁸

⁵ A term now in common use but originally coined by my colleague Andrew Rozanov.

⁶ For example, the Norwegian Statens Pensjonfond (“Government Pension Fund” — a continuation of the former Petroleum Fund, which was funded by sales of Norway’s North Sea oil), the Chilean copper fund and Middle Eastern national investment funds financed by oil revenues.

⁷ This section draws from the original article “A Liability-Based Approach to Sovereign Wealth” by Andrew Rozanov, which appeared in *Central Banking*, Volume XVIII, No. 3, February 2008.

⁸ Remarks by Acting Under-Secretary for International Affairs Clay Lowery on Sovereign Wealth Funds and the International Financial System, 21 June 2007, San Francisco.

In the “Global Financial Stability Report” dated October 2007, the IMF devoted a separate annex to the subject of SWFs, where it defined them as follows:

“Although there is no universally agreed-upon definition, SWFs can generally be defined as special investment funds created or owned by governments to hold foreign assets for long-term purposes.”⁹

While both definitions are legitimate, we believe they are overly restrictive. For example, the recently established Korea Investment Corporation (KIC) and the more long-standing Hong Kong Monetary Authority (HKMA) both manage sizable asset portfolios that are de facto SWFs. However, because neither portfolio is really separate from official reserves, one could argue that under the US Treasury definition neither institution would qualify as a SWF.

Similarly, by making SWF status conditional on “funding by foreign exchange assets” or on “holding foreign assets,” both of these definitions would omit some important institutions, such as Temasek of Singapore, Khazanah of Malaysia, SASAC of China and Samruk of Kazakhstan, to name just a few. All of these institutions have their assets primarily or substantially invested in their domestic economies, yet each operates in a way that would be considered by many observers as befitting a SWF. Indeed, in all analyses of SWFs that we have seen so far, Temasek is always included as one of the classic long-standing SWFs.

To be as comprehensive and inclusive as possible, we would like to define SWFs as sovereign-owned asset pools that are neither traditional public pension funds nor traditional reserve assets supporting national currencies.

The first component of this definition — sovereign ownership and management — is fairly straightforward and typically invoked by all commentators. There are, however, a handful of exceptions: Some sub-sovereign funds are sometimes included in SWF lists. Usually these are the resource-based funds in Alaska, Wyoming and Alberta. As they are policy-driven, funded by excess budget revenues and owned by the (local) taxpayers, they have more in common with commodity-based SWFs than with their sub-sovereign brethren, such as public pension funds (e.g., CalPERS). The Alaska, Wyoming and Alberta funds have existed for a fairly long time and can offer useful lessons and insights for many newly created SWFs. On these grounds, their inclusion is probably warranted. Note that neither the Canadian Pension Plan (CPP) nor the CPP Investment Board, which manages the assets of the CPP, meet the definition of a SWF.

⁹ International Monetary Fund. “Global Financial Stability Report,” October 2007, p. 45 (Appendix 1.2. Sovereign Wealth Funds).

The second and third components of the definition — that SWFs are neither traditional public pension funds nor reserve assets supporting national currencies — allow us to broaden the universe to cover many sources of sovereign wealth. Central banks and monetary authorities must maintain a certain amount of foreign exchange reserves for prudential policy purposes. Such reserves cannot and should not be viewed as SWFs. However, if central banks end up accumulating reserves substantially above and beyond what might reasonably be required for traditional policy purposes, then this excess portion effectively constitutes sovereign wealth, whether or not the authorities choose to acknowledge and manage it as such. It may not represent net sovereign wealth, insofar as these assets are supported by local currency debt on the liability side of the national balance sheet, but it is sovereign wealth nonetheless.

The above definition thus allows us to triangulate the SWF phenomenon in the broadest possible way: As long as the assets in question are sovereign-owned and do not represent either prudential monetary reserves or classic public pension money, they must be sovereign wealth — regardless of whether they are domestic or foreign, equity-like or debt-financed, earmarked for current or future generations, highly liquid and broadly diversified or relatively illiquid and concentrated.

Market Drivers Bringing Sovereign Wealth Funds to the Fore

Some SWFs owe their existence — and most owe their size — to the explosive growth that has recently occurred in official sector assets. Commodities — oil, in particular — are one key to this growth. Petrodollar assets grew at a compound annual rate of 19 percent in the period from 2000 to 2006 as the price of oil tripled and crude oil exports rose.¹⁰ Fourteen of the 20 largest SWFs have commodities as their main source of income.

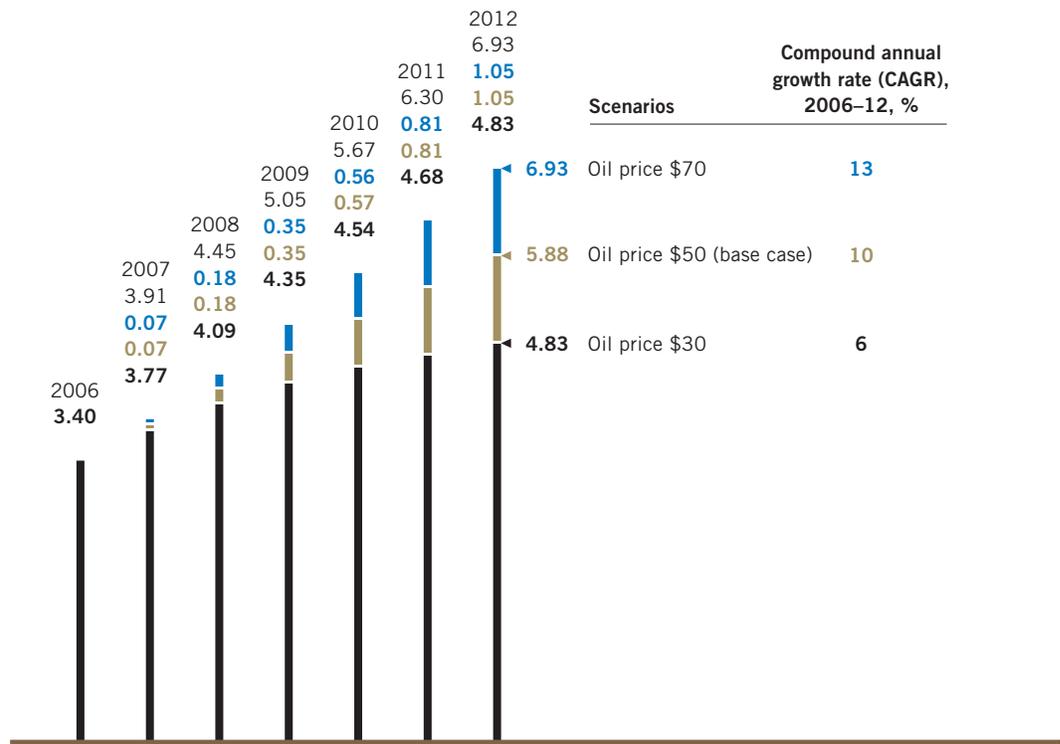


Figure 1
Three Scenarios of Growth for Sovereign Wealth Funds
 Petrodollar foreign investment assets, \$ trillion

2006–2007: Estimated

2008–2012: Forecast

Source: *BP Statistical Review of World Energy 2006*; Global Insight; McKinsey Global Institute (MGI) global capital flows database; MGI analysis

¹⁰ “The World’s New Financial Power Brokers.” *The McKinsey Quarterly*, December 2007, p. 2.

