

ADB Economics Working Paper Series



Capital Outflows, Sovereign Wealth Funds, and Domestic Financial Instability in Developing Asia

Donghyun Park

No. 129 | October 2008



ADB Economics Working Paper Series No. 129

Capital Outflows, Sovereign Wealth Funds, and Domestic Financial Instability in Developing Asia

Donghyun Park
October 2008

Donghyun Park is Senior Economist in the Macroeconomics and Finance Research Division, Economics and Research Department, Asian Development Bank.

Asian Development Bank

Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org/economics

©2008 by Asian Development Bank
October 2008
ISSN 1655-5252
Publication Stock No.:

The views expressed in this paper
are those of the author(s) and do not
necessarily reflect the views or policies
of the Asian Development Bank.

The ADB Economics Working Paper Series is a forum for stimulating discussion and eliciting feedback on ongoing and recently completed research and policy studies undertaken by the Asian Development Bank (ADB) staff, consultants, or resource persons. The series deals with key economic and development problems, particularly those facing the Asia and Pacific region; as well as conceptual, analytical, or methodological issues relating to project/program economic analysis, and statistical data and measurement. The series aims to enhance the knowledge on Asia's development and policy challenges; strengthen analytical rigor and quality of ADB's country partnership strategies, and its subregional and country operations; and improve the quality and availability of statistical data and development indicators for monitoring development effectiveness.

The ADB Economics Working Paper Series is a quick-disseminating, informal publication whose titles could subsequently be revised for publication as articles in professional journals or chapters in books. The series is maintained by the Economics and Research Department.

Contents

Abstract	v
I. Introduction	1
II. Asia's Excess Foreign Exchange Reserves: The Basic Facts	3
III. Underlying Nature of Asia's Foreign Exchange Reserves and the Role of Reserves in Domestic Financial Systems	8
A. Fiscal Reserves versus Central Bank Reserves	9
B. Central Bank Reserves and the Balance Sheets of Commercial Banks	9
IV. Sovereign Wealth Funds in Asia	11
V. Risks Facing Asia's New Sovereign Wealth Funds	13
A. Political Economy Risks	14
B. Risks Arising from Inadequate Institutional Capacity	15
C. Moral Hazard Risks	15
D. Fiscal Risks	16
E. Transparency and Accountability Risks	16
F. Financial Protectionism Risks	16
G. Risks Arising from Noncommercial Motivations	17
VI. Risks from Asia's Sovereign Wealth Funds to Its Financial Systems	17
VII. Concluding Observations	19
References	21

Abstract

Sovereign wealth funds (SWFs) are emerging as developing Asia's main policy tool for handling the region's excess foreign exchange reserves. SWFs represent a strategic shift of excess reserves from low-risk, low-return investments to high-risk, high-return investments, and are subject to a wide range of downside risks. The underlying nature of Asia's reserves, which are the consequence of the central bank's purchases of foreign exchange, means that those reserves have counterpart liabilities in the commercial banks that form the backbone of the region's financial systems. This suggests that the realization of SWFs' downside risks may have serious adverse effects on the region's domestic financial stability. The broader implication is that the transformation of Asia into a major exporter of capital raises the possibility that capital *outflows* can also be a direct source of financial instability in the region.

I. Introduction

Painful memories of the 1997–1998 Asian financial crisis are still fresh throughout much of developing Asia (henceforth Asia). The precautionary tale from the crisis was and still remains that abrupt reversals of foreign capital inflows can destabilize domestic financial systems. Indeed the crisis wrought havoc on the region's banking system and financial markets, as well as on real economies and social fabrics. Although the region has recovered from the crisis, its memories continue to serve as a powerful reminder about the dangers of volatile capital inflows in the region's collective psyche. One well-known recent example of the still prevalent fear of getting burned by volatile capital inflows was Thailand's imposition of draconian capital controls in December 2006. At that time, the Thai central bank implemented a 1-year, 30% withholding requirement on many types of capital inflows to prevent the appreciation of the baht. Although the controls were removed on 3 March 2008, they are symptomatic of a regionwide aversion to potentially destabilizing short-term capital inflows.

This collective regionwide fear of a repeat of the Asian crisis has prompted the region's central banks to accumulate foreign exchange reserves for precautionary purposes.¹ The devastation unleashed by the crisis gave a rude awakening even to neighboring countries that were not directly impacted by the crisis. The scale and pace of this accumulation has been unprecedented. While the People's Republic of China (PRC) accounts for much of the massive build-up, the build-up has been occurring across the whole region, encompassing the newly industrialized economies, the major Southeast Asian economies, and the region's other emerging giant, India. The large war chest of reserves has given the region insurance and protection against a recurrence of the Asian crisis. Other fundamentals such as the robustness and efficiency of the banking system have also improved since the crisis, but the huge amount of reserves protects the region against the most immediate cause of a currency crisis—unexpected shortages of international liquidity.

There is however a prevalent and growing consensus that the region's reserve levels now far exceed all plausible estimates of what the region requires for precautionary liquidity purposes. Although there is much debate about the level of optimal reserves and hence the exact magnitude of excess reserves, there is more or less universal agreement that there are excess reserves and that those reserves are substantial. A naturally corollary of

¹ See Aizenman and Lee (2005) for a more comprehensive discussion of the precautionary motive for holding reserves as well as the mercantilist motive, which has to do with influencing the exchange rate to promote exports.

this consensus is that continuing to invest excess reserves in traditional reserve assets, such as safe and liquid but low-yielding United States (US) government bonds, is a costly waste of valuable national resources. This is especially true given that many of the region's economies—most notably the PRC and India—are still poor economies with huge long-term fiscal needs requiring ample fiscal resources. Hence the increasingly vocal calls to use the excess reserves more profitably, so that they can make a bigger contribution to national welfare.

Sovereign wealth funds (SWFs) provide a natural institutional blueprint for more active management of excess reserves. SWFs are state-owned institutions that use publicly owned foreign exchange to pursue active profit-maximizing investments rather than passive liquidity management. In other words, in contrast to central banks, which manages foreign exchange assets largely to protect the country from sudden shortages of international liquidity, SWFs use foreign exchange assets to maximize risk-adjusted returns. As such, the shift from passive to more active, profit-oriented management of excess reserves is analytically equivalent to a shift from central banks to SWFs. Therefore, it is only natural that Asian countries look to SWFs to guide them in their quest to use their excess reserves more productively. This is especially true when a number of existing SWFs have established solid track records for consistently successful investment performance. Within the region, Singapore is widely seen as a role model in light of the extraordinary success of its two SWFs.

