



Alternatives to Currency Manipulation: What Switzerland, Singapore, and Hong Kong Can Do

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For the major advanced economies and the world as a whole, insufficient aggregate demand—that is, too little spending—impeded recovery from the Great Recession of 2008–09. By manipulating their currencies to boost their net exports, many countries made a bad situation worse for their trading partners, which saw demand shifted away. The world needs policies that increase total demand rather than policies that fight over the allocation of the existing amount of demand.

The costs of currency manipulation are high. Such policies prolonged excess unemployment in the United States, peripheral European countries, and other countries that are not intervening to keep their currencies weak.¹ These countries

1. In principle, fiscal and monetary policy should have acted more forcefully to restore full employment. In practice, the nature and depth of the recession, combined with the novelty of hitting the zero bound on interest rates, prevented a fully adequate macroeconomic policy response. In those circumstances, currency manipulation by trading partners worsened an already unsatisfactory outcome.

experienced trade deficits that were larger than they otherwise would have been. Even in periods of full employment such as the mid-2000s, currency manipulation caused a misallocation of capital; in particular, it enabled unsustainable housing booms in many countries.

Fred Bergsten and Joseph Gagnon (2012) identified 22 countries as currency manipulators over the 2001–11 period. Governments of these countries maintained trade (current account) surpluses by holding down the values of their currencies through excessive purchases of foreign assets. Table 1 updates some of the data Bergsten and Gagnon analyzed for these countries through December 2013. The table shows that many of them still buy large quantities of official foreign assets, suggesting that the issue of currency manipulation is not going away. For the subset of the 22 countries for which historical data are available, figure 1 shows that net purchases of official foreign assets have declined a bit from their previous peak, but they remain much higher than before 2003.²

A recent paper (Gagnon 2013) shows that net official financial flows (which are dominated by official purchases of foreign assets) strongly affect a country's current account balance, with each \$1.00 of official flows raising the current account by \$0.60 to \$1.00. This is a much larger effect than is generally believed. For this group of countries with large net official flows, figure 1 shows that movements in the current account balance are closely related to movements in net official flows. This research strongly supports the important distinction between domestic and external policies that is written into international economic rules. External policies, such as official purchases of foreign assets, operate almost exclusively through their effects on other countries. Domestic policies operate primarily internally, with spillovers to other countries being only a secondary and smaller effect. For this reason, international rules place greater restrictions on external than on domestic policies.

2. There are three related concepts: changes in stocks, financial flows, and actual purchases (or intervention). Flows equal purchases plus accrued earnings. Changes in stocks equal flows plus changes in valuation, including from exchange rate movements. The balance of payments accounting identity says that the current account equals net financial flows.

Table 1 Official foreign assets of selected countries
(billions of US dollars at year end)

Country	2013 Level	2012 Change	2013 Change	Average change, 2012–13 (percent of GDP)
Algeria	195	8	6	3
Angola ¹	38	10	0	4
Azerbaijan	50	5	5	7
China ²	4,065	159	566	4
Denmark	86	4	4	1
Hong Kong	311	32	-6	5
Israel	82	1	8	2
Japan ³	1,239	-28	45	0
Kazakhstan ²	142	16	69	20
Korea ³	349	20	26	2
Kuwait	442	3	120	33
Libya ¹	119	14	3	11
Malaysia ³	138	6	-1	1
Norway ³	880	128	144	27
Qatar	212	46	65	28
Russia	471	32	-2	1
Saudi Arabia	726	115	85	14
Singapore ^{3,4}	543	11	57	12
Switzerland	498	197	30	18
Taiwan	417	18	14	3
Thailand	162	6	-10	-1
United Arab Emirates ¹	1,044	57	181	31
Total	12,207	860	1,410	

1. 2013 reserves data based on latest available: September (UAE), November (Angola, Libya).

2. I include only the share of sovereign wealth fund assets that are invested in foreign assets as estimated by Bagnall and Truman (2013).

3. I include only the share of sovereign wealth fund assets that are invested in foreign assets, as reported by the respective authorities.

4. I assume that 50 percent of the foreign exchange reserves of the Monetary Authority of Singapore are managed by the Government Investment Corporation and make an adjustment to avoid double counting.

Note: This table reports the sum of foreign exchange reserves and foreign assets in sovereign wealth funds.

Sources: Foreign exchange reserves data were obtained from the IMF's *International Financial Statistics* database. Assets of sovereign wealth funds (SWFs) for the following countries were obtained from national sources: Azerbaijan, Korea, and Norway. All other countries' SWF data were obtained from the Sovereign Wealth Fund Institute. GDP is from IMF's *World Economic Outlook*.

The International Monetary Fund's (IMF) Articles of Agreement state that member countries "shall avoid manipulating exchange rates or the international monetary system in order to prevent effective balance of payments adjustment or to gain an unfair competitive advantage over other members." Clearly, this injunction is not being enforced. Bergsten and

Gagnon's strategy seeks to bring more pressure to bear against currency manipulators to get them to stop. However, as Bergsten and Gagnon (2012, 2) note, "An important component of this strategy is to develop new sources of sustainable domestic-demand-led growth in surplus countries as endorsed by the leaders of the Group of Twenty (G-20)."

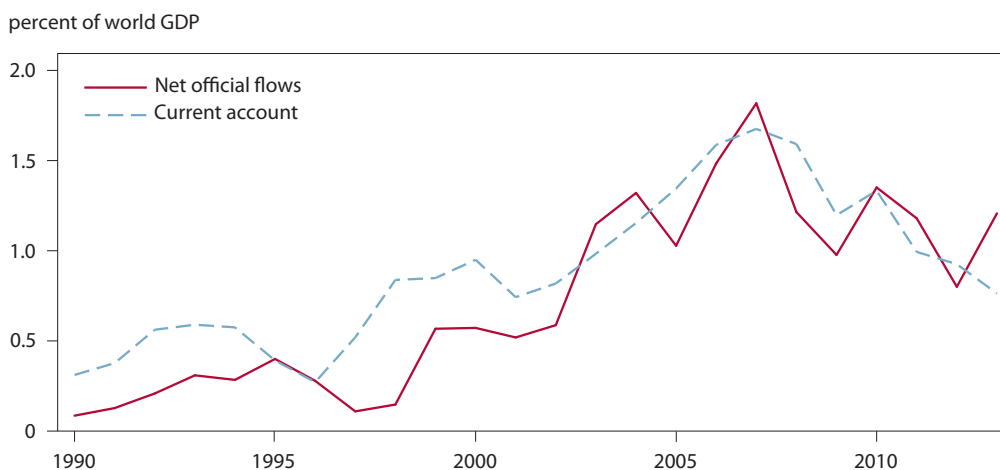
This policy brief fleshes out the growth component of this strategy. For large economies such as China, Japan, and Korea, most observers agree that standard macroeconomic policy tools are sufficient to achieve sustainable growth in domestic demand. In addition, structural reforms can also be helpful in creating a climate for increased domestic investment (or consumption, in the case of China). However, many believe that smaller, highly open economies lack the ability to conduct independent macroeconomic policy and that they may face a stark choice between currency manipulation or recession.

This brief takes up the cases of Switzerland, Singapore, and Hong Kong in the wake of the Great Recession. All are medium-sized economies that are highly open to trade and capital flows. In each of these countries, as in the major advanced economies, short-term interest rates dropped to zero in 2008–09 and have remained near zero since. Use of fiscal policy has been modest. None has undertaken large-scale, unconventional monetary policies comparable to those taken in the euro area, Japan, the United Kingdom, or the United States.

All three have purchased very large amounts of official foreign assets since 2009, but the circumstances differed. In Switzerland, the policy reflected a break from past behavior, driven by concern about a sharp appreciation of the currency at a time of below-target inflation. In Singapore, the policy reflected a continuation of historical patterns amid a relatively stable macroeconomic environment. In Hong Kong, the policy reflected the automatic response of the central bank to currency pressure in the context of a currency board. None of these countries received any significant international opprobrium for policies that helped to sustain large current account surpluses at a time of deficient global demand.

