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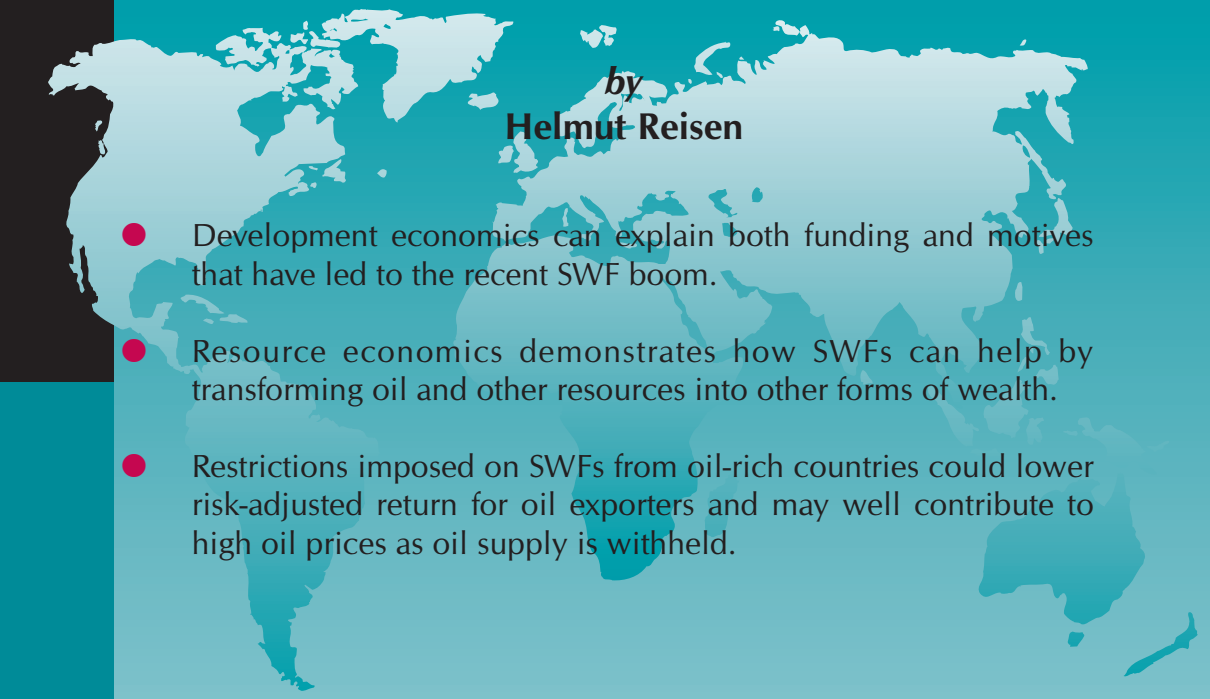
POLICY BRIEF No. 38

HOW TO SPEND IT

COMMODITY AND NON-COMMODITY SOVEREIGN WEALTH FUNDS



by

Helmut Reisen

- Development economics can explain both funding and motives that have led to the recent SWF boom.
- Resource economics demonstrates how SWFs can help by transforming oil and other resources into other forms of wealth.
- Restrictions imposed on SWFs from oil-rich countries could lower risk-adjusted return for oil exporters and may well contribute to high oil prices as oil supply is withheld.

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How to Spend It: Commodity and Non-commodity Sovereign Wealth Funds

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Executive Summary

Sovereign wealth funds have become important players in global financial markets. But their investments have repeatedly raised concerns, such as fear of industrial espionage or geopolitical threats. This paper argues that the principal motivation for setting up SWFs should put such concerns into the appropriate perspective. Development economics can explain both the funding sources and the motives that have led to the recent SWF boom, thus helping to prevent the imposition of investment restrictions in OECD countries.

The basic principles of public finance and development economics leave little room for conspiracy theories, but draw attention to the fact that funding sources and economic motives differ between commodity and non-commodity sovereign wealth funds. These principles point to several major motives for countries to build up SWFs, rather than merely accumulating official foreign exchange reserves. Foreign exchange reserves can become excessively large, additional economic diversification and efficiency gains can be achieved, technology transfer and network benefits can be fostered, and demographic pressures can be tackled.

