
China's Exchange Rate Policy: An Overview of Some Key Issues

MORRIS GOLDSTEIN and NICHOLAS R. LARDY

More than two and a half years have passed since China announced a number of changes to its foreign exchange regime on July 21, 2005. During this period, the debate on the pros and cons of China's exchange rate policy, which had begun in earnest several years earlier, intensified. In this introductory chapter, we seek to convey the flavor of that ongoing debate by identifying and discussing several key issues. We also provide a summary of the other contributions to this volume—a reader's guide, if you will. All of these contributions (papers, discussants' comments, and remarks made during the conference's wrap-up panel) were originally presented at a conference on China's Exchange Rate Policy held at the Peterson Institute on October 19, 2007.

This section summarizes developments since China's exchange rate regime change in July 2005. The next section discusses four key challenges facing the Chinese authorities in light of the increasingly undervalued exchange rate and the accelerating buildup of foreign exchange reserves, namely: (1) maintaining a gradual pace of currency reform while trying to use monetary policy as an effective instrument of macroeconomic management; (2) reducing excessive reliance on external demand to sustain

Morris Goldstein has been the Dennis Weatherstone Senior Fellow at the Peterson Institute since 1994. Nicholas R. Lardy has been a senior fellow at the Peterson Institute since 2003. The authors are indebted to Doug Dowson and Giwon Jeong for excellent research assistance.

economic growth; (3) preventing the defense of the present currency regime from handicapping unduly efforts to strengthen and transform the banks into truly commercial entities; and (4) containing the risk of protectionism abroad in response to China's very large global current account surplus. The last section offers a brief scorecard on the leading options for China's exchange rate policy going forward, contrasting the features of a "stay the course" policy with those of a bolder "three-stage" approach that seeks to reduce more rapidly the current undervaluation of the renminbi.

China's new currency regime ended the fixed nominal exchange rate vis-à-vis the US dollar, which the authorities adopted at the time of the Asian financial crisis.¹ The official bilateral rate appreciated 2.1 percent, moving the rate from RMB8.28 to RMB8.11 to the dollar. By September 2007 the renminbi-dollar bilateral rate stood at RMB7.53, reflecting a cumulative nominal bilateral appreciation against the US dollar of 10 percent.² On a real trade-weighted basis, the renminbi appreciated somewhat less, only 7.4 percent according to JPMorgan.³

China's global current account surplus has expanded substantially over recent years. It stood at \$68.7 billion (3.6 percent of GDP) in 2004 but rose to \$160.8 billion in 2005 (7.2 percent of GDP) and then \$250 billion (9.5 percent of GDP) in 2006 (National Bureau of Statistics of China 2007, 95; State Administration of Foreign Exchange, Balance of Payments Analysis Small Group 2007, 8).⁴ By 2006 China's absolute current account surplus was, by a wide margin, the largest of any country in the world. Based on annual data on trade in goods, we estimate that China's current account surplus in 2007 will approach \$400 billion, about 11 percent of 2007 GDP. A surplus of this magnitude relative to GDP is "unprecedented for a country of China's size and stage of development" (McGregor 2007).

1. Many analyses assert incorrectly that China adopted a fixed exchange rate in 1994. On January 1, 1994 the authorities eliminated their dual exchange rate system by raising the official exchange rate to the then prevailing market rate of RMB8.7. However, the authorities then continually adjusted the official rate until it appreciated to RMB8.28 in October 1997. That remained the official rate until July 21, 2005.

2. In early February 2008 the renminbi-dollar rate was RMB7.118, reflecting a cumulative nominal bilateral depreciation against the dollar of 15 percent. On a real trade-weighted basis, the degree of appreciation was much smaller, 8 percent, according to JPMorgan. The rate of renminbi appreciation relative to the dollar has not been uniform over this period. If one takes the annualized one-month change, the rate of appreciation has varied from less than 2 percent (even going slightly negative at one point in 2006) to almost 20 percent in late 2007 and early 2008 (Anderson 2007c, 2008).

3. Between the dollar peak in February 2002 and January 2008, the renminbi has actually *depreciated* on a real effective basis by between 0.4 and 9.8 percent, according to measures of real effective exchange rates published by JPMorgan, Citigroup, and the Bank for International Settlements.

4. Again, if one goes back to 2001, the expansion of China's global current account surplus is much larger, as it stood at only 1 percent of GDP at that time.

2 DEBATING CHINA'S EXCHANGE RATE POLICY

The buildup of official holdings of foreign exchange reserves has accelerated since July 2005.⁵ In the 12-month periods through June 2005 and June 2006, reserves rose by \$240 billion and \$230 billion, respectively. But in the twelve months through June 2007, reserves rose by \$391 billion, about three-fifths more than in the previous two 12-month periods. At the end of December 2007, total reserves reached \$1,530 billion (People's Bank of China 2008).⁶

It is important to note that the relative importance of the current and capital account surpluses as contributors to the reserve buildup has changed dramatically. In 2004 the capital account surplus was more than half again as large as the current account surplus and thus accounted for most of the reserve buildup. In 2005, however, the current account surplus was 2.5 times the capital account surplus (National Bureau of Statistics of China 2007, 95). By 2006 the current account surplus was 25 times the capital account surplus and accounted for the entire reserve buildup (State Administration of Foreign Exchange, Balance of Payments Analysis Small Group 2007).⁷ Thus, for 2005 and 2006, it is incorrect to argue that China's rapid reserve buildup was due primarily to large capital inflows rather than a growing current account surplus.

Challenges Facing the Chinese Authorities under the Existing Currency Regime

Any methodology that defines the equilibrium exchange rate for the renminbi as the real effective exchange rate that would produce "balance" in China's global current account position, or in its basic balance, or in its overall balance-of-payments position, yields the qualitative conclusion that the renminbi is significantly undervalued and probably by an increasing margin over time. As noted earlier, an increasingly undervalued exchange rate and the concomitant accelerating buildup of foreign ex-

5. Increases in official holdings of foreign exchange reserves are a downward-biased estimate of the magnitude of official intervention in the foreign exchange market for three reasons. First, through the end of 2006 the central government transferred \$66.4 billion in official foreign exchange reserves from the State Administration of Foreign Exchange (SAFE) to the Central Huijin Investment Company (Kroeber 2007). Huijin has used the funds to recapitalize four banks and four insurance companies. Second, SAFE has engaged in swap transactions with state-owned commercial banks that have removed large amounts of foreign exchange from its balance sheet. Third, starting in 2007, on several occasions when the central bank raised the reserve requirement, it required banks to deposit the additional amounts in the form of foreign exchange.

6. China's annual exchange market intervention was roughly 10 percent of its GDP during 2004–06 but substantially higher at 14 percent in 2007.

7. The capital account surplus was \$10 billion, and errors and omissions reflected an unrecorded outflow of \$13 billion.

change reserves pose several economic challenges for the Chinese authorities. In this section, we discuss those challenges for the independence of monetary policy, the “rebalancing” of economic growth, the continuing efforts to reform China’s banking system, and China’s external adjustment and its contribution to correcting global payments imbalances.

Independence of Monetary Policy

A fixed exchange rate regime typically imposes a substantial constraint on a country’s monetary policy for the simple reason that if domestic interest rates diverge too much from foreign rates, the country could be subject to destabilizing capital flows. This is particularly likely to be the case for small countries that are price takers in international goods and capital markets. Capital controls, in theory, could prevent large inflows (outflows) when domestic interest rates are higher (lower) than foreign rates, but in practice it is difficult to maintain effective controls over time, particularly in an economy that is very open to trade. Even when controls are effective in limiting capital inflows or outflows, a country with an undervalued fixed exchange rate, and thus a large current account surplus, will face the challenge of sterilizing the increase in the domestic money supply resulting from the large-scale purchase of foreign exchange (i.e., sale of domestic currency). Otherwise, the growth of liquidity in the banking and financial systems will lead eventually to inflation, which will result in an appreciation of the real exchange rate. Even when the authorities use sterilization successfully to control the growth of domestic liquidity, when the currency is increasingly undervalued, they will need over time to sell greater quantities of bonds to acquire the funds necessary for sterilization. This, in turn, causes an increase in the interest rate the central bank must pay on these bonds. Eventually, the interest the central bank pays on these bonds could exceed its earnings from its holdings of interest-bearing foreign currency–denominated financial assets, imposing a substantial financial constraint on sterilization operations.

Views on the extent to which China’s exercise of monetary policy actually is handicapped by its undervalued exchange rate vary widely. One school of thought argues that China diverges substantially from the small open economy in which a fixed exchange rate means that a country’s monetary policy is determined abroad. According to Jonathan Anderson (2004), “China can run an independent monetary policy under any renminbi regime.” He believes China’s capital controls are relatively effective and that sterilization—implemented mainly via the sale of central bank bills and increases in the required reserve ratio for banks—has been successful and can be maintained indefinitely. Thus, increases in China’s international reserves—whether generated via a growing current account surplus, via the capital account (motivated by the expectation of currency

appreciation, rising Shanghai property prices, or a booming domestic stock market), or via errors and omissions in the balance of payments—“. . . have had virtually no impact on domestic liquidity conditions” (Anderson 2006a, 19).

Stephen Green of Standard Chartered Bank holds a similar view. He has tracked carefully the sterilization operations of the People’s Bank of China (PBC) and has shown that even in the first half of 2007, when capital inflows through various channels increased dramatically, the central bank had little difficulty in retaining control of the growth of the domestic money supply (Green 2007a, 2007b).

The alternative school of thought is that China’s (quasi) fixed exchange rate already has diminished the effectiveness of monetary policy and that this erosion is likely to continue. Thus, increased currency flexibility is needed to reduce the risks of macroeconomic instability, whether of domestic or external origin (Goldstein and Lardy 2006; Lardy 2006; Prasad, Rumbaugh, and Wang 2005). There are several strands to this argument.

First, central bank control of the growth of monetary aggregates in some periods has depended on the reintroduction of credit quotas for individual banks and various types of “window guidance” on bank lending rather than the use of interest rates. These much blunter instruments, rather than market signals, may lead to a much less efficient allocation of credit (Goldstein and Lardy 2004, 7–8; Goodfriend and Prasad 2006, 24).

Moreover, this alternative school of thought believes that the resultant policy mix has left China with an interest rate structure that is far from optimum. On the lending side, real interest rates have been relatively low for a rapidly growing economy. For example, in late July 2007 the central bank adjusted the one-year benchmark bank lending rate upward to 6.84 percent. But inflation, as measured by the corporate goods price index, was running at 5.4 percent, making the real rate less than 1.5 percent in an economy expanding at more than 11 percent in real terms.⁸ This contributes to the underlying excess demand for credit and rapid growth of lending from the banking system.