Each of these countries could have used monetary and fiscal policies to deliver sustainable domestic-demand-led growth. In each case, greater fiscal and especially monetary ease would have allowed countries to achieve a similar macroeconomic outcome with less currency intervention and a declining current account surplus.³ A faster global recovery would have resulted. The aggregate consequences of currency intervention across all the currency manipulators are substantial, as can be

3. It is always difficult to know the counterfactual effect of alternative policies. Yet Gagnon (2011) presents several case studies in which small and medium-sized economies were able to use independent monetary policy effectively to stabilize employment and inflation without resorting to currency intervention and large external imbalances.

Figure 1 External accounts of selected countries, 1990–2013

Note: Countries are Algeria, Angola, Azerbaijan, China, Denmark, Hong Kong, Israel, Japan, Kazakhstan, Korea, Libya, Malaysia, Norway, Russia, Singapore, Switzerland, and Thailand. 2012 and 2013 net official flows are proxied by changes in official asset stocks.

Sources: IMF, *Balance of Payments Statistics*; IMF, *World Economic Outlook*; Norges Bank; Sovereign Wealth Fund Institute; and author's calculations.

seen by the continued large, albeit declining, current account surplus of a subset of these countries (figure 1).

Finally, the brief discusses the special case of Denmark. Its “manipulation” was exclusively against the euro and had the explicit blessing of the euro-area authorities in the context of a tight exchange rate peg. In these circumstances, it may be argued that Denmark and the euro area should be treated as a single economic unit. Because this economic unit is not purchasing significant amounts of official foreign assets, it should not be considered a currency manipulator from the point of view of the rest of the world.

RECENT BEHAVIOR OF THE BERGSTEN-GAGNON COUNTRIES

As mentioned earlier, the countries identified by Bergsten and Gagnon in 2012 have continued to make large purchases of official foreign assets. The official assets the countries held increased around \$1 trillion per year in 2012 and 2013.⁴ There are sharp differences in the magnitude of countries’ behavior, which is expressed in table 1 as a share of GDP (last column). On this measure, countries with the largest recent increases in official foreign assets include Kazakhstan, Kuwait, Libya, Norway, Qatar, Saudi Arabia, Singapore, Switzerland, and the United Arab Emirates. Thailand had a small decrease in official assets.

4. Data on purchases are not available for many of these countries. Data on purchases plus accrued earnings (flow data) also are missing for some of these countries and are reported with a long lag for most. The table reports stocks and changes in stocks, which are widely available and relatively up to date. Most of the changes in stocks reflect new purchases.

Countries with only small increases (2 percent of GDP or less) include Denmark, Israel, Japan, Korea, Malaysia, and Russia.

GUIDING PRINCIPLES

Two main principles guide the recommendations of this policy brief: the efficient allocation of capital and the appropriate assignment of domestic and external economic policies in an interdependent world. As discussed in Bergsten and Gagnon (2012), countries were identified as currency manipulators based on their current account balances and net official asset purchases. In addition, the choice of countries for analysis was guided by a desire to grant greater leeway to lower-income countries and by a recognition of the complexity of the issues facing exporters of nonrenewable resources, which are given only cursory treatment here.

Efficient Allocation of Capital

Net stocks and flows of capital must be zero on average across all countries.⁵ However, it may be efficient for some countries to have net creditor positions and/or current account surpluses and other countries to have net debtor positions and/or current account deficits. In particular, a high ratio of working-age

5. It is important to distinguish between the diversification of assets and the net allocation of assets. To diversify their income streams, households in each country can sell off a significant portion of claims on domestic capital and buy equal amounts of claims on foreign capital. Such a diversification leads to large changes in gross cross-border assets and liabilities but no change in net positions. It is net flows and net positions that are the focus here.

to total population, high total capital and wealth, and large exports of nonrenewable resources should be associated with current account surpluses.⁶ Low values of these factors should be associated with current account deficits.

- The medium-term current account balance should be close to zero—low single digits as a percentage of GDP.

This presumption arises in part because the average for all countries must be zero. It also reflects a view that financial markets are not highly efficient but rather are prone to excessive waves of optimism or pessimism regarding individual countries or industries. Large current account imbalances are good predictors of future financial crises (Frankel and Rose 1996, Catao and Milesi-Ferretti 2013), which suggests that they are often associated with misallocation of capital. Even if the fundamental factors appear to justify a large positive or

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negative net stock position, it may be best to reach that position slowly through a small but steady current account surplus or deficit. A typical threshold for an unsustainable imbalance is around 5 percent of GDP (Freund 2000, Clarida, Goretto, and Taylor 2007).

William Cline and John Williamson have long estimated “fundamental equilibrium exchange rates” under the assumption that sustainable current account balances lie between -3 and $+3$ percent of GDP (Cline 2013 and references therein). In 2010, US Treasury Secretary Timothy Geithner supported an unsuccessful proposal for a normative range of -4 to $+4$ percent of GDP for current account balances in the G-20.⁷

Another important reason for underscoring the desirability of very low current account imbalances is to counter the historically observed bias of policymakers in many countries toward current account surpluses.⁸ The IMF Articles of Agreement contain language aimed at fighting this mercan-

tilist bias, but the IMF has displayed little ability or willingness to take any effective action. Because one country’s current account surplus is another country’s current account deficit, it does not make sense from a global perspective to view surpluses as acceptable while deficits are harmful.

Domestic Policies and External Policies

Both the IMF and the G-20 acknowledge that countries are free—and indeed, encouraged—to use domestic policies to stabilize output, employment, and inflation (G-20 Leaders’ Declaration, September 2013). The primary domestic policies to accomplish these ends are monetary and fiscal policy. Stimulative monetary policy boosts domestic spending, which raises imports. But it also weakens the currency, which raises exports. Most empirical macroeconomic models find very little net effect of monetary policy on current account balances and thus on demand in the rest of the world (Anderson et al. 2013). Fiscal policy does have significant spillover effects on other countries. However, when used appropriately, these spillovers typically offset the spillovers caused by internal imbalances. For example, a country in recession tends to import less than otherwise, and thus its current account balance is higher than normal. Stimulative fiscal policy helps to raise employment, but it also boosts imports and thus pushes in the opposite direction on the external balance. The primary effects of domestic policies, therefore, are on the domestic economy, and international spillovers tend to be smaller in magnitude and often in a beneficial direction.

External policies (mainly currency intervention) operate primarily through their effects on the rest of the world. Whereas monetary and fiscal policy increase or decrease aggregate demand for the world as a whole, sterilized currency intervention—intervention that holds monetary policy fixed—has no effect on global aggregate demand; it merely switches demand away from foreign producers to domestic producers or vice versa. It is because of this first-order effect on other countries that external policies are subject to international rules in a way that domestic policies are not (IMF 2012b).

- Governments should use domestic policies to stabilize employment and inflation and external policies to push current accounts toward equilibrium, which typically means current account balances close to zero.

The benchmark case for currency manipulation is a country with internal balance and an external surplus supported by excessive currency intervention. To move to external balance while retaining internal balance requires an appreciation of the real exchange rate and either a decrease in domestic interest rates or a reduction in the fiscal balance. If the country has a

6. Some observers hold the misconception that small countries should have surpluses or positive net positions because their financial markets are not large enough for domestic savers. This confuses gross with net positions.

7. Simon Kennedy and Shamim Adam, “Geithner’s 4% Solution May Be ‘Unworkable’ as APEC Gathers,” Bloomberg, November 5, 2010.

8. Indeed, this bias is built in to the asymmetric standards of the European Union’s new Macroeconomic Imbalances Procedure, which sets normative thresholds of $+6$ and -4 percent of GDP for current account balances and -35 percent of GDP (with no upper limit) for net stock positions.

floating exchange rate, the real appreciation can occur through a nominal appreciation. If the country has a fixed exchange rate, the real appreciation can occur through temporarily higher domestic inflation.

Exception for Low-Income Countries

Countries defined as low income and lower-middle income by the World Bank are excluded from this analysis. The differential treatment of low-income countries reflects a combination of factors: (1) institutional issues often dominate macroeconomic considerations in these countries, (2) there is a long-standing presumption (e.g., in the World Trade Organization) that low-income countries should not be expected to meet the same standards of behavior as richer countries, and (3) these countries are relatively small in economic terms.

This exception is not an endorsement of currency manipulation as the best development strategy; indeed, it runs against standard economic analysis to recommend that governments in low-income countries should send scarce capital to rich countries at very low rates of return. But such a strategy is widely viewed as having “worked” for China and other developing economies, and wealthy countries can afford to give their less wealthy brethren greater scope to pursue policies that they deem effective.