When using the excess funds, governments have to take important, fundamental decisions. The Hotelling and Hartwick Rules provide theoretical guidance, demonstrating the benefits of transforming oil or other resources into forms of wealth, rather than consuming them.

This not only benefits the investing but also the recipient countries: Protectionism, such as restrictions imposed on SWFs from oil-rich countries, will tend to reduce the risk-adjusted return for oil exporters, and may well contribute to higher oil prices as oil supply is withheld.

Introduction

Sovereign wealth funds (SWFs) are government-controlled investment vehicles which recently have stimulated protectionist sentiments in some OECD countries. Their asset size – more than USD 3 trillion – and their owners – governments – have been perceived by some as providing fertile ground for conspiracy theories, such as fear of industrial espionage or geopolitical threats. These concerns were strongly summarised by maverick TV anchor Jim Cramer at a time when SWFs were heavily investing in US banks: "Do we want the communists to own the banks, or the terrorists? I'll take any of it, I guess, because we're so desperate" on CNBC, 18 January 2008. Indeed, concerns over political motivations on the part of SWFs have become a serious problem in the discussion regarding investment policies around the world. After all, such concerns provide an – albeit diffuse – excuse for calling for protectionist policy measures discouraging foreign investments and hampering cross-border capital flows.

Investments controlled by foreign governments, such as those by SWFs, can raise concerns based on uncertainty regarding the objectives of the investor and whether they are commercially based or driven by political or foreign-policy considerations. They can raise concerns with respect to foreign government control of or access to defence-related technologies. However, the principal motivation for setting up SWFs – intergenerational equity – and the cyclical and diversification motives of SWFs, spelled out in detail below, should put such concerns into appropriate perspective. Development economics can explain both the funding sources and the motives that have led to the recent SWF boom, thus helping to prevent investment restrictions from being imposed in OECD countries.

This policy brief explains these basic principles of public finance and development economics; they leave little room for conspiracy theories, but draw attention to the fact that funding sources and economic motives differ between commodity and non-commodity SWFs. Theory and evidence clearly suggest that concerns about the political motives of SWFs and calls for restricting foreign investments are substantially unfounded.

Sovereign Wealth Funds: Development Motives and Financing Sources

Typically, the largest SWFs with assets of more than USD 100 billion ("heavy SWFs") are either from oil exporting countries or from East Asia (Table 1). They form part of the respective country's national total capital which is defined as the sum of net financial assets, the physical capital stock (e.g. real estate, machines, and plantations), the unused (clean) environment, human capital and unexploited natural resources. Extracting and selling oil amounts to running down capital, unless the receipts are fully reinvested in financial, physical, environmental or human capital[1]. Thus, "genuine" savings would be negative, unless exhaustible resources are fully reinvested, as oil-rich countries would deplete their total capital. The World Bank (2006) has calculated that many resource-abundant economies have negative "genuine" saving rates and are becoming poorer each year. Table 1 shows that the "genuine" saving performance in countries with heavy SWFs is strikingly different: Asian countries save too much, the Gulf states may save too little.

Public finance, monetary and development economics point to several major motives for countries to build up sovereign wealth funds, rather than merely accumulating official foreign exchange reserves:

— In cases where foreign exchange reserves – mostly held in US treasury bonds – are judged excessively large, the interest rate and currency risk inherent in these official reserves from a certain level start to militate in favour of portfolio diversification, in order to contain potential losses on the US dollar or on the face value of US treasury bonds. Central banks find it increasingly difficult to control monetary aggregates when official reserves grow too large, as local financial markets are not deep enough to allow a reduction in the domestic component of the money supply needed to counterbalance the rise in foreign exchange. At a certain stage, either inflation or an upward float of the currency has to be accepted by monetary authorities under an effectively open capital account. Either way, this means real currency appreciation.