From the point of view of savers, deposit rates are also low. In late July 2007, demand deposits yielded only 0.81 percent and one-year deposits 3.3 percent, in the face of headline consumer price index (CPI) inflation of 5.6 percent and a 5 percent tax on interest income (reduced from the previous 20 percent rate at the same time as the upward adjustment in interest rates in late July). Low or negative real returns on bank savings have been a major contributor to the boom in the property market and, more recently, in equity prices on the Shanghai stock exchange. By late August 2007, the Shanghai stock index was up more than fivefold compared with

8. The corporate goods price index is a more relevant indicator of inflation for firms than the CPI, which in 2007 was pushed up largely because of rising prices for several food items. Food currently accounts for about one-third of China’s CPI.

July 2005. Companies listed domestically were trading at a relatively lofty 38 times estimated 2007 earnings. Even more problematic, half the growth of earnings of listed companies in the first half of 2007 came not from core operations but from profits from stock trading (Anderlini 2007).

In short, China might be regarded as a prototypical example of the general pattern that keeping exchange rates low requires keeping interest rates low (Eichengreen 2004). As in other countries maintaining undervalued exchange rates, the Chinese authorities have frequently been slow to raise the general level of interest rates for fear of attracting higher levels of capital inflows that at some point could prove more challenging to sterilize. But one consequence is real estate and stock market booms that heighten financial risk.

A second strand to the argument that increased exchange rate flexibility would enhance the effectiveness of monetary policy is that while the PBC has successfully sterilized the increase in the domestic money supply associated with the buildup of foreign exchange reserves, this sterilization entails hidden costs or risks. These include the risk of a capital loss on dollar assets in the event of eventual appreciation of the renminbi (Goldstein and Lardy 2006).

Equally important, the sustained large-scale sale of low-yielding central bank bills and repeated increases in required reserves both have an adverse impact on the profitability of state banks, hindering their transition to operation on a fully commercial basis (Yu 2007a, 20). In 2003 the central bank, having sold all of its holdings of treasury bonds, began to issue central bank bills to sterilize increases in the domestic money supply associated with its foreign exchange operations. By end-June 2007, total outstanding central bank bills held by banks reached RMB3.8 trillion (People's Bank of China, Monetary Policy Analysis Small Group 2007, 8). From mid-2003 through September 2007, the central bank also raised the required reserve ratio for banks by 50 or 100 basis points on 12 occasions, taking the ratio from 6 percent of deposits to 12.5 percent. The increase in the required reserve ratio compelled banks to deposit with the central bank RMB2 trillion more than would have been the case if the required reserve ratio had remained at 6 percent. The yield on three-month central bank bills at mid-year 2007 was only about 3 percent, and the central bank pays only 1.89 percent on required reserves. Because the benchmark one-year lending rate at mid-year was 6.6 percent, the RMB5.7 trillion increase in bank holdings of these low-yielding assets represents a large implicit tax on Chinese banks; indeed, that tax in 2006 was two-thirds of the pre-tax profits of the entire Chinese banking system.⁹

9. Abstracting from the issue of risk and assuming holdings of these two categories of assets by the banks at mid-year is equal to the average holding of these assets during the year, the implicit tax on the banking sector can be estimated as the sum of RMB3.8 trillion times 3.6 percent (the difference between the 6.6 percent benchmark lending rate and the 3 percent

Last but not least, it is one thing to argue that sterilization operations can be continued indefinitely because the interest rate on China's reserve assets exceeds that on its sterilization bills.¹⁰ It is another thing entirely to argue that sterilization can be continued indefinitely while simultaneously reducing China's large external surplus. This is because large-scale sterilization blocks the monetary, interest rate, and relative-price mechanisms that would otherwise operate (via their effects on the saving-investment balance and on net capital flows) to reduce China's external imbalance. For example, in chapter 8 of this volume, Michael Mussa argues that when large-scale sterilization produces a negative growth rate in the net domestic assets of the PBC while the demand for base money is growing briskly, then that demand for money will be satisfied solely through an increase of the net foreign assets of the central bank, which is of course equivalent to an increase in international reserves.¹¹ In short, China can either continue its large-scale intervention and sterilization operations or significantly reduce its large external surplus. It cannot do both.

In the end, there is no definitive methodology to measure which of the two alternative views on the independence of monetary policy is correct. It appears to be a matter of judgment. Supporters of the status quo point to studies showing that capital controls continue to provide some degree of independence to China's monetary authority (Ma and McCauley 2007). And they are not persuaded that the resulting interest rate structure leads to excess investment. Despite China's uniquely high rate of capital formation in recent years, some studies show no evidence of a decline in the rate of return to capital (Bai, Hsieh, and Qian 2006). Some go even further, arguing that financial repression is positive since it allows low-cost bank financing of infrastructure and other strategic public investments that underpin China's economic expansion (Keidel 2007).

In contrast, those who believe China should allow greater exchange rate flexibility acknowledge that sterilization so far has limited the inflation and credit growth consequences of large and rapid reserve accumulation but emphasize the negative aspects of the resulting financial repression. It contributes to growing risks in property and stock markets,

interest banks receive on central bank bills) and RMB2 trillion times 4.7 percent (the benchmark lending rate minus the 1.89 percent interest banks receive on required reserves) or RMB231.4 billion. In 2006 the pretax profits of the entire Chinese banking sector were RMB338 billion (Chinese Bank Regulatory Commission 2007, 33).

10. The central bank has traditionally earned a profit on its sterilization operations. However, the combination of the falling yields on short term US treasury bonds, because of recent large decreases in the federal funds rate, and the rising rates the central bank is paying on its own sterilization bonds means these profits are under pressure and could even turn into losses.

11. For further elaboration of the "monetary approach" to the recent evolution of China's balance of payments, see the discussion later in this section on alternative explanations for the post-2003 surge in China's net exports.

subsidizes capital-intensive industries with adverse effects on the environment and the pace of job creation, and, as will be discussed below, makes it more difficult to transition to a more balanced and sustainable growth path.

The state of the debate on the links between monetary policy independence and China's currency regime is well illustrated in chapter 2 of this volume. There, Eswar Prasad argues that a flexible exchange rate is required to deliver an effective monetary policy and further capital account liberalization, and without such a monetary policy and capital account regime, it is much harder to achieve stable macroeconomic policies and an efficient and well-functioning financial market. Going further, the latter two elements are essential to achieving the ultimate objective of balanced and sustainable economic growth. Hence, in Prasad's framework, a flexible exchange rate becomes almost a prerequisite for high-quality economic growth. In contrast, the two discussants of the Prasad paper, Jin Zhongxia and Shang-Jin Wei, conclude that the benefits that a more flexible exchange rate confers on monetary policy have been somewhat over-sold in China's case.

Prasad emphasizes that maintaining a tightly managed exchange rate entails also maintaining a set of distortionary policies—including financial repression and a relatively closed capital account; such distortionary policies in turn are costly. These costs include, *inter alia*, a low real rate of return to savers, provision of cheap credit to inefficient state enterprises, less scope for using monetary policy to combat shocks, slower employment growth, and a higher risk of asset price bubbles. Moreover, capital controls are leaky and become less effective over time. He recommends that China adopt both an explicit inflation objective as well as increased flexibility for the renminbi. He does not see a one-off revaluation of the renminbi as a solution to China's monetary policy problem.

Jin points out that the renminbi exchange rate has in fact become more flexible over the past two and a half years and hence that China's central bank now has more scope to implement an effective monetary policy. He also reminds us that the effectiveness of monetary policy in China is constrained by a number of factors, including uncertainties about the monetary transmission mechanism, rapid development of financial markets, and technical difficulties with the aggregate price indices—and not just by the currency regime. He maintains that the composition of inflation in China can also result in an underestimation of the true appreciation of the renminbi.

For his part, Wei stresses that China's capital controls are still binding at the margin, that China's fiscal policy leaves room for countercyclical policy, and that the constraint that the *de facto* dollar peg imposes on China's monetary policy has the advantage of providing effective anti-inflationary discipline. He finds no empirical evidence to suggest that

flexible exchange rate regimes are associated with faster current account adjustment than are other currency regimes. In this sense, he concludes that it is the level of the real effective exchange rate for the renminbi that matters for China's external imbalance (and the problems that go with that imbalance)—not the flexibility of China's currency regime.

Rebalancing Economic Growth

Since 2004, China's top political leadership has assigned a high priority to rebalancing the sources of domestic economic growth. They envision over time transitioning to a growth path that relies more on expanding domestic consumption and less on burgeoning investment and a growing trade surplus (Lardy 2006). Expanding personal consumption is consistent with President Hu Jintao's emphasis both on creating a "harmonious society" and on reducing the pace of growth of energy consumption (associated strongly with investment spending), thus curtailing emissions of greenhouse gases and sulfur dioxide.

China can promote domestic consumption demand as a source of economic growth through fiscal, financial, and exchange rate policies. Fiscal policy options include cutting personal taxes; increasing government consumption expenditures—i.e., outlays for health, education, welfare, and pensions; or introducing a dividend tax on state-owned companies. The first would raise household disposable income and thus consumption expenditures. The second would both increase consumption demand directly and, by reducing household precautionary demand for savings, lead indirectly to an increase in private consumption expenditure. A dividend tax would reduce corporate savings and investment and provide revenues to increase government outlays on social programs.

Financial reform would reduce the extent of financial repression in China by paying higher real deposit rates to savers, thus increasing household income and consumption as a share of GDP. Although household deposits in the banking system as a share of GDP almost doubled between 1993 and 2003, the stream of pretax interest earnings generated by these savings declined from an average of about 5 percent of GDP in 1992–95 to only 2.2 percent of GDP in 2003. The contribution of interest income to disposable income has declined even more since the government introduced a 20 percent tax on interest income in 1999. The declining contribution of after-tax interest income to household disposable income over this period accounts for about two-thirds of the 4.8 percentage point decline in household disposable income as a share of GDP. If interest earnings of households after 1995 had grown proportionately with the stock of household bank deposits and the government had not introduced a tax on interest income, the contribution of interest income to household disposable income

by 2003 would have been 5.7 percentage points of GDP greater than the actual contribution (Lardy 2007, 13).

Finally, appreciation of the renminbi could contribute to China's desired transition to a more consumption-driven growth path for two reasons. First, currency appreciation would reduce the growth of exports and increase the growth of imports, reducing China's external surplus.¹² Second, as already discussed, a more flexible exchange rate policy would allow the central bank greater flexibility in setting domestic interest rates and would thus increase the potential to mitigate macroeconomic cycles by raising lending rates to moderate investment booms. That would presumably lead to a lower average investment rate and thus contribute to the leadership's goal of reducing China's dependence on investment as a source of economic growth.