Nonrenewable Resource Exporters

Many of the countries listed in table 1 are major oil exporters. It is widely accepted among economists that, while the current generation should consume some of these resources, governments have an obligation to provide for the needs of future generations as well. Future generations may be provided for in three ways: (1) some of the resource may be left untapped at present; (2) earnings from current extraction may be invested in infrastructure, business capital, housing, and education, which provide benefits to future generations; and (3) earnings from current extraction may be invested in foreign assets for the benefit of future generations.

The optimal mix of these uses of resource revenues depends on many factors, including (1) current and expected future population growth, (2) the social discount rate, (3) the abundance or scarcity of various forms of capital (including human capital) at home, (4) institutional capacity (governance) to invest productively at home, (5) rate of return on foreign investment, (6) size of the resource and bottlenecks in extraction, and (7) prospects for the future value of the resource (Melina, Yang,

and Zanna 2014; Sugawara 2014). An additional factor not in the standard analysis, but central to this brief, is the externality imposed on the rest of the world by net foreign investment in a time of deficient aggregate demand or by misallocation of capital to capital-abundant reserve-currency countries rather than capital-poor developing economies.

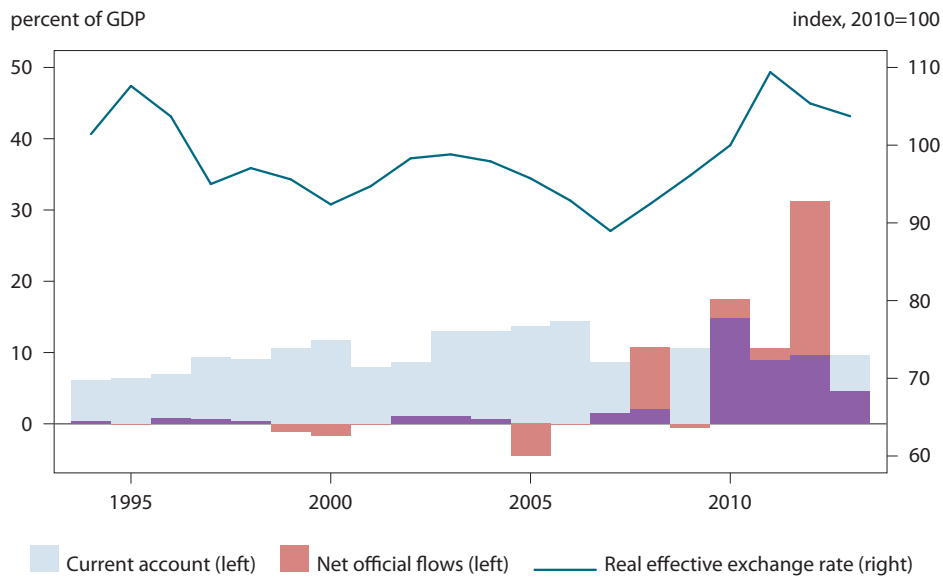
Sharp fluctuations in the price of the resource present a particular difficulty. Investment in domestic capital is likely

In recent years, many major oil exporters have converted almost the entire increase in oil revenues into net foreign saving and continue to do so.

to be very slow to adjust, forcing most of the adjustment onto either the rate of extraction or the rate of foreign saving. Adjusting through the rate of extraction is generally more harmful to the rest of the world than adjusting through foreign saving. For example, when the price of oil rises, pumping less oil only exacerbates the damage, whereas lending the proceeds enables customers to finance a gradual adjustment to high prices. For this reason, it is important to focus on the long-term trends in official flows of resource exporters and not the abrupt swings.

In the past, most resource exporters saved very little abroad and often were net borrowers. In hindsight, this behavior may not have been optimal; at least some of the resource revenues should have been saved abroad. In recent years, the large increase in oil prices has greatly increased export revenues of major oil exporters. Many of them converted almost the entire increase in oil revenues into net foreign saving and continue to do so. Some oil exporters listed in table 1 have official foreign assets that exceed 200 percent of GDP. It seems plausible that such massive foreign savings may not be optimal from a global perspective and possibly even from the perspective of the countries in question.

The characteristics of the major resource exporters vary widely, preventing any one-size-fits-all assessment of optimal levels of net official flows and asset stocks. Nevertheless, they appear to have shifted from a situation in which many saved too little of their revenues abroad to one in which some important exporters now save too much abroad. A detailed analysis of the situations of individual resource exporters is left for a future study.

Figure 2 Swiss external accounts and real effective exchange rate, 1994–2013

Note: 2012–13 official flows are changes in official stocks.

Sources: BIS broad exchange rate indices; IMF, *Balance of Payments Statistics*; IMF, *World Economic Outlook*; and author's calculations.

SWITZERLAND

Averages for 2012 and 2013 (percent of GDP)

Current account balance: 10%

Annual change in net foreign official assets: 18%

External Developments

In the 1980s, Switzerland had a moderate current account surplus that averaged 2.5 percent of GDP while net official flows averaged 0.5 percent of GDP (IMF, *Balance of Payment Statistics*). During most of that decade, Switzerland had large surpluses in services trade and investment income, a large deficit in goods trade, and small deficits in labor income and unilateral transfers.

Beginning in the 1990s, as the Swiss economy slowed and internal investment prospects grew scarce, domestic savers flocked abroad, pushing down Switzerland's real effective exchange rate (REER) and causing its current account surplus to rise. The current account surplus reached 10 percent of GDP by the end of the 1990s (figure 2). Although labor income and unilateral transfers remained negative, goods trade swung into a sustained surplus, and both the services and investment income surpluses also grew. The current account plateaued around 13 percent of GDP in 2003–06.

Switzerland's large external surplus prior to the Great Recession reflected private investor behavior, not currency manipulation. However, some observers argued that it was harmful and unsustainable and that policymakers should take

steps to reduce it (Cline and Williamson 2008). In the wake of the global financial crisis, many economists are increasingly sympathetic to the view that financial markets are not efficient and that market-driven financial flows and the associated trade imbalances may not be optimal. A full assessment of the optimality of the Swiss current account surplus prior to 2008 is beyond the scope of this policy brief, although if Swiss policymakers had followed the guiding principles described above, they would have taken at least some steps to narrow the large external imbalance. In practice, since 2008, the Swiss government has instead moved in the opposite direction, taking extraordinary steps that helped to sustain Switzerland's large external surplus.

The global financial crisis of 2007–09 and the euro debt crisis of 2010–12 caused foreign investors to seek the safety of Switzerland. Their private inflows more than offset the continuing outflows of Swiss private capital. The REER soared. The appreciation plus the slowdowns in Switzerland's trading partners put downward pressure on the Swiss current account. In order to limit the size of this downward adjustment and the associated negative shock to Swiss aggregate demand, the Swiss National Bank (SNB) conducted large-scale interventions in the foreign exchange market in 2008 and 2010. The Swiss franc resumed its upward trend in 2011, leading the SNB to put a ceiling on its value relative to the euro in September 2011.⁹ This ceiling was about 8 percent below the then prevailing level of

9. SNB officials refer to it as a "floor," consistent with the convention of quoting the exchange rate in terms of francs per euro.

the exchange rate and 14 percent below the all-time closing high of the franc against the euro. This ceiling was enforced by massive intervention in the foreign exchange market in 2011 and 2012. The REER edged off its 2011 peak in 2012 and 2013, and Swiss currency intervention diminished in 2013.

After a brief downward jog in 2008 (largely caused by a dip in investment income), the Swiss current account surplus quickly rebounded and stabilized at around 10 percent of GDP in 2012 and 2013.

Swiss officials have argued that the “true” Swiss current account is much less than 10 percent of GDP. They point to three factors: (1) retained earnings of portfolio investors are not included in the income portion of the current account, and foreign investors have larger portfolio holdings of Swiss equity than Swiss investors have of foreign equity;¹⁰ (2) the Swiss services account includes a lot of income from merchanting, or commodity brokerage, that is not strongly tied to the Swiss economy; and (3) cross-border retail shopping is not well measured and may have swung into a substantial unrecorded deficit as the expensive franc pushes Swiss consumers to shop across the border. The latter two factors are recent phenomena. Net merchanting income grew from less than 0.5 percent of GDP in the 1990s to nearly 4 percent of GDP in 2011 (Beusch et al. 2013, 25). However, it is not clear why income earned by merchanting firms and their employees, who are residents of Switzerland, should not be considered part of Swiss national income or its current account surplus.¹¹ SNB president Thomas Jordan (2013) raises the issue of potential mismeasurement of cross-border shopping, but does not provide an estimate of its magnitude.

