

The Management of China's International Reserves: China and a Sovereign Wealth Fund Scoreboard

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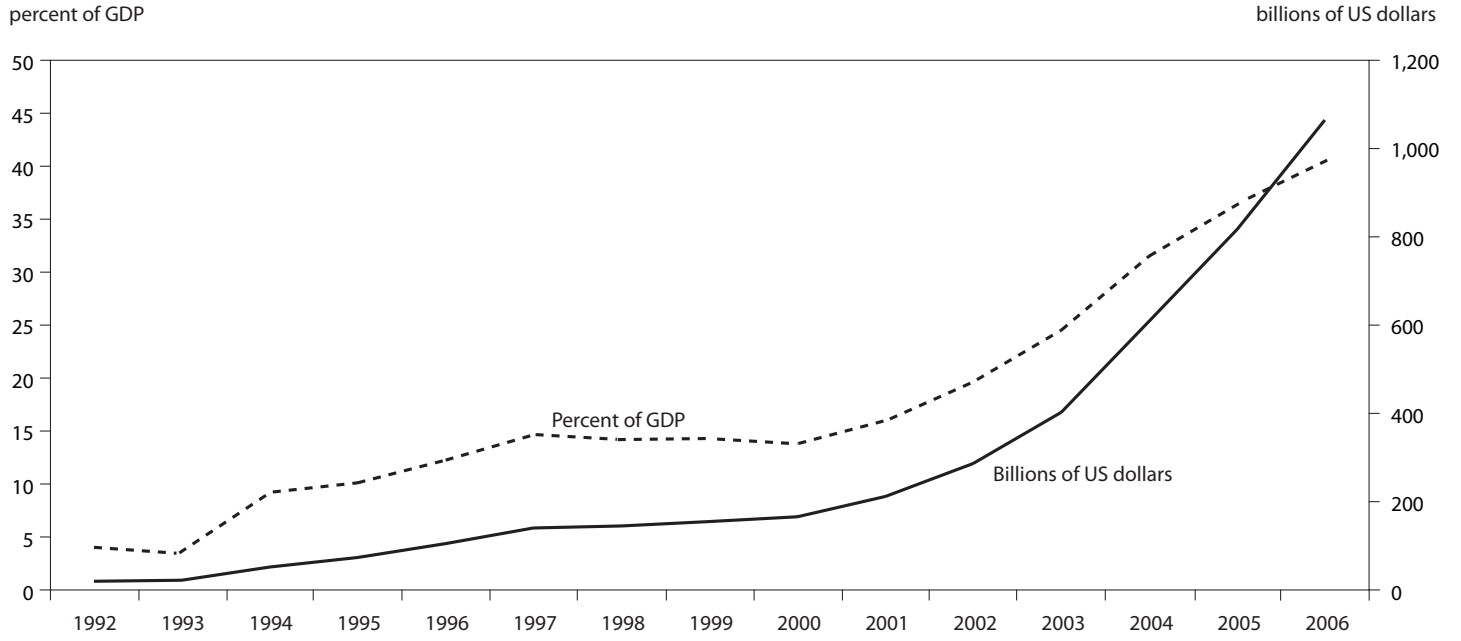
China's international reserves as of the end of September 2007 were \$1.4 trillion, or close to 50 percent of GDP, virtually all of which were in foreign exchange. In 1992, China's foreign exchange reserves were \$19.4 billion, or 4 percent of GDP. They crossed the \$100 billion line in 1996, the \$200 billion line in 2001, and the \$500 billion line in 2004.¹ At the end of 2006, China's foreign exchange reserves were \$1.1 trillion (figure 5.1).

In 2003, the People's Bank of China (PBC) established the Central Huijin Investment Company, a type of sovereign wealth fund (SWF), with \$67.5 billion of its foreign exchange reserves to recapitalize four state-owned banks. On September 29, 2007, Chinese authorities established the China Investment Corporation (CIC). It absorbed the Central Huijin Investment Company and China Jianyin Investment Limited and has initial capital of \$200 billion.

Edwin M. Truman, senior fellow at the Peterson Institute since 2001, was assistant secretary of the Treasury for international affairs (1998–2000). Doug Dowson provided tenacious assistance in the research underlying this paper as well as dedication to preparing the presentation of the results. In revising the original paper, the author benefited from the comments of and subsequent interchanges with Mohamed El-Erian and Brad Setser.

1. China's foreign exchange reserves reached 10 percent of GDP in 1995, 20 percent of GDP in 2003, and 30 percent of GDP one year later.

Figure 5.1 China's foreign exchange reserves, 1992–2006



Source: China State Administration of Foreign Exchange.

Table 5.1 Foreign exchange reserves and current account balances

Country	Foreign exchange reserves				Current account/GDP ^b 2002–06 (percent)
	End of year, 2006 (billions of US dollars)	Change, 2001–06 (percent)	Share of GDP, 2006 (percent)	Reserves/GDP ^a 2002–06 (percent)	
	China ^s	1,066	403	41	
Japan	875	126	20	2.2	3.5
Russia ^{sr}	295	807	30	8.4	9.7
Taiwan	266	118	75	8.9	7.1
Korea ^{sr}	238	133	27	3.9	1.9
India	170	276	19	3.7	-0.3
Singapore ^{sr}	136	81	103	11.3	22.5
Hong Kong	133	20	70	2.6	9.9
Brazil	86	139	8	1.4	1.0
Malaysia ^s	82	185	54	8.9	13.3
Algeria ^s	78	333	68	14.0	17.2
Norway ^s	56	153	17	2.6	14.3
United Arab Emirates ^s	28	98	16	2.4	12.3
Kuwait ^s	12	32	13	0.9	32.9
Qatar ^s	5	346	10	2.4	20.0

r = reserves include sovereign wealth fund in whole or in part

s = has one or more sovereign wealth funds

a. Sum of changes in reserves as a ratio to sum of total output.

b. Sum of current account balances as a ratio to sum of total output.

The major issue addressed in this paper is the future accountability and transparency of the CIC. I present the results of research on 32 SWF of 28 countries by scoring them on their structure, governance, transparency and accountability, and behavior. The Central Huijin Investment Company scores substantially below average for all the funds. Given the actual and potential size of the new CIC and China's growing importance in the international financial system, Chinese authorities should seek to place the CIC at the top of the league of SWF. They should work with other countries to establish a set of best practices for all SWF, using the scoreboard presented in this paper as a point of departure.

China is not the only country with large foreign exchange reserves. Table 5.1 lists the countries with the ten largest holdings of foreign exchange reserves as of the end of 2006 along with the holdings of five other countries with large SWF.² China's foreign exchange reserves now exceed 40 percent

2. SWF for these purposes are (normally) separate pools of (generally) international assets owned and managed (directly or indirectly) by government to achieve various economic objectives, such as macroeconomic stabilization or contributing to a process of saving and

of GDP; at least four other countries can claim the same distinction. China also has not experienced the largest percentage increase in reserves since 2001, as Russia has recorded a larger increase from a lower base.

Finally, China is not the only country for which a rapid rise in reserves since 2001 has been associated with large cumulative current account surpluses. However, for the majority of the 11 countries listed in the table with average surpluses over the past five years of more than 5 percent of GDP (last column), those surpluses were associated with substantial earnings from natural resource-based exports. In addition, China had significant capital account surpluses during this period, as indicated by the difference between the figures for each country in the last two columns of the table. China shared that distinction with Taiwan, Korea, India, and Brazil. For the four countries listed at the bottom of the table, large current account surpluses were on balance recycled via net capital outflows that were not recorded as increases in reserves but at least partly involved governments and their SWF.³

The literature on the demand for and appropriate level of international reserves dates back to the 1960s (Frankel and Jovanovic 1981, Hamada and Ueda 1977, Heller 1966, Heller and Knight 1978). With the 175 percent increase in foreign exchange reserve holdings from 2001 to May 2007 by all countries and the 230 percent increase over that period in holdings excluding traditional industrial countries, the literature has experienced a resurgence (Flood and Marion 2002, Jeanne 2007, Jeanne and Rancière 2006). Rules of thumb have been developed for determining the adequacy of reserves. They are expressed in terms of months of imports of goods and services; a ratio of reserves to short-term debt immediately coming due or in total, to the total external debt of a government or country, or to external obligations; a ratio to GDP or to some measure of the money supply; or combinations of the above.

Theoretical and empirical analyses also have sought to explain the behavior of countries that build up their reserves and to determine the appropriate cutoff for excess reserves (Aizenman 2007; Aizenman and Lee

intergenerational wealth transfer. In its September 2007 *Global Financial Stability Report*, the International Monetary Fund (IMF 2007b) provides a taxonomy of SWF and discusses some of the fiscal issues that they raise, but the report fails to identify or address any of the major issues that SWF raise for the international financial system; see Truman (2007). Conspicuously missing from the list in table 5.1 is Saudi Arabia, even though as of August 2007 the Saudi Arabian Monetary Agency reporting holdings of \$27.0 billion in foreign exchange reserves, \$205.7 billion of other international securities on its balance sheet, and \$51.3 billion in holdings on behalf of other government entities that are not on its balance sheet. The IMF (2007b) includes Saudi Arabia as an example of a country with an SWF despite its apparent lack of such a formal structure.

3. Those countries also have substantially lower official reserves as a ratio to GDP than does China. For the last five countries listed in the table, their foreign exchange reserves plus SWF amount to at least 100 percent of GDP.

2005; Aizenman, Lee, and Rhee 2004; Aizenman and Marion 2003; Garcia and Soto 2006; IMF 2003; Jeanne 2007). My reading of the literature is that there is no consensus about the optimal level of foreign exchange reserves. It thus follows that there is no consensus about the level at which foreign exchange reserves become excessive. One simple explanation for these results is that, as countries have added to their international reserves and it is assumed that these decisions are rational within the context of the models employed, more reserves are found to be better: As in flipping coins, there is always a small probability that the bank will be broken or that reserves considered to be more than adequate prove in the end not to be sufficient.

A more prosaic explanation is that, for most countries, the level of reserves is a by-product of other economic and financial policies, in effect the residual. This explanation, in my view, better characterizes what has happened in China. China's exchange rate policy has failed to adjust to changes in China's development progress, with the result that it has turned mercantilist, as is discussed in other papers in this volume.

Slightly more than a decade ago, before the outbreak of the Asian financial crises, Governor Dai Xianglong of the PBC used the steady accumulation of China's foreign exchange reserves as one of his prominent talking points to demonstrate that China deserved a place in the first rank of nations. When China's reserves passed the \$100 billion mark in 1996, he cited this fact in conversations with officials in the Federal Reserve and—showing a lack of appreciation of the independence of central banks—US Treasury officials to justify why China should be given a seat on the board of the Bank of International Settlements, to which his successor, Governor Zhou Xiaochuan, was elected in 2006 in his personal capacity.

As China developed an ever-wider current account surplus after 2001 and its surplus on the nonreserve financial account continued, at least until 2006, it became clear that the continued accumulation of China's foreign exchange reserves was intimately connected with its exchange rate policy interacting with a rapidly expanding current account surplus as well as with capital inflows responding to the incentives created by its exchange rate policy. As a practical matter, despite Chinese authorities' various efforts to disguise the accumulation of foreign exchange reserves by creating special purpose vehicles and to manipulate controls on capital outflows to promote recycling through the private sector, China is destined to continue to rack up huge annual increases in foreign exchange reserves as long as one can reasonably project.⁴ With reserves including its SWF easily in excess of \$1.5 trillion by the end of 2007, even a modest an-

4. Recognizing this reality in no way detracts from the view that the continued accumulation of foreign exchange reserves by China and other countries should be used to test their intent in increasing the flexibility of their currencies. It does suggest that the analysis, at least in part, should be conducted net of earnings on existing reserves, which not only add to the existing stock but also boost the current account surplus.

nual return of 5 percent implies an annual increase in reserves of \$75 billion, more than the stock of foreign exchange reserves of all but 11 countries at the end of 2006.

Some authors, such as Caballero, Farhi, and Gourinchas (2007) and Mendoza, Quadrini, and Ríos-Rull (2007), attempt to explain the accumulation of foreign exchange reserves by countries such as China in terms of the weaknesses of their domestic financial systems and the strength of financial systems and the rule of law in other countries through which saving in the first group of countries is intermediated. These analyses are built on a flimsy empirical base and fail to distinguish between actions by the private sector and the public sector.

Dooley, Folkerts-Landau, and Garber (2007), in their writings on Bretton Woods II, are more imaginative. They implicitly assume that the government of China knows better than its citizens how to manage China's financial investments. For them, the government is the only relevant actor and its aim is to provide collateral in the form of foreign exchange reserves for foreign direct investment in China. However, in my view, these are rationalizations, not explanations; none pass the test of common sense.⁵

Nevertheless, a few countries, such as Chile and Mexico (see Jadresic 2007, Ortiz 2007) have examined the optimal level of their foreign exchange reserves, implementing policies to limit their accumulation as a result. As described in Bakker (2007) and Bakker and van Herpt (2007), a number of European countries have taken steps to reduce their foreign exchange reserve holdings or to hedge them into local currency. In doing so, they are responding to the exchange risk associated with such holdings as well as to dual pressures, first, by their fiscal authorities to increase the return on foreign exchange holdings, and second, on central banks managing those holdings to limit the asymmetric risks involved. In many cases, the central bank absorbs capital losses at the same time that it is mandated to pass on positive returns to its fiscal authorities.

5. The facts on which the Bretton Woods II boys base their analysis are essentially nonexistent. In recent years, external financing has accounted for less than 5 percent of fixed investment in China; the figures are similar for other Asian countries. All the US government asset seizures they cite were motivated by political rather than private financial considerations (the use of the Iranian assets to pay off non-American commercial or personal non-commercial claims are exceptions that prove the rule, as they were driven by US domestic politics). Countries are slowly diversifying away from the US dollar; based on IMF Currency Composition of Official Foreign Exchange Reserves (COFER) data, the dollar's value share in the reserves of developing countries declined by 10.5 percentage points from the end of 2001 to the end of 2006, and the quantity share declined by 4.6 percentage points. The Bretton Woods II system in Asia today, as a explanation of exchange rate policies, consists of greater China, Malaysia, and Singapore because the Korean won, the Thai baht, the Indonesian rupiah, and the Philippine peso have appreciated substantially. For the won, baht, and rupiah, the real effective appreciation since the dollar's peak in February 2002 through August 2007 was larger than that of the euro.