New SWFs are already emerging in Asia and many more are in the planning stages. Republic of Korea (henceforth Korea) set up the Korea Investment Corporation (KIC) in 2005 and the PRC followed suit with the China Investment Corporation (CIC) in 2007. The subprime mortgage crisis that has been unfolding since the second half of 2007 has led to some high-profile acquisitions of stakes in western investment banks by sovereign funds from Asia and the Middle East. Although those acquisitions have injected much needed capital and helped to shore up the shaky financial positions of those banks, they have further fuelled a growing chorus of concerns in the European Union and the US about their potentially destabilizing and harmful impact on the international financial system. While some of those concerns may mask financial protectionism, others are more legitimate and well grounded. At the same time, the acquisitions of SWFs during the current subprime crisis are themselves useful reminders that SWFs can contribute to the stability and efficiency of the global financial system.

Although the impact of SWFs on global financial stability and efficiency is a highly significant issue, the central purpose of this paper is instead to discuss the implications of SWFs for the stability and efficiency of Asia's domestic financial systems. The paper's primary interest lies in, for example, exploring the potential risks arising from KIC for the Korean financial system. The key to understanding those risks is that Asia's foreign exchange reserves have corresponding counterpart liabilities in the public sector's balance sheet. This is because Asia's reserves are by and large the result of foreign exchange market interventions of central banks rather than government income from

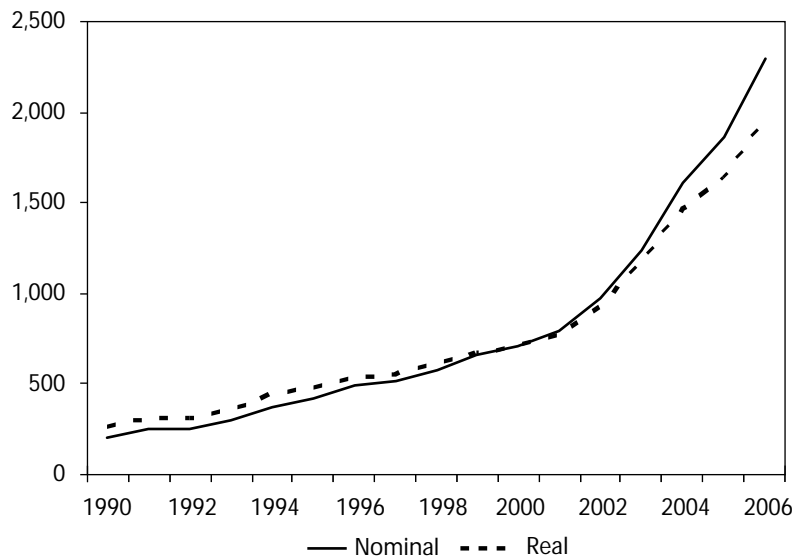
natural resources or other sources. More specifically, Asian central banks typically purchase foreign exchange from the private sector with government bonds. Bonds are liabilities for the public sector but assets for the private sector. The public sector is, in effect, borrowing foreign exchange from the domestic private sector, including domestic financial institutions, to make investments abroad. Therefore, the risks to domestic financial institutions from SWFs are those emanating from poor risk management by the SWFs themselves. For examples, heavy losses suffered by the SWFs will compromise their ability to pay back their loans from domestic financial institutions.

At a broader level, discussions of the relationship between capital flows and domestic financial stability in Asia tend to be almost exclusively about capital *inflows*. This is hardly surprising in light of the painful memories of the Asian crisis, and, more generally, the fact that until the Asian crisis the region was largely a net importer of capital. Despite the postcrisis transformation of the region into a substantial net capital exporter, capital inflows—or more precisely, their sudden reversals—still have the potential to destabilize the region's financial systems. Nevertheless, the transformation has brought to the fore the issue of the effects of capital *outflows* on financial stability. Given the magnitude of capital outflows from the region, and the changing nature of those outflows from passive to active investments, those effects may now be too large to ignore. Capital outflows should no longer be thought of simply as a counterweight to potentially destabilizing capital inflows. Instead the region's policymakers should give due recognition to the fact that capital outflows can themselves become major sources of financial stability. The relative novelty of large capital outflows from Asia makes such a change in the policymakers' mindset difficult but no less urgent.

II. Asia's Excess Foreign Exchange Reserves: The Basic Facts

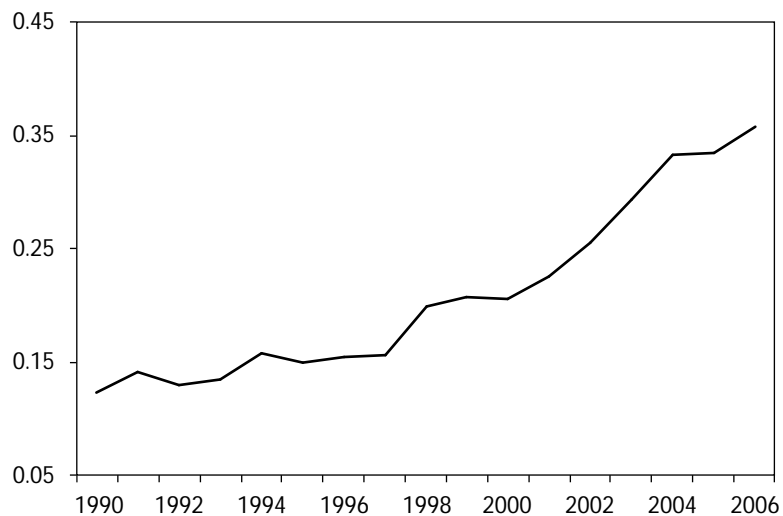
Let us now look at Asia's foreign exchange reserve accumulation for the period 1990–2007. This provides the background for the emergence of SWFs in the region. Foreign exchange reserves refer solely to foreign currency assets recorded on central banks' balance sheets, and exclude gold, special drawing rights, and International Monetary Fund reserve positions. Figure 1 below shows that Asia's total foreign exchange reserves grew from \$203 billion to \$2,295 billion in nominal terms; and from \$267 billion to \$1,960 billion in real terms between 1990 and 2006. The overall trend is one of secular growth since 1990, and a noticeable acceleration since 2000. To put the growth of the region's reserves into better perspective, it is useful to scale regional reserves by gross domestic product (GDP). Figure 2 shows that the reserves-to-GDP ratio rose from 12.3% in 1990 to 35.8% in 2006. Figure 3 shows that developing Asia's share of total world reserves rose from 23.8% to 44.0% during the same time period. In short, Asia has been experiencing a remarkably rapid build-up of reserves in both absolute and relative terms.