The first of the above factors—retained earnings in portfolio investment—is acknowledged by the IMF (2012a) as a valid concern. In its balance of payments periodical, SNB (2007, 27) calculates that retained earnings of foreign portfolio investors in Swiss corporations averaged 3.1 percent of GDP from 2003 through 2006. The SNB did not report retained earnings of Swiss portfolio investors in foreign corporations, but it noted that such holdings were only one-third the level of inward foreign portfolio investment. Assuming

10. The principle behind the exclusion of retained earnings on portfolio investment is that portfolio investors lack control over these earnings, unlike the control direct investors have on retained earnings. However, the market value of portfolio holdings should in principle increase with retained earnings. By excluding these retained earnings, the current account is a biased measure of the net flow of capital, which is arguably its main purpose.

11. Some have argued that a stronger franc would not reduce Switzerland’s current account surplus because merchanting and investment income are not sensitive to exchange rates (Jordan 2013). Even if true—and there are reasons for doubting that investment income is not sensitive to exchange rates—the conclusion does not follow because other components of the current account do respond significantly to exchange rates.

that retained earnings of Swiss portfolio investors were one-third that of foreign portfolio investors, the overstatement of the Swiss current account from this source in the mid-2000s was 2 percent of GDP.¹²

In an important sense, the SNB’s currency intervention has succeeded too well in that it completely prevented any sustained adjustment in Switzerland’s large current account surplus. This has had harmful effects on the rest of the world because it came at a time of deficient global aggregate demand and sharp recessions in several of Switzerland’s European neighbors, who were denied the ability to increase net exports to Switzerland. Nevertheless, Swiss intervention was not generally viewed as controversial in international economic policy circles. The IMF, in its regular surveillance of Swiss policies, has not pointed out that massive Swiss currency intervention effectively prevented adjustment of the Swiss external balance, in apparent contravention of IMF Article IV (IMF 2012a).

Macroeconomic and Financial Developments

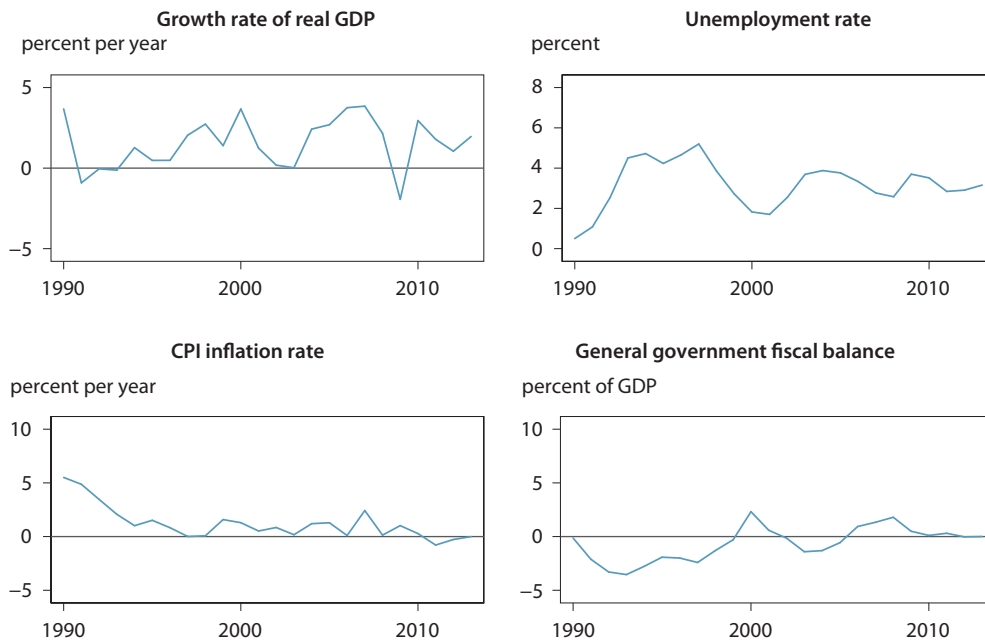
As shown in figure 3, Swiss GDP contracted briefly in 2009 but quickly rebounded. After a small uptick, the unemployment rate has returned close to its average of the past 25 years. These data suggest that the Swiss economy may be operating near its potential. However, Swiss inflation is too low, at roughly 0 percent.¹³ To get inflation back to the advanced economy norm of 2 percent, Switzerland needs more expansionary macroeconomic policy.

Figure 4 shows that Swiss short-term interest rates are at the zero bound. However, with inflation also at zero, the real short-term interest rate is zero. This is higher than in the euro area or the United States, where positive inflation means that the real short-term rate is negative. Switzerland’s slow economic growth rate (1.5 percent on average since 1990) probably implies a low equilibrium real interest rate, certainly

12. SNB (2007, 26) suggests that Swiss portfolio retained earnings may be even lower than one-third of foreign retained earnings, arguing that “foreign companies tend to distribute a higher proportion of their profits as dividends than Swiss companies.” However, over the 10 years through 2013, the ratio of retained earnings to stock price in the Swiss Market Index (SMI) was the same as that of the Dow Jones Euro Stoxx index, at 2.9 percent, and less than that in the US S&P 500 index, at 4.2 percent. This suggests that the overstatement of the current account from this source may have been less than 2 percent of GDP. (Earnings data are from Bloomberg. Retained earnings ratio is earnings yield minus dividend yield.)

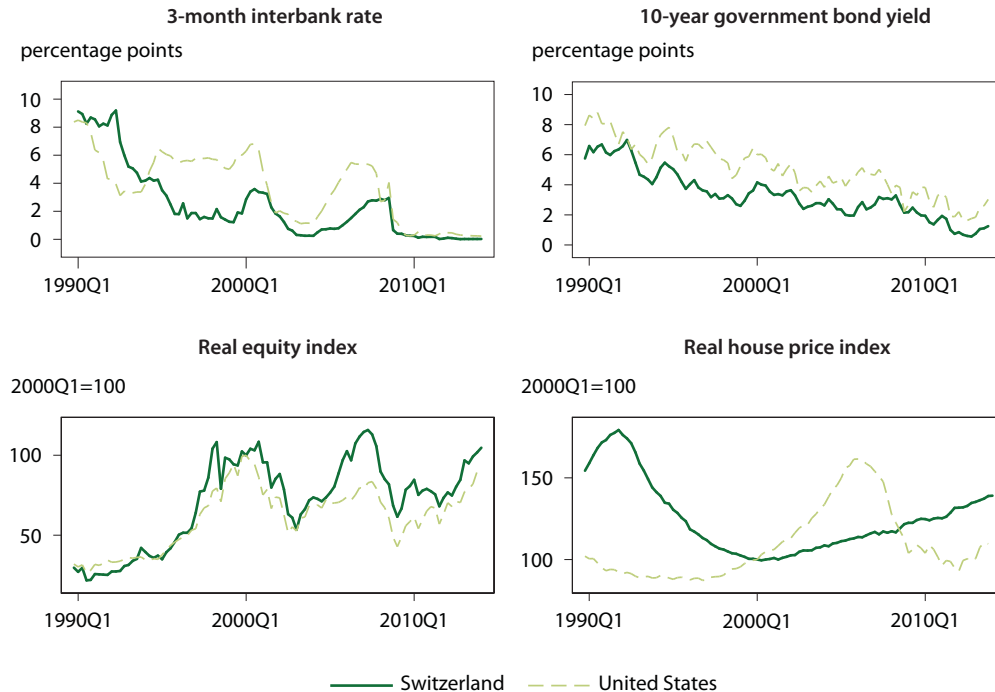
13. The SNB says its primary objective is price stability, which it defines as “a rise in the national consumer price index (CPI) of less than 2 percent per annum” (www.snb.ch/en/i/about/monpol/id/monpol_strat#t8). Zero inflation would appear to be consistent with this objective. However, most advanced economy central banks have price stability objectives that are centered on a positive rate of inflation, typically 2 percent. Janet Yellen (2014) discusses the costs of an inflation rate that is too low.