Table 1. **SWFs and Savings**

Country	Fund	Assets under Management (USD billion, Sept. 2007)	Source	Gross National Savings (% of GNI, end-2000)	"Genuine" Savings (% of GNI, end-2000)
United Arab Emirates	Abu Dhabi Investment Authority (ADIA)	875	Oil	n.a.	n.a.
China	China Investment Corp. Ltd. Central Hujin Investment Corp. State Foreign Exchange Investment Corp. (SFEIC)	500	Non-commodity	38.8	25.5
Singapore	Govt. of Singapore Investment Corp. (GIC) Temasek	438	Non-commodity	47.7	35.2
Norway	Govt. Pension Fund – Global (GPFG)	322	Oil	36.9	18.5
Saudi Arabia	Various Funds	300	Oil	29.4	-26.5
Kuwait	Kuwait Investment Authority	250	Oil	40.0	-12.9
Hong Kong, China	Hong Kong Monetary Authority Investment Portfolio	140	Non-commodity	31.8	21.4
Russia	Stabilisation Fund of the Russian Federation (SFRF)	127	Oil	37.1	-13.4

Source: Kern (2007); World Bank (2006).

— Next to shifting out of excessive reserves, economic diversification and efficiency gains are major economic motives for establishing SWFs. For raw-material rich countries, reducing resource dependence through vertical and horizontal sector diversification is a major development goal. Sovereign wealth funds can serve this goal in

several ways: by helping limit unwarranted currency appreciation, it contains the competitiveness burden for non-traditional industries ("Dutch Disease")[2]. The United Arab Emirates are using their fund for rapid diversification of their economies away from oil towards tourism, aerospace and finance. Such a diversification motive is as legitimate as the desire to raise the efficiency of their economy through acquiring stakes in leading global companies.

— By investing in world-class business, technology transfer and network benefits can be fostered and production efficiency be raised as a future driver of growth; by investing in infrastructure, in particular with regional links, private-sector business can be stimulated. This motive is particularly relevant in those (Asian) countries where future growth cannot be based on mere factor accumulation but requires greater reliance on more efficient use of accumulated production factors. The aspect of boosting efficiency in funds allocation may well explain the recent rush by SWFs to acquire stakes in US financial intermediaries battered by the sub-prime lending crisis.

— Finally, SWFs may serve as a response to expected demographic pressures, while smoothing inter-temporal consumption levels for future generations when resources are exhausted. This motive becomes more important if policy makers want to limit immigration. It also presupposes that political economy problems that typically have led to "resource curse", the appropriation of raw material rents by sitting governments, have been overcome. The rationale also assumes that the stream of natural resource revenues and what is done with it becomes transparent at some point.

The largest SWFs known today are depicted in Table 1. They are either financed from export receipts earned from a non-renewable resource, or they result from very high corporate or household saving rates and saving surpluses. Griffith-Jones and Ocampo (2008) rightly emphasize that, from a development perspective, it only makes sense to finance an SWF from a surplus in the country's current account of the balance of payments. In the absence of a current account surplus, it is difficult to justify the creation of SWFs as these would be merely created on the basis of external financing and thus constitute a form of financial intermediation of "borrowed money".

As for the source of the saving surplus, SWFs can be divided into two types: commodity-based funds, which are established through the receipts from commodity exports owned or taxed by the government;

and non-commodity funds, which are usually financed by a transfer from the official foreign exchange reserves, hence via the country's central bank. Table 2 brings major motives and financing sources into a matrix, calibrated for those countries with SWFs that currently exceed USD 100 billion. The next sections discuss the rationale for commodity and non-commodity SWFs in greater detail.

Table 2. **A Matrix of SWF Motives and Financing**
Countries operating SWFs with assets under management higher than USD 100 billion, 2007

Financing \ Main Motive	Diversification of Foreign Exchange Reserves	Economic Diversification	Economic Efficiency	Inter-generational Equity
Commodity Earnings	Russia	United Arab Emirates		Kuwait Norway Saudi Arabia
Structural Saving Surplus	China	Singapore	China Singapore	

Source: Author's assessment.

The Rationale and Case for Commodity SWFs

In choosing how best to spend their natural resource receipts, authorities in resource-rich countries depend on information that is highly uncertain – resource reserves, future commodity prices and rates of return on exploration – and interrelated. Essentially, the choice is between extraction and preservation of exhaustible resources; between consumption and investment once the decision for extraction is made; between foreign investment and domestic investment; and between foreign investment and retiring national debt (based on two excellent surveys (Collier, 2007; Van der Ploeg, 2008). Table 3 provides a decision tree faced by authorities in resource-rich countries.