A slightly more pragmatic view of international reserves distinguishes between those held for liquidity purposes and those held as longer-term investments. Often the tranche of longer-term investments is split between the reserve holdings of the monetary authorities—the central bank or finance ministry—and reserves held in an SWF or the equivalent.⁶ This strand of the literature recognizes, at the level of the government of a country, the continuum of purposes in holding international assets ranging from managing exchange rates and meeting short-term external financial obligations to investing for the long term. Working out the associated arrangements in practice is more difficult because foreign exchange reserves are normally held on the books of the central bank, at least in developing countries, while it is more rational that policies governing longer-term investments are set by the government and associated returns and losses accrue to the fiscal authorities.⁷

For the governments of countries such as China, with their huge hoards of foreign exchange reserves, the basic question is what to do with the reserves once they are there. One approach is to limit their further accumulation, net of earnings on the existing stock, by adopting a currency policy directed at appreciation and flexibility supported by macroeconomic and microeconomic policies that are in turn directed at maintaining sustainable growth and price stability. This is a major theme of other papers presented in this volume.

A second approach, in particular for a developing country such as China, where the accumulation of foreign exchange reserves does not reflect the conversion of wealth from nonrenewable resources underground into wealth in financial assets above ground, is to try to use the foreign exchange reserves for domestic development purposes. This approach is understandable but problematic. If China is to use its foreign exchange reserves to finance domestic investment or government expenditures, it must not only halt the gross and net accumulation of reserves but also reverse the accumulation of reserves to repatriate the principal into domestic financial resources. The former requires economic and financial policies to be recalibrated; the latter requires their reversal.

China has implemented the indirect use of foreign exchange reserves to support domestic policies, and India is in the process of doing so.⁸ In the

6. As noted in appendix table 5.A1, the latter distinction is not always made in practice.

7. In Canada, Japan, and the United Kingdom, the great bulk of foreign exchange reserve holdings are on the books of the finance ministry rather than the central bank. In the United States, they are split essentially evenly between the Federal Reserve and the exchange stabilization fund of the US Treasury.

8. Several years ago, Montek Ahluwalia, deputy chairman of India's Planning Commission, raised the issue of how India's growing foreign exchange reserves could be used in a non-inflationary way to finance domestic expenditures. Press reports suggested that the idea would be to borrow abroad against India's foreign exchange reserves to finance investment

Chinese case, an amount of foreign exchange reserves estimated at \$67.5 billion has been used since 2003 to fund the Central Huijin Investment Company, which in turn helped to fund the recapitalization of four major government-owned banks and financial institutions. The new CIC has absorbed the Central Huijin Investment Company and is expected to make similar investments in the Agricultural Bank of China and the China Development Bank. Thus, about two-thirds of the initial \$200 billion in CIC investments nominally will be domestic.⁹

China's approach to using foreign exchange reserves is problematic, first, because it is unclear where the exchange risk lies. Second, excepting the limiting case in which the banks involved have foreign currency-denominated liabilities that they otherwise cannot hedge, for the capital injections to be useful to the banks, they have to be converted into domestic currency. To the extent that the Central Huijin Investment Company has absorbed exchange risk and the banks converted the foreign currency into domestic currency, the foreign exchange is returned to the books of the PBC. The general public does not know what has happened. This situation illustrates a fundamental issue in managing large official holdings of cross-border assets: the importance of transparency. Diverting resources from an SWF for domestic investment purposes without a high degree of transparency and accountability also creates opportunities for corruption.

A third approach is to use the accumulated foreign exchange holdings to meet China's external economic or political objectives. China may make loans to African countries,¹⁰ or Chinese government-owned banks or cor-

in domestic infrastructure. However, to do so without recalibrating its macroeconomic policies in the direction of current account deficits, India would have to convert the foreign exchange into domestic currency, which either expands the money supply and lowers interest rates or requires the central bank to purchase foreign exchange with domestic currency and sterilize the monetary effects through sales of government debt. In effect, infrastructure investment has been financed by an increase in government debt in the hands of the public. Nevertheless, the government of India has continued to pursue some variant of the idea; see Committee on Infrastructure Financing (2007). Indian Finance Minister Palaniappan Chidambaram explained at the Peterson Institute on September 25, 2007 that foreign exchange reserves would be used to finance the import content of infrastructure investments in India. However, there is little difference between the government buying foreign exchange to finance imports from the central bank and buying it in the private market, as long as the central bank pegs the exchange rate.

9. Even though the investments will be domestic, given that they are financed out of foreign exchange, the underlying international assets either have to be sold in the market or managed by someone. China is not the only country with an SWF that invests domestically as well as internationally. Singapore's Temasek Holdings, Russia's Stabilization Fund, the Alaska Permanent Fund, and Alberta Heritage Savings Trust Fund, among others, do so as well.

10. Such an operation could take the form of recycling: The government or a government-owned entity could make a loan to a foreign borrower denominated in foreign currency and purchase the foreign currency from the central bank (directly or indirectly through the market) to fund the loan.

porations may directly invest in foreign countries. Such investments might be funded indirectly out of foreign exchange reserves or through an SWF or the equivalent to which the foreign exchange has been effectively transferred.¹¹ The investments may be for economic or political purposes, illustrating an additional ambiguity as well as an issue for the Chinese government vis-à-vis its own citizens and vis-à-vis the international community.

Fundamentally, the preferable approach to managing excess foreign exchange reserves is to try to apply strict economic and financial criteria and to maximize their return over a relevant horizon, subject to whatever constraints may be imposed for risk management purposes.¹² As Lawrence H. Summers (2006, 2007) has argued with his characteristic force and eloquence, to do anything else amounts to financial malpractice.¹³ More concretely, he has pointed out that for a country like China, a difference of 100 basis points on average over time on its holdings of cross-border financial assets, with foreign exchange reserves at 50 percent of GDP by the end of 2007, amounts to half a percentage point of GDP per year. Such calculations apply regardless of whether the cross-border assets are held in the central bank as foreign exchange reserves, are held in an SWF or the equivalent, or are held in some looser structure on the books of some government agency. However, sovereign wealth funds may be second-best arrangements to the use of the private sector. Recall that, in general, governments are not skilled investors. They are not good at picking winners. Government-owned banks tend not to be the most profitable. Recently, I was told by Anusha Chari of the University of Michigan that her preliminary research suggests that recent mergers and acquisitions by Chinese corporations, many of which are government-owned or government-controlled, under perform other cross-border mergers and acquisitions.

Thus, China faces major issues in managing its foreign exchange reserves. It is the elephant in the room of the international financial system not only because of its exchange rate policies and outsized current account surplus but also because of its large official holdings of foreign assets. As far as is known, China has the largest stock of cross-border as-sets

11. See the previous footnote. According to published reports, China's new SWF, the CIC, also involved multiple contortions in connection with allocating exchange risk when foreign exchange was transferred from the PBC. Students of the independence of central banks were amused that in mobilizing some of the domestic resources to fund the CIC, the government of China evaded the spirit but not the letter of its law by "selling" RMB600 billion in bonds to the state-owned Agricultural Bank of China. The PBC, in turn, made an "open market purchase" of those bonds in effect to fund the purchase of foreign exchange from the PBC to provide the initial resources for the CIC.

12. In narrow financial terms, the return to be maximized should be calculated net of the cost of any liabilities associated with the external assets.

13. See also Lawrence H. Summers, "Funds that Shake Capitalist Logic," *Financial Times*, July 29, 2007.

controlled by a government.¹⁴ This fact alone means that the Chinese government's management of cross-border assets potentially raises major issues not only for China and its citizens but also for the international financial system. China is being, will be, and should be held to the highest standard of accountability and transparency in this area. The Chinese authorities may not like this fact, but as a citizen and former official of the country long characterized as the elephant in the room of the international financial system, my advice is to get used to it.

On the other hand, diversification of China's cross-border assets away from US dollar assets and short-term assets issued by the US and other governments is appropriate and inevitable. It is part of a pattern of financial globalization that has generally positive, as well as occasional negative, implications for the international financial system and the global economy. Therefore, for the rest of the world, my advice is to get used to it!

The potential issues raised by China's management of its international assets including those of the CIC are the following:

1. concern that its investment policies will be motivated by political or economic power considerations, producing protectionist reactions in other countries;
2. concern that in implementing its investment policies, it may provoke a reaction of financial protectionism *even if* that reaction is *not* justified;
3. concern that implementing its investment policies contributes otherwise to uncertainty and turmoil in financial markets;
4. to the extent that intermediary financial institutions are used to execute its investment policies, concern that conflicts of interest may arise with respect to those intermediaries;
5. concern about the domestic political fallout from its international investment decisions; and
6. domestic concern that the mismanagement of China's external wealth is wasteful and adversely affects the country's economic, financial, and political stability.

Many of the above concerns are hypothetical at this stage. The concerns do not apply uniquely to China and its new sovereign wealth fund, the CIC. Such funds have been around for decades. There is considerable evidence that the last concern about the squandering of international assets is something about which countries should worry. On the third risk, most experienced observers with whom I have spoken, for example, Mohamed El-Erian in his comments on this paper, do not see SWF posing a threat to financial-market stability on the basis of the past behavior of the owners

14. It is possible that the United Arab Emirates has larger holdings, but we cannot confirm this from published information. Estimates suggest that its holdings are less than two-thirds of China's approximately \$1.5 trillion.

and managers of these funds. Nevertheless, such assurances may not be sufficient to satisfy politicians or the general public in countries receiving investments by foreign governments.

For China, because of the potential size and scope of the CIC's operations, each of these six concerns should be central for the authorities. The rest of the world will hold them responsible for its actions to a greater degree than it would a country with much smaller holdings of cross-border assets.

How might this responsibility be established and monitored? Most governmental organizations promulgate laws, guidelines, and standards as the basis for establishing their accountability and use transparency to demonstrate that they have lived up to their commitments.

In Truman (2007) I advocated the establishment of a standard or set of best practices for governmental cross-border investments in general and SWF in particular. For SWF, the set of best practices would cover four categories: structure, governance, transparency and accountability, and behavior. In my research, I have developed a scoreboard for 32 SWF in 28 countries, including 25 different elements grouped in these four categories.¹⁵ The construction of the scoreboard and the detailed results for each SWF appear in the appendix.

Table 5.2 summarizes the preliminary results of the exercise based on systematic publicly available information about SWF.¹⁶ Out of a possible maximum of 25 points, the highest score is 24 points recorded for New Zealand's Superannuation Fund, followed closely at 23 points for Norway's Government Pension Fund-Global.¹⁷ The Abu Dhabi Investment Authority (ADIA) and Abu Dhabi Investment Corporation (ADIC) in the United Arab Emirates post the lowest score, at 0.5 points. The average is 10.27 points. Six of the 10 largest SWF (see table 5.1) score at or below the average, including two of the three largest funds near the bottom of the table.¹⁸

15. As a point of reference, we also scored the California Public Employees' Retirement System (CalPERS), which scores slightly lower than Norway's SWF at 21.75, the same score as Timor-Leste's Petroleum Fund.

16. The results summarized in table 5.2 are preliminary in two respects. First, we are in the process of scoring additional SWF, or their equivalent. Second, we have received comments on the results presented in table 5.2 that will change some of the scoring and we are collecting additional information that may change some of the scoring. For example, additional information about Mexico's Oil Income Stabilization Fund would significantly boost our score for that SWF shown in table 5.2. See also the next footnote.

17. Norway's SWF has not strictly followed its rules on using earnings from its SWF, does not provide the currency breakdown of its investments, and is not subject to a fully independent audit. Subsequent to our preparation of table 5.2, we learned that information on the currency composition of the investments of Norway's SWF is available annually, which would boost it into a tie. To our knowledge, New Zealand's SWF does not have a formal guideline governing the speed of adjustment in its portfolio.

18. One of the two is the Government of Singapore's Investment Corporation. At the same time, Singapore's Temasek Holdings scores considerably above the average.

Table 5.2 Summary scoreboard for sovereign wealth funds

Country	Fund	Structure	Governance	Transparency and accountability	Behavior	Total
New Zealand	Superannuation Fund	8.00	4.00	12.00	0.00	24.00
Norway	Government Pension Fund–Global	7.50	4.00	10.50	1.00	23.00
Timor-Leste	Petroleum Fund	8.00	2.00	11.75	0.00	21.75
Canada	Alberta Heritage Savings Trust Fund	7.50	3.00	9.00	0.00	19.50
United States	Alaska Permanent Fund	7.50	2.00	8.50	0.00	18.00
Australia	Future Fund	8.00	2.00	7.00	0.00	17.00
Azerbaijan	State Oil Fund of the Republic of Azerbaijan	5.00	2.00	9.50	0.00	16.50
Chile	Economic and Social Stabilization Fund	7.00	2.00	6.50	0.00	15.50
Botswana	Pula Fund	5.50	2.00	7.00	0.00	14.50
Kazakhstan	National Oil Fund	6.00	2.00	6.50	0.00	14.50
Singapore	Temasek Holdings	4.00	1.50	8.00	0.00	13.50
São Tomé and Príncipe	National Oil Account	8.00	2.00	2.25	0.00	12.25
Trinidad and Tobago	Heritage and Stabilization Fund	6.50	2.00	3.75	0.00	12.25
Kuwait	Kuwait Investment Authority	6.00	3.00	3.00	0.00	12.00
Malaysia	Khazanah Nasional	4.00	1.50	4.00	0.00	9.50
Russia	Stabilization Fund of the Russian Federation	4.00	2.00	3.50	0.00	9.50
Korea	Korea Investment Corporation	6.00	2.00	1.00	0.00	9.00
Kiribati	Revenue Equalization Reserve Fund	5.00	2.00	0.50	0.00	7.50
Mexico	Oil Income Stabilization Fund	5.00	0.00	2.00	0.00	7.00
China	Central Huijin Investment Company	5.50	0.00	0.50	0.00	6.00
Venezuela	National Development Fund	1.50	0.50	4.00	0.00	6.00
Iran	Oil Stabilization Fund	4.00	1.00	0.50	0.00	5.50
Venezuela	Macroeconomic Stabilization Fund	3.00	0.50	2.00	0.00	5.50
Oman	State General Reserve Fund	3.00	0.00	2.00	0.00	5.00
Sudan	Oil Revenue Stabilization Account	4.00	0.00	1.00	0.00	5.00
Algeria	Revenue Regulation Fund	3.00	1.00	0.50	0.00	4.50
United Arab Emirates	Istithmar	3.00	0.50	0.25	0.00	3.75
United Arab Emirates	Mubadala Development Company	3.00	0.50	0.00	0.00	3.50
Brunei	Brunei Investment Agency	1.00	0.50	1.00	0.00	2.50
Singapore	Government of Singapore Investment Corporation	1.50	0.00	0.75	0.00	2.25
Qatar	Qatar Investment Authority	2.00	0.00	0.00	0.00	2.00
United Arab Emirates	Abu Dhabi Investment Authority and Corporation	0.50	0.00	0.00	0.00	0.50
Total possible points		8.00	4.00	12.00	1.00	25.00
Average number of points		4.80	1.42	4.02	0.03	10.27
United States	California Public Employees' Retirement System	8.00	3.00	10.25	0.50	21.75

As table 5.2 shows, the 32 funds fall into five groups of five to eight funds each. The first and third groups could be further subdivided. In the first three categories—structure, governance, and transparency and accountability—scores within the categories are correlated with overall scores. On balance, the scores are higher (relative to the potential maximum) in the structure category and lower in the governance and transparency and accountability categories. However, in the last category, the variance of the scores is the largest.