Asian central banks reserves are the second leading source of sovereign wealth. Trade surpluses and foreign investments boosted these foreign currency reserves at a compound annual growth rate of 20 percent between 2000 and 2006.¹¹ Asia now holds two-thirds of the world's foreign exchange reserves — up from one-third just a decade ago.

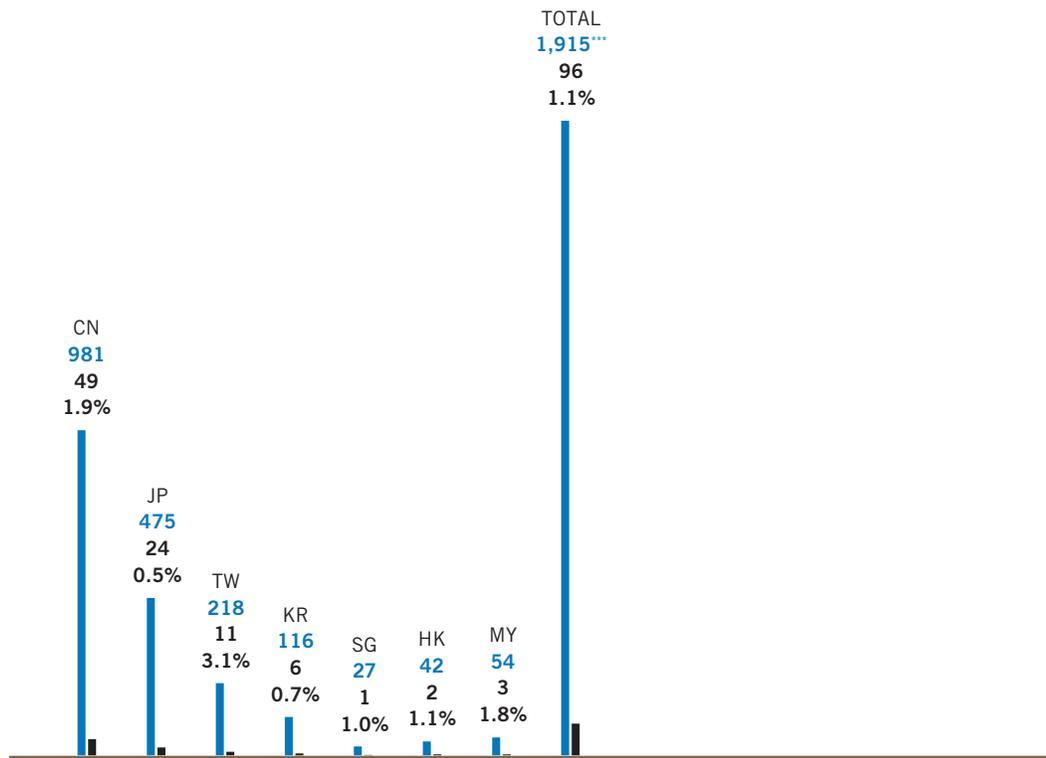


Figure 2
Opportunity Costs for Asia

\$ billion

Excess foreign reserves, 2006*

Opportunity cost, 2006**

Cost as a share of GDP, %

Source: Global Insight; International Monetary Fund (IMF); Ministry of Economic Affairs, Taiwan; McKinsey Global Institute analysis

* Determined using Greenspan-Guidotti Rule, which states that foreign-reserve assets should equal foreign short-term debt. Short-term external debt calculated as sum of external-bank claims and international debt securities; nonbank trade credits not included.

** Estimated returns of 5 percent more than US Treasury bills.

*** Due to rounding, figures do not sum to total.

¹¹ Ibid.

The Growth in Official Sector Assets

From a level of around \$1.2 trillion at year end 1995, and \$2 trillion at year end 2002, total central bank international reserves now exceed \$6 trillion.¹² Add in the \$3 trillion estimated to be held in SWFs and the total of official sector assets is around \$9 trillion and rising fast.

Several reasons have been put forward for this rapid growth in reserve assets. For some countries it represents a desire to self-insure. This is particularly a feature of policy orientation in Asia, where countries that experienced the turbulence of the Asian financial crisis of 1997–1998 set a goal of rebuilding reserves to levels sufficient to avoid a repetition of that turmoil. Second, and more latterly, as the initial objective of rebuilding reserves was fulfilled, there has been a desire to maintain given exchange rates — again, this has been a major theme in Asia in particular. Lastly, and of more importance for resource-rich countries, in many cases domestic markets are unable to fully absorb current revenues. Many oil exporters, in particular, find their domestic markets at risk of overheating and choose to keep a substantial proportion of their oil revenues offshore.

What is interesting about the development of reserves accumulation is that in several countries it has moved from being a conscious objective of policy (for example to self-insure) to a by-product of other policies (for example the desire to stop domestic overheating or a rising exchange rate). As a result, a growing number of countries face the question of when the continued increase in their reserves stops being an undisputed benefit and starts to pose its own challenges — for example in the sterilization of domestic credit expansion (the counterfactual to the intervention that builds up the reserves), or in the risks to the central bank's own balance sheet from such large, unhedged foreign exchange positions.

The Diversification of National Investment Portfolios

National authorities must decide how to invest their greatly increased reserves. Two related issues arise here. First, a reliance solely on traditional asset sectors such as money markets and short duration government bonds risks over-concentration in a limited number of securities; and second, diversification opens the door to the pursuit of incremental revenue.

This has started a debate among reserves managers as to where exactly the boundaries of public sector portfolios should lie. One of the more striking features of the last two years has been the return of the central banking community to the gold market, this time as net buyers. After two decades when any gold broker who received a call from a central bank could safely assume it was for a sell order, a two-way market in central bank gold activity has re-emerged. And official sector investors are also increasingly looking at commodity investments — such as a strategic oil reserve — and even real assets as they seek to increase the diversification of their portfolios.