Figure 1: Nominal and Real Foreign Exchange Reserves of Developing Asia, 1990–2006 (US\$ billion)



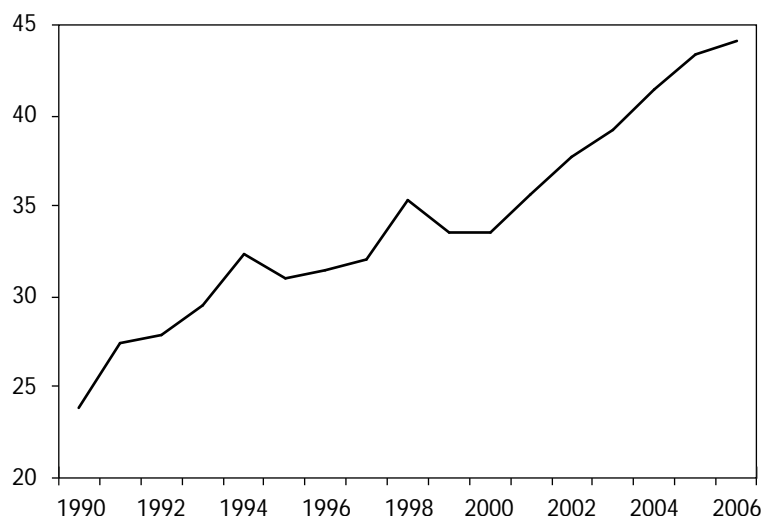
Source: Asian Development Outlook database.

Figure 2: Ratio of Foreign Exchange Reserves to GDP, Developing Asia, 1990–2006



Source: Asian Development Outlook database.

Figure 3: Share of Developing Asia in World Foreign Exchange Reserves, 1990–2006 (percent)



Source: Asian Development Outlook database.

It is clear from Table 1 below that there was no let-up in Asia's reserve accumulation during 2007. The PRC's reserves surged by 43.3% during the year while India's reserves soared by 55.5%. As of 31 December 2007, the region's 12 largest reserve holders are, in descending order: PRC; Taipei,China; Korea; India; Singapore; Hong Kong, China; Malaysia; Thailand; Indonesia; Philippines; Kazakhstan; and Viet Nam. The 12 economies jointly account for more than 98% of the region's reserves and highlight the regionwide nature of Asia's reserve accumulation. Their collective reserves grew by 31.2% during 2007, underlining the relentless growth of the region's reserves. The region accounted for no fewer than six of the world's top 10 reserve holders at the end of 2007: PRC (1st); India (4th); Taipei,China (5th); Korea (6th); Singapore (8th); and Hong Kong, China (9th).

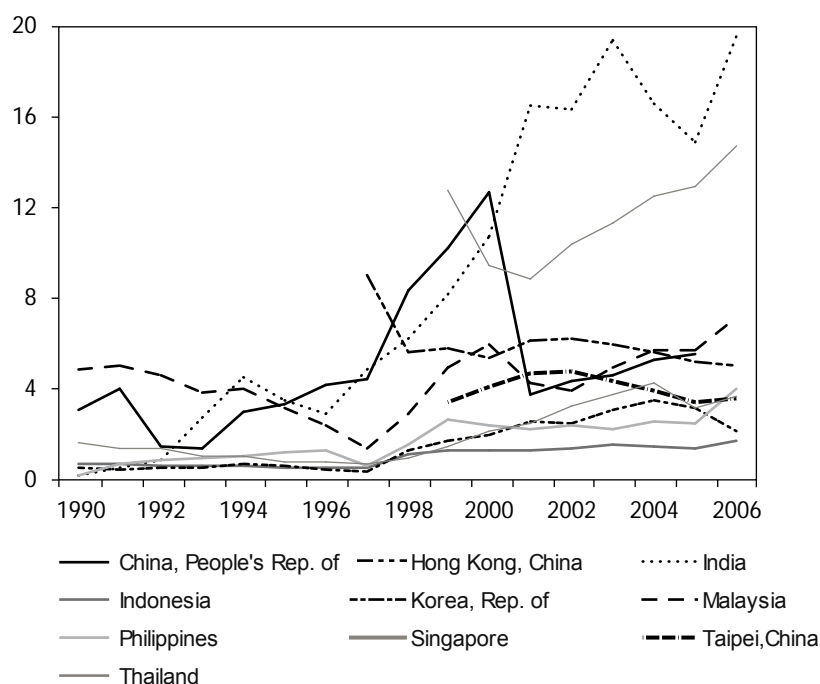
Turning now to the issue of whether, in accordance with conventional wisdom, Asia's reserves exceed levels deemed adequate for traditional reserve purposes, some well-known, widely used measures of reserve adequacy to estimate the magnitude of developing Asia's excess reserves are used. Comprehensive discussions of these measures include Edison (2003) and ECB (2006). Empirical studies find one rule of thumb (the ratio of reserves to short-term external debt) to be a particularly significant determinant of an economy's vulnerability to financial crisis. According to the well-known Greenspan-Guidotti rule, the critical value of this ratio is 1, i.e., a country with reserves equal to or more than all external debt falling within 1 year should be able to service its foreign exchange obligations even during a crisis. Figure 4 below reveals that developing Asia comfortably passes the Greenspan-Guidotti rule, which supports the presence of substantial excess reserves.

**Table 1: Developing Asia's Foreign Exchange Reserves:
Stocks as of 31 December 2007 and 31 December 2006 (US\$ billion)**

Economy	December 2007	December 2006	Percent Increase
PRC	1,528.25	1,066.34	43.32
Taipei,China	270.31	265.14	1.95
India	264.73	170.19	55.5
Korea	261.77	238.39	9.8
Singapore	162.96	135.81	20.0
Hong Kong, China	152.70	133.17	14.7
Malaysia	101.3	81.72	24.0
Thailand	85.24	65.15	30.8
Indonesia	54.56	40.70	34.1
Philippines	30.07	19.89	51.2
Kazakhstan	19.25	17.75	8.5
Viet Nam	17.16	13.38	28.3

Source: *Asian Development Outlook* database.

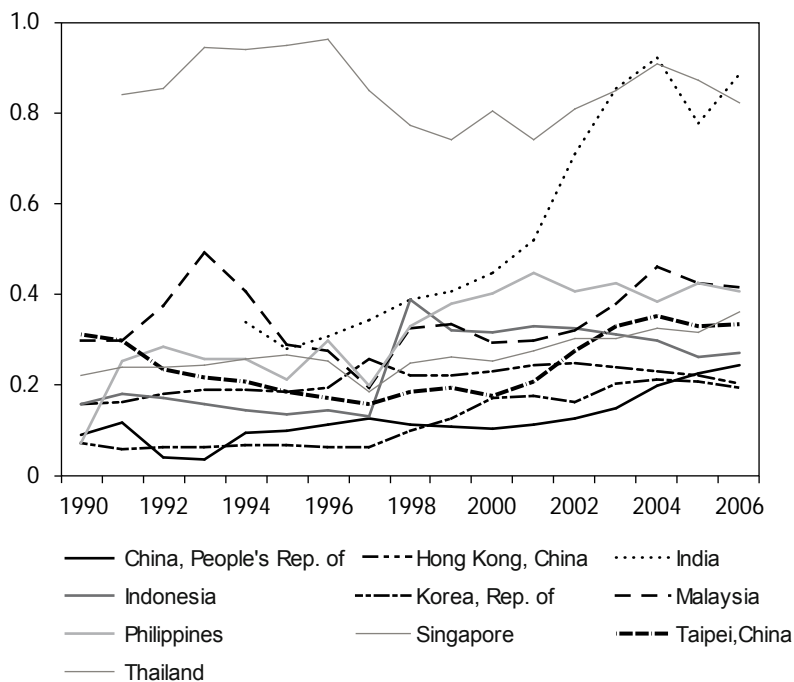
Figure 4: Ratio of Foreign Exchange Reserves to Short-term External Debt in Developing Asia's Top 10 Reserve Holders, 1990–2006 (percent)



Source: *Asian Development Outlook* database.