Before discussing the relevance of the scoring exercise to China, three points of qualification are in order. First, the objective in presenting the scoreboard is to offer an illustrative benchmark that could be used in designing a set of best practices. Second, the scoreboard is based on public information that we accessed principally using the Internet, as is appropriate today. To be useful in establishing accountability and transparency, information should be public, but we may not have accessed all the information available and necessarily applied judgment in some of our interpretations.¹⁹ Third, any benchmark provides a basis for countries to assess their own practices and performance. Countries in different circumstances may conclude that particular elements are irrelevant to their situations, but even so, the benchmark stands as a reference point to justify such decisions.

China's Central Huijin Investment Company receives an overall score of 6.0, the same as Venezuela's National Development Fund. Both are well below the average.

To date, there is not enough public information about the CIC to provide a score for that entity, but based on what we know to date, it is not in the first two groups. The CIC's economic objective is unclear. "The purpose is to realize a maximization of long-term investment returns within an acceptable risk range," CIC chairman Lou Jiwei is reported in the press to have said, though Lou's characterization is hardly operational, in particular given the context in which two-thirds of the CIC's initial investment is to be domestic. One would want to know how the recipient banks are going to deploy the foreign currency assets they receive as well as what return the CIC will receive on its investments in those banks. More broadly, what is the CIC's strategy for its other investments?

The CIC appears to have a detailed governance structure, but how it will operate and relate to the actual managers of the investments remains to be clarified. Will it primarily make direct investments, as with China Jianyin Investment Limited's stake in Blackstone (discussed below), or will it largely invest in marketable instruments, such as bonds and equities? Will it follow guidelines for corporate responsibility to the extent that it holds voting shares or stakes? What assurances are there of domestic or international accountability and transparency? Will the CIC publish re-

19. See footnote 16.

ports on its size and operations? Will it be subject to a published independent audit?

Why should any of these questions be important to the sovereign Chinese authorities? First, as noted earlier, because of the potential size of the CIC and the actual size of the country's foreign exchange reserves, the reality is that China's investments, including by government-owned or government-controlled financial and nonfinancial entities, are the target of principal concern to the international financial system. Therefore, China will be held to the highest standard in the operation of its SWF as well as in its other investment activities, whether or not the authorities embrace that standard. China is sovereign within its own borders, but in the international financial context, in its investment policies as well as its exchange rate policies, China's sovereignty is constrained because other countries' interests are involved.

Second, Chinese authorities should embrace some standard to increase the accountability of its own SWF to domestic and international critics. It follows that, in their own interests, Chinese authorities should lead the way in developing the standard to be applied.²⁰

Third, unless China leads in setting and adhering to such a standard and can demonstrate that it is a good international financial citizen, it risks protectionist reactions that limit its investments in other countries nominally seeking to defend their national security interests but in fact seeking to protect narrow national commercial interests.

Fourth, it is well known that there have been controversies in China already about official financial investments, such as the Chinese investment in Blackstone through China Jianyin Investment Limited, which has been transferred to the CIC. The value of that investment has declined substantially since it was first made, generating controversy and criticism within China. Presumably, the investment was part of an overall strategy that is expected to generate higher long-term returns than investments in short-dated US treasury instruments, but there is increased risk and the potential for losses, at least on paper and in the short run. This goes with the territory, but a clear investment strategy would help to blunt such criticism.

Another controversy surrounds investments by Temasek Holdings, one of Singapore's SWF, in Chinese banks at share prices substantially discounted relative to prices paid in their initial public offerings. These transactions involved the sale of strategic stakes, and often, other foreign institutions also purchased stakes on similar terms; nevertheless, the transactions have been criticized as sweetheart deals smacking of crony capitalism.

20. At the same time, Chinese authorities should embrace greater transparency in managing their international reserves more broadly, as advocated in Truman and Wong (2006).

As Chinese authorities roll out the structure, governance, transparency, and ground rules for the CIC, they have good reason to think hard about the above issues due to the actual and potential size of the CIC, general anxiety around the world about anything that concerns China's economic expansion, and the reality that China is subject to multiple suspicions about its political and strategic objectives. These suspicions derive from the fact that the scope for true private enterprise grounded on the rule of law is still minimal in China, and the country is associated with economic espionage and the proliferation of strategic technologies (Graham and Marchick 2006).

Along with other countries with large SWF or their equivalent, China should take the lead in developing a set of best practices for SWF operation. I offer my scoreboard exercise as a point of departure. Such an approach will facilitate the smooth management of China's outsized foreign exchange reserves, respecting the interests of China as well as those of the global financial system.

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Appendix 5A

A Scoreboard for Sovereign Wealth Funds

Sovereign wealth funds (SWF) or their near equivalents come in many forms with a variety of objectives in countries with a range of governmental structures. Consequently, comparing them is difficult. Nevertheless, it is possible to outline a core set of elements that are substantially relevant for all such entities, whether the objective is short-term macroeconomic stabilization, wealth transfer across generations, or a combination of objectives, the last of which is usually the case. Using these elements, one can then create a scoreboard to evaluate each individual SWF on the extent to which its structure and operation embrace these elements.

This appendix presents the scoreboard that I have constructed with the assistance of Doug Dowson. It covers four basic categories: structure, governance, transparency and accountability, and behavior. Within each category, we pose a set of yes-or-no questions, for a total of 25 questions. For two of the categories, we group the questions into subcategories.

For each question, if the answer is an unqualified yes, we score it as a 1. If the answer is no, we score it as a 0. However, for many elements, we allow for partial scores of 0.25, 0.50, and 0.75, indicated by (p) in the descriptions below. For each of our 25 questions, the answer is yes for at least one SWF.

We evaluate 32 SWF in 28 countries (table 5.A1), as well as the California Public Employees' Retirement System (CalPERS) as a reference point.²¹

In collecting the answers to our questions, we looked for sources of systematic and continuously available public information. For some of our facts, we relied on independent published reports, such as those of the International Monetary Fund (IMF) or World Bank. However, in general, we required that the SWF produce an ongoing flow of systematic information. Consequently, for some SWF, more is known about them than is reflected in our scoring, but the information is anecdotal and occasional rather than systematic and regular. In our view, it is not sufficient that an individual SWF provide information in ad hoc interviews with the press, as the Government of Singapore Investment Corporation and the Abu Dhabi Investment Authority have done. We have tried to be rigorous and

21. In our evaluation of SWF, we include the funds of two subnational units, the Alberta (Canada) Heritage Savings Trust Fund and Alaska (United States) Permanent Fund. We might have included Wyoming's similar fund. We also include two national pension funds, New Zealand's Superannuation Fund and Australia's Future Fund. We might have included the national pension funds of a number of other countries, such as Ireland. We do not classify Norway's Government Pension Fund-Global as a pension fund, despite the appearance of that phrase in its title, because at present, earnings from the fund are used to finance Norway's general budget. For pension funds such as CalPERS, established by law and generally subject to restrictions under such a law, it is somewhat easier for the SWF to record a high score.

Table 5.A1 Sovereign wealth funds

Country	Fund	Year established	Current size ^a (billions of US dollars)
United Arab Emirates			522 to 897 ^e
	Abu Dhabi Investment Authority and Corporation	1976	(500 to 875 ^e)
	Istithmar (Dubai)	2003	(12 ^e)
	Mubadala Development Company (Abu Dhabi)	2002	(10 ^e)
Singapore			208 to 438 ^{er}
	Government of Singapore Investment Corporation	1981	(100 to 330 ^{er})
	Temasek Holdings ^b	1974	(108)
Norway	Government Pension Fund–Global	1990	329
Kuwait	Kuwait Investment Authority	1953	213
Russia	Stabilization Fund of the Russian Federation	2004	148 ^f
China	Central Huijin Investment Company ^b	2003	68 ^e
Qatar	Qatar Investment Authority	2005	50 ^e
Australia	Future Fund ^b	2006	49
Algeria	Revenue Regulation Fund	2000	43
United States	Alaska Permanent Fund ^b	1976	40
Brunei	Brunei Investment Agency	1983	35 ^e
Korea	Korea Investment Corporation	2005	20 ^f
Kazakhstan	National Oil Fund	2000	19
Malaysia	Khazanah Nasional ^b	1993	18
Canada	Alberta Heritage Savings Trust Fund ^b	1976	15
Venezuela			16
	National Development Fund ^c	2005	(15)
	Macroeconomic Stabilization Fund	1998	(1)
Chile	Economic and Social Stabilization Fund	2006	10
New Zealand	Superannuation Fund ^b	2001	10
Oman	State General Reserve Fund	1980	10 ^e
Iran	Oil Stabilization Fund	2000	9 ^e
Botswana	Pula Fund	1997	6
Mexico	Oil Income Stabilization Fund	2000	3
Azerbaijan	State Oil Fund of the Republic of Azerbaijan	2000	2
Trinidad and Tobago	Heritage and Stabilization Fund	2007	1
Timor-Leste	Petroleum Fund	2005	1
Kiribati	Revenue Equalization Reserve Fund	1956	< 1 ^e
São Tomé and Príncipe	National Oil Account	2004	< 1
Sudan	Oil Revenue Stabilization Account	2002	< 1
Total ^d			2,148

e = estimate

r = some or all assets are included in reserves

a. Data are from the end of 2006 or the most recent date available.

b. A portion of the holdings is in domestic assets.

c. A portion of these holdings is intended for domestic investment.

d. Total uses the midpoint of the range of estimates.

systematic in our evaluation of each entity, but some degree of subjectivity necessarily is present in our procedure.

The four categories in our scoreboard are listed below with subcategories where relevant. The 25 questions are stated with explanatory comments on some of them. Table 5.A2 provides the scores of the 32 funds on each element as well as subtotals for each category and the overall score for each SWF that is also in table 5.2.

Structure (8)²²

1. Is the SWF's **objective** clearly communicated? (p: 28)²³

Fiscal Treatment (4)²⁴

Fiscal treatment is central to an SWF's role in the macroeconomic stability of a country. This involves several components, including how an SWF receives its funding, how the government may employ the SWF's principal and earnings, and whether the government actually follows the procedures it has established. As detailed in IMF (2007a), basic principles of good public finance aim at limiting procyclical influences on fiscal policy. It follows that the SWF should not be used as a second budget, should be integrated with the overall budget of the government, and that the government should not explicitly or implicitly borrow against resources building up in the SWF. In addition, clear rules and principles help to limit the potential scope for corruption in using the SWF for foreign or domestic purposes.

2. Is the **source** of the SWF's **funding** clearly specified? (p: 25.5)
3. Is the nature of the subsequent **use** of the principal and earnings in the fund clearly stated? (p: 16)
4. Are these elements of fiscal treatment **integrated with the budget**? (p: 17.5) In some cases, the integration is looser than in others. For this element, as well as the element that follows, some recently created SWF do not have an established record of compliance. In those cases, we gave the SWF full credit.

22. The number in parentheses indicates the number of elements included in the category as well as the maximum number of points that can be recorded for each SWF in the category.

23. The number in parentheses, for some elements preceded by a "p," indicates the total number of points out of 32 (the number of funds) recorded in this category. In other words, the number summarizes the score of the SWF as a group on each element. The figure is also at the bottom of each column in table 5.A2. A "p" indicates the potential for partial scores.

24. The number in parentheses indicate the number of elements included in the subcategory as well as the maximum number of points that can be recorded for each SWF in the subcategory.