Given the recent developments in China's global current account position, it is hardly surprising that China has become increasingly dependent on the expansion of net exports of goods and services to sustain high growth. Net exports jumped from \$50 billion (2.5 percent of GDP) in 2004 to \$125 billion in 2005 and then \$210 billion (7.5 percent of GDP) in 2006. We estimate that in 2007 net exports of goods and services were \$300 billion, about 9 percent of GDP.¹³ As a consequence, the contribution of net exports to economic growth has increased dramatically, from an average of less than 5 percent (0.35 percentage points of GDP growth) in the four years from 2001 through 2004 to an average of more than a fifth (2.4 percentage points of GDP growth) in 2005–06 (National Bureau of Statistics of China 2007, 36). The contribution of net exports to economic growth in 2007 likely will be even higher.

Although investment growth moderated somewhat in 2005–06, these very large increases in net exports of goods and services have meant that the consumption share of GDP has fallen significantly. By 2006, government and personal consumption combined accounted for only half of GDP, almost certainly the lowest share of any economy in the world. China is particularly an outlier in terms of personal consumption, which in 2006 accounted for only 36 percent of GDP (National Bureau of Statistics of China 2007, 35).

In summary, China has yet to transition to a more consumption-driven growth path. Indeed, growth has become even more unbalanced, as reflected in the declining consumption share of GDP. This decline is not only because the authorities have not undertaken sufficient exchange rate adjustment but also because they have neglected to implement the fiscal

12. See the discussion later in this section on the effectiveness of renminbi appreciation.

13. The estimate is based on Ministry of Commerce data on trade in goods in 2007 and data on trade in services in the first half of 2007.

and financial policies that would support the transition to more consumption-driven growth (Lardy 2007).

In chapter 3 of this volume, Bert Hofman and Louis Kuijs explain why a more sustainable growth path in China will require more reliance on services and less on industry, more reliance on factor productivity and less on capital accumulation, and more reliance on domestic demand and less on net exports. To illustrate how key imbalances in the Chinese economy might evolve to the year 2035 under alternative policy packages, Hofman and Kuijs consider two scenarios. The first one broadly incorporates features of past growth (that is, investment-led and driven by industry) and simply extrapolates it forward. The results—be it in terms of the share of industry and investment in GDP, or the size of the current account surplus, or energy intensity, or job creation, or the rural-urban income disparity—are disappointing. In contrast, a second scenario that incorporates five types of policies to help rebalancing yields much better outcomes. The exchange rate plays only a minor role in this second scenario, in large part because price and tax measures are used instead of the exchange rate to alter the relative attractiveness of manufacturing (tradables) vis-à-vis producing services (nontradables).

In his comment on chapter 3, Kenneth Rogoff observes that even assuming a fall in China's growth rate to 8 percent for the next decade and to 7 percent thereafter, China would on unchanged policies require a seemingly incredible investment share of 60 percent of GDP just to keep up the growth pace. He regards the model simulation more as a speculative flourish than as a centerpiece of the analysis. In particular, he questions how Hofman and Kuijs can regard the exchange rate as unimportant when their model seems not to contain any meaningful monetary or financial sector; indeed, Rogoff argues that their analysis is more consistent with the conclusion that to obtain significant rebalancing without exchange rate adjustment, China would be required to perform what he calls "policy reform miracles" on numerous fronts.

In the second comment on chapter 3, Barry Bosworth regards the contribution of Hofman and Kuijs as the attention their paper directs to the domestic side of economic imbalances that have developed in China since 2005. He argues that the public discussion has so far focused too narrowly on exchange rate issues. He notes that the literature now contains conflicting estimates of the distribution of Chinese saving between households and enterprises, yet this distribution is central to the adoption of appropriate policy measures. For example, if the emphasis is on enterprise saving, then much of the problem is that only a small share of growth in aggregate income is being passed on to the households, whereas a focus on household saving leads naturally to an examination of how fears of illness and old age affect saving in the absence of a stronger social safety net.

Speakers in the wrap-up panel, whose remarks appear in chapter 9, spoke strongly in favor of rebalancing the pattern of China's growth. An-

drew Crockett argued that it was clearly in China's interest to create a social safety net that met the needs and aspirations of its people and that doing so would also have the favorable dividend of reducing China's external imbalance. He also thought there was considerable scope for making more widely available to Chinese households a set of financial instruments that also would increase the rate of spending. C. Fred Bergsten took the view that appreciation of the renminbi—as important as it was—was not the only answer to China's external imbalance problem. It had to be part of the broader rebalancing strategy, as laid out by Lardy (2007) and others.

Potential Effects on China's Banking System

There is considerable agreement both inside and outside China on the evolution of China's banking system and on efforts to date to reform it. It is recognized, for example, that the high share of bank deposits in household financial wealth and the dominance of bank loans in enterprises' external financing make the performance of the banking system in China more important than in most other economies—with significant impact on, *inter alia*, the growth of total factor productivity, household consumption, size of public debt, transmission of monetary policy, and prospects for capital account convertibility. Most observers also regard the central elements of China's banking reform as having moved the system in the right direction—including large-scale (over \$300 billion) public recapitalization of the state-owned commercial banks to remove a huge overhang of nonperforming loans from bank balance sheets; implementation of tougher asset classification and provisioning guidelines; creation of an energetic bank supervisor (China Bank Regulatory Commission); large reductions in the number of bank branches and bank employees; World Trade Organization (WTO) accession; listing of four big state-owned commercial banks on stock exchanges; and the sale of bank shares to strategic foreign partners.

But the banking system still has some serious deficiencies and faces a number of formidable challenges going forward. Wendy Dobson and Anil Kashyap (2006) bemoan the still dominant (albeit declining) share of state-owned banks in total bank lending and continuing government pressure on these banks to direct too much credit to less-profitable state-owned enterprises to support employment. Similarly, Richard Podpiera (2006) concludes that, despite the *de jure* removal of the ceiling on loan interest rates, pricing of bank loans remains largely undifferentiated and that large state-owned banks do not appear to take enterprise profitability into account when making lending decisions. And Anderson (2006b) emphasizes the still relatively low profitability of China's state-owned banks, the high dependence of bank profitability on the huge gap between lending and deposit interest rates, and the likelihood that this in-

terest rate gap will narrow markedly in the period ahead as financial liberalization and globalization proceed.

What is much less widely agreed on is how a more appreciated and more flexible exchange rate for the renminbi would affect bank reform. Too often, the effects of currency reform have also been confused with the effects of further capital account liberalization.

One popular view is that going much beyond the existing gradualist approach to currency reform would be too dangerous for the still fragile banking system. Mindful of financial crises in other emerging economies over the past dozen years, proponents of this view argue that a large renminbi appreciation could generate serious currency mismatches for banks and their customers. They worry as well that appreciation could bring in its wake a sharp reduction in growth, making it much harder to maintain the trend decline in banks' nonperforming loans. They point out too that China's financial infrastructure does not yet possess hedging instruments adequate for protecting market participants against a marked increase in exchange rate volatility. Their bottom line is that further strengthening of the banking system—and of the financial system more broadly—is a necessary precondition for bolder currency reform.

Others take a nearly opposite tack, seeing bolder currency reform as the ally rather than the enemy of banking reform. They offer the following rebuttals.

China's banks and their customers are much less vulnerable to currency mismatches than were their counterparts in earlier emerging-market financial crises (Goldstein 2007b).¹⁴ After all, China is a net creditor—not a net debtor—in its overall foreign exchange position. Exporters have lower debt-equity ratios than firms in other sectors. Most of China's largest exporters are foreign owned and do not raise the bulk of their financing in the domestic market. Where the authorities require bank capital to be held in US dollars, reports indicate that the associated currency risk is hedged.

Best estimates suggest that 10 to 15 percent appreciation in the real effective exchange rate would reduce real GDP growth rate by 1 to 1.5 percent a year over a two- to three-year period—hardly a disaster given that in 2007, economic growth was 11.4 percent, consumer prices rose by almost 5 percent, and China's average growth rate over the entire postreform (1978–2006) period was 9.7 percent (National Bureau of Statistics of China 2007, 23).

The excessive accumulation of international reserves that has accompanied the increasingly undervalued renminbi has put Chinese mone-

14. Prasad in chapter 2 of this volume reaches a similar conclusion: "There is little evidence . . . that Chinese banks have large exposure to foreign currency assets or external liabilities denominated in renminbi that would hurt their balance sheets greatly if the renminbi were to appreciate in the short run."

tary authorities in a no-win dilemma, with increasing risk to the banking system.¹⁵

If the authorities did not sterilize the large increase in reserves, the resulting explosion of bank credit and of monetary aggregates would probably have been so large as to generate a watershed surge in nonperforming bank loans and domestic inflation. Indeed, even with the ambitious sterilization efforts of the past five years, there were costly bank credit booms in 2003, the first quarter of 2004, and the first half of 2006. In 2007 consumer price inflation also hit nearly 5 percent, while producer prices by December 2007 rose by almost 8 percent compared with December 2006.¹⁶ With sticky nominal interest rates on deposits and loans, sharp increases in inflation translate into low—and sometimes, negative—real interest rates. This, in turn, can fuel overinvestment, slow or even negative growth in bank deposits, and speculative runs in equity and property markets.

Alternatively, the authorities can take the high sterilization route. But then the increase in inflation—which would otherwise appreciate the real exchange rate—is cut off. Similarly, if the growth rate of net domestic assets of the central bank is kept too low in a fast growing economy, then the excess demand for money will induce the very expenditure patterns and balance-of-payments inflows that will perpetuate the economy's external imbalance. Also, as suggested earlier, the need both to place large amounts of low-yielding sterilization bills with the banks and to repeatedly raise bank reserve requirements (which likewise pay low interest rates) imposes a "tax" on the banks that is not captured in standard calculations of the "cost of sterilization." If the banks absorb this tax themselves, then their profitability—which is already low by international standards—is further compromised; if the banks instead pass on the cost of sterilizing to depositors in the form of lower deposit rates, then depositors have an incentive to put their money elsewhere. Without adequate growth of bank deposits, bank loan growth will ultimately be constrained unduly. And if the authorities rely on window guidance—instead of sterilization—to control how much and to whom banks lend, then the longer-term objective of teaching credit officers how to evaluate creditworthiness and of developing a "credit culture" in China's banks is undermined.

As indicated earlier, low flexibility of the exchange rate—even with remaining controls on capital flows—also means that interest rate decisions will often be delayed beyond what would be desirable for domestic stabilization purposes—for fear that more decisive interest rate policy would trigger large capital flows, which in turn would put undue pressure on

15. Yu (2007b) puts it succinctly: "In summary, to achieve simultaneously the objectives of the maintenance of a stable exchange rate, a tight monetary policy, and a good performance of the commercial banks is impossible."