Figure 3 Swiss macroeconomic indicators, 1990–2013



Source: IMF, World Economic Outlook database.

Figure 4 Swiss financial indicators, 1990–2014



Note: SMI, S&P 500, SNB housing, and Case-Shiller indexes. All are deflated by CPI.

Sources: Bloomberg, Thomson Reuters Datastream, Swiss National Bank, and author's calculations.

less than in the United States. These considerations all point to excessively tight monetary policy in Switzerland.

The monetary base has soared along with the SNB's balance sheet. During 2008 and 2009, the SNB expanded the provision of short-term credit in domestic currency dramatically, as did most major central banks. But, in subsequent years, essentially all of the domestic assets of the SNB were allowed to run off. At present, 99 percent of the SNB balance sheet comprises foreign assets and gold.

Although the REER remains higher than it was before 2008, the rebound of the current account surplus at a high level suggests that the REER was weak before the global recession and is not strong now.

The general government budget balance declined to near zero in 2009 and 2010, but it remains slightly positive. The fiscal response to the global recession was modest. Net general government debt remains quite low, at 28 percent of GDP (IMF, *Fiscal Monitor*, April 2014).

Policy Recommendations

In the face of a downward shock to price stability from exchange rate appreciation, the SNB's first response should be to expand domestic assets on its balance sheet rather than shrink them. Such an expansion would boost domestic spending and would also relieve pressure on the exchange rate. Only as a secondary measure, and only to the extent that its current account was declining too rapidly, should the SNB have conducted large-scale purchases of foreign assets. In other words, central banks should fight domestic imbalances with domestic policies and limit the use of external policies to the narrowing of external imbalances.

Swiss nominal GDP should be growing at around 3 to 4 percent (compared with 1 to 2 percent lately). To get there requires easier monetary policy and thus lower rates of return on assets, at least until the nominal growth rate of 3 to 4 percent is achieved. Fiscal policy should be allowed to operate in a normal countercyclical manner. During a period of slack demand, the budget should be in moderate deficit, not surplus, especially when the debt stock is low. Given that Swiss unemployment is close to normal, fiscal policy probably does not have a large role to play at present.

To be effective in the current circumstance of near-zero short-term interest rates, domestic monetary expansion requires large-scale purchases of long-term bonds, equity, and real estate, also known as quantitative easing (QE). Often referred to as unconventional, QE has been used by other major central banks with positive results (Gagnon and Hinterschweiger 2013). The goal of QE is to raise asset prices and to reduce prospective real rates of return. This boosts private-sector net worth and encourages consumption and investment.

Given that the Swiss 10-year bond yield is below 2 percent, it might be argued that there is little scope for a further decline. However, as the Bank of Japan has shown since April 2013, large-scale purchases of long-term bonds can raise inflation expectations, lower long-term real interest rates, and boost consumption even when long-term nominal bond yields are very low.

The SNB should ease monetary policy through large-scale purchases of long-term bonds, equity, and real estate, also known as quantitative easing.

Swiss authorities have expressed concern about equity and real estate prices being excessively high in Switzerland, but figure 4 shows that real housing prices are still below their early 1990s peak and equity prices have only recently returned to previous peaks. Moreover, some long-run growth in real equity and house prices is to be expected in economies with trend increases in real GDP. Adam Posen (2011) shows that many historical instances of large increases in asset prices are not harmful and the connection between monetary policy and harmful bubbles is very weak. Even if asset prices were exceeding long-run appropriate levels, the correct policy response would be to make sure that holders of these assets are not excessively leveraged.

There is no fundamental reason that assets should always have positive expected rates of return; in other words, the possibility or even the expectation of falling asset prices is not necessarily a sign of an undesirable bubble. The job of monetary policy is to set the overall rates of return in the economy where they need to be to keep inflation at its target and output at potential. Meeting this objective may require negative expected real rates of return on some assets.

In fairness to the Swiss authorities, these policy recommendations are unconventional, although the trail has been blazed by the Bank of England, the Federal Reserve, and the Bank of Japan. The policies the Swiss adopted—a currency ceiling and massive foreign exchange intervention—also were unconventional but perhaps less so. It bears special emphasis that the IMF never raised any concerns about the distortionary effects of Swiss currency manipulation on Switzerland's trading partners. An important implication of this analysis is that the IMF needs to take its own guidelines more seriously with respect to currency policy and countries with large external imbalances.

The Swiss exchange rate should be allowed to adjust over time to bring about a gradual reduction in the current account

surplus. After subtracting the overstatement from excluded portfolio retained earnings (worth around 2 percent of GDP), Switzerland should have a small current account surplus, in the range of 0 to 5 percent on average over the cycle. Given the depressed state of its main trading partners, Switzerland would normally be expected to be at the low end of this range or possibly to have a small current account deficit at present.

These policy recommendations imply a sharp reduction and perhaps even a reversal of Swiss purchases of foreign exchange reserves. In the future, the SNB should discuss its intervention policy with the monetary authorities of the currencies being bought, most notably the European Central Bank (ECB) and the Federal Reserve. About 50 percent of Swiss foreign exchange reserves are in euros and 25 percent in US dollars. If the SNB had requested the approval of the ECB for the intervention of the past few years, one condition the ECB should have asked for is that the SNB distribute its euro assets across euro-area countries in proportion to their GDPs.¹⁴ This distribution would have helped to reduce sovereign yield spreads between euro-area members.

SINGAPORE

Averages for 2012 and 2013 (percent of GDP)

Current account balance: 18%

Annual change in net foreign official assets: 12%

External Developments

Singapore imposes very large compulsory pension contributions, with combined employer and employee contributions of 36 percent of gross salary. The government of Singapore invests the vast majority of these contributions in foreign assets through a large sovereign wealth fund, the Government Investment Corporation (GIC). In addition, the Monetary Authority of Singapore (MAS) backs the monetary base almost entirely (97 percent) with foreign-currency assets, and another sovereign wealth fund, Temasek, manages a portfolio of domestic and foreign assets that is left over from an earlier period of Singapore's development. Together, these policies have delivered a current account surplus that has not fallen below 10 percent of GDP, and often exceeded 20 percent, for more than 20 years (figure 5).¹⁵ The effect of the Great Recession on the current account was modest and short-lived.

14. The SNB reports that 92 percent of fixed-income foreign currency assets are rated AA or AAA as of March 31, 2014 (www.snb.ch/en/i/about/id/assets_reserves). Italy, Spain, and other peripheral euro-area members have sovereign ratings below AA. Interestingly, the SNB reports that 15 percent of its foreign exchange reserves are in equities.

15. Balance of payments version 6 data are not publicly available prior

The MAS operates a managed float with a medium-term objective of price stability. After falling significantly from 1997 through 2005, Singapore's REER has since been rising steadily.

Macroeconomic and Financial Developments

Singapore has long had volatile real GDP and inflation, in part owing to the unique properties of its large bioengineering sector (figure 6). Inflation has averaged about 2 percent over the past 30 years and is currently close to its target of 2 percent. Trend GDP growth seems to have slowed in recent years, but no significant macroeconomic imbalance is apparent. After a brief tick upward in 2009, the unemployment rate has fallen back toward the level that was maintained before the Asian financial crisis of 1997–98.

Since 2000, Singapore has had an average general government surplus of 6 percent of GDP. The public sector has a large net positive financial position, which is rare for a non-resource-exporting country. There was a sharp response of automatic stabilizers to the slowdown in 2009, but the rebound in the fiscal surplus was extremely rapid thereafter.

Short-term interest rates were lower in Singapore than in the United States before the Great Recession, and they have fallen to zero since then (figure 7). Ten-year bond yields are similar in the two countries. Singapore's real equity and real house price indexes have exhibited little trend over the past 20 years or more. Some upward movement would be expected given the enormous increase in per capita GDP Singapore has experienced over these decades. Thus there is little reason to worry about asset bubbles at present. Moreover, as mentioned above, the correct response of policymakers to a worrisome asset bubble is to make sure that it is not excessively leveraged. The MAS has been notably proactive in combatting excessive leverage in finance and real estate (Menon 2013). Singapore's success in avoiding most of the damage of both the Asian financial crisis of 1997–98 and the global financial crisis of 2008–09 speaks well of its ability to prevent harmful fallout from any future asset price bubble.