Table 5.A2 Scoreboard for sovereign wealth funds

Country	Fund	Structure								
		Objective	Fiscal Treatment			Guidelines followed	Investment strategy	Changing the structure	Separate from international reserves	Subtotal
			Source of funding	Use of fund	Integrated with budget					
Algeria	Revenue Regulation Fund	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00
Australia	Future Fund	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	8.00
Azerbaijan	State Oil Fund of the Republic of Azerbaijan	1.00	1.00	0.50	0.50	1.00	0.00	0.00	1.00	5.00
Botswana	Pula Fund	1.00	0.50	1.00	1.00	0.00	1.00	1.00	0.00	5.50
Brunei	Brunei Investment Agency	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Canada	Alberta Heritage Savings Trust Fund	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	7.50
Chile	Economic and Social Stabilization Fund	1.00	1.00	1.00	0.50	1.00	0.50	1.00	1.00	7.00
China	Central Huijin Investment Company	0.50	1.00	1.00	1.00	1.00	0.00	0.00	1.00	5.50
Iran	Oil Stabilization Fund	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	4.00
Kazakhstan	National Oil Fund	1.00	1.00	1.00	0.50	0.00	1.00	0.50	1.00	6.00
Kiribati	Revenue Equalization Reserve Fund	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	5.00
Korea	Korea Investment Corporation	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	6.00
Kuwait	Kuwait Investment Authority	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	6.00
Malaysia	Khazanah Nasional	0.50	1.00	0.00	0.00	1.00	0.50	0.00	1.00	4.00
Mexico	Oil Income Stabilization Fund	1.00	1.00	0.50	1.00	0.00	0.50	0.00	1.00	5.00
New Zealand	Superannuation Fund	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	8.00
Norway	Government Pension Fund–Global	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	7.50
Oman	State General Reserve Fund	0.50	0.50	0.50	0.50	0.00	0.00	0.00	1.00	3.00
Qatar	Qatar Investment Authority	0.50	0.50	0.00	0.00	0.00	0.00	0.00	1.00	2.00
Russia	Stabilization Fund of the Russian Federation	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	4.00
São Tomé and Príncipe	National Oil Account	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	8.00
Singapore	Government of Singapore Investment Corporation	1.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Singapore	Temasek Holdings	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	4.00
Sudan	Oil Revenue Stabilization Account	0.50	1.00	0.50	1.00	0.00	0.00	0.00	1.00	4.00
Timor-Leste	Petroleum Fund	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	8.00
Trinidad and Tobago	Heritage and Stabilization Fund	1.00	1.00	1.00	0.50	1.00	1.00	0.00	1.00	6.50
United Arab Emirates	Abu Dhabi Investment Authority and Corporation	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.50
United Arab Emirates	Istithmar	1.00	0.50	0.00	0.00	0.00	0.50	0.00	1.00	3.00
United Arab Emirates	Mubadala Development Company	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	3.00
United States	Alaska Permanent Fund	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	7.50
Venezuela	Macroeconomic Stabilization Fund	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00
Venezuela	National Development Fund	0.50	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.50
Total ^a		28.00	25.50	16.00	17.50	13.00	16.50	12.00	25.00	4.80
United States	California Public Employees' Retirement System	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	8.00

a. For each category, the value under subtotal represents the average for all funds.

Table 5.A2 Scoreboard for sovereign wealth funds *(continued)*

Country	Fund	Governance				Transparency and accountability					
		Role of government	Role of manager	Guidelines for corporate responsibility		Subtotal	Reports		Investments		
				Ethical guidelines			Annual report	Quarterly report	Size of fund	Returns	Types
Algeria	Revenue Regulation Fund	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.00
Australia	Future Fund	1.00	1.00	0.00	0.00	2.00	1.00	0.00	1.00	1.00	1.00
Azerbaijan	State Oil Fund of the Republic of Azerbaijan	1.00	1.00	0.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00
Botswana	Pula Fund	1.00	1.00	0.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00
Brunei	Brunei Investment Agency	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00
Canada	Alberta Heritage Savings Trust Fund	1.00	1.00	1.00	0.00	3.00	1.00	1.00	1.00	1.00	1.00
Chile	Economic and Social Stabilization Fund	1.00	1.00	0.00	0.00	2.00	1.00	1.00	1.00	0.00	1.00
China	Central Huijin Investment Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Iran	Oil Stabilization Fund	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.00
Kazakhstan	National Oil Fund	1.00	1.00	0.00	0.00	2.00	0.50	0.50	1.00	1.00	0.50
Kiribati	Revenue Equalization Reserve Fund	1.00	1.00	0.00	0.00	2.00	0.00	0.00	0.50	0.00	0.00
Korea	Korea Investment Corporation	1.00	1.00	0.00	0.00	2.00	0.00	0.00	1.00	0.00	0.00
Kuwait	Kuwait Investment Authority	1.00	1.00	0.00	1.00	3.00	0.50	0.00	0.50	0.00	0.00
Malaysia	Khazanah Nasional	0.50	1.00	0.00	0.00	1.50	0.50	0.00	1.00	0.00	0.50
Mexico	Oil Income Stabilization Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
New Zealand	Superannuation Fund	1.00	1.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00
Norway	Government Pension Fund–Global	1.00	1.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00
Oman	State General Reserve Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Qatar	Qatar Investment Authority	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Russia	Stabilization Fund of the Russian Federation	1.00	1.00	0.00	0.00	2.00	0.00	0.00	1.00	0.00	1.00
São Tomé and Príncipe	National Oil Account	1.00	1.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.25
Singapore	Government of Singapore Investment Corporation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.50
Singapore	Temasek Holdings	0.00	1.00	0.50	0.00	1.50	1.00	0.00	1.00	1.00	0.50
Sudan	Oil Revenue Stabilization Account	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Timor-Leste	Petroleum Fund	1.00	1.00	0.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00
Trinidad and Tobago	Heritage and Stabilization Fund	1.00	1.00	0.00	0.00	2.00	0.50	0.00	1.00	0.00	0.00
United Arab Emirates	Abu Dhabi Investment Authority and Corporation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
United Arab Emirates	Isthmar	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.25	0.00	0.00
United Arab Emirates	Mubadala Development Company	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00
United States	Alaska Permanent Fund	1.00	1.00	0.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00
Venezuela	Macroeconomic Stabilization Fund	0.00	0.50	0.00	0.00	0.50	0.25	0.25	1.00	0.00	0.50
Venezuela	National Development Fund	0.00	0.50	0.00	0.00	0.50	1.00	0.50	1.00	0.00	0.00
Total ^a		16.50	22.50	3.50	3.00	1.42	13.25	9.25	21.50	10.00	13.50
United States	California Public Employees' Retirement System	1.00	1.00	1.00	0.00	3.00	1.00	1.00	1.00	1.00	1.00

a. For each category, the value under subtotal represents the average for all funds.

Table 5.A2. Scoreboard for sovereign wealth funds (continued)

		Transparency and accountability									
		Investments				Audit			Sub-total	Behavior: Speed of adjustment	Grand total
Country	Fund	Location	Specific	Currency composition	Man-dates	Regular	Published	Independent			
Algeria	Revenue Regulation Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	4.50
Australia	Future Fund	0.00	0.00	0.00	0.00	1.00	1.00	1.00	7.00	0.00	17.00
Azerbaijan	State Oil Fund of the Republic of Azerbaijan	0.50	0.00	1.00	0.00	1.00	1.00	1.00	9.50	0.00	16.50
Botswana	Pula Fund	0.00	0.00	0.00	0.00	1.00	0.00	1.00	7.00	0.00	14.50
Brunei	Brunei Investment Agency	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	2.50
Canada	Alberta Heritage Savings Trust Fund	1.00	0.00	0.00	0.00	1.00	1.00	1.00	9.00	0.00	19.50
Chile	Economic and Social Stabilization Fund	0.50	0.00	1.00	1.00	0.00	0.00	0.00	6.50	0.00	15.50
China	Central Huijin Investment Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	6.00
Iran	Oil Stabilization Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	5.50
Kazakhstan	National Oil Fund	0.00	0.00	0.50	0.50	1.00	0.00	1.00	6.50	0.00	14.50
Kiribati	Revenue Equalization Reserve Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	7.50
Korea	Korea Investment Corporation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	9.00
Kuwait	Kuwait Investment Authority	0.00	0.00	0.00	0.00	1.00	0.00	1.00	3.00	0.00	12.00
Malaysia	Khazanah Nasional	1.00	0.00	0.00	0.00	1.00	0.00	0.00	4.00	0.00	9.50
Mexico	Oil Income Stabilization Fund	0.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	7.00
New Zealand	Superannuation Fund	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00	0.00	24.00
Norway	Government Pension Fund–Global	1.00	1.00	0.00	1.00	1.00	1.00	0.50	10.50	1.00	23.00
Oman	State General Reserve Fund	0.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	0.00	5.00
Qatar	Qatar Investment Authority	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Russia	Stabilization Fund of the Russian Federation	0.50	0.00	1.00	0.00	0.00	0.00	0.00	3.50	0.00	9.50
São Tomé and Príncipe	National Oil Account	0.00	0.00	0.00	0.00	1.00	0.00	1.00	2.25	0.00	12.25
Singapore	Government of Singapore Investment Corporation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	2.25
Singapore	Temasek Holdings	1.00	0.50	0.00	0.00	1.00	1.00	1.00	8.00	0.00	13.50
Sudan	Oil Revenue Stabilization Account	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	5.00
Timor-Leste	Petroleum Fund	1.00	1.00	1.00	0.75	1.00	1.00	1.00	11.75	0.00	21.75
Trinidad and Tobago	Heritage and Stabilization Fund	0.00	0.00	0.00	0.25	1.00	0.00	1.00	3.75	0.00	12.25
United Arab Emirates	Abu Dhabi Investment Authority and Corporation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
United Arab Emirates	Isthmar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	3.75
United Arab Emirates	Mubadala Development Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50
United States	Alaska Permanent Fund	0.50	0.00	1.00	0.00	1.00	0.00	1.00	8.50	0.00	18.00
Venezuela	Macroeconomic Stabilization Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	5.50
Venezuela	National Development Fund	0.00	0.00	0.00	0.00	1.00	0.00	0.50	4.00	0.00	6.00
Total ^a		8.00	3.50	7.50	4.50	17.00	7.00	14.00	4.00	1.00	10.27
United States	California Public Employees' Retirement System	0.25	0.00	1.00	1.00	1.00	1.00	1.00	10.25	0.50	21.75

a. For each category, the value under subtotal represents the average for all funds.

5. Are the **guidelines** for fiscal treatment generally **followed** without frequent adjustment? (p: 13)

Other Structural Elements (3)

6. Is the overall **investment strategy** clearly communicated? (p: 16.5)
7. Is the procedure for **changing the structure** clear? (p: 12) When an SWF has been established by law, the procedure for changing many elements of the structure is clearer than when the SWF has not been established by law.
8. Is the SWF **separate from** the country's **international reserves**? (25) A lack of separation between the SWF and international reserves creates ambiguity about the investment objectives of the SWF as well as about the management of the government's international reserves.

Governance (4)

9. Is the **role of the government** in setting the investment strategy of the SWF clearly established? (p: 16.5)
10. Is the **role of the manager** in executing the investment strategy clearly established? (p: 22.5)
11. Does the SWF have in place, and publicly available, **guidelines for corporate responsibility** that it follows? (p: 3.5)
12. Does the SWF have **ethical guidelines** that it follows? (3) It reasonably could be argued that an SWF's objectives should be merely to implement its investment strategy and maximize financial returns subject to whatever risk management constraints have been established. In this case, its ethical guidelines would involve ignoring ethical considerations, but we would still score such an SWF as a 1. However, in some cases, the SWF may implicitly limit its investments in certain instruments, entities, activities, or countries without a clearly articulated set of guidelines. In the absence of any information on this point, an SWF receives a 0 in our scoring.

Transparency and Accountability (12)

Accountability is the principal objective of the scoreboard exercise and any set of best practices for SWF. Transparency is a key means of establishing accountability.

Reports (2)

Any SWF that does not provide some sort of regular public report on its activities does not score many points in this subcategory or for the category as a whole.

13. Does the SWF provide at least an **annual report** on its activities and results? (p: 13.25) If there is an annual report but it contains little or no information on the SWF's activities, we give it a score of more than 0 but less than 1. We also give partial credit (0.25) for an unpublished report to a parliament.
14. Does the SWF provide **quarterly reports** on its activities? (p: 9.25) As with element 13, we allow for a partial score. We acknowledge that views differ on the desirability of quarterly financial reporting. Some argue that it promotes too much focus on short-term returns. In our view, the principal argument for quarterly reporting rests on transparency. The entity should be able to withstand the influence of excessive short-term emphasis given that it is not subject to the disciplines of the market.

Investments (7)

15. Do regular reports on the investments by the SWF include the **size of the fund**? (p: 21.5) If an SWF states that it is at least of a certain size, we give partial credit (0.25).
16. Do regular reports on the investments by the SWF include information on the **returns** it earns? (10) In a number of cases, reports indicate an overall increase in the size of the fund without distinguishing between adding new resources and earnings on resources previously incorporated in the fund. This practice receives no credit. Some reports on returns may provide an overall figure, perhaps translated into domestic currency, as well as additional detail, which one might think deserves extra credit, but we do not give extra credit.
17. Do regular reports on the investments by the SWF include information on the **types** of investments? (p: 13.25) Specifying what sectors and in which instruments. A general description receives only partial credit.
18. Do regular reports on the investments by the SWF include information on the geographic **location** of investments? (p: 8) A listing of broad regions of the world receives only partial credit.
19. Do regular reports on the investments by the SWF include information on **specific** investments? (p: 3.5) Which instruments, countries, and companies? In some cases, the SWF only reports the investments it considers to be significant. This receives partial credit.
20. Do regular reports on the investments by the SWF include information on the **currency composition** of investments? (p: 7.5) Partial credit is given when an SWF provides information on broad groups of currencies.
21. Are the holders of investment **mandates** identified? (p: 4.5) By disclosing the holders of individual investment mandates, both in the

country and outside the country, the public can check on the records, quality, and reliability of those intermediaries. Such disclosure also limits the scope for sweetheart arrangements and corruption. To receive full credit, a SWF must publish the names of each holder of a mandate. If it merely states that it grants mandates, we give it no credit.

Audits (3)

Regular audits, preferably independent as well as published, are a central element of accountability. For this reason, we have assigned a maximum of three points to this subcategory.

22. Is the SWF subjected to a **regular audit**? (p: 17)
23. Is the audit **published**? (7)
24. Is the audit **independent**? (p: 14) In some cases, SWF are subjected to regular published audits, but the auditing is internal to the SWF in whole or in part, which takes away some of the objectivity and receives a partial deduction.

Behavior (1)

We include only one element in this category. One could imagine several other elements that might be included, such as whether the SWF engages in short sales or derivatives, which many SWF with moderately active investment strategies do in part and also disclose. In addition, it might be desirable if the SWF consulted with the country of location for any large investment or disinvestments, or with the country of issue of the currency involved. An initial version of our scoreboard included such an element, but because we could not find an SWF that followed such a practice, we dropped it from our scoring exercise.