16. In December 2007, the CPI in China was 6.5 percent higher than a year earlier; core inflation (i.e., excluding food), however, was much lower—on the order of 1 percent.

the exchange rate. This too is not good for banks. Much of good central banking today involves taking preemptive interest rate action to ward off both sharp growth slowdowns and inflation excesses. If, for example, the authorities wait too long to move interest rates in response to an overheated economy, the dose of monetary tightening may have to be much larger than if they acted earlier; the more volatile the operating environment facing banks, the higher the risk that bank credit growth will be too rapid or too slow. Similarly, if the monetary authorities are constantly tinkering with export taxes, restrictions on capital inflows and outflows, and the pace and volatility of the exchange rate crawl—as substitutes for more independent monetary policy and a more market-determined exchange rate—it is highly debatable that the need for banks and their customers to hedge against this kind of wider policy uncertainty will be less costly than hedging against greater exchange rate volatility.

Champions of the view that bolder currency reform should not be held hostage to the pace of financial-sector reform do not maintain that the remaining fragility of the Chinese banking system is irrelevant for the sequencing of other reforms. But they contend that capital account convertibility—not currency appreciation and flexibility—should await further strengthening of the banking system (Prasad 2007, Goldstein and Lardy 2003b, Williamson 2003). Here the argument is that so long as restrictions on capital outflows are reduced gradually rather than precipitously, then the authorities will have adequate room for maneuver in countering, say, an unanticipated setback on bank reform or an unexpected large fall in China's growth rate. In contrast, if bank fragility is paired with the potential for large-scale capital flight, then, as other emerging economies have discovered, the management of such a crisis is inherently much more difficult. Yu Yongding (2007b) observes that if Chinese households and firms decided for whatever reasons, rational or irrational, to suddenly increase markedly the share of their assets invested abroad, capital outflow in a short time span could be as much as \$500 billion, with very unpleasant consequences for the Chinese economy.

Under this view, the right sequencing of reforms is to continue with bank reform and to move now to reduce significantly both the undervaluation and inflexibility of the renminbi—but to wait until China's financial system is on stronger footing before opening up too widely the doors on capital outflows.

Looking ahead, the conundrum facing China's banking system can be summarized as follows. The authorities have indicated, quite sensibly, that they wish to expand the role of commercial paper, bond, and equity markets to diversify (away from banks) the sources of external financing available to firms. In addition, they have expressed an understandable intention to gradually lift restrictions on capital outflows—in part to offer savers a higher rate of return and in part—given China's large global current account surplus—to take upward pressure off the renminbi. Such

moves in the direction of further financial liberalization and globalization are likely, however, to have the competitive effect of reducing over time the existing 350 to 400 basis point spread between deposit and loan interest rates—since Chinese investors and savers will then both have a wider set of alternatives to domestic banks. As Anderson (2006b) points out, even a 100 basis point decline in the deposit-loan spread would have wiped out all the profits of state-owned banks in 2005. So how to square this circle? Yes, maybe costs can be reduced further by larger cutbacks in the number of branches and bank employees. Yes, maybe Chinese banks can increase somewhat the share of profits coming from fees so as to offset partially the fall in interest income. But in the end, two things would seem to be required. First, credit allocation decisions will have to be improved so less income is spent on dealing with bad loans. This in turn would seem to imply that the influence of political factors on loan decisions has to be reduced vis-à-vis the influence of arm's-length, commercial considerations. Can this be done other than by further privatization of banks, including probably raising the limit on foreign ownership of banks? We doubt it. Second, the burden increasingly imposed on bank profitability by the sterilization requirements of defending a seriously undervalued renminbi will need to be lowered. Can this be done other than by reducing the amount of intervention in the exchange market? Again, we doubt it.

External Adjustment, Global Imbalances, and the Rising Risk of Protectionism

China's exchange rate policy also carries important implications for China's own external adjustment, the correction of global imbalances, public policy toward sovereign wealth funds (SWFs), the operation of the international exchange rate system, and efforts to maintain forward momentum on globalization. In this regard, among the most interesting issues in the ongoing debate are the following:

- Given the wide range of estimates of renminbi misalignment, can one be confident that the renminbi really is seriously undervalued?
- If China did implement a sizeable revaluation/appreciation of the renminbi, would it be effective in reducing substantially China's large global current account surplus?
- Would the costs of a large renminbi revaluation be prohibitively high?
- What explains the large surge in China's current account surplus between 2004 and 2007?
- Will the effect of renminbi revaluation on global imbalances be larger (smaller) than sometimes assumed because it will (not) lead to sympathetic revaluations in other Asian and emerging-market currencies?

- With China’s reserves topping \$1.5 trillion at year-end 2007 and with the recent establishment of its own SWF, what will be the impact, and what principles should guide the fund’s operations?
- Should the IMF have regarded China’s large-scale, prolonged, one-way intervention in exchange markets since 2003 as currency manipulation, and how should IMF exchange rate surveillance be conducted going forward?
- Are the several currency bills now before the US Congress a serious threat to open markets, or are they a “third best” policy response to a beggar-thy-neighbor exchange rate policy?

Renminbi Undervaluation

Some argue that China should not have been expected to appreciate earlier and more forcefully because no one really knows the “right” or “equilibrium” exchange rate.¹⁷ They note that existing studies yield a wide range of estimates of misalignment. An IMF study by Steven Dunaway and Xi-angming Li (2005), for example, maintains that estimates of renminbi undervaluation range from zero to nearly 50 percent.¹⁸ Furthermore, Dunaway, Lamin Leigh, and Li (2006) argue that a more definitive answer is unlikely to emerge soon because of data problems, instability in the underlying relationships, and lack of consensus on the proper methodology.

Others (Goldstein 2004, 2007b) find the evidence in support of a large renminbi undervaluation increasingly robust and, by now, simply overwhelming. They note that China’s global current account surplus has grown without interruption from 1 percent of GDP in 2001, to 9 percent of GDP in 2006, to an estimated 11 percent of GDP in 2007; that China’s net capital account position has usually also been in surplus over this period, sometimes becoming even larger relative to GDP than the trade balance surplus; that China’s real effective exchange rate through January 2008 has actually depreciated on a cumulative basis over this period (see footnote 3)—notwithstanding the 15 percent nominal appreciation of the renminbi relative to the US dollar; that China’s monthly intervention in the exchange market has been persistent, one-way, and growing in size; and that China’s domestic economy has been growing at or above its potential.

17. Some in this camp (Mundell 2004) also maintain that a fixed exchange rate has served China well, that it could continue to do so, and that claims of “overheating” of the economy are misguided.

18. Similarly, Ahearne et al. (2007) find that renminbi appreciation of 5 to 25 percent would be required to reduce China’s global current account surplus by between 3½ to 6½ percent of GDP. Crockett, writing in chapter 9 of this volume, concludes that there is wide agreement that the renminbi is both undervalued and insufficiently flexible but finds little agreement either on the size of the undervaluation or on how the existing misalignment should be corrected (e.g., large jumps versus small, gradual steps).

Taking these developments together, any reasonable back-of-the-envelope calculation aimed at finding the level of the renminbi that would eliminate China's global current account surplus would generate a large (and growing) estimate of renminbi undervaluation. A variety of studies suggest that each 10 percent change in China's real effective exchange rate is associated with a change of 2 to 3.5 percent of GDP in China's global trade balance (Goldstein 2007b). Thus eliminating China's global current account surplus would require a 30 to 55 percent real appreciation of the renminbi. Just to cut the surplus roughly in half (say, reducing it by 6 percent of GDP) would imply a 17 to 30 percent undervaluation. Of course, in earlier years (say, in 2003 and 2004) when China's global surplus was much smaller, the implied undervaluation would be lower—but still not small. The fact that China's large current account surpluses have occurred when the domestic economy has also been booming means that China is in what James Meade (1951) called a "nondilemma" situation, where exchange rate appreciation moves the economy simultaneously closer to both external and internal balance.

Those who claim that the renminbi undervaluation verdict is clear cut concede that the relevant empirical literature has spawned a wide range of estimates but argue that this reflects largely a lack of comparability across studies. Some studies (Goldstein and Lardy 2006) assume that the objective is to eliminate entirely China's external imbalance, while others (Ahearne et al. 2007) assume that only part of this imbalance should or could be eliminated within the specified period. Some authors assume that exchange rate revaluation would be undertaken on its own, while others assume that revaluation would be paired with a macro policy that maintained a constant level of aggregate demand; in the former case, the contractionary effect of revaluation reduces the demand for imports in the second round, while in the latter case, there is no second-round effect on import demand.

Some studies opt for modeling explicitly the high import content in China's exports, while others ignore it; when the import content in exports is taken into account, renminbi revaluation leads to a smaller export-price increase than when it is not so assumed. Some studies assume higher export and import price elasticities of demand for China's trade than do others. Because China's imports and exports have been growing faster than GDP, the size of its traded-goods sector is larger now than it was even half a dozen years ago. This means that a smaller exchange rate change will be needed, *ceteris paribus*, to achieve a given trade balance target than when the traded-goods sector was smaller. Studies done at different points in time (even when the same methodology is employed) can produce different estimates of renminbi misalignment.

Some authors obtain point estimates that show very large renminbi undervaluation but do not regard the confidence level on those estimates as sufficiently strong to warrant an undervaluation conclusion (Cheung, Chinn, and Fujii 2007); other authors obtain similar estimates and accept

the point estimate. And finally, there are several methodologies for inferring exchange rate misalignments—ranging from the macroeconomic balance approach, to various structural models of exchange rate determination, to a whole family of purchasing power parity models—and different authors have not always chosen the same methodology—even if some of those are regarded as more reliable than others.¹⁹

The contention of the large undervaluation school is that were one to “standardize” the misalignment exercise and to restrict attention to the better methodologies and the more reasonable assumptions, the large undervaluation verdict would emerge more clearly. They also point out that some of the initial agnostics on renminbi undervaluation have recently come around. In its 2004 Article IV consultation report for China, the International Monetary Fund (IMF 2004, 12) concluded that “it is difficult to find persuasive evidence that the renminbi is undervalued.” Two years later the Fund’s conclusion was quite different, namely, that “All of these developments point to the currency (the renminbi) as being undervalued and that this undervaluation has increased further since last year’s Article IV consultation” (IMF 2006a, 17).

In chapter 4 of this volume, William Cline and John Williamson survey many existing estimates of the equilibrium value of the renminbi. They find that the literature offers widely varying answers. At the same time, only one of the 18 studies in their survey concludes that the renminbi is overvalued. The average estimates indicate substantial renminbi undervaluation—on the order of 20 percent for the real effective exchange rate and 40 percent for the nominal bilateral renminbi-dollar exchange rate. Also, they find that renminbi undervaluation has been increasing over time, with a 17 percent real effective appreciation needed in studies using data for the 2000–2004 period versus 27 percent for studies based on data for the 2005–07 period.