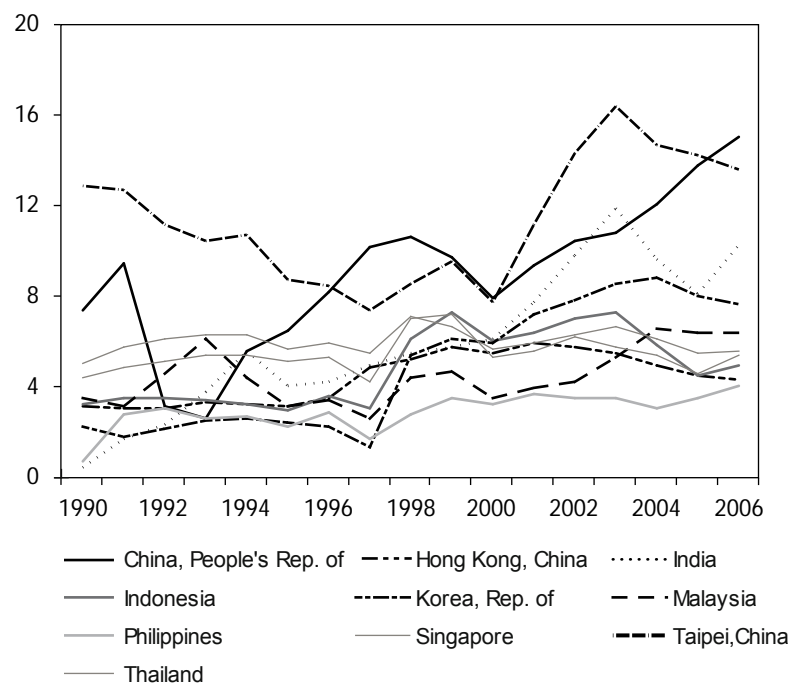
There are two other well-known reserve adequacy measures: the reserves-to-M2 ratio and the months of imports that reserves can pay for. The higher the reserves-to-M2 ratio, the greater the extent to which the risks of crisis-provoking domestic capital flight are covered, and hence the lower the probability of a crisis. The suggested critical values range from 5% to 20%. Figure 5 indicates that the reserves–M2 ratio is either above or close to the upper limit of the 5–20% range for Asia’s biggest reserve holders. The import cover measure is based on the intuition that reserves reduce vulnerability to current account shocks such as higher oil prices for an oil importing-economy. The suggested critical value is usually 3–4 months. Figure 6 shows that reserves can cover well above 4 months of imports in the region’s biggest reserve holders.

Figure 5: Ratio of Foreign Exchange Reserves to M2 in Developing Asia’s Top 10 Reserve Holders, 1990–2006



Source: *Asian Development Outlook* database.

Figure 6: Imports Covered by Foreign Exchange Reserves in Developing Asia's Top 10 Reserve Holders, 1990–2006



Source: *Asian Development Outlook* database.

III. Underlying Nature of Asia's Foreign Exchange Reserves and the Role of Reserves in Domestic Financial Systems

In this section, we briefly look at the underlying nature of Asia's reserve accumulation and its relationship with the domestic financial system. By and large, Asia's reserves are the consequence of foreign exchange purchases by the central bank. Those purchases have an impact on the balance sheets of commercial banks. The link between the central bank's foreign exchange purchases and commercial banks' balance sheets is ultimately what explains the transmission of risks stemming from the activities of SWFs to the domestic financial system.

A. Fiscal Reserves versus Central Bank Reserves

According to a conceptually useful dichotomy introduced by Hildenbrand (2007), foreign exchange reserve accumulation can be classified into two types: (i) accumulation based on government budget surpluses, profits of state-owned companies, or other government net income; and (ii) accumulation based on foreign exchange market interventions by central banks within the context of current account surplus and/or capital inflows. A classical example of the first type is oil revenues accruing to the governments of oil-producing countries such as Saudi Arabia. A classic example of the second type is the PRC central bank's purchase of foreign exchange that the PRC companies earned by exporting manufacturing products.

Let us define the first type of reserves as *fiscal reserves* and the second type *central bank reserves*. A critical difference separates fiscal reserves and central bank reserves in terms of the balance sheet of the consolidated public sector, i.e., government plus central bank. Fiscal reserves are net assets in the sense they do not have any counterpart liabilities in the balance sheet. By contrast, central bank reserves have counterpart liabilities in the form of bonds or currency. Asia's reserve build-up reflects central bank reserves and thus do have counterpart liabilities. Whether the reserve build-up reflects fiscal reserves or central bank reserves, it reflects a balance of payments surplus. It is conceptually useful to distinguish among three main types of balance of payments surplus: (i) resource-based current account surplus based on natural resource export revenues; (ii) nonresource current account surplus based on exports of manufactured goods and services; and (iii) financial account surplus, i.e., capital inflows from abroad. For the region as a whole, the external surplus is predominantly Type 2, in some cases augmented by Type 3, rather than Type 1.

B. Central Bank Reserves and the Balance Sheets of Commercial Banks

To repeat, Asia's foreign exchange reserves are the consequences of foreign exchange purchases by central banks. A hypothetical example will clarify the effect of central bank reserves on the balance sheets of commercial banks. Suppose that Hyundai, a Korean conglomerate, exports US\$80 billion and imports US\$50 billion. The firm has earned more than it spent, so it is in effect saving and thus adding US\$30 billion to its net wealth. Korea's national net wealth has unambiguously increased. In terms of Hyundai's balance sheet, the US\$30 billion is a foreign currency asset, as follows:

Hyundai

Assets	Liabilities
US\$30 billion	

Instead of investing the US\$30 billion abroad in assets such as a US dollar deposit account, Hyundai brings its US dollars home and exchanges them for Korean won at a commercial bank, e.g., the Korea Exchange Bank (KEB), and opens a won deposit account at KEB. Hyundai's transactions affect KEB's and its own balance sheet as below. Hyundai may have opened a dollar deposit account instead, but that does not affect the analysis.