25. Does the SWF indicate the nature and **speed of adjustment** in its portfolio? (p: 1) This is done only by the Norwegian Government Pension Fund-Global, as far as we have determined. That fund's declared policy is to use new inflows to adjust its portfolio in light of market changes that move its existing portfolio away from its benchmarks; in other words, it follows a policy of portfolio rebalancing. CalPERS states that it seeks to invest efficiently, bearing in mind the impact of management and transaction costs on the return on its assets. We gave it partial credit.

Comment

Toward a Better Understanding of Sovereign Wealth Funds

MOHAMED A. EL-ERIAN

My objective is to comment on Edwin Truman's paper, which deals with the management of China's reserves and, more generally, the growing systemic role of sovereign wealth funds (SWF).

At the outset, I would like to thank him for his thoughtful work on SWF, not only in this paper but also in his August 2007 policy brief (Truman 2007). While I have some questions about the methodology that he uses in the paper, his work is helping to bring some rationality to a topic that, until now, has been overly dominated by incomplete analysis, ill-defined concepts of national security and reciprocity, and monster-like characterizations of motives pertaining to political, military, and/or mercantilist aspects.

The importance of more thoughtful and well-researched analyses of the SWF phenomenon cannot be overemphasized. After all, the phenomenon is part of a broader realignment of the global economy that, if well managed, can be part of an orderly solution to current national and international imbalances—a solution that can alleviate the growing risk of global financial dislocations while preserving the prospects for continued robust global growth.

This comment reflects the perspective of a market participant who, first, is involved on a daily basis in market segments in which SWF have a pres-

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ence, and second, has spent time thinking and writing about the SWF phenomenon, including in the context of the secular and quarterly themes that anchor various investment strategies.¹ The comment starts by summarizing the key points in Truman's paper. It then discusses the methodology that the paper uses to score SWF, asking why some of the scores conflict so strongly with the likely perceptions of a large number of market participants who have interacted with some of the SWF for long periods. It then shifts from what is covered in the paper to some elements that could be considered in designing the future research agenda on SWF, focusing mainly on how best to formulate and implement a strategy that can successfully enhance the governance and institutional robustness of the SWF complex in general while also recognizing its important systemic role.

Summary of the Main Points

In summarizing the paper's main points, let me start with the three main areas in which there is likely to be complete agreement.

First, the paper points to the tremendous increase in the level and rate of accumulation of China's international reserves—a phenomenon that is also well documented in Morris Goldstein and Nicholas Lardy's overview paper for this conference (see chapter 1). Second, it rightly argues that the reserve accumulation has not been an end in itself, but rather a by-product of other economic and financial policies, not only in China but elsewhere. Finally, the paper suggests that, while the literature is far from precise on the topic, it is fair to say that China's reserves now exceed what would be deemed reasonable for balance-of-payments purposes, particularly in light of the country's current economic parameters, including its set of capital controls. These considerations lead the paper to argue, correctly, that the policy issue for China and other emerging economies relates not just to flows but to the stock of international reserve holdings: Once they are there, the paper asks, what does a country's government do with them? It then argues that "China is being, will be, and should be held to the highest standard of accountability and transparency in this area" (Truman 2007).

In this context, the paper seeks to demonstrate that China falls short of expectations when judged by an SWF scoreboard that captures structure, governance, transparency and accountability, and behavior. Several other SWF are shown to score poorly as well, generalizing the paper's argument to the SWF complex as a whole.

1. See, for example, El-Erian (2007) and Mohamed A. El-Erian, "Foreign Capital Must Not Be Blocked," *Financial Times*, October 3, 2007.

Some Methodological Considerations

Let us now turn to the methodology used in the paper, focusing mainly on why the paper's scoreboard results in poor assessments of several SWF that, for many funds, conflicts with the perceptions of market participants who interact with them.

Why Are SWF Special?

It is highly likely that if the paper's methodology were applied to the most rapidly growing investment vehicles in the private sector—namely, hedge funds and private equity—the scores would be as low if not lower than those for the SWF complex. Also, because of these alternative private-sector vehicles' higher leverage and shorter investment horizons compared with SWF, the potential systemic effects emanating from them are greater. Yet the serious regulatory debate is still quite a distance away from the set of best practices and standards that Truman suggests through his paper and earlier policy brief.

Simon Johnson, economic counselor and director of the Research Department at the International Monetary Fund, touches on the issue of hedge funds in one of his recent writings. As he notes, "The consensus so far is that while hedge funds deserve considerably greater scrutiny, there are advantages for the allocation of global capital flows if this sector continues to have a relatively light direct regulatory burden" (Johnson 2007). Interestingly, those in markets with significant capital exposure to these vehicles—that is, institutional investors—are still happy to judge the vehicles by their output (i.e., risk-adjusted investment returns) rather than their strict adherence to elements such as those in the paper's scoreboard.

Such an initial comparison of hedge funds and private equity firms and SWF does not, of course, account for a notable difference in their structures. Hedge funds and private equity firms are owned and controlled by the private sector, whereas SWF have governments behind them. As such, SWF are inevitably subject to higher scrutiny lest their investment decisions be hijacked by noncommercial considerations pertaining to political, military, and mercantilist drivers.

Interestingly, the issue that dominates the public debate is not whether SWF will produce superior investment returns and, in the process, benefit current and future generations and enhance international capital flow efficiency and market completion. There was less public concern among observers when the investments of China's and Russia's excess reserves were even more highly concentrated than they are now (i.e., an even greater concentration in holdings of US government and agency bonds), which, virtually by definition, was inefficient from a return and risk perspective.

In the past, concerns about the impact of noncommercial investments by foreign governments have been handled by imposing the appropriate screening mechanisms in the recipient countries. Such mechanisms are visible in the United States (e.g., the work of the Committee on Foreign Investment in the United States [CFIUS]) and have been used successfully to block investments in what are deemed to be sensitive areas from a national security perspective. In the current debate, however, they seem to be viewed as necessary but insufficient. One argument in support of this is the risk that the absence of adequate safeguards at the level of the SWF—as opposed to that of the recipient country—will end up feeding general protectionist pressures into the global economy. The specific risk is a proliferation of capital account protectionism and negative externalities in the form of further delays in completing the next stages of trade liberalization.

There could well be merit in concerns about protectionism given what else is happening in industrial economies and particularly in the United States. The political calendar is approaching a cyclical peak with upcoming presidential and congressional elections, the debate about financial-sector instability has been fueled by the sudden liquidity stops and market turmoil that started last summer, and the economy is facing headwinds on account of its weakening housing sector and employment outlook.

The multilateral framework of international finance is also under pressure and, accordingly, cannot be expected to act as a credible circuit breaker in preventing protectionist pressures from rising. The legitimacy and effectiveness of the multilateral institutions are being questioned openly and widely, as is the underlying architecture, which is viewed as increasingly obsolete.² Moreover, given the current configuration of influences on global growth, trade, price formation, and capital flows, the Group of Seven process is viewed increasingly as outmoded and unproductive because it excludes key emerging economies that have systemic importance. That said, a credible substitute has yet to emerge. Accordingly, the argument for SWF to commit to higher standards relates in large part to deficiencies in the international economy as a whole. To use a sports analogy, to play defense in limiting their sensitivity to collateral damage, SWF need to play offense, particularly regarding specific aspects of disclosure and transparency.

The agenda here is not open ended; it need not encompass every element of SWF operations, as some have suggested. Rather, the emphasis should be on three aspects: first, the governance structure and, in particular, the extent to which political ownership is appropriately separated from operational issues and subject to the required level of checks and balances; second, the investment process, including the robustness of the approaches that underpin asset allocation and the related choice of in-

2. See, for example, the discussion in Truman (2006).

vestment vehicles; and third, risk management, including the ability to set appropriate risk limits, monitor them, and implement the required reaction function.

Limitations of the Scoreboard Approach

The paper's scoreboard exercise results in some highly counterintuitive outcomes with respect to long-established SWF, the behavior patterns of which have been repeatedly observed by market participants. I would postulate that the vast majority of experienced market participants would be shocked to see the low scores that the paper assigns to some SWF—including the Abu Dhabi Investment Authority (ADIA), Singapore's Government Investment Corporation (GIC), and the Kuwait Investment Authority (KIA)—whose behavior, investment savvy, and systemic impact have been observable for long periods of time. It also runs counter to the way that some of the newer SWF, including the Dubai entities and the Qatar Investment Authority (QIA), have approached their recent investments.

If the underlying concern relates to the impact of SWF on global stability, funds such as those mentioned above have simply not behaved in a manner that their low scores might suggest. If anything, the recent deployment of their patient capital has been a highly stabilizing influence on a global economy that has been increasingly sensitive to balance-sheet excesses and extreme financial alchemy in industrial countries. The catalyst to and aftermath of the liquidity dislocations and market turmoil that started this summer are yet another example of this duality.

The paper's attribution of low scores to several SWF does not reflect their activities, behavior, or temperament, nor is it due to how they have interacted with the realities of the marketplace. Rather, it reflects the paper's limited access to information. Understandably, the paper uses publicly available information to compile the rankings and is explicit about it. The rather puzzling outcome likely indicates how little information is disseminated by SWF as a group, and the approach would probably yield similar outcomes were it applied to hedge funds, private equity firms, or the proprietary desk activities of major Wall Street banks. Given the scope and recommendations of the paper, I would suggest that further work seek to expand the information set. Pending this, the paper's findings speak more to data limitations than to a genuine assessment of SWF.

Strategy for Productively Engaging SWF

Let me now turn to a strategic issue that would benefit from greater attention in the work plan on SWF: how best to engage SWF and encourage

them to make progress, as appropriate, on issues pertaining to governance, investment process, and risk management.

In the vast majority of cases, history suggests that the approach of debtors lecturing to creditors is not very effective. It does not help that such lecturing materially intensified after some of the newer SWF, including those of China, sensibly decided to gradually diversify hitherto excessively concentrated reserve holdings. It is also inconvenient that such lecturing comes on the heels of the disruptions of the summer of 2007. After all, the systemic shock originated in the most sophisticated financial system in the world, involved the migration of activities outside the purview of adequate oversight, and led to disruptions at the very heart of the market system in industrial countries, in terms of segments (i.e., interbank, commercial paper, and money markets) and market parameters (e.g., valuations, price discovery, and visibility).

The risk is that, no matter how sensible the proposals may be, they will fall on deaf ears because of the strategy deployed to advocate them. This consideration is additionally important because it is reinforced by another hypothesis: Ill-conceived pressure could not only be ineffective but also be harmful to the long-term welfare of the global economy.

One possibility is that ill-conceived pressure ends up inhibiting the asset diversification process that SWF are and should be embarking on. The result would be a set of market mispricings and distortions, including in US fixed income. We already know how these can contribute to interest rate conundrums, overly subdued market volatility, and excessively tight credit spreads. The result could well be another phase of overproduction and overconsumption of risk assets in the most sophisticated financial system, subsequently requiring a costly clean-up process.

Another possibility is that China and other SWF could adopt an approach that heavily outsources its reserves management to private-sector institutions in the hedge fund space. While such private vehicles theoretically come under the domain of industrial country oversight, they involve a significant degree of limitations on information dissemination. Transparency thus would still be lacking, and a host of other considerations would arise, including whether these vehicles would efficiently deal with size.

Bottom Line

Where does all of the above leave us? The debate on China and other SWF should start from the hypothesis that it is in the interest of the global economy to have excess reserves managed in a diversified and commercially oriented manner. The resulting flow of capital—across geographical, product, and risk boundaries—can help sustain economic growth in the con-

text of a process of adjustment necessitated by large global imbalances, overstretched US consumers, and a need for emerging economies to gradually shift to greater emphasis on the domestic components of aggregate demand.

Against this background, the analyses of how SWF behave, including their systemic impact, should be based on a comprehensive set of data. It should include an assessment of how long-standing SWF have actually operated in many different market environments, which would help to refine what tends to be an overly broad set of recommendations to China and other SWF. The outcomes would be targeted improvements in governance, investment process, and risk management, as opposed to an excessively expansive approach that has little chance of gaining traction and may even be counterproductive. That said, for such an effort to have a greater chance of being effective, it is best pursued in the context of a holistic approach that would be well advised to address the legitimate deficiencies in the international system—including questions of representation in multilateral forums—that penalize countries such as China.

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Comment

Impact of China Investment Corporation on the Management of China's Foreign Assets

BRAD SETSER

My comments focus on my comparative advantage: China's external portfolio, the composition of Chinese demand for US financial assets, and the potential impact of the creation of the China Investment Corporation (CIC) on China's portfolio. I cannot match Edwin M. Truman's experience in central banking and successfully leading an international effort to increase central bank transparency. I also cannot match Mohamed El-Erian's experience in managing large portfolios, whether Harvard University's portfolio or a large portfolio of emerging-economy bonds.

These comments more complement Truman's paper than critique it. My only real criticism is that the paper's subtitle downplays the scope of Truman's argument: Rather than being called "China and a Sovereign Wealth Fund Scoreboard," it should be titled "How China's Proposed Investment Corporation—And Many Other Funds—Fall Short of the Truman Standard for Transparent Sovereign Wealth Management." I share Truman's belief that the expansion of sovereign wealth funds (SWF) calls for an increase in their transparency. Citizens of countries with large assets should be able to assess how their money is being invested. More transparency

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would help address US and European concerns about SWF by, among other things, allowing independent observers to assess whether SWF portfolios are consistent with the funds' stated objectives.

Truman's paper both defines a standard for SWF transparency and names and shames institutions that fall short of this standard. In doing so, Truman moved faster than the Group of Seven or the International Monetary Fund (IMF), and no doubt his work will shape their subsequent efforts. In the 1990s, from inside the Federal Reserve and US Treasury, Truman led a global effort to dramatically increase central bank transparency, including standards for the transparent and timely disclosure of central bank reserves. My own work tracking global reserves has benefited immensely from that effort. I can only hope Truman experiences the same success at the Peterson Institute that he experienced in government.