In explaining why there is such a wide range of estimates, Cline and Williamson argue that the available methodologies for calculating and inferring equilibrium exchange rates differ significantly in their reliability. They regard the approach based on fundamental equilibrium exchange rates (and macroeconomic balance) superior to both the purchasing power parity (PPP) approach and the approach based on behavioral equilibrium exchange rates. They strongly suspect that the PPP estimates overstate the needed degree of renminbi appreciation; the approaches based on fundamental equilibrium exchange rates and behavioral equilibrium exchange rates tend to produce similar estimates of renminbi undervaluation.

In his comments on the Cline-Williamson paper, Jeffrey Frankel concludes that the lack of consensus on renminbi misalignment militates

19. See IMF (2006b) for a discussion of different methodologies for assessing misalignment of exchange rates.

against giving either the IMF or the US Treasury legal mandates to assess exchange rate misalignments and to levy penalties if corrections by the erring governments are not forthcoming. After making a plea for reporting estimates of percentage undervaluation in logarithms, Frankel examines the pros and cons of alternative methodologies for estimating equilibrium exchange rates. On the whole, he is less critical of the PPP approach and more critical of the other two approaches than are Cline and Williamson. While he shares the broad conclusion that the renminbi is undervalued, he notes that the new price data for China recently published by the United Nations' International Comparison Program (ICP) imply that the renminbi is far less undervalued under the extended PPP approach than previously thought. He maintains that the most plausible explanation for China's growing trade surplus is that it is the product of tumbling trade barriers against China's exports and a substantial pre-existing cost advantage.

In the second comment on the Cline-Williamson paper, Simon Johnson concludes that a balanced approach using two or three reasonable methodologies can move us a long way in the right direction and can often find a range of plausible estimates for the equilibrium exchange rate. He agrees with Cline and Williamson that PPP methods are most dubious when applied to China because until December 2007, there were no comparable price data for China—and even the new ICP data should be handled with caution. Johnson suggests that less weight should be placed on methods that do not explicitly adopt a multilateral framework. He also posits that the behavior of net foreign assets could be informative in deciding whether external payments are approaching equilibrium.

Effectiveness of Renminbi Appreciation

Another bone of contention is whether a renminbi appreciation would have much effect on China's global current account position. The pessimists cite low wages and high profit margins (which would allegedly permit exporters to absorb the cost of appreciation without raising export prices), a high import content in exports, and low price elasticities of demand for imports and exports as factors that reduce the effectiveness of exchange rate action.²⁰

The optimists see it differently. They agree that manufacturing wages in China are very low relative to those in, say, the United States but point out that Chinese productivity is also very low vis-à-vis the US level—and it is the combination of the two (unit labor cost) that matters for competitive-

20. Some (Bosworth 2004) also argue that there is no obvious channel by which a renminbi revaluation would correct China's saving-investment imbalance.

ness (Lardy 2006). If wages alone mattered, why is Germany, with the highest wages, the world's largest exporter? Moreover, why are some very-low-wage countries extremely modest exporters? Profit margins in China's traditional export industries (e.g., textiles, electronics, machinery, toys, sporting goods, and furniture) are modest (i.e., in the low to mid-single digits), reflecting strong competition in domestic and external markets. True, profit margins are higher in the newer and faster-growing export industries (e.g., aircraft parts, autos, ships, and telecom equipment). But there is so far little evidence that profit margins move systematically to offset the effects of nominal exchange rate changes on export prices. Anderson (2007b) observes that broad indices of China's export prices have been rising over the past two to three years, in contrast to falling export prices over the previous three-year period.

The import content in Chinese exports is high—on the order of 30 to 35 percent. As suggested earlier, this implies that (unilateral) renminbi appreciation will lower the cost of imported inputs and produce a smaller increase in export prices than if exports had no import content. But this does not imply that renminbi appreciation would be ineffective—only that the exchange rate change needs to be larger to achieve a given trade balance objective. China's role as a regional processing center does distort the meaning of China's bilateral trade imbalances with some industrial countries like the United States, since goods previously exported directly from some supplier countries now get assembled in China and thus show up in China's exports. But these imported inputs wash out when one looks at China's global trade imbalance.

Because the manufactured goods that China exports are typically quite price elastic (around the world) and because the goods that China imports are also produced in China, it is highly likely that the Marshall-Lerner conditions for an effective revaluation are satisfied. Although econometric studies of China's trade flows are still limited and have to contend with poor price data, relatively short sample periods, and large structural and cyclical changes, more researchers are finding significant price elasticities of demand.²¹

Optimists also make the debating point that if the demand for China's exports really was price inelastic, then the authorities should hardly fear revaluation, since higher export prices would then increase—not decrease—export revenue.

21. See Goldstein (2007b) for a summary of the results of many of these studies. In view of the difficulties of estimating the price elasticities for China's trade, some analysts choose instead to simply assume reasonable values for those elasticities. For example, Cline (2005) assumes that the import and export elasticities of demand are each unity. Anderson (2006a) assumes that the sum of the elasticities is just slightly above one.

Costs of a More Appreciated Renminbi

Even if a significant renminbi appreciation/revaluation would be effective in reducing China's large external imbalance, some analysts—including many in China—claim that the internal cost of such a policy would be too high in terms of China's growth, employment, and social stability. In his comments on this chapter, Fan Gang points out that in gauging the impact of a large renminbi appreciation, Chinese leaders have to be sensitive to the employment prospects of 300 million underemployed rural laborers (who each earn about \$500 per year), as well as to another 300 million immigrant workers (with average earnings of about \$1,000 per year). The Chinese authorities may also be deterred, according to Fan, by the concern that even a large renminbi appreciation is unlikely to diminish foreign pressure on China, especially from the United States; after all, job losses in Chinese export industries are more likely to be made up by job gains in countries like Vietnam and Bangladesh—not the United States; the overall US current account position may not change; the US dollar will likely keep falling due to the subprime mortgage turmoil and other factors; and even if the renminbi were to be revalued by 30 percent today, Fan posits that the US Congress and the markets might well request another similar jump soon. As a poor country with many potential risks and shocks before it, it may be wiser for China to take small steps in exchange rate adjustment.

The counterargument that the costs of a large renminbi appreciation should be manageable stresses the following observations. The last time China's real effective exchange rate exhibited a large real appreciation, namely, between 1994 and early 2001, when it appreciated by nearly 30 percent, China's growth did fall but still averaged 9 percent per year and in no single year did growth drop below 7.5 percent. As mentioned earlier, recent estimates (Shu and Yip 2006, Anderson 2006a) point to a 10 percent real effective revaluation of the renminbi lowering economic growth by roughly 1 percent a year (over a two- or three-year period). If even this modest decline in growth were seen to be too contractionary, revaluation could be paired with an increase in government expenditure on health, education, and pensions, reducing the need for precautionary savings and contributing to a reduction in China's external imbalance.

Employment growth has been noticeably slower during the recent period when investment and export-led growth have been most pronounced than during the period when China's economic growth was oriented more toward consumption (Lardy 2007). Employment in China's export industries accounts for roughly 6 percent of total employment—not 30 or 40 percent (Anderson 2007d). Tens of millions of Chinese workers lost jobs when state-owned enterprises were reformed in the mid- to late 1990s; if there was no social meltdown during that reform, why should there be one after a renminbi revaluation? If the concern is with income losses in

low-margin traditional export industries, why not introduce a trade adjustment assistance package along with a renminbi revaluation? Since China's exports are produced more in the high-income coastal provinces than elsewhere, exchange rate action that reduces profitability in export industries should not exacerbate income inequality in China. And if the concern is that farmers and other rural inhabitants will be hurt by the lower cost of food imports following a revaluation, why can't the authorities take fiscal measures to cushion the impact of revaluation on that sector's standard of living?

Explaining the Surge in China's Global Trade Surplus

One of the yet unsolved mysteries on the external front is what was primarily responsible for the upsurge in China's global trade (and current account) surplus between 2004 and 2007? How does one account for an almost quadrupling of net exports of goods and services as a share of GDP, from 2.5 percent in 2004 to an estimated 9 percent in 2007?²² Several hypotheses—not mutually exclusive—have been put forward, with different implications for China's exchange rate policy.

One hypothesis, highlighted by Lardy (2007), is that differential growth in total factor productivity between traded and nontraded goods has made Chinese goods far more competitive in international markets than is suggested by conventionally calculated real effective exchange rates. In short, while China's conventionally calculated real effective exchange rate changed little over this period, appropriately measured, the renminbi appears to have depreciated significantly since June 2005. The "real" adjustment in the JPMorgan index is based on the rate of change of "core" prices for finished manufactured goods, excluding food and energy, for the country in question compared with its trading partners.

But this methodology appears to be a poor measure of the change in the prices of China's exports. Despite a 9 percent appreciation of the renminbi vis-à-vis the US dollar between June 2005 and August 2007, the price of Chinese goods imported into the United States was basically unchanged.²³ The available evidence does not support the view that Chinese firms producing exports cut their margins in order to avoid passing through the renminbi appreciation to US consumers. If anything, profit margins in Chinese industry, which produces almost all of China's exports, have increased (World Bank 2007, 7). The most likely explanation is that produc-

22. As noted earlier, the explosion of the global current account surplus was similar—from 3.6 percent of GDP in 2004 to an estimated 11 percent of GDP in 2007.

23. Prices of Chinese imports in August 2007 were 0.2 percent less than in June 2005, according to the estimates of the International Price Program of US Department of Labor, Bureau of Labor Statistics. These estimates are not based on unit values of imports but take into account the changing composition and quality of imported goods.

tivity growth in those industries exporting to the United States was sufficiently large that firms could more than absorb the adverse effect of the rising value of the renminbi on their earnings. The combination of a nominal appreciation of the renminbi vis-à-vis the dollar of about 9 percent and unchanged prices of Chinese imports in the United States suggests that total factor productivity growth in China's export industries was 9 percent between June 2005 and August 2007. Over this period US prices rose about 7 percent. Since the prices of Chinese exports fell 9 percent while prices in the United States rose 7 percent, the Chinese currency would have had to appreciate in nominal terms against the dollar by about 16 percent to maintain the initial level of competitiveness of Chinese exports in the US market. But the rate of nominal appreciation was only about half that pace, so Chinese goods became much more competitive vis-à-vis import-competing goods made in the United States. And the prices of imports into the United States from countries other than China rose 10.9 percent over the same period, so Chinese goods gained even greater competitiveness vis-à-vis alternative external suppliers to the US market than they did against US domestic producers (US Department of Labor, Bureau of Labor Statistics 2007). A key implication of this "hidden Chinese export productivity" story is that if recent productivity trends were to continue, the renminbi would need to appreciate by a much larger degree against the US dollar than in the recent past for exchange rates to contribute to a deterioration in China's competitive position vis-à-vis the United States.