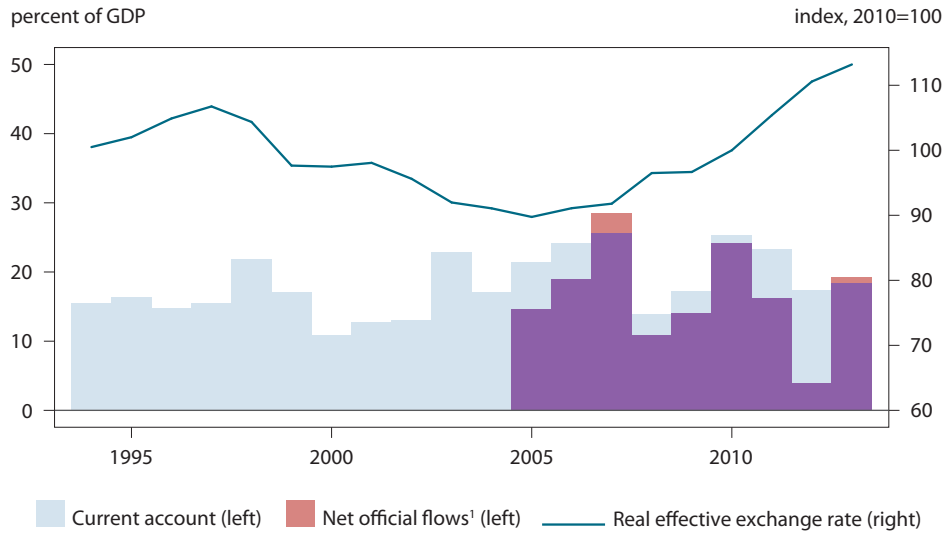
On balance, Singapore is in a good macroeconomic position and does not need to either loosen or tighten the stance of policy.

Policy Recommendations

The MAS should significantly rebalance its assets toward domestic assets. The government of Singapore should obtain the

to 2005. In the case of Singapore, the transition to version 6 represents a significant change because it includes flows of sovereign wealth funds for the first time. For this reason, the figure does not display net official flows prior to 2005.

Figure 5 Singapore external accounts and real effective exchange rate, 1994–2013

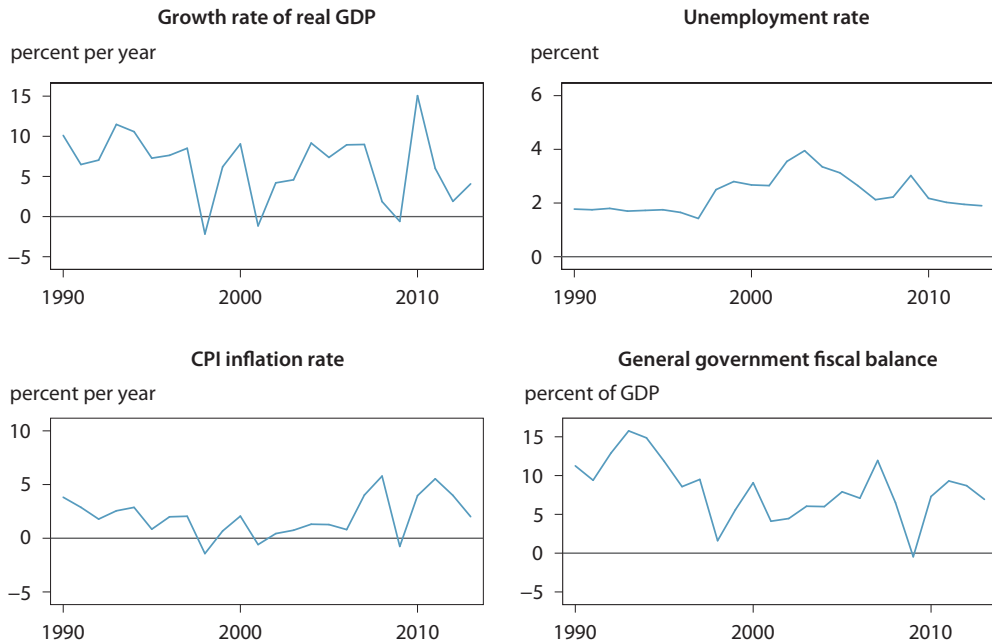


1. Net official flows are not available prior to 2005.

Note: 2012–13 official flows are changes in official stocks.

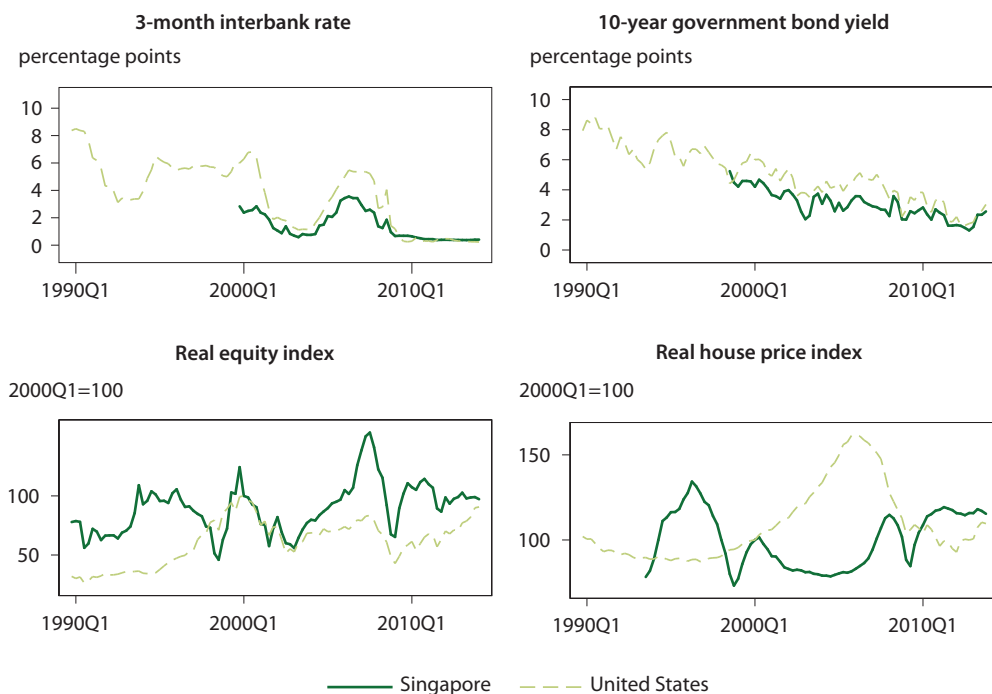
Sources: BIS broad exchange rate indices; IMF, *Balance of Payments Statistics*; IMF, *World Economic Outlook*; Sovereign Wealth Fund Institute; and author's calculations.

Figure 6 Singapore macroeconomic indicators, 1990–2013



Source: IMF, *World Economic Outlook* database.

Figure 7 Singapore financial indicators, 1990–2014



Note: MSCI Singapore, S&P 500, Urban Redevelopment Authority, and Case-Shiller indexes deflated by CPI.

Sources: Bloomberg, Thomson Reuters Datastream, government of Singapore, and author's calculations.

consent of the governments of countries in which it holds substantial quantities of official assets. The goal is to eliminate the policy distortion that encourages excessive net foreign saving out of Singapore and shifts net aggregate demand away from foreign trade partners to Singapore.

The government of Singapore shields pension savers from the volatility of foreign investments, offering guaranteed rates of return in domestic currency. This distorts market outcomes. If the government of Singapore would stop taking on the enormous exchange rate and market risk of foreign investments and force those risks onto private investors, Singapore would hold far fewer foreign assets. Home bias in investment is well documented. In Japan, with about 9 percent of global GDP, the private sector holds 80 percent of its financial assets domestically.¹⁶ In Korea, with about 2 percent of global GDP, the private sector holds 87 percent of its financial assets domestically. If private Singaporeans held 75 percent of their pension investments domestically, the

steady-state current account surplus of Singapore would shrink by half.¹⁷ Even larger declines are possible.