KEB

Assets	Liabilities
US\$30	Korean won deposit 30

Hyundai

Assets	Liabilities
Korean won deposit 30	

The Korean central bank, the Bank of Korea (BOK), decides to add to its stock of foreign exchange reserves by purchasing US\$30 billion from KEB. BOK initially purchases the US dollars with Korean won it issues. The US\$30 billion dollars' worth of won expands the monetary base and is thus inflationary. Central banks typically try to sterilize the inflationary expansion of the monetary base by selling bonds, and BOK is no exception. For the sake of simplicity, let us assume that BOK sells those sterilization bonds to KEB. In effect, BOK has borrowed US dollars from KEB, and their balance sheets are affected as below. In most Asian countries, commercial banks do in fact play a central role in the foreign exchange market.

KEB

Assets	Liabilities
Sterilization bonds 30	Korean won deposit 30

BOK

Assets	Liabilities
US dollars 30	Sterilization bonds 30

The central bank may manage all foreign exchange reserves, including excess reserves, on its own. However, as noted above, the regional trend is toward establishing SWFs to manage at least part of the reserves. The following section describes this trend in more detail. The transfer of reserves from the central bank to the SWF usually takes the form of the SWF's borrowing the reserves. This is purely an internal transaction within the public sector, so it does not affect commercial banks' balance sheets.

KEB

Assets	Liabilities
Sterilization bonds 30	Korean won deposit 30

BOK

Assets	Liabilities
KIC bonds 30	Sterilization bonds 30

KIC

Assets	Liabilities
US dollars 30	KIC bonds 30

IV. Sovereign Wealth Funds in Asia

Section II showed evidence that supports the conventional wisdom that the level of foreign exchange reserves has now surpassed all plausible estimates of what the region needs for precautionary insurance purposes. There is thus ample justification for the popular notion that investing the region's excess reserves in traditional reserve assets such as US government securities is a costly waste of national resources. For example, if the rate of return on traditional reserve assets is only 3% but the rate of return on higher-return assets is 10%, the central bank is incurring a loss of 7% of foregone investment income. This suggests that the optimal use of the region's excess reserves is to invest them abroad to maximize risk-adjusted returns.²

In fact, state-owned SWFs have a long history of using publicly owned foreign exchange to pursue commercial profits.³ These institutions provide a natural institutional blueprint for more active, profit-oriented management of Asia's excess reserves. Despite their relatively long history (the oldest, the Kuwait Investment Authority, was set up in 1953) the term sovereign wealth fund was coined only in 2005 by Andrew Rozanov (2005a and 2005b). Table 2 lists the major SWFs of the world. Well-known sovereign funds include Norway's Government Pension Fund (GPF), the Abu Dhabi Investment Authority and other Gulf oil funds, and Singapore's Temasek Holdings and Government of Singapore Investment Corporation (GIC). Most well-established and biggest funds are based on export revenues from oil and other natural resources. The two defining characteristics of SWFs are (i) ownership and control by the government and (ii) pursuit of risk-adjusted returns rather than liquidity as the central objective.

² It is also possible to invest them at home on domestic-currency projects but doing so entails a number of macroeconomic complications. See Park (2007) for an extended discussion.

³ Johnson-Calari and Rietveld (2007) provide an excellent overview of sovereign wealth management.

Table 2: Sovereign Wealth Funds of the World

Economy	Name of Fund	Assets (US\$ billion)	Year of Inception	Type
United Arab Emirates	Abu Dhabi Investment Authority	875	1976	Commodity: Oil
Singapore	Government of Singapore Investment Corporation	330	1981	Noncommodity
Norway	Government Pension Fund	300	1990	Commodity: Oil
Saudi Arabia	Various types	300	n/a	Commodity: Oil
PRC	China Investment Corporation	200	2007	Noncommodity
Kuwait	Kuwait Investment Authority	160–205	1953	Commodity: Oil
Singapore	Temasek Holdings	100	1974	Noncommodity
Hong Kong, China	Investment Portfolio (Hong Kong Monetary Authority)	100	1998	Noncommodity
Australia	Future Fund	50	2004	Noncommodity
Qatar	Qatar Investment Authority	40	n/a	Commodity: Oil
State of Alaska, USA	Permanent Reserve Fund	35	1976	Commodity: Oil
Russia	Oil Stabilization Fund	32	2003	Commodity: Oil

Note: Due to lack of official information from the funds themselves, asset sizes are largely estimates from unofficial sources such as Jen (2007).

Sources: Jen (2007), Rozanov (2005a), Setser and Ziemba (2007), Government of Singapore Investment Corporation (2007), Temasek Holdings (2007), Rietveld and Pringle (2007), United States Treasury (2007).

Within Asia, by far the most well-established SWFs are Singapore's Temasek and GIC. Unlike most of the other well-established funds, the two Singaporean funds are not based on oil export revenues. Instead, their underlying income base is government budget surplus and profits of government-owned companies. A common characteristic of SWFs, with the notable exception of Norway's GPF, is their relative lack of transparency. Despite the lack of transparency and information, there is a fairly robust consensus that the two Singaporean funds have been highly successful investors. For example, the market value of Temasek grew on average by a remarkable 18% per year on a compounded basis between 1974 and 2006. It is this kind of commercial success by SWFs right in their own backyard that has encouraged many Asian countries to plan their own SWFs. Indeed many Asian governments are looking toward the two Singaporean funds as models for their own SWFs, and seeking to replicate their success. It was in this context that Korea established the KIC in 2005 with initial assets of US\$20 billion, and the PRC established the CIC in 2007 with initial assets of US\$200 billion. Table 3 lists the major SWFs of Asia.

Table 3: Sovereign Wealth Funds of Developing Asia

Economy	Name of Fund	Assets (US\$ billion)	Year of Inception	Type
Singapore	Government of Singapore Investment Corporation	330	1981	Noncommodity
PRC	China Investment Corporation	200	2007	Noncommodity
Singapore	Temasek Holdings	100	1974	Noncommodity
Hong Kong, China	Investment Portfolio (HKMA)	100	1998	Noncommodity
Brunei Darussalam	Brunei Investment Agency	30	1983	Commodity: Oil
Korea, Rep. of	Korea Investment Corporation	20	2005	Noncommodity
Malaysia	Khazanah Nasional BHD	15	1993	Noncommodity
Kazakhstan	National Oil Fund	15	2000	Commodity: Oil, gas, metals
Taipei, China	National Stabilization Fund	15	2000	Noncommodity
Azerbaijan	State Oil Fund	1.6	1999	Commodity: Oil
Timor Leste	Petroleum Fund	1.22	2005	Commodity: Oil and gas
Uzbekistan	Fund for Reconstruction and Development	0.5	2006	Commodity and noncommodity
Kiribati	Revenue Equalization Reserve Fund	0.47	1956	Commodity: Phosphate mining
Nauru	Nauru Phosphate Royalties Trust	0.07	1968	Commodity: Phosphate mining
India	To be named	n.a.	n.a.	Noncommodity
Thailand	To be named	n.a.	n.a.	Noncommodity

Note: A number of trust funds in the Pacific region, which have been financed by government and donor funds, are not included in the above list and have an aggregate size of about \$500 million. Due to lack of official information from the funds themselves, asset sizes are largely estimates from unofficial sources such as Jen (2007).