Some find this hidden productivity story unpersuasive because it covers only China's exports to the United States (almost 30 percent of total exports), and these may not be representative (e.g., on product mix) of total Chinese exports. Anderson (2007b), for example, argues that China's export prices for both traditional exports (like clothing and toys) and IT electronics have been rising by 3 to 4 percent a year since 2004—whereas they were falling by 3 to 4 percent a year during the 1995–2003 period.²⁴ He also wonders why, if rising productivity is responsible for the net export surge, we have not seen more of a continuous move toward more domestic sourcing in labor-intensive export industries. He speculates that China's now large export market share in some products (toys, footwear, and other low-end products) permits Chinese exporters to pass on their increased costs to overseas buyers. This cannot go on indefinitely if rising wages and renminbi appreciation persist, but he thinks it has been going on recently.

Fan, in his comment on this chapter, expresses some support for the hidden productivity thesis. Specifically, he points out that rapid productivity growth helps to explain China's good inflation performance, why

24. Anderson's analysis is based on Chinese export price data and Hong Kong data on prices of goods of Chinese origin that are reexported from Hong Kong. Unlike the price data analyzed in Lardy (2007), both of these are calculated from unit values.

profitability in Chinese corporations has recently been high, and why import substitution has been such a prominent feature of the recent net export surge.

A second hypothesis is that the large and growing trade surplus is primarily cyclical, with little relation to exchange rate developments. Anderson, in his comment on this chapter, as well as in some earlier work (Anderson 2007c), argues as follows: Any good theory about China's surging trade surplus has to confront several facts, namely, that the shift in the trade balance occurred primarily in the heavy industrial products (aluminum, machine tools, cement, key chemical products, and especially, steel and steel products); that it involved more of a collapse in imports than a jump in exports; that the net export shift was highly correlated with domestic demand swings; that gross domestic saving grew much faster than gross investment; and that profit margins in heavy industry fell during the initial increase in the trade surplus.

His explanation is as follows: The 2000–2003 period witnessed a boom in property, housing construction, and auto sales, brought on by rapid structural changes in home ownership and new consumer finance instruments; with sharply rising profits in industrial materials and machinery sectors, local governments and state enterprises invested heavily in smelting, refining, and machinery production. The boom soon turned into a bubble, and by early 2004, the authorities drastically curtailed lending for real estate and construction; the central government, however, could not slow the pace of investment in heavy industry. As a result, productive capacity grew much faster than domestic demand for the next three years; as profits fell, China began to cut its surplus capacity aggressively by cutting way back on imports and becoming a sizeable net exporter in a few industrial categories.²⁵ In short, it is as if a large stock of new excess capacity sprang out of the ground and subsequently played havoc with China's balance of payments. Anderson expected the excess capacity problem to soon abate. Indeed, as late as March 2007, Anderson (2007a, 35) argued that "China's trade surplus is already peaking and should begin to fall by the latter part of the year." He saw China returning to a more balanced trade position in the course of 2008 and 2009.

But questions also arise about the "cyclical, excess capacity" view of the surge in China's trade balance. Most fundamentally, unless one understands what is driving investment decisions in what later become industries with excess capacity, it is difficult to either forecast when excess capacity will contract/expand or to apportion influence among many plausible factors. Illustrative of the former point, writing in July 2007, Anderson (2007c) acknowledged that there was no sign whatsoever of stabi-

25. Anderson in his comments on chapter 1 notes that the fall in profits in heavy industry reflected a dramatic rise in production volumes, which more than offset the fall in unit margins.

lization of the trade balance, that excess capacity in the steel industry (which accounted for about a quarter of the trade surplus surge) showed no sign of a slowdown, and that after-tax profit margins in overall heavy industry had risen—in part because Chinese firms were doing a better job of exploiting export opportunities. More striking, even though the exchange rate allegedly had practically no role in the origin of the net export surge, Anderson (2007b, 9) recently recommended renminbi appreciation “. . . as the only real tool left available to the authorities to offset the effects of excess capacity creation. . . .”

But then how do we know that Chinese producers did not take the expected level of the exchange rate into account when making investment in tradable goods industries? After all, an undervalued exchange rate offered the safety valve of better access to overseas markets if domestic demand proved less buoyant than they expected. Similarly, doesn't an increasingly undervalued exchange rate and the spur it gives to exports help explain why investment and profits have slowed much less in this investment cycle than in earlier ones? And why should the same Chinese producers who allegedly paid no attention to the exchange rate in 2004–06 in making investment decisions now do so if the renminbi appreciates faster this year and next?

Yet a third explanation for the post-2003 net export surge comes from Mussa, whose paper appears in chapter 8 of this volume. He employs the “monetary approach” to the balance of payments not only to explain the net export surge but also to elucidate the corresponding and seemingly bizarre improvement in China's national saving-investment balance despite exceptional growth in investment.

Mussa argues that several features of China's economy make application of the monetary approach relevant and fruitful:

- China has maintained both a fixed/tightly managed exchange rate and capital controls during this period.
- The monetary aggregates in China are very large relative to the size of the economy (e.g., broad money is 150 percent of GDP versus 50 percent in the United States, and the Chinese monetary base accounts for 37 percent of GDP versus 6 percent in the United States).
- With annual growth of nominal GDP running about 16 percent in China, annual growth of the demand for base money is also large (about 6 percent of GDP).
- There is a remarkably stable relationship between base money and nominal GDP in China.
- Unlike the US Federal Reserve, the Chinese monetary authorities do not automatically adjust their net domestic assets to meet fluctuations in the demand for base money—instead, they adjust the growth of net

domestic assets to offset increases in the supply of base money resulting from excessive inflows of foreign exchange.

- Foreign reserve inflows have fluctuated widely over the past decade (ranging from 0.4 percent of GDP in 1998 to 14 percent of GDP in 2007).

A key equilibrium condition is that the demand for base money has to equal the supply of base money, where the latter is composed of the net domestic assets and net foreign assets of the monetary authority. In periods when the *ex ante* demand for base money is growing rapidly but the monetary authority chooses to meet only part of this growing demand by expanding its net domestic assets, then the remainder of that demand will be satisfied by the foreign component of the monetary base—that is, by an increase in the net foreign assets of the monetary authority (that is, by an increase in international reserves). The increase in international reserves is, in turn, equal to the current account plus the capital account in the balance of payments.

Mussa shows that a key prediction of the monetary approach tracks the evolution of China's balance of payments quite well over the 1994–2006 period, including the net export surge of 2003–06. In that latter period, China's nominal GDP increased cumulatively by 75 percent, and base money expanded by 72 percent. The increasing undervaluation of the renminbi during this period contributed to the expansion in China's current account surplus; increasing capital inflows added to upward pressure on the exchange rate. The authorities intervened massively in the foreign exchange market to hold their exchange rate target, and they engaged in large-scale sterilization to prevent the huge intervention from being fully reflected in the supply of base money and in the inflation rate. These sterilization operations resulted in a large fall in net domestic assets of the monetary authority. All this in turn meant that the rapidly growing demand for base money was satisfied via the balance of payments—including the explosion of China's net exports from 2002 through 2006. For the 1994–2006 period as a whole, Mussa demonstrates that there is a reasonably close and positive relationship between the excess of base money growth over the growth of net domestic assets on the one hand and China's current account surplus on the other (both expressed as a share of GDP). The relationship between them is not one-for-one because other factors (for example, the capital account) also affect the current account, but Mussa maintains that the similarity of large swings in the two series is unmistakable.

The main policy implication of the monetary approach is that so long as the authorities continue to engage in heavy sterilization while economic growth and demand for base money are increasing rapidly, they will perpetuate the large external surplus by creating a monetary disequilib-

rium.²⁶ If they want to reduce the large surplus, they should cut back both on sterilization and on their massive exchange market intervention.

The monetary approach too is not without questions. Anderson, in his comment on this chapter, offers four criticisms of the monetary approach, as employed by Mussa:

- The dominant line of causation should be from an increase in China's reserves to a drop in the central bank's net domestic assets (what he calls the "balance-of-payments approach to money")—and not the other way around.
- Neither the ratio of cash to M2 nor banks' base money multiplier have been stable over time in China—contrary to the assumptions of the monetary approach.
- There has been no obvious upward pressure on either money market interest rates or long-term bond yields, as there should have been if agents were scrambling for money.
- The monetary approach is incapable of explaining why the household saving rate has remained constant while the corporate saving rate has risen sharply.

Suffice it to say that Mussa finds these criticisms of the monetary approach unpersuasive.

Renminbi Revaluation and Global Imbalances

Another vigorously debated question is the contribution that a renminbi appreciation could or should make to the correction of global payments imbalances, particularly the large US current account deficit, which hit \$811.5 billion (6.15 percent of GDP) in 2006 and is running at just a slightly reduced ratio this year.

One school maintains that China's potential and fair contribution to this international problem is quite limited. After all, China's weight in the Federal Reserve's trade-weighted index for the dollar is about 15 percent. A unilateral 20 percent renminbi appreciation against the dollar by itself therefore would translate into only a 3 percent depreciation in the trade-weighted dollar—a move that would perhaps reduce the US global current account deficit by roughly \$40 billion to \$55 billion—hardly a major

26. The thrust of the argument here is similar to the conclusion that large-scale sterilization of reserve increases perpetuates external disequilibrium for a country with a large capital inflow because it prevents that inflow from lowering the interest rate and thereby discouraging further capital inflows.

contribution. The United States should instead raise its own low national saving rate—and particularly decrease government dissavings over the medium to long run—if it wants to significantly improve future US current account deficits and future US net foreign indebtedness (Roach 2007). Claims that foreigners will at some point soon tire of adding dollar assets to their portfolios underplays the decline of “home bias” in investment decisions, the attraction of the US capital market, and the moderate size of the US external financing needs relative to the large stock of financial wealth in US trading partners (Cooper 2005).

The large bilateral US trade deficit with China should not be a matter of concern since it is a country’s global current account position that matters; also, the share of the US global trade deficit with emerging Asia has not changed much over the past several years: The share with China has increased while the share with other Asian economies has fallen—just what one would expect from China’s emergence as a major regional processing center. A renminbi revaluation will merely induce a substitution away from Chinese products toward other low-cost producers, with little effect on total US imports.