Economic theory offers useful insights into the optimal management of natural resources. One strand of literature focuses on arbitrage arguments and the Hotelling Rule. A country exporting oil or any other exhaustible commodity should be indifferent to whether it keeps the oil under the ground, in which case the return is the expected rise in future oil prices, and getting a market rate of return on its sale (Hotelling Rule for efficient depletion). If the market return of reinvesting the proceeds of extracted oil is depressed, the oil exporter will either consume the proceeds – rather than invest them – or leave the oil under the ground. As capital protectionism, such as restrictions imposed on SWFs from oil-rich countries, will tend to reduce the risk-adjusted return for oil exporters, it may well contribute to higher oil prices as oil supply is withheld.

Extracting and selling oil amounts to running down capital, unless the receipts are fully reinvested in financial, physical or human capital (Hartwick Rule for intergenerational equity). In addition to saving, SWFs can also be helpful for stabilizing notoriously volatile raw material prices. In addition, the law of diminishing returns forces oil exporters to invest a large share of savings abroad. In Where Is the Wealth of Nations? the World Bank (2006) has calculated that many resource-abundant economies do not follow the Hartwick rule; they have negative 'genuine' savings rates and become poorer each year. This highlights the important policy question of what resource rich economies can do to avoid the resource curse. An SWF can help, in that oil receipts are eventually transformed into other forms of wealth, rather than being consumed.

Oil exporters would be forced to disregard both the Hotelling and the Hartwick rules, if SWFs could not invest in OECD countries. The Hotelling Rule warns that lowering the returns on investment from oil receipts, by preventing investments by SWFs from oil-rich countries, would lead to lower oil supplies and higher oil prices. Hence, a protectionist stance against commodity SWFs can clearly damage the interest of the recipient country, by stimulating a larger transfer of purchasing power to the oil exporters as oil prices rise. In oil-rich countries, such capital protectionism would lead to more intense waste and corruption today and lower consumption tomorrow, possibly with harsh geo-strategic implications.

Table 3 shows that there are good theoretical reasons for investing a substantial part of the windfall initially abroad: the return on investment would fall below the world interest rate if the windfall were to be used entirely for domestic investment. Investing abroad offers an escape from diminishing returns: foreign assets can be repatriated gradually and used

for domestic investment. The construction price-smoothing rule can be employed to dampen rising capital cost, such as typically occurs in a construction boom, by deferring domestic investment until the construction boom abates. However, in practice the efficient balance between domestic and foreign assets is politically difficult to sustain, as there will always be competing demands for current consumption at home. Domestic debt repayment may solve this dilemma as long as domestic debt cost exceeds expected foreign returns. It has the added advantage of making foreign-asset accumulation difficult to reverse by future predatory governments.

Table 3. **A Decision Tree for Managing Public Sector Commodity Booms**

Decision	Rule
How much to deplete? Arbitrage: The country should be indifferent between keeping the natural resource under the ground in which case the return is the capital gain on the reserves compared to selling the natural resource and getting a market rate of return on it.	*Hotelling-Solow Rule* This rule requires that the price of the natural resource should grow at the world rate of interest and that under some conditions the rate of depletion should equal the demand elasticity times the world rate of interest. The steady-state depletion rate stipulates that societies with fast growing populations should deplete their natural resources less rapidly than countries with little population growth.
How much to save? To maximise intergenerational utility, the question is which saving rate will sustain sTable consumption per capita over time. Consuming rents from exhaustible resources is literally consuming capital. The mid-term saving decision is ruled by stabilisation and diversification concerns. Fiscal policy is superior to monetary policy to deal with the first, active diversification involves use of funds for new activities (as in UAE, Norway & Chile).	*Hartwick Rule:* If there is no population growth, all resource rents must be invested in capital, including education. In order to maintain a constant income per capita. If consumption per head were rising (falling) over time, social welfare could be increased if earlier (later) generations saved and invested less or consumed capital at the expense of later (earlier) generations. Commodity price smoothing rule Unlike the savings generated by the Hartwick Rule, these savings are intended to finance subsequent consumption during periods when the oil price is below its long run path. There is thus a strong case for holding these assets in liquid form, which implies the acquisition of financial assets abroad.
How much to invest at home?	Excess return on home investment Construction price smoothing rule
How much to invest abroad vs. retire public debt?	Excess cost of public debt over global return

Source: Based on discussion in Van der Ploeg (2008) and Collier (2007).