Sources: Jen (2007), Rozanov (2005a), Setser and Ziemba (2007).

V. Risks Facing Asia's New Sovereign Wealth Funds

As discussed earlier, the risks of Asia's SWFs for Asia's financial systems are primarily risks arising from the investments of SWFs. Section III showed that Asia's foreign exchange reserves originate from foreign exchange market interventions by the central bank. Analytically, such interventions amount to the central bank's borrowing foreign exchange from the commercial banking system. The central bank then on-lends the borrowed foreign exchange to the SWF, which uses them to finance investments abroad. Therefore, if those investments sour, commercial banks will also suffer the consequences. That is, the investment performance of Asia's SWFs will have repercussions for the stability and efficiency of Asia's financial systems. The principal risks to the investment performance of SWFs originate from a number of sources.

A. Political Economy Risks

It is important to remember that the region's sovereign funds are partly a policy response to growing calls from the general public to use the region's burgeoning reserves more productively so that they can make a bigger contribution to welfare. There are concerns that Asian SWFs may pursue geopolitical or strategic objectives and that those objectives may complicate their pursuit of profit maximization. While there is some element of truth to this, such concerns tend to be overdone. The primary impetus behind the creation of SWFs in Asia is a popular belief that a potentially valuable national resource is being wasted. More specifically, the primary concern among both policymakers and the general public is that the rate of return on traditional reserve assets is "too low" and that Asia is incurring a large opportunity cost by foregoing higher-return assets. In short, the central focus of Asian SWFs is likely to be largely, or even purely, commercial for the simple reason that their *raison d'être* is to make more money out of reserves.

Contrary to conventional wisdom, operational independence and commercial orientation does not guarantee freedom from major investment risks. Indeed it may be argued that precisely because SWFs are tasked with making as much money as possible that they may be tempted to take risks they are ill-prepared to manage. SWFs manage a public resource and hence the performance of their investments will be subject to a great deal of public scrutiny. In principle, public scrutiny is beneficial since it promotes transparency and accountability. At the same time, however, public scrutiny may lead to public pressure for unrealistically high returns given the limited capacity of the SWF. A classic example of such outcomes is CIC's purchase of a US\$3 billion stake in Blackstone, a US private equity firm, in May 2007. The turmoil in US financial markets in the wake of the subprime mortgage crisis has taken a heavy toll on Blackstone. As a consequence, the book value of CIC's investment in the firm has dropped by almost 50% as of the end of March 2008. The price of Blackstone shares has plunged from US\$29.61 to US\$15.45. The huge loss in book value has provoked a major uproar among the PRC general public infuriated by the loss of "their money".

The example of CIC's so far disastrous investment in Blackstone highlights the political economy risks stemming from the fact that SWFs are state-owned institutions. The SWFs are in a no-win situation in the following sense: while they are motivated to pursue high-risk, high-return investments because of political pressure to make better use of excess reserves, they face popular criticism and anger when investments go wrong. Conversely, the general public will always insist on having it both ways—to pressure the SWF for higher returns, but to blame the SWFs responsible when the downside risks are realized. Pursuing a conservative investment strategy reduces the likelihood of big losses but also reduces the likelihood of high returns. On the other hand, pursuing an aggressive investment strategy increases the likelihood of high returns but also increases the likelihood of big losses. While private sector financial institutions also face such

dilemmas, SWFs, unlike those institutions, are ultimately answerable to the entire country rather than just a group of shareholders for their performance. Therefore, regardless of which investment strategy they choose, SWFs will be subject to a much greater deal of scrutiny, criticism, and second-guessing from the general public.

B. Risks Arising from Inadequate Institutional Capacity

Political pressures for earning higher returns from the region's large and growing excess reserves has induced Asian countries to set up their own SWFs to emulate the success of Singapore's Temasek and GIC. The commercial success of the Singaporean funds is ultimately the consequence of high-risk, high-return investment strategies. However, the new Asian SWFs simply do not yet have the institutional capacity to effectively manage a portfolio of high-risk, high-return investments. Temasek and GIC are financially sophisticated investors with large investments in alternative asset classes such as private equity, venture capital, and real estate. Furthermore, they are often active investors seeking to control or at least influence the management of companies. It is not only unrealistic but downright dangerous for Asian countries to believe that it is possible to build a Temasek or a GIC overnight. In the absence of adequate investment management capacity, including risk management capacity, pursuing Singapore-type investment strategies creates dangerously high levels of risk. Nevertheless, popular pressures for profits may encourage SWFs to try to run before they can walk, to pursue high-risk, high-return investments without adequate capacity to handle risk. Succumbing to such pressures entails a clear risk of large, even catastrophic, investment losses.

C. Moral Hazard Risks

All state-owned institutions, including SWFs, are subject to a moral hazard risk arising from government support in case of unfavorable contingencies. For example, state-owned enterprises tend to be less efficient than private sector firms because they believe that the government will bail them out if they suffer losses. A similar moral hazard arises for SWFs, which may take unduly high risks in pursuit of high returns in the belief that the government will bail them out if their investments go bad. This type of moral hazard, in combination with the inadequate risk management capacity of Asia's new SWFs and popular pressure for high returns, creates a dangerous Molotov cocktail of excessively risky investment behavior. Precisely because SWFs are state-owned institutions entrusted with managing public funds, governments will have to take the ultimate responsibility if they suffer heavy losses or go bankrupt. This is true regardless of the SWF's degree of operational autonomy and freedom from political interference. As such, governments will be tempted to shore up poorly performing SWFs with financial support. The secure belief that government will not allow them to fail will embolden SWFs to focus on returns without due regard for risk, increasing the likelihood of large investment losses.

D. Fiscal Risks

The foregoing has demonstrated that the prospect of government support for SWFs may encourage excessive risk-taking. The flip side of this argument is that using SWFs to support the government will also create serious risks for SWFs. In particular, there has to be a clear-cut separation between the foreign exchange assets controlled by the central bank and those controlled by the SWFs. There must be clear ground rules for ensuring that SWF resources will not be used to supplement the central bank's traditional reserves in the event of a financial crisis. Otherwise, having to liquidate long-term assets, which are likely to be a major part of a SWF's portfolio, at short notice will bring about major losses for SWFs. More generally, serious financial risks for SWFs will ensue if the government views their assets as free fiscal resources to be used ad hoc to meet various fiscal needs. The vast majority of Asia's reserves are not fiscal reserves but central bank reserves with counterpart liabilities. The balance sheet of even the best-run Asian SWF will suffer if the government views SWF assets as fiscal assets to be used freely at its own discretion.