El-Erian argues forcefully that many of the institutions that score poorly on the Truman standard for transparency, notably the Abu Dhabi Investment Authority and Singapore's Government Investment Corporation, are among the most well-respected global fund managers. In his view, these institutions pose little risk to systemic stability, as market participants know their track record and understand their investment processes. Their low level of public disclosure—and low scores on Truman's matrix—do not, in El-Erian's view, correlate with risk to the integrity of the global financial system.

El-Erian may be correct, but growing public attention to SWF suggests that it is no longer sufficient for their activities to be known and understood by market insiders while remaining indecipherable to the broader public. China's new investment fund is a case in point. Even if the CIC receives only a modest share of the ongoing increase in China's foreign asset growth and its purchases of US equities only modestly diversify China's overall portfolio, it could easily generate far larger portfolio inflows than any existing oil-investment fund could.

Transparency alone will not address all US or European concerns. Some stem from the sheer size of Chinese foreign asset growth and general discomfort with the notion that states, and not private investors, are influencing the allocation of capital, both globally and in the US economy. But more transparency could allow sovereign funds to establish a public track record that will, over time, reduce many of the concerns associated with the rapid rise in their assets.

My remaining comments can be divided into three sections. The first section reviews the pace of China's reserve growth and the available data on the composition of its foreign assets. China currently has a large and concentrated bet on a relatively narrow segment of the US fixed-income market. The case for including equities in the set of securities that China holds in its foreign portfolio is compelling.

The second section argues that the current pace of Chinese asset growth—counting reserves that have been farmed out to the banks for

management—is now so rapid that even a fairly modest shift in Chinese demand toward equities could dramatically affect US markets. Assuming that around 70 percent of Chinese flows go to the United States, if only one-quarter of China’s total new flows are directed toward equities, then total Chinese flows would be far larger than estimated purchases of US equities by any of the large Gulf SWF. Indeed, total Chinese demand could top the combined impact of the existing oil funds and come close to current (net) private purchases of US portfolio equity.

The third section highlights a set of specific issues raised by the CIC:

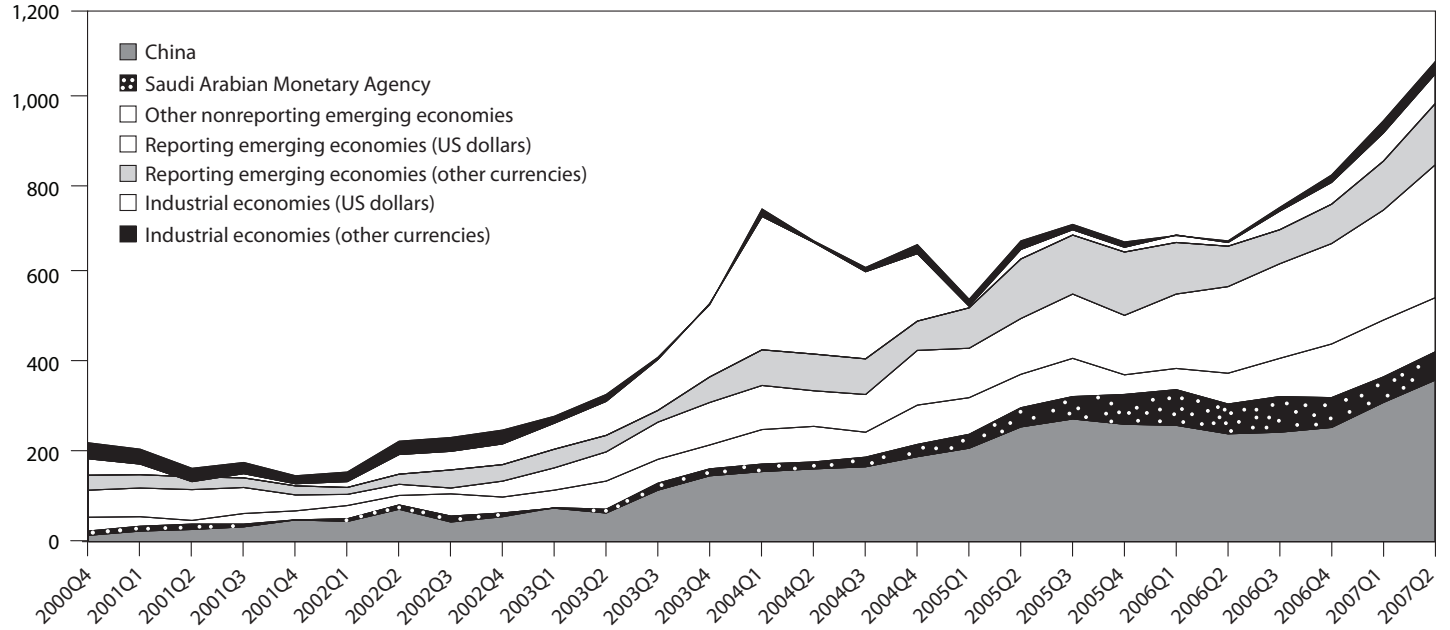
- the likelihood that the current governance structure of the CIC will magnify rather than reduce global concerns about the politicization of Chinese investment decisions—a particular concern for a government with large domestic investments in manufacturing companies that compete globally;
- the need for coordination with the People’s Bank of China (PBC) to assure that the CIC’s portfolio allocation does not work against the PBC’s efforts to support China’s existing link to the dollar;
- the CIC’s high cost of funding and the risk that the desire to avoid losses from renminbi appreciation will result in excessive risk taking; and
- the case for investing the CIC’s funds in assets that are not correlated with China’s own growth—and the risk that the CIC will instead buy a portfolio the performance of which is tightly correlated with China’s own economic performance.

China’s Foreign Assets

China accounts for roughly one-third of global reserve growth over the four quarters between mid-2006 and mid-2007 (figure 5.C1). The pace of increase in China’s reserves is unprecedented: After adjustments are made to account for the rise in the dollar value of China’s reserves due to the rise in the euro and pound, China added about \$125 billion to its reserves in the first and second quarters of 2007. If that pace of growth is sustained for the entire year, China’s total reserves will rise by \$500 billion. That is more than twice the largest annual increase in Japan’s reserves. The creation of the CIC combined with pressure on Chinese state banks and state firms to hold more reserves may slow formal reserve in the second half of 2007; reserve growth in the third quarter was only around \$80 billion after adjusting for valuation gains. However, the total increase in China’s foreign assets will unquestionably be exceptionally strong (figure 5.C2).

Figure 5.C1 Distribution of global reserve growth, rolling four-quarter sums, 2000–2007

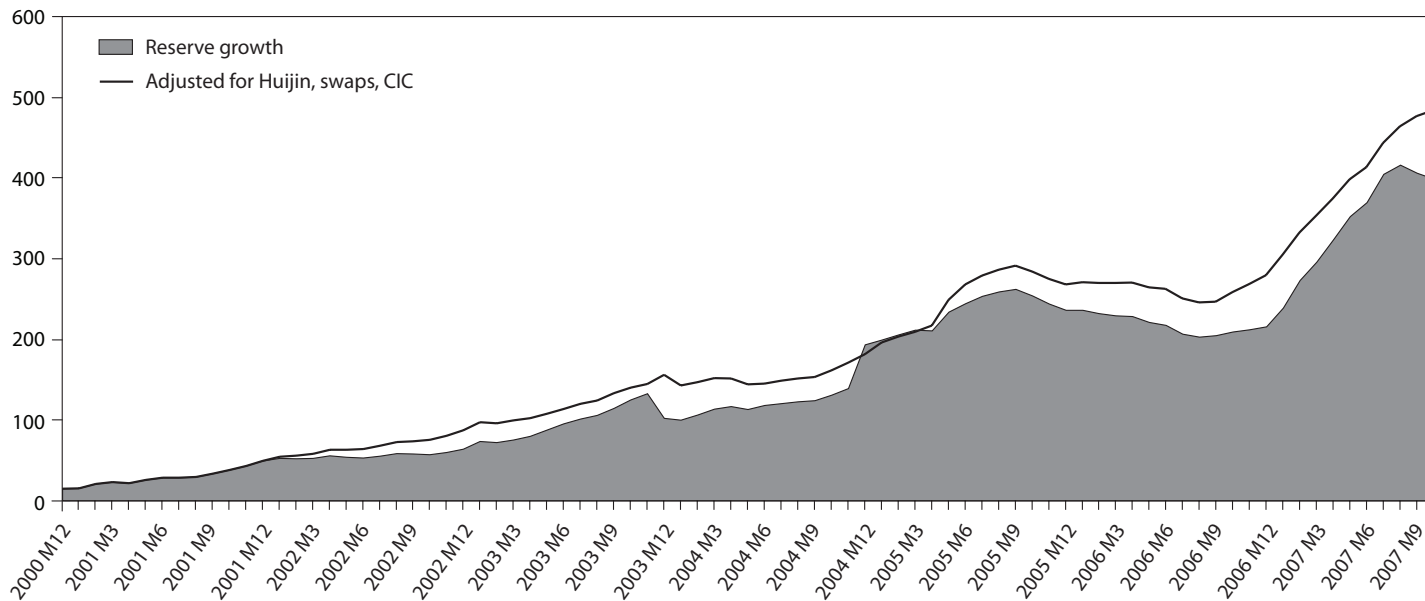
billions of US dollars



Sources: International Monetary Fund COFER database; national data (China and Saudi Arabia); author's estimates (for valuation effects/valuation-adjusted growth).

Figure 5.C2 China's reserve growth, rolling 12-month sum, valuation adjusted, 2000–2007

billions of US dollars



CIC = China Investment Corporation

Sources: China State Administration of Foreign Exchange (Chinese reserves); People's Bank of China (banking data); author's estimates (for the China Investment Corporation, valuation effects).

The increase in China's dollar holdings, assuming a constant 70 percent portfolio share, should top \$350 billion and could approach \$400 billion. Keeping the dollar share of China's portfolio constant would require that China disproportionately hold its new reserves in dollars to offset the increase in the euro value of its existing reserves. Dollar-asset growth of \$350 billion to \$400 billion over the course of 2007 would be equal to about one-half of the financing the United States needs to sustain a \$750 billion to \$800 billion current account deficit.¹ Never before in the post-war period has the world's largest economy depended so much on financing from another country's government.

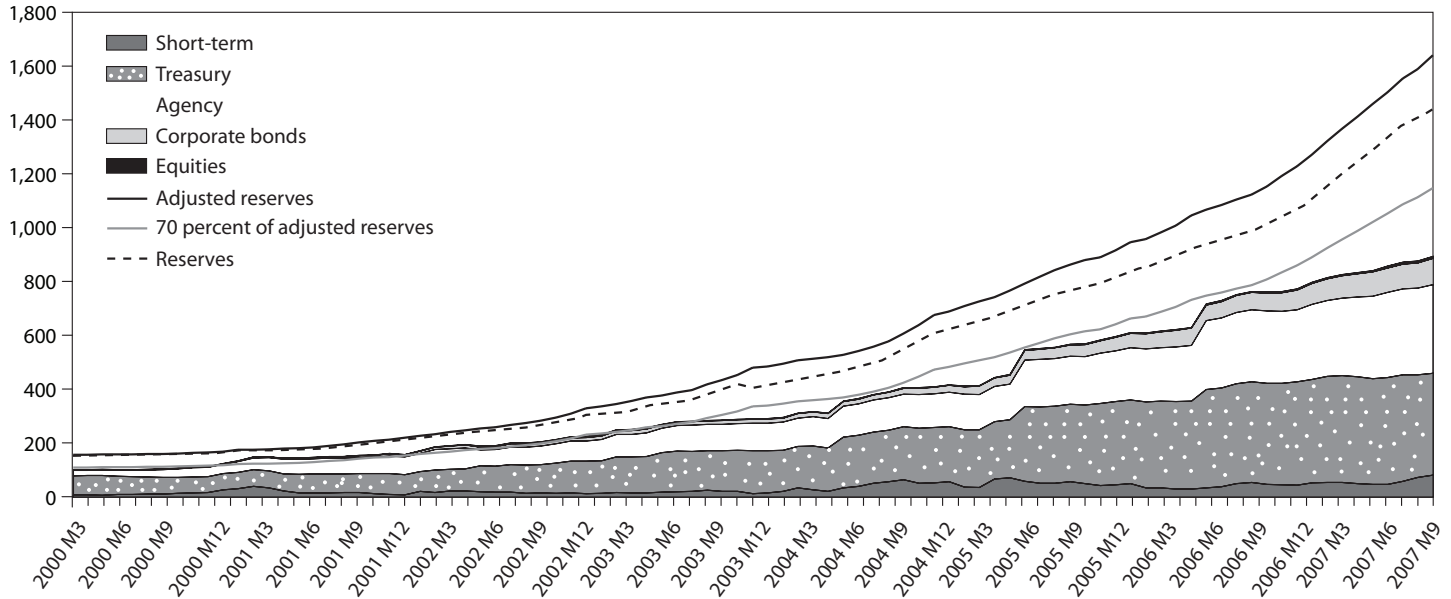
China's foreign exchange reserves currently make up the vast majority of China's foreign assets. China's foreign reserves totaled \$1.066 trillion at the end of 2006, about 65 percent of all Chinese foreign assets reported in China's net international investment position. They are on track to rise to above \$1.4 trillion by the end of 2007 (figure 5.C3). However, the formal foreign exchange reserves are not the only existing pools of foreign funds controlled by China's state. Three other pools are important:

- the assets of Central Huijin (\$67.5 billion), the PBC's bank recapitalization vehicle. The PBC transferred \$67.5 billion in foreign exchange reserves to Huijin in 2003 and 2005, receiving a claim on Huijin in exchange. Those reserves were then injected into three of the four large state commercial banks as part of their recapitalization, with Central Huijin receiving equity in the banks. The banks were required to hold these assets abroad, though they reportedly also received forward contracts hedging their balance sheets from renminbi appreciation and assumed responsibility for investing the funds. The CIC bought Central Huijin's domestic assets in September 2007.
- the foreign assets of Chinese domestic financial institutions. Ning Ma and Roy Ramos of Goldman Sachs (Ma and Ramos 2007) report that the five banks with the largest foreign securities holdings held \$209 billion in debt securities at the end of 2006, \$159 billion in dollars. The balance of payments data indicate that Chinese nonreserve holdings of foreign debt increased by \$109 billion in 2006, rising from \$117 billion to \$226 billion. This total likely includes the foreign exchange that the banks received from the Huijin recapitalization. But most of the 2006 increase seems to have been financed through various swaps with the PBC, which reported that the banks' foreign currency liabilities from the "sale and purchase of foreign exchange" rose by \$73 billion in 2006,

1. The United States also relies on net capital inflows to finance its purchases of foreign assets. Assuming that gross bank flows can be netted out, the United States will need to attract around \$1.3 trillion—around 10 percent of its GDP—in net inflows to finance both a large current account deficit and rising purchases of foreign assets.