¹² Source: IMF, various national statistical reports.

These developments raise two questions. First, does the official sector have the skills required to manage increasingly diverse portfolios? As already mentioned, several countries have decided that there is merit in establishing a specialist investment agency to manage non-typical assets, though the exact location of the dividing line between what remains in the traditional central bank portfolio and what is separated out for inclusion in the new investment portfolios is an interesting question. Other central banks prefer to keep all their assets in one place, but in recognition of the limits to their internal expertise they are increasingly willing to outsource the actual management of the assets to the private sector.

Second, the whole question of strategic investment has arisen. In an uncertain world, some countries are now looking to secure vital national interests — for example, ownership stakes in crucial companies, access to raw materials or influence with other sovereign states — by using their plentiful financial resources. This fascinating extension of the debate over what governments should do with national assets has arisen only in the last two years or so. The trigger that caught the world's attention was the attempt by some governments to use national asset funds to buy major positions in other countries' private sector companies. This is a controversial area with geopolitical ramifications, and spice is added to the debate by the fact that — in a reversal of more normal roles — it is increasingly the developing world that is seeking to purchase companies in the developed world.

This has sparked a heated discussion within the developed world about the degree to which SWFs should be allowed to operate in national markets. Two main themes seem to be emerging: that SWFs should be restricted in what they are allowed to do in national markets (and in particular in the sort of companies they can take major stakes in), and that they should be more transparent in what they do. On the first point, all governments have legitimate national security concerns, and it is understandable that they seek to limit access to critical technologies. Furthermore, it is understandable that recipient countries are concerned that the investments should be based solely on commercial grounds, rather than to advance, directly or indirectly, the geopolitical goals of the controlling government.

How Much Transparency is Appropriate?

The issue of transparency is a difficult question on which the received wisdom has moved dramatically over the last 20 years. Two decades ago, it was widely assumed that a central bank needed to maintain an air of secrecy over its operations — not just its reserves management, but its monetary policy as well. The 1997–1998 Asian financial crisis caused a reassessment of this assumption. The pressure on the Thai baht in June and July 1997 revealed that the Thai authorities had been covertly but aggressively intervening in the forward market. Although their spot reserves were shown to be an almost constant \$35 billion or so for the first six months of 1997, the forward book had grown from a flat position to minus \$36 billion. In other words, the Bank of Thailand had negative \$1 billion net reserves. When this became known, the pressure on the baht grew to be irresistible, leading to the abandonment of the baht peg and a significant devaluation that had knock-on effects throughout the region.

In the aftermath, the analysis focused on the Thai authorities' hidden forward book, and the consensus was that in the future it would be best practice not to allow such a distortion to exist unadvertised as a source of surprise to the market. The IMF published a number of papers extolling the virtue of openness, and the momentum in favor of transparency grew. It was helped by the concurrent move to more independent central banks, with many arguments put forward along the lines of: If central banks are given greater freedom of action, it is only appropriate that we see more clearly what they are doing with that freedom.

From the high-water-mark of the move to transparency, which was reached about three years ago, there are signs of a reaction and a realization that not all aspects of central banking and official sector asset management are best conducted in the full glare of publicity. The most obvious recent case of this was the Bank of England's dilemma in handling the insolvency of Northern Rock. The Bank's belief that it had to announce to the market what it was doing at every stage of the process clearly affected its operations and probably caused the Bank to be more circumspect when speed and decisiveness were the more obvious needs. But even before then there have been dissenting voices, such as the European Central Bank's (ECB) determined and principled stance that it would not reveal the minutes of its interest-rate-setting policy meetings. The first president of the ECB, Wim Duisenberg, always maintained that the unity of the ECB was more important than publishing the debate, and that too great a ray of light on the deliberations of its Governing Council would negatively impact the process of building the consensus the new institution needed. However, in the US, where the level and volatility of inflation has fallen over the past several years, greater transparency by the Federal Reserve is thought to have reduced the potential for miscommunication with the marketplace.

The latest stage of the transparency debate has sought to force SWFs to provide the same level of openness as central banks. While for the proponents of transparency this would appear to be a logical conclusion to the enthusiasm for openness that has characterized so much of the public debate in the post-1997 world, it is not immediately obvious that the level of transparency required of a policy-formulating body with strategic objectives (such as a central bank with the objective of monetary stability) should automatically also be optimal for all other official sector bodies such as SWFs. And for many commentators, the debate has so far merely illustrated the flaws in the mantra of "the more transparency the better." The arguments in favor of SWFs being more transparent have often seemed somewhat simplistic and have ignored the long history (in some cases decades long) of these official bodies operating with minimal fuss, publicity and controversy and yet in harmony with markets and other market participants.

The debate on openness, like so many debates in central banking, does not permit an absolute answer, and some of the more thoughtful commentators sense that the “pro-transparency” ascendancy is on the wane and the pendulum is beginning to swing back. SWFs are asking Western authorities what they mean by “greater transparency,” what information is required (and to whom it should be shown) and why the *modus operandi* that established SWFs have used for decades is suddenly so unacceptable because of their increasing size and scope. For their part, countries receiving SWF investment acknowledge that they should not discriminate among investors: Inward investment policies should treat like-situated investors equally.

An illustration of a balance scale with two pans. The pans are tilted, and a thick stream of bright yellow gold is pouring from each into a tray below. The scale is suspended by a wooden beam from a dark blue ceiling. The background is a gradient of dark blue and brown.

Chapter II

A LIABILITY-BASED APPROACH TO SOVEREIGN WEALTH

by Andrew Rozanov

A Liability-Based Approach to Sovereign Wealth¹³

by Andrew Rozanov

Much of the current literature about SWFs is marked by a widespread flaw: the tendency to treat all SWFs as equal. In reality, there is no such thing as a typical SWF. These entities differ in size, age, structure, funding sources, governance, policy objectives, risk/return profiles, investment horizons, eligible asset classes and instruments, not to mention levels of transparency and accessibility. No commentary that ignores these differences can hope to add serious value to the current debate.

To make the debate meaningful and the policy response both robust and fair, it is very important to develop a shared analytic framework that will be as inclusive and comprehensive as possible, while at the same time remaining objective and rule-based. Classifying SWFs according to their liabilities will help everyone think through the differences in how these funds are structured, how they manage their assets, and how much transparency they may be prepared to accept. We propose to categorize SWFs according to their liability profiles. To do so, we ask two fundamental questions: What is the source of the fund? What is the intended use of the fund?

¹³ The original version of “A Liability-Based Approach to Sovereign Wealth” by Andrew Rozanov appeared in *Central Banking*, Volume XVIII, No. 3, February 2008.