China’s large global current account surplus and the current renminbi exchange rate cause no major damage to either the US or the global economy. The US economy has been operating at full employment; the trend decline of employment in US manufacturing has been long running (well before any evidence of renminbi undervaluation); US consumers benefit from low-cost imports from China; and US borrowers benefit from low interest rates, which would otherwise be higher if China were not purchasing as many US government and other dollar-denominated securities in its exchange-market intervention operations. If renminbi appreciation were to generate a wider and rapid depreciation of the US dollar, there might not be enough slack in the economy to accommodate the expansion in US net exports without generating inflationary pressures. If there is a competitive benchmark for currencies in Asia, it is more apt to be the Japanese yen than the renminbi (Park 2007). Other countries benefit from the rapid growth of their exports to China. And China also benefits from this so-called Bretton Woods II arrangement since the low value for the renminbi assists China in dealing with its formidable employment problem and in attracting enough foreign investment to build a world-class capital stock for tradable goods (Dooley, Folkerts-Landau, and Garber 2003).

The opposing view sees much less justification for complacency about global payments imbalances or the undervalued renminbi.

True, a unilateral revaluation of the renminbi would not much affect the real effective exchange rate of the dollar. But China is a competitive benchmark for many others and if other Asian economies follow China’s lead by revaluing their currencies, the effects on the dollar and on the US current account deficit would be anything but trivial. Emerging Asia plus

Japan has roughly a 40 percent weight in the Federal Reserve's trade-weighted dollar index. A 20 percent real appreciation in all Asian currencies would translate into an 8 percent real depreciation of the dollar and probably a \$100 billion to \$140 billion improvement in the US current account deficit (Goldstein 2007b). This is not small potatoes if the objective is to cut the US deficit, say, roughly in half. If China and Japan do not act to remove the currently large undervaluation of their currencies, other Asian economies that have allowed their currencies to appreciate significantly (e.g., Korea) might reverse course and use large-scale intervention to lower the value of their currencies (Park 2007).

The dollar is still overvalued by a considerable degree (Obstfeld and Rogoff 2006). Failure of Asian currencies to share appropriately in the needed real effective depreciation of the dollar would imply either of two undesirable scenarios: either other nondollar currencies—like the euro, the Canadian dollar, and the Australian dollar—would have to appreciate unduly when they already have made an important contribution (having risen in real effective terms since the dollar peak in February 2002 by 26, 20, and 48 percent, respectively) or the total amount of dollar depreciation would be too small to produce a meaningful reduction in the US global deficit (Truman 2005). The fact that financing of the US global current account deficit has relied heavily on official lenders and on short maturity instruments—with much of the proceeds going to stoke consumption rather than investment—ought to be regarded as worrisome (Summers 2004).²⁷ Recent turbulence in global financial markets linked to the US subprime market illustrates both how quickly risk perceptions can change and how financial contagion can operate. A disorderly correction of the US dollar—coupled with a much lower demand for US equities—could push the Federal Reserve into a thorny dilemma where higher US interest rates were needed to defend the dollar while lower interest rates were called for to limit the contractionary effects of an increasingly weak housing market. And if the US economy does enter or get close to a recession, adverse effects on US trading partners would be widespread. A renminbi revaluation will not necessarily result in a switch of US imports to other low-cost emerging economies if those emerging economies also allow their currencies to appreciate.

Yes, the United States should implement a credible medium-term plan for fiscal consolidation that would help raise the low US national saving rate. But satisfactory resolution of the global imbalance problem should not be an “either or” choice. We need both US fiscal action and a better alignment of key exchange rates, including the renminbi, to obtain the correction of global payments imbalances in the least costly way in terms

27. Setser (2007), writing in early October 2007, reports that central banks in developing countries provided almost all of the financing of the US current account deficit over the past four quarters.

of economic growth or inflation for both deficit and surplus countries alike (Mussa 2005).

The market for US government securities is very large, deep, and liquid. When Japan suddenly ceased its exchange market intervention in the second half of 2004 after having intervened (cumulatively) to the tune of about \$320 billion in 2003 and the first quarter of 2004, we did not see a major run-up in US interest rates.²⁸ Emerging economies that have an export basket broadly similar to that of China do suffer a competitive disadvantage from the “export subsidy” (to echo Federal Reserve Chairman Ben Bernanke’s (2006) characterization) that a highly undervalued renminbi imparts to China; some US industries are adversely affected as well. Seeking to maintain a highly undervalued renminbi as a means of implementing an investment and export-led growth strategy is not a sensible development plan for China (Lardy 2007), and many of the assumptions made in support of the Bretton Woods II story (e.g., the importance of the export sector in growth and employment, the role of foreign direct investment in financing total investment, the share of the United States in total trade, and the ownership of export industries) simply do not fit the specifics of the Chinese economy (Goldstein and Lardy 2005a).

Recent experience with the effect of the renminbi on other countries’ exchange rates in Asia would seem to contradict two alternative assumptions. In the Bretton Woods II thesis, it is argued that Asian economies as a group share a strong self interest in maintaining an undervalued fixed exchange rate (since, among other benefits, it supports employment in their export industries). But if one looks at the evolution of real effective exchange rates for Asian economies from the dollar peak in February 2002 through August 2007, the record is diverse. More specifically, whereas Indonesia (37), Singapore (27), Korea (22), Thailand (15), and the Philippines (20)—call them the “movers”—have registered large appreciations in their real effective rates (ranging from 15 to 37 percent), Hong Kong (–24), Japan (–15), Malaysia (–13), Taiwan (–6), and China (–2)—the “stickers”—have recorded real effective depreciations (ranging from 2 to 24 percent).²⁹ If self interest is revealed by behavior, the “movers” must have therefore decided that the benefits of resisting real exchange rate appreciation, emphasized in Bretton Woods II, were considerably less than the costs.

At the same time, the diversity of real exchange rate behavior within Asia also casts doubt on the alternative assumption that unless China allows the renminbi to appreciate, nobody else in Asia will do so. Clearly, there must be other factors (e.g., the strength of domestic demand, pres-

28. See Ito (2004) for a full discussion of the motives for Japan’s large intervention during this period.

29. Percentage appreciation and depreciation calculated from JPMorgan real broad exchange rate indices.

asures from capital inflows, inflation threats, and costs of sterilization) besides remaining competitive with China that affect Asian exchange rate policy. Since we cannot observe the counterfactual, it could be of course that we would have seen even more real appreciation among the movers—and much more depreciation among the stickers—if the renminbi had appreciated substantially since February 2002. Still, estimates of the maximum induced effects of renminbi appreciation on other Asian currencies probably need to be lowered. For example, if one assumes that a 20 percent appreciation of the renminbi would elicit no further appreciation among the movers but a 20 percent appreciation among the stickers, then the weight of the appreciating currencies in the Federal Reserve’s dollar index (inclusive of China) would be 31 percent (not 40 percent as in the earlier example), and this would lead to about a 6 percent real effective depreciation in the US dollar (about twice as large as for a unilateral renminbi revaluation).

Outside Asia, if one goes down the list of the 25 largest US trading partners and looks for economies that have had depreciating real effective exchange rates or only mildly appreciating ones (from the dollar peak in February 2002 through August 2007) and where this exchange rate behavior could possibly have been influenced by competition with China, Mexico (–8), Israel (–6), Argentina (–4), and India (+7) make the cut;³⁰ together, those four countries have a weight of 12 percent in the Federal Reserve’s trade-weighted dollar index (with the lion’s share of that, almost 10 percent, contributed by Mexico).

Looking ahead, Goldstein (2007b) has argued that China’s currency policy could generate an unfavorable demonstration effect in other emerging economies. One reading of China’s post-2002 experience is that countries should engage in huge, persistent intervention in the exchange market, plus large-scale sterilization, and they too will be able to generate and sustain a highly undervalued real exchange rate, which is advantageous for growth. Were that the message, one might then see in the future much less real exchange rate appreciation in surplus countries and a smaller role for exchange rates in the correction of external imbalances—both bad news. Others would say that such a demonstration effect is quite unlikely. There are many earlier (non-China) examples in Asia of an undervaluation strategy (if one wants such a role model). As noted above, since 2002 some emerging economies in Asia have strongly discouraged real exchange rate appreciation, but some others have not. And the Chinese economy has some features (e.g., a still predominately state-owned banking system that can be persuaded to buy large amounts of low-yielding sterilization bills), not shared by other emerging economies, that contribute to the sustainability of an undervaluation strategy.

30. Switzerland (–11) and Saudi Arabia (–23) also appear on the depreciation list, but their exports are much less competitive with those of China.

In chapter 7 of this volume, Takatoshi Ito examines the influence of the renminbi on exchange rate policy in other Asian economies. He shows that exchange rate regimes in East Asia are diverse and uncoordinated: Japan has recently followed a free float; Korea, Singapore, Thailand, Indonesia, Malaysia, and the Philippines have adopted managed floating regimes with varying degrees of basket currency features; and Hong Kong and China have adopted hard and (de facto) crawling pegs, respectively, to the US dollar.

Ito maintains that it would be in the interest of most Asian economies to allow faster appreciation of their currencies. Such currency appreciation is also needed to resolve global payments imbalances. But there is a coordination failure: Many Asian economies are reluctant to see their currencies appreciate too much—lest they lose undue competitive advantage to China, while China itself worries that much appreciation of the renminbi—if not matched by other Asian currencies—will result in excessive job losses in its export industries. Lack of communication and commitment thus prevent both sides from acting in the common interest. Ito proposes the establishment of an Asian currency unit (ACU), cum a commitment by each Asian economy to aim at a stable relationship between its currency and the ACU, as a possible solution to the regional coordination problem.

In his empirical work, Ito finds that whatever the official pronouncements, the renminbi does not behave as a basket currency; instead, it has become a de facto crawling peg against the US dollar. At the same time, other Asian currencies put a much lower weight on the US dollar in their exchange rate policies than does China. Also, the influence of the renminbi on other Asian currencies cannot be separated (econometrically) from the influence of the US dollar on these currencies. After comparing both the attributes of alternative currency baskets for Asia (based on either 3 or 13 currencies) and considering the currently weak political cohesion in East Asia, Ito concludes that all that can be done for now is to prepare the relevant economic tools that could be used if and when political forces make greater currency coordination feasible.

In commenting on Ito's paper in chapter 7, Yung Chul Park takes a critical look at the Asian regional currency unit as a means of promoting greater East Asian coordination on exchange rate policy. He notes that in 2006, policymakers from the ASEAN-plus-three economies agreed to explore steps to create regional currency units as a sequel to two other regional initiatives, namely, the Chiang Mai Initiative and the Asian Bond Initiative.