Figure 5.C3 Adjusted reserves versus known US holdings, 2000–2007

billions of US dollars



CIC = China Investment Corporation

Note: Adjustments include other foreign exchange liabilities, foreign exchange purchases and sales, and CIC.

Sources: China State Administration of Foreign Exchange (Chinese reserves); People's Bank of China (banking data); US Treasury (international capital data and annual survey of foreign portfolio investment in the United States); author's estimates.

reaching \$123 billion by the end of the year.² Judging from the state commercial banks' disclosed holdings of subprime debt, this pool of money has been managed more aggressively than have China's reserves.³ There are strong signs that the banks have resumed the accumulation of foreign exchange in the third quarter.

- foreign direct investment (FDI) by state-owned Chinese firms. Outward FDI totaled \$82 billion at the end of 2006.

China's reserves have been invested more aggressively than the reserves of some other countries. Chinese holdings of so-called mortgage-backed securities, backed in fact by a guarantee from a US government-sponsored enterprise like Fannie Mae (Agency MBS), are particularly large. The pace of increase in the sheer size of China's reserves—from mid-2006 to mid-2007, China added roughly \$400 billion to its reserves after adjusting for valuation gains—at least partly explains why China has been more aggressive than some other central banks. From mid-2006 to mid-2007, the stock of outstanding treasury bonds, net of the increase in the Federal Reserve's holdings, was only \$120 billion. The stock of outstanding agencies—the debt that the agencies issue to finance their own mortgage portfolio—increased by \$25 billion. The stock of Agency MBS, by contrast, increased by \$400 billion.⁴

China's large purchases of treasuries and agencies almost certainly have reduced equilibrium interest rates in the US bond market. Warnock and Warnock (2005) have examined the overall impact of foreign flows on US Treasury rates. Their analysis suggests that the 7 percent of US GDP inflow from foreign investors into US bonds of all kinds from May 2004 to May 2005 reduced US treasury benchmark yields by 150 basis points. If, as seems likely, China is on track to buy between \$350 billion and \$400 billion in US bonds in 2007, or about 3 percent of US GDP, Chinese demand alone would be reducing US interest rates by around 60 basis points.

Warnock and Warnock (2006) estimated that central bank demand for treasuries and agencies between May 2004 and May 2005 reduced Treasury yields by 90 basis points and had an impact of more like 120 basis

2. According to PBC data, Chinese banks' foreign currency-denominated portfolio investment rose by \$57 billion over 2006. It is unclear if these data include investments financed by the proceeds of the Chinese state banks offshore IPOs (initial public offerings).

3. McCormack (2007); Ma and Ramos (2007); State Administration of Foreign Exchange, China's international investment position, 2006, available at www.safe.gov.cn.

4. Data from the Federal Reserve's flow of funds. The total stock of treasuries and agencies is far larger—\$4.1 trillion of treasuries and \$2.7 trillion of the agencies' own issues. However, central banks are already rumored to hold very large shares of certain parts of the treasury market, as they tend not to hold treasury inflation-protected securities or long bonds and are underweight bills. The stock of available Agency MBS is comparable to the stock of outstanding treasuries—\$3.8 trillion—and until recently was growing far faster.

points in early 2004, when strong Japanese intervention pushed total official inflows up toward 4 percent of US GDP.⁵ Assuming that Chinese inflows are now close to 3 percent of GDP, Chinese purchases could be depressing US interest rates by as much as 90 basis points. Not all these flows show up in the recent US data, but this is not a major concern: The change in Chinese holdings in the annual survey is typically much larger than the increase in holdings implied by summing up the monthly Treasury international capital flow data. The last survey captured China's holdings in mid-June 2006. The next survey will likely revise estimated Chinese flows up significantly (figure 5.C4).

China is holding far more liquid dollar-denominated assets than it needs to meet any plausible liquidity need. It is overweight in relatively safe US assets. Its holdings of safe US treasury and agency bonds will likely top \$1 trillion at the end of 2007, a sum equaling close to 35 percent of China's GDP. Conversely, China is underweight in currencies other than the dollar and risk assets. Chinese holdings of US corporate debt, including asset-backed securities, have increased rapidly since 2005. However, they still are a relatively small share of China's total portfolio. Chinese holdings of portfolio equity are negligible. Chinese investment in foreign equity, both portfolio equity and FDI, are also small relative to foreign equity investment in China.

It is reasonable for China to want to hold a more balanced portfolio, both to obtain higher returns than would be possible holding only safe liquid assets and to minimize the concentration of China's portfolio. However, this can only happen if China's government diversifies its portfolio, whether by changing the assets it holds directly or by handing more funds to outside asset managers to invest in a wider range of assets. At current exchange rates, the only actor consistently willing to accumulate foreign assets is China's government, as private investors naturally prefer holding appreciating renminbi to depreciating dollars. Chinese firms, including state firms, generally only add to their dollar or euro portfolios if required to do so by China's government, or if offered a government guarantee against exchange rate losses.

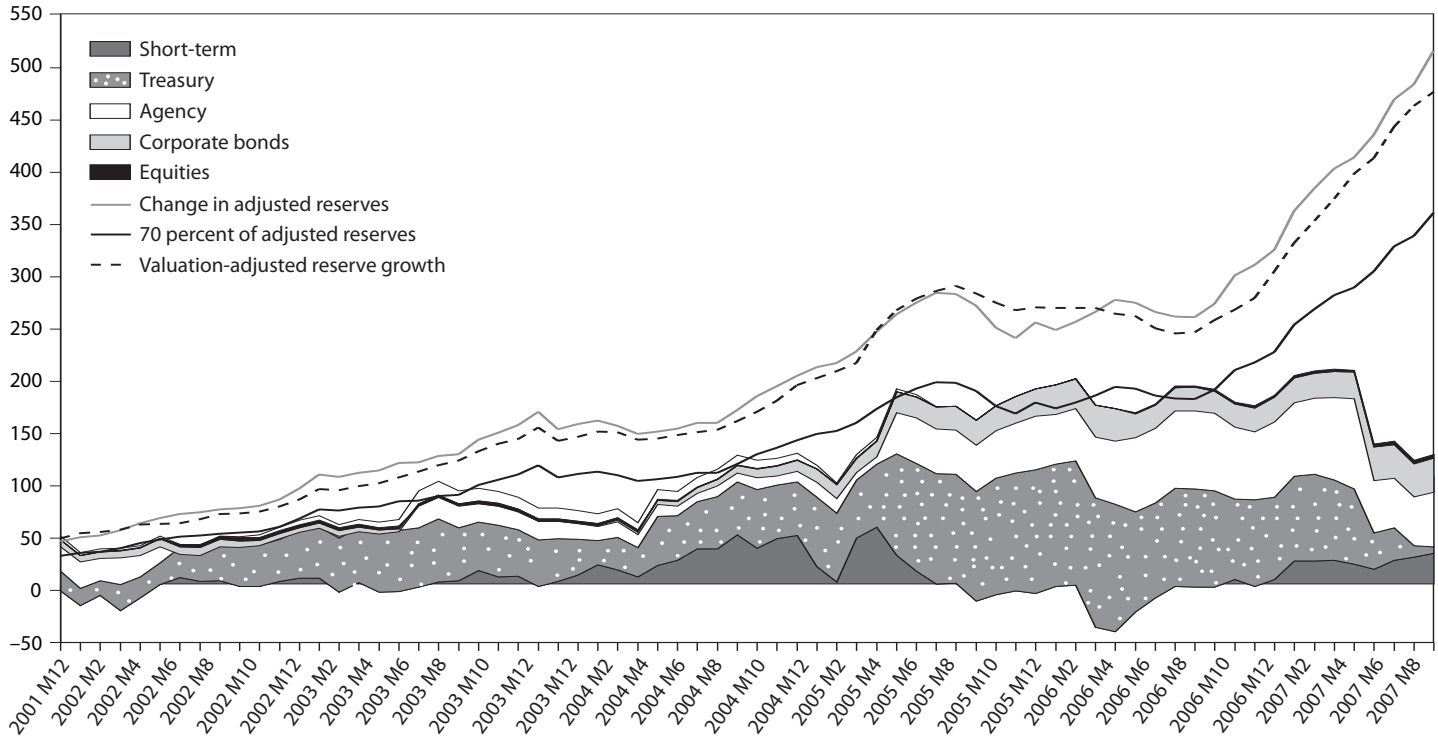
CIC's Demand for US Equities Is Potentially Large Relative to Existing Flows

Spreading China's investment broadly across a broad range of asset classes would tend to minimize its impact on any specific market. However, the impact of spreading the impact of large Chinese purchases across a range of markets could be offset, as the impact of Chinese demand on smaller,

5. Frey and Moec (2005) also found that the approximately \$300 billion in central bank purchases of treasuries reduced Treasury yields by 115 to 125 basis points in 2004; others have found a smaller impact.

Figure 5.C4 China's purchases of US debt versus adjusted foreign exchange reserve growth, 2001–07

billions of US dollars



Note: The last Treasury survey was in June 2006, and it influences the data through May 2007. Data from June 2007 onward will likely be revised upward after the next survey.

Sources: China State Administration of Foreign Exchange (Chinese reserves); People's Bank of China (banking data); US Treasury (international capital data and annual survey of foreign portfolio investment in the United States); author's estimates.

less liquid markets may be larger than the impact of Chinese demand on larger markets.

Formal studies of the impact of official purchases on the equity market have not been done, largely because official purchases have been negligible until recently. A bit of ballpark math suggests that the CIC quickly could become the largest single source of official demand for US equities and that Chinese purchases could be comparable in size to private investors' net demand for US equities (\$150 billion to \$200 billion annually). However, efforts to assess the scale of China's prospective purchases are hampered by uncertainty about the scale of future Chinese demand for equities and the scale of current purchases of equities from SWF.

The CIC used most of its initial \$80 billion allocation to buy the assets of central Huijin from the PBC, effectively shifting \$67 billion of the total foreign exchange purchased by the CIC back to the central bank. The CIC has indicated that a large fraction of its remaining \$120 billion in funds will be used to recapitalize the Agricultural Bank of China and the China Development Bank, effectively handing another \$60 billion to 70 billion of foreign exchange over to the banks to manage. If past patterns hold, most of the funds that the banks receive will be invested in corporate bonds. Only about one-third of the CIC's initial \$200 billion allocation is likely to be invested in global equities.

Over time, though, the CIC could receive additional funds from the ongoing increase in China's foreign assets. Assuming that the CIC receives \$50 billion each quarter from investments abroad and places 80 percent of that inflow into global equities, it will have roughly \$40 billion a quarter, or \$160 billion a year, to invest in equities. As the CIC is managing only a fraction of China's total foreign assets, it has little need to hold a large share of its portfolio in safe assets. China's ongoing desire to manage its exchange rate relative to the US dollar likely implies that China will need to invest a large share of the incremental increase in its assets in US dollars. Bernhard Eschweiler of JPMorgan argues that "countries that shadow the dollar have to hold their reserves in dollars."⁶ If, like the PBC, the CIC puts around 70 percent of its assets into US dollars, it could soon be buying roughly \$30 billion a quarter in US equities, or \$120 billion a year. In the aggregate, though, China would continue to buy far more bonds than equities (figure 5.C5), and its overall portfolio would remain weighted toward bonds (figure 5.C6).

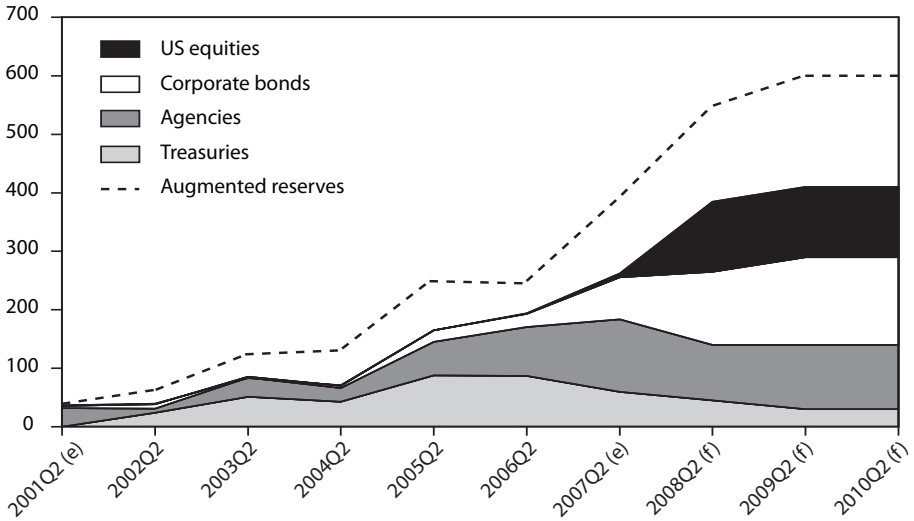
This is a significant sum relative to current foreign demand for US equities. It is only a bit smaller than total foreign purchases of US equities in 2006 (\$150 billion)⁷ and over half the peak recent four-quarter total of

6. Bernhard Eschweiler, "Don't Blame the Central Banks for the Falling Dollar," *Financial Times*, December 4, 2007.

7. Foreign demand for US equity picked up in early 2007. Total demand between mid-2006 and mid-2007 reached \$200 billion.