Sources of Sovereign Wealth

We look first at the source of a fund's wealth and, by extension, at any resulting restrictions or constraints affecting management of the asset side of the fund's balance sheet.

Some funds represent an equity-like claim by the sovereign on the underlying assets. This is typical of commodity-based SWFs, such as those in Norway and Russia, which represent net national savings by their respective governments. On the other hand, a SWF may be funded by issuance of debt that is denominated in local currency. This is more typical of entities created from a central bank's excess foreign exchange reserves. Korea and China are classic examples of this latter approach.

If a sovereign wealth fund is debt-based, it faces additional constraints and complications on the asset side of its balance sheet. In effect, the cost of local debt and the expected appreciation of the local currency become the hurdle rate that the fund must beat to be economically viable.

Let us use China as an example. If one assumes, very conservatively, that the annual cost of local debt is 4 percent and the expected annual appreciation of the renminbi is 5 percent, China's newly launched SWF, which has been funded by a transfer of foreign currency assets from the State Administration of Foreign Exchange (SAFE) against a renminbi liability of the government, will need to make at least 9 percent annually just to break even. As most observers expect inflationary pressures to rise and the renminbi to appreciate much faster, the actual hurdle rate is probably going to be even higher.

To put this in perspective, consider that the Government of Singapore Investment Corporation (GIC) has produced an annualized nominal return of 9.5 percent over the 25 years of its existence — an exceptionally benign period of global disinflation, secular declines in interest rates and rising stock markets. It is highly questionable whether these same tail winds will persist over the next 25 years. In fact, senior officers at GIC acknowledge that it would be more realistic to expect annualized returns in the range of 6 to 8 percent going forward.¹⁴

Another way to look at this problem is to compare China with Norway. The latter represents an equity-like SWF, which targets returns in foreign currency and does not have a liability-driven hurdle rate in local currency terms. Norway's annualized nominal return from inception in 1996 to 2006 was 6.5 percent, and the fund beat its benchmark in every year of operation. By any measure, this is a remarkable achievement. However, if China were to run its SWF along the same lines and produce similar returns, it would not necessarily be considered a success: The government would effectively lose money every year by paying more on its local currency liabilities than it received in SWF returns. One might reasonably expect China's SWF to behave differently from Norway's, not least in terms of its approach to asset allocation, strategic investment and level of transparency.

¹⁴ "Singapore's GIC Reorganizes Management for Succession." Bloomberg, 16 July 2007.

One final note on the source of funds: Even if an entity is unencumbered by interest-bearing liabilities, its asset management operation can still be affected by certain nuances of its funding profile. Below is a quote from an article about France's pension reserve fund FRR.

Unlike other government funds, such as the Irish National Pensions Reserve Fund (NPRF) that was set up in 2001, the management team at FRR does not receive regular and consistent funding from the state, and Mr. Salins [Chairman of FRR's Manager Selection Committee] argues that this makes it very tricky for the fund to push into new investment areas... "It is difficult to tactically manage the fund if you have no idea what level of funding you will receive from the government," he told *European Pensions and Investment News*. "It is for that reason that we use a tactical overlay programme, which is based mainly on derivatives. It works well for us, but things would be much simpler if we received regular funding. Having no clarity on this also makes it more difficult for us to invest in new asset classes with poor liquidity. If we had that clarity we would almost certainly be prompted to invest in those other investment classes."¹⁵

Therefore, when we think about how SWFs manage their assets, it is very important to consider how constraints and complications on the liability side might influence their investment policy and decisions.

Uses of Sovereign Wealth

Funding sources and patterns are only one dimension of liability profiling. The other is the intended use of a fund's assets. Along this dimension, it is useful to categorize SWFs into four types:

- Contingent liabilities
- Fixed liabilities
- Mixed liabilities
- Open-ended liabilities

Contingent liability funds are essentially stabilization funds set up to smooth out budget revenues and expenditures; sterilize excess liquidity; and protect the economy from overheating, "Dutch disease" and boom-bust cycles. Because the liabilities of these funds are contingent on volatile and unpredictable commodity prices, the investment objectives will typically resemble those for central bank reserves: safety, liquidity and return — with the latter measured as nominal returns denominated in foreign currency.

¹⁵ "Getting Inside the FRR Private Equity Plan." *European Pensions and Investment News*, 16 January 2006.

Fixed liability funds are entities like the French Pension Reserve (Fonds de Reserve pour les Retraits, or FRR), Ireland’s National Pensions Reserve Fund (NPRF), Australia’s Future Fund and New Zealand’s Superannuation Fund. These SWFs were set up to meet a fixed liability of the sovereign 20 to 30 years out into the future. In each of these cases, the liability is a projected shortfall in the public pension system. These funds resemble a large pension plan with a very young workforce and very few, if any, current retirees. At inception, fixed-liability funds are extremely flexible in managing the asset side of their balance sheet, but as they mature, they become much more constrained.

Mixed liability funds are endowment-type future-generation funds, like the ones in Norway and Russia. Their liabilities are mixed in the sense that they have a contractually fixed obligation to make regular payments into the budget under a so-called “fiscal rule” or “spending rule.” However, these funds are also open-ended: They have no targeted terminal value, and they exist, effectively, in perpetuity. On the asset side, they may not have quite the same degree of freedom as a newly launched fixed liability fund, but as time goes by, they retain their relatively high degree of freedom — unlike fixed liability funds, which become more and more conservative and constrained.

Open-ended liability funds are investment authorities and corporations. These funds do not have readily identifiable or contractually defined obligations. They have neither formal spending rules nor liability shortfall targets.¹⁶ As a result, open-ended liability funds have the longest investment horizon, the greatest capacity for risk taking, and the broadest possible latitude on the asset side of their balance sheets. They can afford, quite simply, to do with their money whatever they want.¹⁷ Unlike the first three types of SWFs, which can learn from central banks, pension plans, endowment funds and other kinds of institutional investors, open-ended liability SWFs have no immediately obvious candidates to adopt as models.

Implications for the SWF Debate

In our view, this two-dimensional classification of SWFs according to their liability profiles provides a useful frame of reference for the ongoing debate about how these funds should be structured and managed. While the Government Pension Fund of Norway is often invoked as a model for other SWFs to follow, differences in liability profile may make it an inappropriate template for adoption elsewhere.

The liability profiles of SWFs are not static. They evolve over time, depending on various factors — not least, the fund’s growth dynamic. What started out as a stabilization fund often morphs into a pension reserve or an endowment-type future-generations fund. Similarly, in a growing number of cases, excess central bank reserves are being carved out for management by a government investment authority or corporation.