Non-Commodity SWFs: A Case of Dynamic Inefficiency and Past Currency

Misalignment?

In contrast to oil-rich countries, SWFs from East Asia are financed through transfers from foreign exchange reserves. For a decade, China has been providing "cheap savings" to the United States as it extended supplier credits to pay for the "cheap goods" the country used to export, holding the accumulating reserves mostly in low-coupon US treasury bonds. Eventually, with reserves at more than USD 1.7 trillion, currency and interest risk was deemed excessive and monetary control is lost due to exhausted sterilisation capacity.

To be sure, official foreign exchange reserves allow countries to smooth domestic absorption in response to sudden stops in capital inflows. Popular rules of thumb for policy makers have been linked to the current account, such as maintaining reserves equivalent to three months of imports, or to the capital account, notably the Greenspan-Guidotti Rule of full coverage of total short-term external debt. Observing the Guidotti Rule of covering all foreign short-term debt plus three months of imports would require China to hold around USD 500 billion in reserves, less than a third of what it actually holds. These excess reserves plus future saving surpluses represent the funding potential for China's sovereign wealth funds[3].

While in most OECD countries growth is driven by productivity gains, it is instead factor accumulation that has explained growth in East Asia (Young, 1995). The relevance of this finding to the sustainability of Asia's rapid growth is that factor accumulation tends to be self-limiting. Eventually you run out of labour and supplying a given labour force with more and more capital equipment eventually runs into diminishing returns. This may suggest that Asian SWFs are the result of "dynamic inefficiency". Dynamic inefficiency is defined as capital over accumulation.

Abel *et al.* (1989) show that an economy is dynamically efficient if gross capital income consistently exceeds gross investment, where capital income is defined as the sum of profit, rental, and interest income. If this is the case, then the financial sector is making more resources available for future consumption than it is using. Conversely, if investment consistently exceeds capital income then the financial sector is draining resources from the economy. This is inefficient, since the whole point of investing is to augment future consumption possibilities. In countries

with "dynamic inefficiency", so much capital has been accumulated that investment spending tends to exceed capital income; investment is draining resources from the economy rather than augmenting future consumption possibilities. Note that the pension motive should not apply to SWFs from dynamically inefficient countries when their growth rates exceed the global capital return: Ironically, pay-as-you-go pensions would generate higher returns for beneficiaries than would fully funded pensions.

In East Asia, rapidly ageing populations and limited immigration do suggest the need for high savings to sustain consumption levels in the future. When savings become excessive and capital returns drop below the growth rate, however, tax-financed pensions achieve that goal better than fully-funded pensions. Mandatory savings and excessive capital accumulation have resulted in "dynamic inefficiency" in both China and Singapore, as shown by recent empirical research (Kasa, 1997; He *et al*., 2007). The root origins of excess savings, however, differ between the two countries.

In Singapore, much of saving is "forced". Since 1955, the government has operated a compulsory savings programme called the Central Provident Fund, a fully-funded defined-contribution public pension scheme. This programme requires a "contribution" from both employees and their employers. The compulsory contribution rates are on average 20 per cent for employees and 13 per cent for employers, making a total of 33 per cent in 2008. Forced savings help explain why gross national savings averaged 47 per cent of GDP in 2007, while the current account surplus was 24.3 per cent of GDP. Predictably, such excessive savings have generated very low returns for Singapore's pension beneficiaries; Asher and Nandy (2006) estimate that the Central Provident Fund generated a meagre 1.2 per cent real rate of return during the period 1987-2004.