The government should allow Singaporean workers to direct the allocation of their pension investments either through private fund managers or through a menu of government-run options that includes equities, fixed income, and real estate in Singapore as well as abroad. Savers who want guaranteed rates of return should be required to buy government of Singapore bonds or government-guaranteed bank deposits. GIC should be converted into a fund manager for workers, or it should be converted into a pool of foreign assets in which workers can choose to invest. Temasek should be privatized.

These changes would almost surely require an easing of Singapore's monetary policy, which would imply lower interest rates on a range of Singaporean bonds and deposits. Lower interest rates probably would lead to higher equity prices and higher property prices. As discussed in the case of Switzerland, higher asset prices and lower expected future rates of return are not necessarily signs of a dangerous asset price bubble. At

16. Private foreign assets equal total foreign assets minus official foreign assets. Total private financial assets equal the sum of domestic stock market capitalization, bond market capitalization, bank deposits, and net private foreign assets. Data refer to 2010 and are from IMF's *Balance of Payments Statistics* and the World Bank's *World Development Indicators*.

17. Specifically, if 2012–13 average net official flows of 12 percent of GDP were cut to zero and private households invested 75 percent of the associated pension funds domestically and 25 percent abroad, that would imply an increase in net private outflows of 3 percent of GDP. The current account would decline from 18 to 9 percent of GDP.

the zero bound on short-term nominal interest rates, the job of monetary policy is set to the average returns on domestic assets to the level that is appropriate for price stability and full employment. Concerns about asset price bubbles should be dealt with through limits on leverage, such as loan-to-value and debt-to-income ratios.

At the zero bound on short-term nominal interest rates, the job of monetary policy is to set average returns on domestic assets to the level that is appropriate for price stability and full employment.

These recommendations imply a radical break from previous policy in Singapore. Given that Singapore's policy framework has not received much criticism from the IMF or from its trading partners, it is unlikely that the government of Singapore would feel inclined to make these changes. Nevertheless, these recommendations flow naturally from a balanced and impartial application of the guiding principles—namely, that countries should achieve sustainable economic growth and price stability using domestic policy instruments and that countries should use external policies only to narrow external imbalances.

HONG KONG

Averages for 2012 and 2013 (percent of GDP)

Current account balance: 3%

Annual change in net foreign official assets: 5%

External and Macroeconomic Developments

The Asian financial crisis of 1997–98 has deeply affected Hong Kong's external and macroeconomic developments over the past 20 years.¹⁸ As shown in figure 8, Hong Kong suffered a brief but sharp contraction in GDP in 1998, leading to a prolonged rise in the unemployment rate and a prolonged bout of deflation. The fiscal balance also declined substantially between 1997 and 2001.

The HK dollar has been pegged tightly to the US dollar for decades. It bears noting that the stability of the HK dollar against the US dollar has not delivered stability in the REER, which rose sharply as Hong Kong's neighbors depreciated in the

Asian crisis and subsequently fell with their recoveries, China's appreciation, and Hong Kong's deflation. The peg also has not delivered stability of inflation, as Hong Kong has swung from excessively high to excessively low periods of inflation.

As seen in figure 9, the prolonged slowdown after the Asian financial crisis caused the current account balance to move into surplus. Except during 1999 and 2000, the current account surplus was mainly associated with private financial flows, as net official flows were close to zero. However, net official flows soared during the Great Recession of 2008–09 as the Hong Kong Monetary Authority (HKMA) fought upward pressure on the exchange rate by selling HK dollars for US dollars. The upward pressure came from foreign investors who saw Hong Kong as a safe haven during the crisis. Since 2010, Hong Kong's current account surplus has narrowed somewhat further, while net private flows, and thus net official flows, remained volatile.

Both short-term and long-term interest rates in Hong Kong are close to those in the United States, consistent with its open financial markets and credible peg to the US dollar (figure 10). Both equity and house prices have headed upward, with the housing trend being particularly noticeable over the past five years.

The Currency Peg

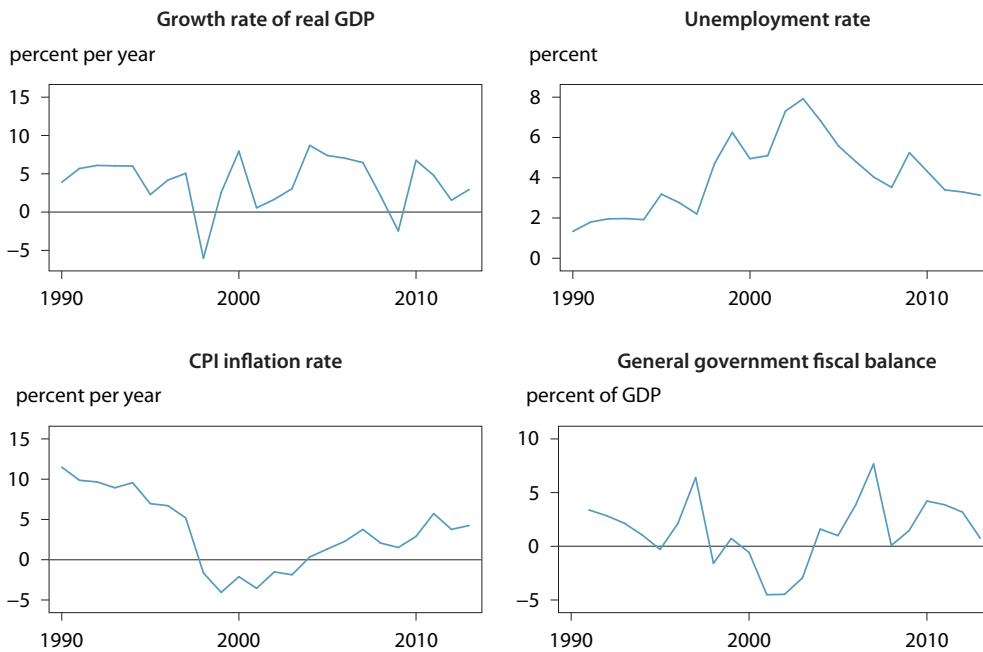
Arguably, a floating exchange rate would have better served Hong Kong, but the current policy has broad support within Hong Kong. A peg to the US dollar may serve Hong Kong better than a peg to the Chinese renminbi, given that Hong Kong's economy is more mature and growing slower than that of China. China's ongoing rapid development suggests that the renminbi will continue to appreciate in real terms against both the HK and US dollars. The government of Hong Kong has said that it is not committed to maintaining the peg forever. When China's economy has matured sufficiently, it may make sense for Hong Kong to adopt the renminbi as its currency.

Hong Kong has never explicitly coordinated its exchange rate regime with the United States, but the United States has tacitly granted its approval through its acquiescence.¹⁹ One of the implications of this analysis is that being the target of another country's exchange rate peg is not without consequences. The US authorities should not continue to ignore such policies.

18. It is not clear what actions the United States could have taken to discourage Hong Kong's peg. IMF (2012b, 21) states that "members should take into account in their intervention policies the interests of other members, including those of the countries in whose currencies they intervene." The injunction is specified entirely in terms of the intervening country, and no mechanism exists through which the target country can make its views heard.

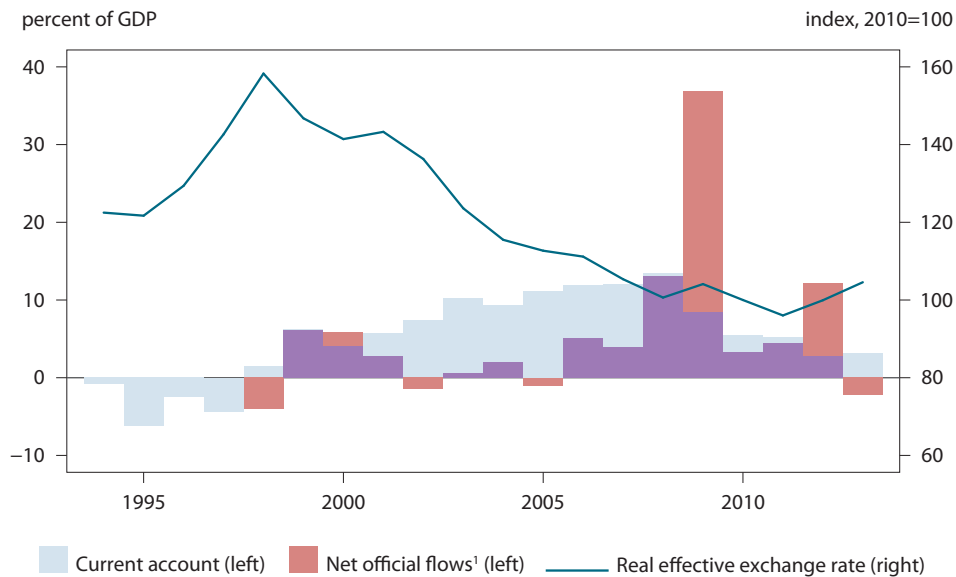
18. 1997 also was marked by the transfer of Hong Kong from Britain to China.