¹⁶ They may be taking into account the contingent liability of a low-probability, high-impact event. For example, KIA was instrumental in helping rebuild Kuwait’s infrastructure after the first Gulf War. While this suggests that maintaining a liquidity buffer in the form of highly liquid and safe assets is prudent, it does not mean that these SWFs in their entirety should be managed like stabilization funds or central bank reserves.

¹⁷ The argument may be more nuanced for SWFs in countries which are running out of oil. If they rely on oil export revenues to provide universal and “free” education, healthcare and other benefits to their citizens, and if the social contract would not allow the introduction of taxes and levies on the population, then an endowment-type “mixed liability” future generation fund may be a better model.

Changes of this kind may lead to important shifts in a fund's risk/return profile and constraints. As SWFs evolve, they may be able to shift their targets from nominal returns in foreign currency to real returns in domestic currency.¹⁸ Similarly, they may be able to change their definition of risk from risk of loss to risk of not meeting their liability-based target. In this context, funds that used to shun risky assets may embrace higher interim volatility as the necessary price for higher expected long-term returns. The same holds true for liquidity: SWFs may stop paying for liquidity and instead start to harvest the liquidity premia available to them in the marketplace. Finally, their investment horizons may lengthen dramatically, and their constraints may shift from policy-based to market-based.

Do we see this happening in practice? There is some compelling evidence that some of the above propositions are true. If one looks at the investment objectives of some of the largest funds — the GIC, Hong Kong Monetary Authority (HKMA),¹⁹ Kuwait Investment Authority (KIA)²⁰ and Norway's fund, for example — one will see statements explicitly targeting real returns. Similarly, the asset allocation of these SWFs now includes some or all of the following asset classes: emerging markets, private equity, real estate and hedge funds. All of these exposures represent higher volatility and/or lower liquidity than would have been acceptable at earlier stages of the funds' evolution.

However, real life is always more nuanced and complicated than theory. Norway's fund may have proclaimed that it has a "100-year investment horizon," but it has put all of its assets into highly liquid instruments and has explicitly avoided any illiquid investments. Why would a fund pay for liquidity that it does not need? Put differently, why would a fund forego a significant source of return that it is best positioned to extract? Given the high level of sophistication and financial acumen exhibited by the managers of this fund, the problem certainly doesn't arise from a lack of understanding or appreciation of these issues on their part. Rather, it arises from policy and politics. The managers of Norway's SWF are doing their best to move it up the risk curve and down the liquidity curve, but even for such an advanced and proactive fund, progress is glacial.²¹ This is the direct result of the political liability profile of Norwegian society: All stakeholders in the fund must be convinced that a higher risk profile and lower liquidity profile are desirable for the fund. Getting to this point in a democratic society requires time, patience and public education.

It should be reiterated that SWFs are not all the same: They differ in both the sources and the uses of their funds. As a consequence, they adopt different investment styles and focus on different opportunity sets. The current policy debate about SWFs must take full account of this important fact. To move the debate forward, we must make sure to treat each SWF on its own unique merits and challenges.

¹⁸ However, debt-funded SWFs will still need to keep in mind their nominal liabilities.

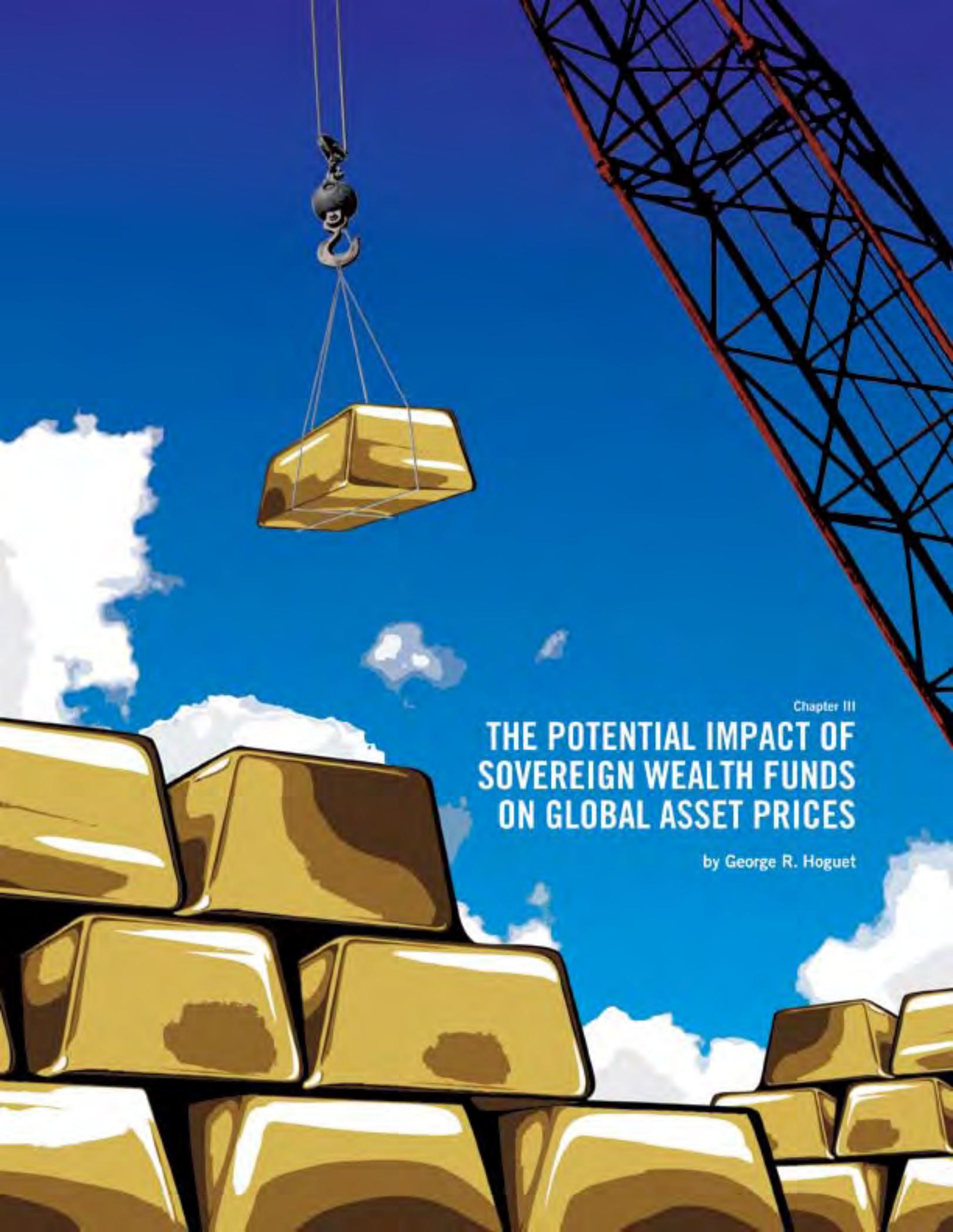
¹⁹ Investment Portfolio.