Figure 5.C5 CIC changes the composition of flows, 2001–10

billions of US dollars



CIC = China Investment Corporation

(e) = estimate

(f) = forecast

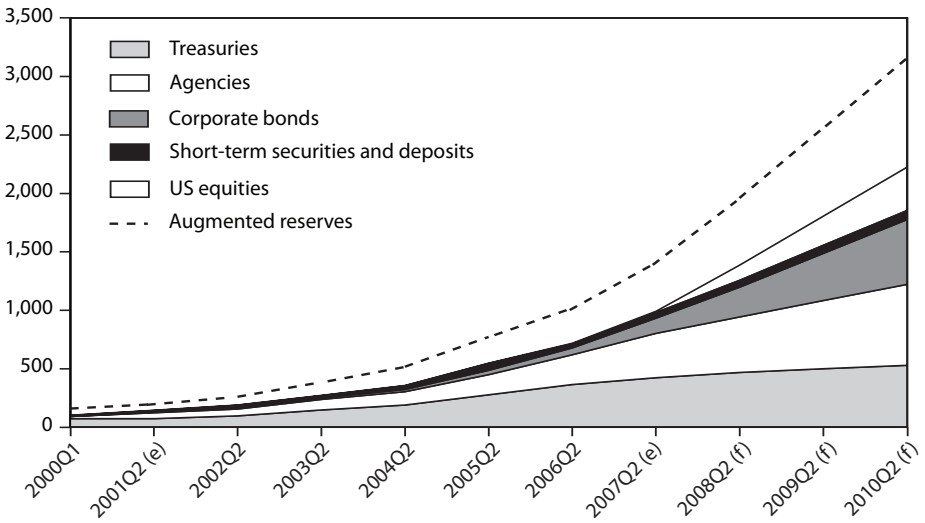
Sources: China State Administration of Foreign Exchange and People's Bank of China (Chinese data); US Treasury (international capital data and annual survey of foreign portfolio investment in the United States); author's estimates.

\$200 billion in the second quarter of 2007 (\$200 billion). It is far larger than recorded official purchases of US equities (\$6 billion in 2006, net outflows in the four quarters through the second quarter). However, the US data unquestionably understates current official demand, as it does not capture the money that various sovereign funds and central banks have farmed out to outside portfolio managers.

The IMF's data on inflows into official funds offers another and hopefully more accurate way to estimate sovereign purchases of US equities. According to IMF (2007), the world's governments transferred about \$130 billion to their investment funds in 2006. Norway accounts for \$50 billion of this increase; the oil funds in the Middle East account for most of the rest. Norway's fund is quite transparent, so we know that only \$3 billion of the \$50 billion in new funds handed over to Norway's fund was invested in US equities, as the rise in the equity markets led Norway to direct its purchases toward the bond market to meet its portfolio targets. If both the bond and equity market increased in value at the same pace, Norway would, after increasing its equity target from 40 to 60 percent of

Figure 5.C6 Projected Chinese holdings of US assets, 2000–2010

billions of US dollars



(e) = estimate

(f) = forecast

Sources: China State Administration of Foreign Exchange and People's Bank of China (Chinese data); US Treasury (international capital data and annual survey of foreign portfolio investment in the United States); author's estimates.

its portfolio, put about 17 percent of the annual increase in its assets into US equities.

Setting the Saudis aside, the major Gulf funds likely received an inflow of around \$80 billion from their oil revenue. Some of this inflow was used to purchase bonds and some was invested outside the United States, as several Gulf funds seem to be in the process of diversifying their holdings. It is unlikely that more than \$20 billion—roughly 25 percent of the new inflow into the big Gulf funds—went to purchase US equities or to outside fund managers who made unleveraged bets on the US equity market. The Gulf funds also invest in both hedge funds and private equity funds as so-called alternatives, and both private equity funds and hedge funds make leveraged bets on the equity market. As much as \$20 billion from the Gulf funds might have been invested in hedge funds and private equity funds, and a large share of this likely would have been invested in the US market.

Finally, the Saudis added about \$60 billion to the foreign assets of the Saudi Arabian Monetary Agency, which is widely believed to hold most of its assets in dollars and has been estimated to have up to 25 percent of its portfolio in equities. On the assumption that it holds 80 percent of its as-

sets in dollars and is not bound by a strict portfolio share target that forces it to buy fewer equities, it might have put around 20 percent of the \$60 billion increase in its overall holdings (\$12 billion) into US equities. Singapore's Government Investment Corporation (GIC) also buys US equities, but the magnitude of the new GIC flows is likely to be relatively small.

This estimate suggests that the official sector bought around \$35 billion of US equity in 2006 and by contributing to private equity funds, indirectly supported a much larger indirect bid. That total likely increased in 2007 as more central banks added equities to their portfolio and the sizes of the Gulf funds swelled. Nonetheless, there is little doubt that even a relatively modest reallocation of China's portfolio away from bonds⁸ would still produce large equity inflows in relation to existing official purchases (figure 5.C7).

CIC's Challenges

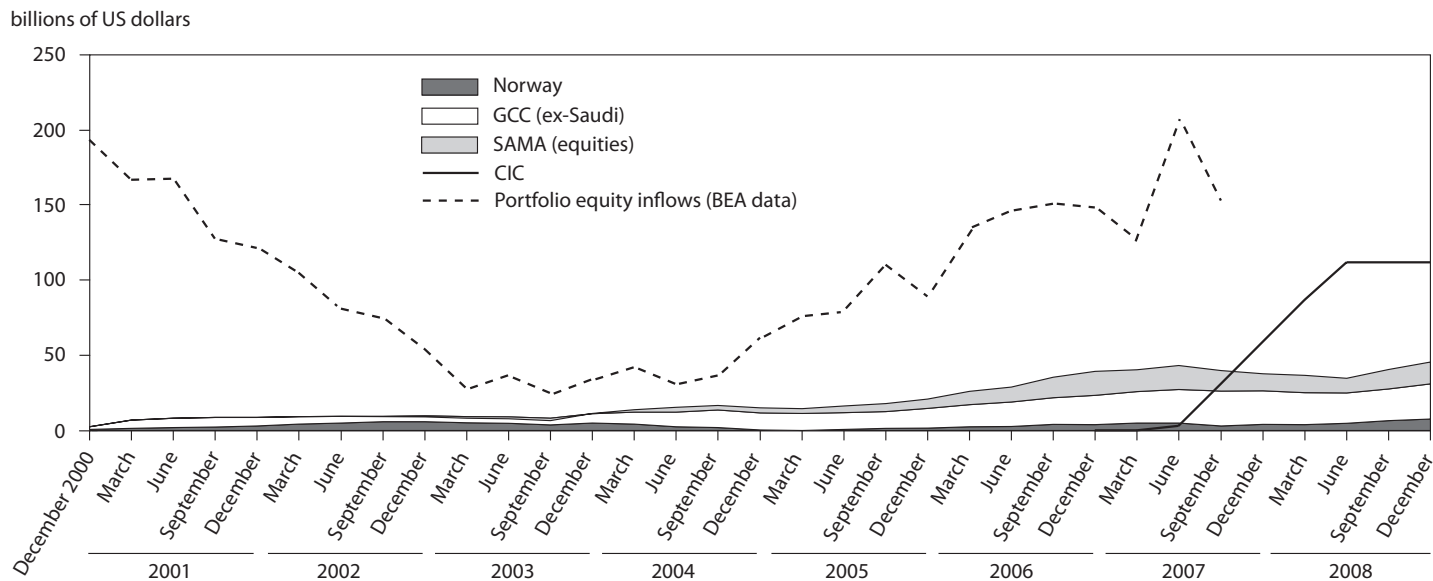
Setting Singapore's GIC aside, the large existing SWF have emerged from small, wealthy oil-exporting economies and generally countries that are part of a security alliance with the United States. As China is neither small nor wealthy, neither an energy exporter nor a US ally, its SWF consequently raises a different set of issues than do the funds from transparent Norway, the small oil-exporting city-states of the Gulf, or for that matter, even Russia's new investment fund. Russia's fund seems to be modeled on Norway's transparent fund, not the less transparent funds from Singapore and the Gulf.

China's economy already produces goods that compete directly with US and European products.⁹ That much of this production is done either by US and European firms or by subcontractors working for US and European firms has minimized commercial tension. However, China's development policy envisions that Chinese firms, including state-owned firms, will move up the value-added ladder and emerge as global players in many sectors. Most small oil-exporting economies, by contrast, lack the industrial base to compete with US or European production. As a result, CIC purchases of direct stakes in US or European manufacturing firms likely will receive far more scrutiny than comparable investments from oil-exporting economies. These concerns flow both ways: Chinese state

8. In my scenario, China invests only \$160 billion of its \$500 billion to \$600 billion in foreign-asset growth in equities and does not reallocate any of its existing holdings.

9. The interest of US domestic oil producers and the Gulf states are generally aligned, as both benefit from higher oil prices. Certainly, US firms would like additional opportunities to help produce oil in countries that grant their national oil company a monopoly on local production.

Figure 5.C7 Estimated CIC and oil fund US equity purchases versus recorded private flows, rolling four-quarter sums, 2000–2008



BEA = Bureau of Economic Analysis
 CIC = China Investment Corporation
 GCC = Gulf Cooperation Council
 SAMA = Saudi Arabian Monetary Agency

Sources: US Bureau of Economic Analysis; national data (Norway and Saudi Arabia); International Monetary Fund (Article IV reports for the GCC countries); author's estimates (CIC).

firms are also unlikely to welcome Chinese government investment in US firms that compete with them.

The governance structure of the CIC seems certain to magnify concerns. The CIC reports directly to the state council. Representatives of the parts of the Chinese bureaucracy that are tied to the state sector, including the Commerce Ministry and the National Development and Reform Commission, are represented on its board. Its mandate includes managing the state's large strategic stakes in China's main banks and making strategic investments to facilitate the outward expansion of Chinese firms. The CIC recently bought into China Rail's Hong Kong listing, helping it raise funds offshore. Housing a set of strategic investments in large state banks and state firms under the same roof as China's investment in US and European equities inevitably will generate concerns that strategic goals, and not only returns, are motivating its investment decisions.

China is also likely to face difficulties increasing its exposure to emerging Asian economies. Most Asian economies either have current account surpluses or are already attracting more private inflows than they need to finance their existing deficits. Most are already intervening heavily to limit upward pressure on their currencies. Additional inflows from China would either push other Asian currencies up or result in additional intervention by other Asian central banks. Neither development would be welcome. The Bank of Thailand and Reserve Bank of India were severely criticized for allowing their currencies to appreciate against the renminbi earlier in 2007, putting pressure on both countries' export sectors. Both banks are currently intervening heavily to keep their respective currencies from appreciating, and clearly would not want to help the CIC diversify at their expense. Any decision to invest in the assets of countries that are likely to request to be excluded from China's portfolio would be intrinsically political.

Even with a governance structure that insulated its investment decisions from noncommercial considerations, the CIC would still face a daunting set of challenges. These include

- *coordination with the central bank.* If the CIC adopts an asset allocation that has a lower dollar share than China's existing portfolio, the growth of the CIC portfolio will increase China's net sales of dollars. Such sales could put additional downward pressure on the dollar, and in turn, push the renminbi down against a range of currencies, so long as the renminbi is managed primarily against the dollar. A weaker renminbi would not help to reduce inflationary pressures and could prompt additional hot money inflows into China. The net result might well be that China's total dollar accumulation does not slow, as CIC diversification would be offset by stronger net inflows and faster overall official asset growth. Alternatively, the State Administration of Foreign Exchange (SAFE) could increase its dollar allocation to create

space for the CIC to hold fewer dollars. In either case, some coordination between the CIC, PBC, and SAFE is necessary.

- *CIC's high effective cost of funds and risk of losses.* The Ministry of Finance has financed the CIC by selling long-term renminbi-denominated bonds that yield between 4 and 5 percent to the PBC and to the state banks. This is unlikely to be a true market rate, as it is unlikely that the banks would voluntarily buy large quantities of long-term bonds yielding around 4.5 percent when the PBC is raising short-term rates. The renminbi's expected appreciation in the forward market has been around 6 percent against the dollar. It rose above 9 percent in November 2007 before falling back to around 8 percent against the dollar, a bit less against the euro. If the market's expectation for the renminbi is correct, then the CIC needs to obtain dollar returns of over 12 percent just to break even. Even if the expected pace of appreciation falls to 6 percent, China still needs returns of around 10 percent. This requires taking substantial risks. Rather than seeking a positive return in renminbi, the CIC should aim for a return somewhat above the return SAFE achieves on its less risky portfolio. That implies losses in renminbi terms, however, which may be a hard sell for a fund marketed as way to increase China's return on its foreign assets.
- *a portfolio highly correlated with China's economic growth.* Michael Pettis (2008) of Beijing University has argued that the CIC should hold assets that are negatively correlated with China's own economic performance. However, it now looks likely that the CIC's portfolio will include assets that are highly correlated with China's growth. A Chinese slump would increase bank nonperforming loans and cut into bank profit margins, reducing the market value of the CIC's large stake in China's state banks. If the CIC also invests in resource companies, it will end up holding another asset the financial value of which would fall in the event of a slump. Rather than holdings assets that would increase in value when China slows, the CIC is likely to hold assets that fall in value.

Conclusion: Transparency Can Help

The challenges facing the CIC are daunting. The CIC has a much broader mandate than the typical oil investment fund, one that includes managing the government's stake in China's large banks and helping Chinese firms expand abroad. The CIC has to borrow in an appreciating currency to buy assets denominated in depreciating currencies. The enormous scale of China's foreign asset growth implies that the CIC will inevitably affect the internal dynamics of any market it invests in. The CIC will not immediately be the world's largest SWF, but it could easily generate the largest

flows. Norway currently invests \$50 billion a year. The large Gulf funds collectively invest less than \$100 billion a year.

Transparency will not eliminate concerns about the CIC's impact on global markets or fears that the CIC's investments are motivated by non-commercial goals. But the absence of transparency is certain to increase such concerns. Truman's paper has done the world a tremendous service by creating a baseline for evaluating the level of transparency of different funds. Long-established and widely respected funds with low scores should consider dramatically increasing their transparency. Likewise, Chinese policymakers should not emulate the poor example set by some existing large funds, but rather aim to create a fund that is as transparent as the world's most transparent funds.

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