Figure 8 Hong Kong macroeconomic indicators, 1990–2013



Source: IMF, *World Economic Outlook* database.

Figure 9 Hong Kong external accounts and real effective exchange rate, 1994–2013

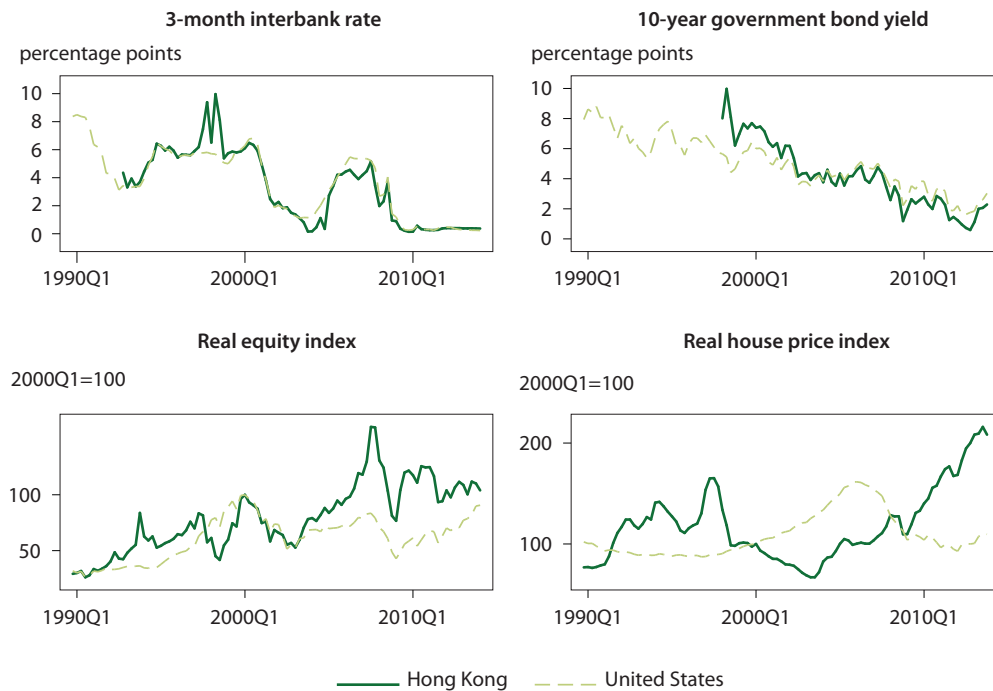


1. Net official flows are not available prior to 1998.

Note: 2012–13 official flows are changes in official stocks.

Sources: BIS broad exchange rate indices; IMF, *Balance of Payments Statistics*; IMF, *World Economic Outlook*; and author's calculations.

Figure 10 Hong Kong financial indicators, 1990–2014



Note: Hang Seng, S&P 500, Rating and Valuation Department, and Case-Shiller indexes deflated by CPI.

Sources: Bloomberg, Thomson Reuters Datastream, government of Hong Kong, and author's calculations.

The HKMA maintains the peg by standing ready to buy unlimited amounts of US dollars in exchange for HK dollars. The HKMA operates a currency board in which the monetary base is fully backed by foreign exchange reserves. At present, nearly all of the HKMA's assets are in foreign currency. But the HKMA retains the right to purchase HK dollar assets using liabilities that are not considered to be part of the monetary base. During the Asian financial crisis, the HKMA purchased a large quantity of domestic equities on the Hong Kong Stock Exchange.

Policy Recommendations

Although Hong Kong would benefit in many ways from a freely floating currency, Hong Kong need not break its currency's long-standing link to the US dollar in order to meet the objectives laid out here. Instead, it should make the operation of the link more responsive to external imbalances, using domestic policy instruments to stabilize the domestic economy and using external policy instruments to keep external imbalances small.

As Hong Kong's experience and the history of other hard currency pegs show, the HKMA does not need to limit its assets to those denominated in US dollars and other foreign

currencies in order to maintain its peg. Moreover, the rapid growth of foreign assets in the HKMA balance sheet encourages a continuing current account surplus and a large positive net international investment position. An alternative approach to fighting upward pressure on the HK dollar is for the HKMA to ease monetary policy. Ordinarily that would mean lowering the short-term policy interest rate. Currently, however, that rate is close to zero. Instead, HKMA should expand its holdings of domestic bonds and equities through QE to lower long-term interest rates and boost equity prices. This would boost demand in Hong Kong, reducing the current account surplus. Over time it would raise prices higher than otherwise, thus increasing the REER and keeping the current account surplus lower than otherwise.

Of the three countries examined here, Hong Kong is most at risk of asset price bubbles. However, as discussed in the cases above, the appropriate policy response is to use regulatory and supervisory powers to reduce excessive leverage. High asset prices and possible negative future real rates of return are not of themselves an argument against monetary ease. The HKMA has been among the most aggressive central banks in the world in imposing leverage limits for investors in real estate. The chief executive of the HKMA, Norman Chan,

recently pointed to the success of last year's macroprudential measures, including restrictions on loan-to-value ratios, in reducing speculative excess in HK real estate.²⁰

Hong Kong has achieved greater external adjustment in the wake of the Great Recession than either Switzerland or Singapore. Thus the amount of monetary ease required to implement these policy recommendations is considerably smaller than in the cases of Switzerland and Singapore, and any effects on asset prices also would be quite small.

Although Hong Kong does not need higher inflation, it is conventional economic wisdom that fixed exchange rates imply the loss of control over a country's price level. If Hong Kong residents would prefer to have stable inflation, they should allow their currency to float. By maintaining its exchange rate peg by massive intervention while sterilizing the effects on inflation, Hong Kong has imposed a cost on the rest of the world in the form of a drag on domestic demand at a time when global demand has been weak.

DENMARK

Averages for 2012 and 2013 (percent of GDP)

Current account balance: 6%

Annual change in net foreign official assets: 1%

Denmark represents a special case because its external policy is oriented entirely toward the euro area, and it has secured the approval of the monetary authorities of the euro area. Arguably, Denmark would be better served on purely economic grounds from a floating exchange rate. However, one does not need a detailed macroeconomic and financial analysis in order to assess

20. Central Banking.com, "HKMA Chief Deems Macro-prudential Measures a Success," April 16, 2014.

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the effect of Denmark's external policies on the world outside of the euro area.

The Danish krone is linked in a narrow band to the euro through the European Exchange Rate Mechanism (ERM II). Denmark's participation in ERM II is agreed within the European Union and is coordinated with the ECB. Denmark holds all of its official foreign assets in euros, thus there is no direct effect of its foreign exchange intervention on any country outside of the euro area.²¹ It is possible to treat Denmark and the euro area as a single currency zone as far as the rest of the world is concerned. The only currency intervention that matters is that conducted by the ECB and the Danish National Bank in terms of currencies outside the euro area and Denmark. The ECB and Danish National Bank are not conducting such intervention.

Policy Recommendations

Denmark should continue to hold its foreign official assets entirely in euros. The ECB should ask Denmark to distribute its euro assets across euro-area countries in proportion to their GDP.²² This distribution would help to reduce spreads between peripheral euro-area countries and Germany.

21. According to the Danish National Bank's *Annual Report 2013*, p. 22, some reserves are held in other currencies, but these are entirely hedged in terms of euros, which should neutralize any effect on other exchange rates.

22. According to the Danish National Bank's *Annual Report 2013*, p. 21, Danish bond holdings are almost exclusively rated AAA and AA, which excludes bonds issued by Italy, Spain, and other peripheral euro-area members. Denmark also holds collateralized claims on banks, but no information is provided on the locations of the counterparty banks.

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