²⁰ Future Generation Fund.

²¹ Recently, Norway's authorities have approved recommendations from their fund managers to increase exposure to risky assets and to include new and less liquid asset classes such as real estate.

Theoretical Impact of Liability Profiles on Investment Preferences and Styles

	Debt Funded	Equity-like
Contingent	<p><i>(e.g. excess monetary reserves)</i></p> <p>Return target: nominal, in foreign currency</p> <p>Definition of risk: absolute loss</p> <p>Risk-taking capacity: lowest</p> <p>Liquidity: user of liquidity</p> <p>Investment horizon: very short</p> <p>Investment constraints: policy-driven</p>	<p><i>(e.g. stabilization fund)</i></p> <p>Return target: nominal, in foreign currency</p> <p>Definition of risk: absolute loss</p> <p>Risk-taking capacity: lowest</p> <p>Liquidity: user of liquidity</p> <p>Investment horizon: very short</p> <p>Investment constraints: policy-driven</p>
Fixed	<p><i>(e.g. national reserve fund in a deficit country)</i></p> <p>Return target: real, in domestic currency</p> <p>Secondary return target: beat the funding rate</p> <p>Risk 1: failure to meet target liability</p> <p>Risk 2: underperforming nominal funding rate</p> <p>Risk-taking capacity: high, but time-decaying</p> <p>Liquidity: strong liquidity provider, but time-decaying</p> <p>Investment horizon: long, but time-decaying</p> <p>Investment constraints: funding and market-based</p>	<p><i>(e.g. national reserve fund in a surplus country)</i></p> <p>Return target: real, in domestic currency</p> <p>Risk: failure to meet target liability</p> <p>Risk-taking capacity: high, but time-decaying</p> <p>Liquidity: strong liquidity provider, but time-decaying</p> <p>Investment horizon: long, but time-decaying</p> <p>Investment constraints: market-based</p>
Mixed	<p><i>(e.g. future generation fund in a deficit country)</i></p> <p>Return target: real, in domestic currency</p> <p>Secondary return target: beat the funding rate</p> <p>Risk 1: failure to maintain target spending rate</p> <p>Risk 2: failure to preserve capital in real terms</p> <p>Risk 3: underperforming nominal funding rate</p> <p>Risk-taking capacity: relatively high and constant</p> <p>Liquidity: medium liquidity provider; constant</p> <p>Investment horizon: long, effectively perpetuity</p> <p>Investment constraints: funding and market-based</p>	<p><i>(e.g. future generation fund in a surplus country)</i></p> <p>Return target: real, in domestic currency</p> <p>Risk 1: failure to maintain target spending rate</p> <p>Risk 2: failure to preserve capital in real terms</p> <p>Risk-taking capacity: relatively high and constant</p> <p>Liquidity: medium liquidity provider; constant</p> <p>Investment horizon: long, effectively perpetuity</p> <p>Investment constraints: market-based</p>
Open-ended	<p><i>(e.g. reserve-funded investment corporation)</i></p> <p>Return target: real, in domestic currency</p> <p>Secondary return target: beat the funding rate</p> <p>Risk 1: failure to meet stated objective</p> <p>Risk 2: underperforming nominal funding rate</p> <p>Risk-taking capacity: relatively high and constant</p> <p>Liquidity: strong liquidity provider; constant</p> <p>Investment horizon: longest, effectively perpetuity</p> <p>Investment constraints: funding and market-based</p>	<p><i>(e.g. commodity export-funded investment authority)</i></p> <p>Return target: real, in domestic currency</p> <p>Risk: failure to meet stated objective</p> <p>Risk-taking capacity: very high and constant</p> <p>Liquidity: very strong liquidity provider; constant</p> <p>Investment horizon: longest, effectively perpetuity</p> <p>Investment constraints: market-based</p>



Chapter III

THE POTENTIAL IMPACT OF SOVEREIGN WEALTH FUNDS ON GLOBAL ASSET PRICES

by George R. Hoguet

The Potential Impact of Sovereign Wealth Funds on Global Asset Prices

by George R. Hoguet

Sovereign wealth funds are among the world's fastest-growing groups of institutional investors. Their total assets, currently approaching \$3 trillion, are expected to reach \$7 trillion by 2012.²² Twelve new SWFs have been established since 2005 alone. As they diversify their portfolios, SWFs represent a source of incremental demand for risk assets. This paper considers the impact of SWFs on world equity, fixed income and currency markets.

²² Source: Morgan Stanley.

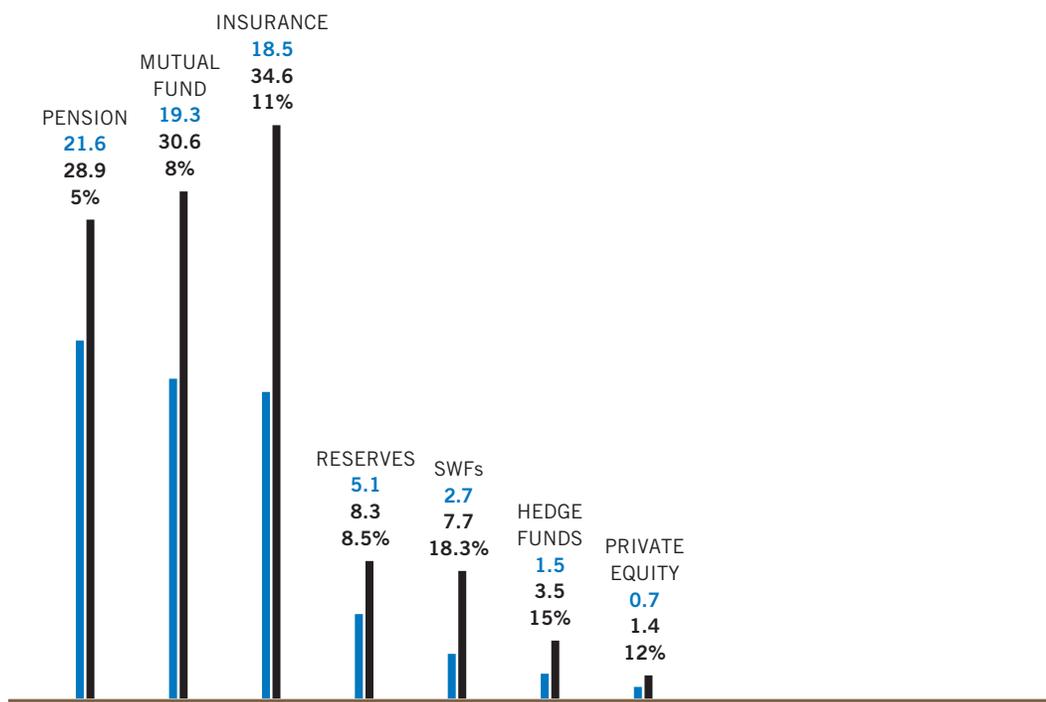


Figure 3
Sovereign Wealth Funds Are the Most Rapidly Growing Institutional Investor Segment
 AUM 2006–2012, \$ trillion

2006
 2012

Source: The McKinsey Quarterly, December 2007 and UBS data.