E. Transparency and Accountability Risks

A vocal demand from western governments to the SWFs of emerging markets, including those from Asia, is that they become more transparent and accountable. In this connection, they often hold up Norway's exceptionally transparent GPF as a blueprint for all SWFs. Therefore, greater transparency and accountability will help to diffuse financial protectionism in industrialized countries.⁴ Furthermore, it may be argued that greater transparency and accountability will prevent corruption and promote good governance within SWFs. On the other hand, it is not clear whether transparency is beneficial or harmful for investment performance, e.g., hedge funds are notoriously opaque but some of them are remarkably successful investors. More generally, transparency and accountability are not without significant risks for Asian SWFs, especially in conjunction with the political economy risks outlined above. Transparency will increase public scrutiny and the political pressures stemming from public scrutiny. A more specific risk associated with transparency is short-termism in investment strategy associated with political pressures to deliver short-term results. A long-term investment horizon that ignores short-term volatility can deliver significant benefits in terms of investment performance.

F. Financial Protectionism Risks

The biggest external risk faced by Asia's new SWFs is that of financial protectionism, especially from industrialized countries. The cross-border investments of SWFs not only affect the legitimate interests of home countries but also those of host countries. As such, foreign investors, whether state-owned or not, have to conform to host-country laws and regulations. However, host-country governments and citizens are sometimes

⁴ Using financial protectionism expands the SWF's universe of possible investments.

more wary of state-owned investors than private sector investors, and are particularly concerned that their investments may be partly driven by noncommercial objectives. This is why the Government of Germany, for example, is considering new legislation to block state-controlled foreign investments (see Truman 2007). Such concerns may also partly explain the political unrest in Thailand over Temasek's purchase of Shin Corp., which culminated in change of government. At a minimum, those concerns will subject SWFs to greater scrutiny by host-country governments than their private sector counterparts. More seriously, those concerns may give way to various forms of financial protectionism in host countries. Financial protectionism constrains how and where the new Asian funds can invest, and thus imposes a significant cost.

G. Risks Arising from Noncommercial Motivations

The risks arising from noncommercial motivations are related to financial protectionism risks. Since they are state-owned institutions, SWFs may be tempted to pursue noncommercial strategic or geopolitical objectives in addition to purely commercial objectives. The pursuit of noncommercial investment objectives will inevitably interfere with the SWFs' central objective of earning the highest possible risk-adjusted returns. For example, acquiring oil fields in a country with high political risk may help to strengthen a country's national energy security but may not pass the test of commercial profitability. Hence SWFs may make investments that private sector firms, which are driven by purely commercial criteria, may be unwilling to make. While such concerns are not entirely groundless, they tend to be overblown. Again, we must remember that the driving impulse behind the creation of Asian SWFs in the first place is to make as much money as possible subject to manageable risk. Furthermore, the boundary between purely commercial investments and strategic/geopolitical investments is not always clear. For example, if CIC were to acquire natural resource assets in Africa, those assets not only promote the PRC's energy security, but they may also make perfect commercial sense in light of growing scarcity and fast-rising global prices of commodities.

VI. Risks from Asia's Sovereign Wealth Funds to Its Financial Systems

The preceding section explored the wide range of downside risks facing Asia's new SWFs. The issue of interest is the fallout for the domestic financial system of Asian countries when those downside risks are realized. The unfolding subprime mortgage crisis in the US provides a natural point of departure for discussing the ramifications of SWFs' investment losses for the financial system. Suppose that Asian SWFs had invested heavily in assets linked to US subprime mortgages and thus faced a high degree of exposure to the risks associated with those mortgages. Under that scenario, they would

have suffered heavy losses from the unfolding crisis, and those losses would correspond to a big write-off of the value of assets. To return to the earlier example in Section III, assume that the losses suffered by KIC from the crisis amounted to US\$20 billion. In this case, the public sector (KIC plus BOK) has assets of only US\$10 billion with which to honor liabilities worth US\$30 billion to the KEB. This insolvency of the public sector is transmitted to the commercial banking system. The KEB still holds US\$30 billion dollars' worth of bonds, but those bonds are, in effect, now only worth US\$10 billion dollars. The losses suffered by KIC directly harm the solvency and hence stability of the Korean commercial banking system.

It is also worth noting that there are potentially serious currency and duration mismatches between the SWF's assets and liabilities. Since the public sector buys foreign exchange reserves with sterilization bonds, making long-term investments with those reserves should give pause for thought in light of the typically short maturity of those bonds. Of course, in principle either continuous refinancing of the short-term bonds or replacing those bonds with long-term bonds can facilitate a long-term investment strategy. However, in practice continuous refinancing can be costly and can keep Asia's long-term bond markets underdeveloped. In addition to the duration mismatch, another source of mismatch between assets and liabilities is currency mismatch. Sterilization bonds are denominated in local currencies whereas SWF assets are denominated in foreign currencies. Large foreign exchange rate movements may lead to large discrepancies between the value of assets and liabilities. For example, depreciation of the US dollar will reduce the local currency value of US assets, and hence make it more difficult to service the local-currency sterilization bonds. The broader point here is that Asia's reserves are borrowed funds rather than wealth. This fact suggests that mismatches between SWF's assets and liabilities may have major repercussions for the commercial banking system.

There is no *a priori* reason why the public sector is better than the private sector at investing a country's current account surplus. The easing of restrictions on capital account outflows and financial development would even further weaken the rationale for the government's dominant role in foreign investment. The dominant role of the public sector in Asia's outward foreign investment, epitomized by the emergence of SWFs, can seriously hamper the efficiency of the domestic financial system by hampering their capacity to invest in foreign assets. It is true that the creation of SWFs and the appropriation of the role of foreign investor by the government is largely a consequence rather than a cause of the inefficiency of Asian financial sectors. However, it is no less true that the government's quasi-monopoly of foreign investments through SWFs will deprive private sector financial firms of the opportunity to develop its own capabilities in efficiently investing abroad. In a world of growing international financial integration, the efficiency of a financial system will be increasingly determined by its ability to allocate scarce resources to their best uses not only at home but also in other countries. The investment activities of SWFs may thus not only harm the stability of financial systems but also their efficiency.