China's high savings are ultimately linked to a surge in corporate profits thanks to an undervalued currency. In contrast to Singapore, China has seen a strong rise in corporate and government savings over recent years, while household savings have remained flat (Kuijs, 2006). Between 2000 and 2005, gross corporate savings increased from 16 to 23 per cent of Chinese GDP, and government savings from 5 to 10 per cent. Household savings remained roughly constant at 16 per cent. Mattoo and Subramanian (2008) cite estimates of China's exchange rate to suggest a sizable undervaluation for the 2000-2007 period, ranging from 20 to 60 per cent. Eliminating this undervaluation is estimated to reduce China's current account surplus by between 6 and 12 percentage points of GDP.

Ferguson (2007) makes a convincing case that China's current account surplus and corporate savings are linked with the undervaluation of the Chinese yuan. They show that Chinese companies – many of them state-owned – have captured large parts of the domestic market from foreign competition, depressing imports and expanded their market share abroad, increasing exports. The surge in corporate profits in China has mainly come from two industrial sectors: manufacturing and mining. Purely domestic-oriented industries have seen much less dramatic profit growth. Yet the reason for the profit boom was not a widening of margins, which have been more or less stable. The reason was a dramatic increase in sales volumes and gains in market share both abroad and at home. Profits have surged and the dollars have piled up as official reserves at the People's Bank of China, before some of these assets were transferred to the CIC.

Outlook

From the perspective of development economics there is little need for conspiracy theories to explain what drives the funding and motivation of sovereign wealth funds. While a clear case can be made from a development perspective for commodity SWFs, the issue is much more complicated as far as Asian non-commodity SWFs are concerned. For China, a large, but still relatively poor and underdeveloped country, with eroding public safety nets, the case for investing the country's savings in overseas markets is ambiguous. Unlike many commodity exporters, both China and Singapore tend to save too much.

A partial solution to global imbalances and a strong barrier to rapid asset growth of sovereign wealth funds will occur with the inevitable real appreciation of the currencies, not only in China and Singapore but also in the Gulf countries. As for China and Singapore, current consumption should be stimulated; in China, first and foremost through a transfer of corporate profits to the (rural) household sector; in Singapore, through establishing a focus on capital return rather than accumulation and by further reducing contribution rates to the Central Provident Fund.

Sovereign wealth funds in general should not be restricted by industrialised countries as long as they pursue financial objectives only. Pursuing protectionist policies against investments from oil-rich countries would harm oil-importing countries the most as oil prices would rise further in response to capital protectionism.

Notes

1. Hartwick's Rule for intergenerational equity. For details see below.

2. A surge in resource exports leads to a real appreciation of the county's exchange rate and this hurts other exporters and producers in import-competing sectors. This phenomenon is known as the "Dutch disease" (Corden and Neary, 1982). A resource boom affects the economy through the resource movement effect and through the spending effect. For Dutch Disease to arise and become a serious policy issue there must be other sectors for which the rise in the real exchange rate would create problems relating to competitiveness.

3. Note, however, that the level of "optimal"' reserves may be higher than suggested by the popular rules of thumb, depending on the output cost and the probability of capital-flow reversals. See Jeanne and Rancière (2008).

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DEVELOPMENT CENTRE POLICY BRIEFS

In its research activities, the Development Centre aims to identify and analyse problems the implications of which will be of concern in the near future to both member and non-member countries of the OECD. The conclusions represent a contribution to the search for policies to deal with the issues involved.

The *Policy Briefs* deliver the research findings in a concise and accessible way. This series, with its wide, targeted and rapid distribution, is specifically intended for policy and decision makers in the fields concerned.

Sovereign wealth funds (SWFs) have become important players in global financial markets. But their investments have repeatedly raised concerns, such as fear of industrial espionage or geopolitical threats. This *Policy Brief* argues that the principle motivation for setting up SWFs should put such concerns into perspective. Development economics can explain both saving sources and motives that have led to the recent SWF boom, thus helping to avoid investment restrictions in OECD countries. Protectionism, such as restrictions imposed on SWFs from oil-rich countries, will tend to reduce the risk-adjusted return for oil exporters, and may well contribute to higher oil prices as oil supply is withheld.

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