Investment Objectives

Given the diverse requirements and profiles of SWFs, their investment objectives, risk tolerance and time horizons vary over a considerable range. Some of this variation reflects differences in fund liabilities. Except for those funds that have open-ended liabilities, SWFs must invest with a view to managing their liabilities — whether these are contingent, fixed or mixed.²³ For most funds, however, return enhancement is a high priority. SWFs generally seek to earn returns greater than they would achieve on foreign exchange reserves, which are primarily invested in short-term deposits, US Treasury bonds and other sovereign instruments. Diversification is another leading priority. According to a recent article in *Central Banking*, fully 80 percent of the sovereign investors surveyed had diversified their portfolios in the past two years by adding a new asset class, including corporate bonds, equities, gold and other real assets.²⁴

²³ See pages 17–18.

²⁴ Survey of Central Banks Reserve. *Central Banking*, 2007.

What will be the impact of SWFs on global asset prices? To begin with, we should be cautious of partial equilibrium models. Many factors shape incremental asset supply and demand, and, hence, prices. However, it is clear that SWFs may represent an important source of additional demand for financial assets.

As pure conjecture based on the asset allocation of a typical pension plan, we can speculate that over time the collective asset allocation of SWFs will be approximately 60 percent equities, 30 percent bonds and 10 percent alternatives. Capital market theory holds that the world market portfolio is the most efficient. The international capital asset pricing model is not perfectly robust, but it provides a good starting point for analysis. As part of our thought experiment, we formulate a working hypothesis that SWFs will, over time, reduce their incremental purchases of US Treasuries, sell a portion of their existing US Treasuries, and reallocate to global equities and global bonds in proportion to world market weights.

Estimates of the size of the world's capital markets vary. The average of figures compiled by the McKinsey Global Institute, Goldman Sachs and Merrill Lynch places the total stock of investable global equities at about \$33 trillion, global government bonds at \$21 trillion, and private sector bonds at \$24 trillion.

The Impact on Global Equity Values

SWFs currently control nearly \$3 trillion in assets and are projected to invest about \$5 trillion in the next five years. If, today, they were to collectively allocate 60 percent of this capital to the FTSE Global All Cap Index, they would own about 5.2 percent of each of the 8,009 companies in the index. By the same token, if they were to allocate 60 percent of their assets to the MSCI All Country World Index, they would collectively own about 5.5 percent of each company in that index as of March 31, 2008. If SWFs do, indeed, allocate some 60 percent of their assets to equities, there is scope for the global equity risk premium to fall and for real bond yields to rise. In the medium term, SWF allocations to stocks are likely to be supportive of equity valuations.

The Impact on Global Fixed Income Values

As of December 2007, foreign official institutions held 32 percent of the roughly \$4.5 trillion in marketable US debt held by the public, with 85 percent of these holdings in Treasury notes and bonds. In a recent study of the US Treasury market, University of Virginia scholar Frank Warnock states, "Foreign buying has kept long-term US interest rates about one to one-and-a-half percentage points lower than otherwise."²⁵ To the extent that foreign central banks reduce their purchases of US Treasuries and SWFs sell a portion of their existing US Treasury notes and bonds to diversify, US real yields could rise.

²⁵ Warnock, Francis and Veronica Warnock. "International Capital Flows and U.S. Interest Rates." FRB International Discussion Paper No. 840. September 2006.

Impact on World Currencies

Since 2001, the US dollar's share of allocated currency reserves has fallen from 71 percent to 65 percent. Many factors affect the value of the dollar, but at the margin, as SWFs increasingly diversify into global portfolios, their activities may place further pressure on the dollar. However, many believe the impact could be small, given that global foreign exchange markets trade about \$3 billion a day. There are several factors that impact the value of the dollar, including the attractiveness of the US as an investment destination, and we should be cautious in attributing movements in the dollar to any one factor.

Other Financial Implications

Given their countries of origin, SWFs could produce sustained interest in emerging market equities and debt and at the same time facilitate the development of new asset classes, such as infrastructure, local currency emerging debt and frontier emerging markets. SWFs may also continue to provide strong flows into private equity, real estate and alternative investments, including hedge funds and commodities. Aggregate SWF investments in hedge funds and private equity funds had already reached \$350 billion by the close of 2007.²⁶

SWFs may also accelerate corporate restructurings by taking 5 percent to 10 percent strategic stakes in global companies — financial services companies, in particular. From the start of 2007 through April 2008, SWFs invested some \$80 billion in new capital to the banking sector.²⁷ This number is influenced greatly by the additional investment SWFs made in US and European banks that had experienced serious losses on sub-prime mortgages.

As patient, long-term investors, SWFs are in a position to influence key corporate decisions, such as the selection of chief executives or of major acquisition targets. So far, most SWFs have limited their stakes in public companies to less than 10 percent. However, as their resources grow and as recipient countries and corporate boards gain greater familiarity with SWF investors, there is scope for SWFs to exert greater influence in their target companies.

SWFs are the most rapidly growing segment of the institutional investor base. Their uniqueness arises in part from their ownership and governance, their provenance and liability structures and their rapid growth. They reflect the changing structure of world output and the commodities boom brought about in part by the partial integration of more than 2 billion people in former command economies into the world economy. As SWFs' assets grow and their asset allocation shifts, they have the potential to place upward pressure on global equity prices. However, we should be cautious of partial equilibrium analyses, particularly in today's rapidly changing and technology-driven global economy. Many factors, including potential asset allocation shifts by retiring baby boomers, will impact global equity prices in the years ahead.

²⁶ "The World's New Financial Power Brokers." McKinsey Quarterly, December 2007, p. 8.

²⁷ "Sovereign Wealth Fund Tracker." Global Insight, April 2008, p. 3.