The concentration of Asia's outward foreign investments in a SWF may also lead to a concentration of risks to the domestic financial systems. Returning to the example of the current subprime mortgage crisis, it is unclear whether the risks to Asia's financial system would have been larger or smaller if the private sector played a bigger role in intermediating the region's current account surplus. It is possible that Asia's commercial banks and other financial institutions would have purchased large amounts of US assets linked to subprime mortgages, in which case the region's exposure to the crisis would have been substantially bigger. However, the fact that SWFs accounts for a high and growing share of Asia's outward foreign investments entails an unhealthy concentration of risks. For example, if a SWF had bet big on subprime mortgage-backed assets, the large concentrated losses would have had a devastating impact on the commercial banking system. A diffusion of outward foreign investment among more players, including private sector players, leads to a diffusion of risks.

At a broader level, Asia's SWFs will not insulate Asian financial systems from global financial instability. To the contrary, the region's SWFs represent an important channel for integrating the region's economies more closely into the global financial system. For example, recent purchases of equity stakes by CIC and KIC by the likes of Morgan Stanley and Merrill Lynch are unprecedented acquisitions that signal a greater willingness to explore the risks and returns of global financial markets. In other words, those acquisitions mark the first, state-led forays of Asian countries into the world of global finance. At the same time, we have seen that the central role of commercial banks in the foreign exchange market makes them the main counterparties to the central bank's purchases of foreign exchange, which form the basis of the funds available to SWFs. In effect, the public sector is borrowing from the commercial banking system to purchase foreign assets. Therefore, looking at the big picture, it is useful to view the SWFs as a bridge between the global financial system and domestic financial system. A major shock to the global financial system such as the subprime mortgage crisis will be transmitted to the domestic financial system via the SWFs.

VII. Concluding Observations

Until now, discussions of the relationship between cross-border capital flows and domestic financial stability in Asia have focused almost exclusively on the effect of capital *inflows* on domestic financial stability. This is perfectly understandable in light of the painful memories of the 1997–1998 Asian financial crisis, which continues to haunt the region; and the fact that large capital *outflows* from the region are a relatively recent phenomenon. The devastation wrought by the sudden reversal of capital inflows in a region highly dependent on those inflows has left a deep scar on the collective psyche of the region's policymakers and general public. The policymakers' almost complete neglect of outflows as a direct source of financial instability is perhaps best illustrated by the fact

that encouraging outflows is seen as a means of reducing net inflows and hence reducing the destabilizing potential of inflows. Nevertheless, Asia's large and growing levels of capital outflows suggest that these too may become a direct source of domestic financial instability, as brought up in this paper.

The analysis suggests that capital outflows, in the form of outward investments of the region's emerging SWFs, can indeed become a major source of financial stability. Those investments are subject to a wide range of risks that the new SWFs are ill-equipped to handle at the present. At the same time, the fact that SWFs were created in the first place to maximize risk-adjusted returns implies the presence of powerful political pressures to pursue high-risk, high-return investment strategies. If the downside risks to such strategies are realized on a large scale, as they certainly would have been if Asian SWFs had a much high exposure to the current credit crisis in the US, the damage to the region's financial systems would have been substantial. In particular, the commercial banks—which still form the backbone of Asian financial systems—would have had to write off a large part of their loans to the central bank. Asia's foreign exchange reserves are, in effect, loans from the commercial banking system to the central bank. This is true regardless of whether there are SWFs or not. The new element that is introduced by the creation of SWFs is that those loans are being used to finance high-risk, high-return investment activities rather than low-risk, low-return investment activities.

Managing Asia's large and growing pool of excess foreign exchange reserves more actively through profit-seeking SWFs is both politically popular and economically sound. The potentially destabilizing effect of SWFs on domestic financial systems does not affect the overall validity of this statement. However, the exposure of the domestic financial system to higher risks as a result of higher-risk investments by SWFs is a significant cost that has to be taken into account. The practical implication of this cost for the new Asian funds is that a gradualist approach of learning-by-doing is preferable to a cold-turkey approach of a big bang. That is, it is far better for those funds to start from passive portfolio investments in less risky asset classes and build up their investment management capacity before moving on to active direct investments in more adventurous asset classes. Limiting exposure to risk is important to begin from, in light of the new Asian fund's lack of institutional capacity, although the possible transmission of that risk to the domestic commercial banking system seals the argument for a gradualist, go-slow approach. The nature of Asia's reserves means that SWF's taking on excessive risks in pursuit of high returns will not only impose costs on the SWF itself but the entire financial system.

References

- Aizenman, J., and J. Lee. 2005. *International Reserves: Precautionary versus Mercantilist Views, Theory and Evidence*. IMF Working Paper 05/198, International Monetary Fund, Washington, DC.
- Edison, H. 2003. "Are Foreign Reserves in Asia too High?" In *World Economic Outlook 2003 Update*. International Monetary Fund, Washington, DC.
- European Central Bank. 2006. *The Accumulation of Reserves*. ECB Occasional Paper No. 43, Frankfurt am Main.
- Government of Singapore Investment Corporation. 2007. "Our Business: Overview." Available: gic.com.sg/, downloaded 1 August.
- Hildenbrand, P. 2007. "Four Tough Questions on Foreign Reserve Management." In J. Johnson-Calari, and M. Rietveld, eds., *Sovereign Wealth Management*. London: Central Banking Publications.
- Jen, S. 2007. "How Big could Sovereign Wealth Funds be by 2015?" Morgan Stanley, New York. Available: morganstanley.com, downloaded 7 May.
- Johnson-Calari, J., and M. Rietveld, eds. 2007. *Sovereign Wealth Management*. London: Central Banking Publications.
- Park, D. 2007. *Beyond liquidity: New Uses for Developing Asia's Foreign Exchange Reserves*. ERD Working Paper No.109, Economics and Research Department, Asian Development Bank, Manila.
- Rietveld, M., and R. Pringle. 2007. "The Evolution of Sovereign Wealth Management." In J. Johnson-Calari, and M. Rietveld, eds., *Sovereign Wealth Management*. London: Central Banking Publications Ltd.
- Rozanov, A. 2005a. "Who Holds the Wealth of Nations?" *Central Banking Journal* 15(4):52–57.
- _____. 2005b. "From Reserves to Sovereign Wealth Management." *Central Banking Journal* 15(3):1–3.
- Setser, B., and R. Ziemba. 2007. "What do we Know about the Size and Composition of Oil Investment Funds?" *RGE Monitor* April:1–5.
- Temasek Holdings. 2007. Corporate Profile. Available: temasekholdings.com.sg/about_us.htm, downloaded 1 August.
- Truman, E. 2007. *Sovereign Wealth Funds: The Need for Greater Transparency and Accountability*. Peterson Institute for International Economics No. PB07-6, Washington, DC.
- US Treasury. 2007. *Are High Foreign Exchange Reserves in Emerging Markets a Blessing or a Burden?* Occasional Paper No. 6, Washington, DC.