END NOTE

End Note

Sovereign wealth funds are very diverse. Some are more than 50 years old; others are by comparison quite new. Some have been created out of surplus foreign exchange reserves; others represent the financial proceeds from commodity exports. Most prefer to maintain a low profile, though recently their activities have increasingly been in the world's media spotlight. Almost all have long investment horizons. By providing liquidity and capital to world markets, they can enhance the operation of markets, lower equity financing costs and provide support to equity valuations.

The rapid growth in SWFs is evidence of the changing structure of the world's economic output and brings to the fore many issues regarding governance of the global economy. For example, rapid reserve accumulation in emerging economies is a symptom of persistent global imbalances, itself a function of different national savings and investment patterns, and of exchange rate policies.

Over the past few decades, an open and expanding world trade and investment regime has greatly contributed to rising standards of living in developed and emerging markets alike. According to a study by Scott Bradford, Paul Grieco and Gary Hufbauer, the United States, for example, has reaped very substantial benefits from the “hugely successful postwar record of trade and investment liberalization.”²⁸ In 2003, global integration added between \$2,800 and \$5,000 to the income of the average American, between \$7,100 and \$12,900 to the income of the average American household, and approximately \$1 trillion to GDP.

Political pressures in recipient countries for SWFs to increase transparency are understandable, given recent developments in global capital markets. However, in light of the benefits of an open and expanding world trade and investment system, it is essential that industrialized countries keep their markets open. By the same token, the growth of a liberal global investment regime is enhanced through dialogue and acknowledgement of shared rights and responsibilities.

Whatever the merits of the case, SWFs need to acknowledge that asymmetric access to capital markets risks provoking a strong policy debate. An open exchange of views is in everybody’s interest.²⁹ Given that SWFs are by their very nature sovereign institutions, the only way to advance the debate on transparency and involvement is by consensus and dialogue, not political posturing. The debate will move into more productive stages only when all parties engage in a cooperative dialogue.

Whatever the political concerns surrounding this issue, there is no doubt that on purely a portfolio risk management basis, there are legitimate grounds for asset-rich countries to seek real assets through SWFs, not least to avoid the risk that official sector debtors from the industrialized countries will seek to reduce their (nominal) liabilities through a policy of inflation. It is not yet clear what the consequences of this new investment dynamic will be, and whether it is in fact optimal for official sector asset managers to push the boundary of risk/reward maximization in this way. But the subject is certain to remain alive as long as asset-rich states continue to look to diversify their national wealth away from portfolios consisting wholly of local securities and paper assets, and as long as governments seek to use all the tools at their disposal — including large financial assets — to pursue their national interest.

²⁸ Bradford, Scott, Paul Grieco and Gary Hufbauer. “The Payoff to America from Global Integration.” Peterson Institute for International Economics, pages 67–8. 28 December 2007.

²⁹ It is interesting to note that the recent injections of capital into some western financial institutions have not been met by any protectionist opposition (except at the margin by a few shareholders unhappy at seeing their investment diluted). Maybe the current financial situation has enabled SWFs to emerge from their latter-day image of aggressive buyers and reassume their more traditional role as conservative and sympathetic long-term suppliers of capital to markets.

APPENDIX



Appendix

Sovereign Wealth Funds and Monetary Authorities Performing SWF Functions with Estimated Assets of \$1 Billion or More

Name	Home Country	Founded	Sources of Funds	Assets (in billions US\$)
Abu Dhabi Investment Authority and Corporation (ADIA)	UAE (Abu Dhabi)	1976	Oil	\$ 875
Government of Singapore Investment Corporation (GIC)	Singapore	1981	Excess Reserves	330
Government Pension Fund-Global	Norway	1990	Oil	322
Saudi Arabia Monetary Agency	Saudi Arabia	N/A	Oil	300
Kuwait Investment Authority	Kuwait	1960	Oil	250
China Investment Corporation	PRC	2007	Excess Reserves	200
Hong Kong Monetary Authority Investment Portfolio	Hong Kong SAR, PRC	1998	Excess Reserves	140
Stabilization Fund of the Russian Federation	Russia	2004	Oil	127
Temasek Holding	Singapore	1974	Excess Reserves	108
Central Huijin Investment Corporation	PRC	2003	Other	100
Reserve Fund	Libya	N/A	Oil	50
Australia Government Future Fund (AGFF)	Australia	2006	Budget Surpluses, Sale of Telstra	50
Qatar Investment Authority	Qatar	2005	Oil	40
Alaska Permanent Fund	US	1976	Oil	40
Brunei Investment Authority	Brunei	1983	Oil	35
National Pensions Reserve Fund	Ireland	2001	Other	29
Revenue Regulation Fund	Algeria	2000	Oil	25
Korea Investment Corporation	South Korea	2005	Excess Reserves	20
National Oil Fund	Kazakhstan	2000	Oil, Gas	18
Khazanah Nasional	Malaysia	1993	Debt	18
National Development Fund	Venezuela	2005	Oil, Excess Reserves	18

**Sovereign Wealth Funds and Monetary Authorities Performing SWF Functions with Estimated Assets of \$1 Billion or More
(continued)**

Name	Home Country	Founded	Sources of Funds	Assets (in billions US\$)
Alberta Heritage Savings Trust Fund	Canada	1976	Oil	\$ 17
Taiwan National Stabilization Fund	Taiwan	2000	Postal Savings, Loans From Domestic Banks	15
New Mexico State Investment Office Trust Fund	US	1958	Other	15
Foreign Exchange Reserve Fund	Iran	2000	Oil	15
Excess Crude Account	Nigeria	2004	Oil	11
Government Pension Fund	Thailand	1997	Budget Surpluses, Payroll Taxes	11
Superannuation Fund	New Zealand	2003	Other	10
State General Stabilization Fund (SGSF)	Oman	1980	Oil, Gas	8.2
Isithmar	UAE (Dubai)	2003	Oil	8
Pension Guarantee Fund	Chile	2007	Budget Surpluses	6.8
Dubai International Capital	UAE (Dubai)	2004	Oil	6
Economic and Social Stabilization Fund	Chile	2006	Copper	6
Pula Fund	Botswana	1993	Diamonds	4.7
Permanent Wyoming Mineral Trust Fund	US	1974	Minerals	3.2
Government Petroleum Insurance Fund	Norway	1986	Oil	2.6
State Oil Fund	Azerbaijan	1999	Oil	1.5
Heritage and Stabilization Fund	Trinidad and Tobago	2006	Oil	1.4
Timor-Lease Petroleum Fund	East Timor	2005	Oil	1.2

Source: Sovereign Wealth Funds. Joint Economic Committee. US Congress. Research Report #110.21. February 2008.

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