Drawing on the experience of European countries with the European currency unit (ecu) as a precursor to the euro, Park recalls that the ecu was not able to deliver symmetry in adjustment between weak and strong currencies. He notes that the absence of a regional currency unit has generally also not stood in the way of developing markets for bonds denomi-

nated in a basket currency. Park concludes that so long as the yen remains a free floating currency and so long as China remains reluctant to revalue significantly its currency, a regional currency unit will be of little use as a surveillance indicator for coordination of exchange rate policy.

In his comments, also appearing in chapter 7, Jean Pisani-Ferry observes that prior to the autumn of 2007, Europe largely adopted a posture of benign neglect toward the renminbi. In contrast, the United States has for a while now been a vocal critic of China's exchange rate policy. Pisani-Ferry considers the factors that could account for this difference in attitudes between the two sides of the Atlantic.

He rejects the notion that China does not matter much to Europe: EU exports to China exceeded US exports to China by almost half in 2006, whereas the EU imports from China as well as the weight of the renminbi in the euro's effective exchange rate were only slightly lower than the comparable figures for the United States. Similarly, he rejects the argument that appreciation of the renminbi has little effect on the value of the euro. While it is true that Europeans are divided on exchange rate policy, they have been no less divided on trade matters, but that has not prevented them from having a common trade policy. He speculates that a strongly worded communiqué of the euro area finance ministers in October 2007 and the decision to send a high-level EU mission to Beijing to discuss exchange rate policy probably signal the end of Europe's benign neglect toward the renminbi. In the end, Pisani-Ferry postulates that Europeans are probably slower to react to external developments than Americans but also that an increasingly active European stance on China's exchange rate policy is in the cards—especially with the euro's sharp appreciation against the US dollar.

The comments of the wrap-up panel in chapter 9 include some views on the renminbi and global payments imbalances. Lawrence Summers concludes that the Chinese economic policy strategy, with its emphasis on export-led growth and on using large-scale exchange market intervention to hold down the value of the renminbi, has been as large a contributor to potential economic instability and to strains in the global financial system as we have seen in many years. He feels that the real concern should be with China's large global surplus rather than with the (negligible) effect of the renminbi on America's workers. Consistent with that view, Summers maintains that it would be better to follow a multilateral—rather than a bilateral, US-led—approach to correcting global payments imbalances. He does not see China's exchange rate as the primary source of the US global current account deficit.

Bergsten argues that if a reasonable goal was to cut the US global current account deficit in half, then one should not downplay the contribution that Asian currency appreciation could and should make to that objective: Indeed, work done at the Peterson Institute suggested that such

Asian currency appreciation could represent one-quarter to one-half of the needed adjustment.

Bergsten, Crockett, and Summers also took the view that all things considered, it was strongly in China's interest to implement faster appreciation of the renminbi and to do it at a faster pace than had occurred over the past two and a half years. In this connection, it was mentioned that there were many more cases where highly managed exchange rates were too slow to respond to market pressures for change than there were cases where exchange rate adjustment occurred and was subsequently viewed as premature or erroneous. There was consensus too that in measuring progress on exchange rate adjustment, the Chinese authorities should look to the real, trade-weighted exchange rate of the renminbi—and not so much to nominal, bilateral exchange rates. All that said, the wrap-up panel also counseled that there be an appropriate degree of modesty in pushing economic policy advice to policymakers in a country that had delivered exceptional growth performance over several decades.

Management of China's International Reserves

In late September 2007, China formally established the China Investment Corporation (CIC) to manage a portion of its massive US\$1.5 trillion foreign exchange reserves. Many questions have been raised about the implications of CIC's management of cross-border assets (Truman 2007). Will the CIC be motivated by political considerations rather than conventional risk and rate of return?³¹ Because of its potentially large size and method of operation, could the CIC contribute to uncertainty and turmoil in international financial markets? These concerns led a leading economic official of the European Union to warn in September 2007 that the European Union was likely to take steps to restrict investments by sovereign wealth funds (SWFs) that are not transparent.

Although the CIC could become the world's largest SWF, it will at least initially be relatively small and will invest primarily within China. Indeed, the CIC is probably more accurately described as a holding company than an SWF. The latter typically invest entirely off shore. In contrast, the CIC will incorporate Central Huijin, which has existed for a number of years, the conduit through which the government has transferred foreign exchange reserves to a variety of domestic financial institutions as part of their recapitalization and restructuring. To date these injections amount to \$66.4 billion (see footnote 5), and it is widely anticipated that the government soon will inject \$40 billion into the restructuring of the Agricultural Bank of China and \$20 billion into the China Development Bank. Since the

31. Summers (2007) contrasts the investment motives of sovereigns and private investors and discusses the potential problems that the motives of sovereign wealth funds could generate.

initial funding of the CIC is only \$200 billion, these domestic investments will absorb about two-thirds of the CIC's resources.

In addition, the CIC will absorb China Jiayin Investment (Limited), which manages domestic assets, and will create a third arm responsible for international investments, both strategic and portfolio. Direct strategic investments will presumably be concentrated in energy, resources, and commodities. Some strategic investments may take the form of loans to Chinese domestic companies seeking to expand abroad. And the management of some if not most of the portfolio investments is likely to be outsourced.

The magnitude of these international investments is likely to be limited since there are no concrete plans to transfer additional funds from the state's official reserves to the CIC, and the ongoing flow of foreign exchange purchased by the central bank will continue to be added to state official reserves rather than to the CIC.

Those who do worry about the potential prospective size of the CIC argue that to limit potential economic and political conflicts with its trading partners, the CIC should reject the approach taken by many state-controlled investors in Asia and the Middle East of keeping information secret. The CIC should instead adopt the Norwegian model of full transparency and accountability.³² Full transparency, it is argued, will ensure both that political intentions are known and fully communicated and that financial and economic disturbances are minimized.

Others argue that transparency is only secondary and could even pose a threat to other priorities. Disclosing essential information—so the argument goes—about assets, investment strategy, or performance could sacrifice some control over how an SWF is administered. Furthermore, CIC management may be concerned that, despite the success of Norway's Government Pension Fund, full transparency could lead to inferior returns or greater volatility in domestic financial markets. Similar state-owned investment firms like Singapore's Government Investment Corporation (GIC) have made these kinds of arguments. Senior officials at GIC have maintained for years that "it is not in the nation's interest to detail our assets and their yearly returns" (Lee Kuan Yew 2001) and that "publishing this information would make it easier for would-be speculators to plan their attacks" (Lee Hsien Loong 2001).

In chapter 5, Edwin Truman examines the future accountability and transparency of the CIC. Expanding on his earlier work (Truman 2007), he presents the results of research on 32 SWFs of 28 countries by scoring them on their structure, governance, transparency and accountability, and be-

32. El-Erian (2007) argues that in encouraging transparency and disclosure for SWFs, politicians in industrial countries should focus on issues of governance, process, and risk management.

havior. The highest maximum score is 25 points, and the average score is just over 10 points, with Norway's SWF at the top (with 24 points) and two Abu Dhabi funds at the bottom (with a 0.5 score). On this metric, China's Central Huijin Investment Company scores substantially below the average for all funds. Given the actual and potential size of the new CIC, as well as China's growing weight in the international financial system, Truman suggests that the Chinese authorities should aim to place the CIC at the top league of SWFs. He explains that for China the basic question is what to do with reserves once they are there. He argues that the preferable approach to managing excess foreign reserves is to apply strict economic and financial criteria and to maximize return over a relevant time horizon, subject to risk management constraints. The rest of the world will hold China responsible for its actions to a greater extent than it would a country with much smaller cross-border assets, and the Chinese authorities, so Truman opines, should get used to it. His scoreboard for SWFs is based solely on publicly available information and is intended as a benchmark for a set of best practices. He counsels that now is the time for China to take the lead in helping to develop a set of best practices for SWFs.

Also in chapter 5, Mohamed El-Erian and Brad Setser provide comments and reactions to Truman's paper. While acknowledging that Truman's methodology for rating SWFs has brought a much needed rationality to the debate, El-Erian delves into why several SWFs get poor assessments on Truman's scoreboard yet generate very favorable perceptions for market participants that interact regularly with them. He observes that if Truman's methodology were applied to hedge funds and to private equity groups, they would be rated as low if not lower than the SWF complex; of course, hedge funds and private equity groups are owned by the private sector, while SWFs have governments behind them—a factor that results in greater scrutiny of SWFs. He notes that the behavior, investment savvy, and systemic impact of some SWFs—such as the Abu Dhabi Investment Authority, Singapore's GIC, and the Kuwait Investment Authority—have been observable for a long time. He regards their deployment of their patient capital as a stabilizing influence on the global economy—contrary to the low scores on the Truman rating scale. As such, El-Erian concludes that the ranking of SWFs in the Truman paper reflect more the limited access to information rather than the realities of the marketplace. He also suggests that the Group of Seven (G-7) debtor countries should be cautious in lecturing SWFs and in putting forward an excessively broad agenda for reforms on governance, investment process, and risk management. He prefers a more targeted approach to these subjects within a holistic approach that would also address other legitimate deficiencies in the international system—including questions of representation in multilateral fora.

For his part, Setser shares Truman's view that an expansion of SWFs calls for an increase in their transparency since, among other reasons, cit-

izens of countries with large cross-border assets should be able to assess how their money is being spent. He focuses on what the US data allow us to infer about the current composition of China's external portfolio and on how the creation of the CIC might change the composition of China's demand for US financial assets.

Setser reports that China currently has a large and concentrated bet on a relatively narrow segment of the US fixed-income market and that the case for including equities in China's external portfolio is very strong. The pace of Chinese asset growth is now so rapid that even a modest shift in Chinese demand for US equities could have a dramatic effect on the US market. He underlines that the current governance structure of the CIC is apt to magnify global concerns about the politicization of Chinese investment decisions, that there is a need for the CIC to coordinate with the People's Bank of China (so that the CIC's investment decisions do not undermine the central bank's exchange rate policy), and that the CIC's high cost of funding and its desire to avoid losses from renminbi appreciation could result in the CIC taking excessive risks.

Currency Manipulation and IMF Exchange Rate Surveillance

Another bone of contention is whether, as a member of the IMF, China has been living up to its obligation (as contained in Article IV, Section I of the Fund's charter) to ". . . avoid manipulating exchange rates or the international monetary system in order to avoid effective balance of payments adjustment or to gain unfair competitive advantage over other member countries," and similarly, whether the IMF itself is living up to its obligations to ". . . oversee the compliance of each member country with its obligations," and to ". . . exercise firm surveillance over the exchange rate policies of members."

Some observers have answered one or both those questions with a resounding "no." Bergsten (2005, 2007), Desmond Lachman (2007), Goldstein (2004, 2006a, 2006b, 2007a, 2007b), Goldstein and Mussa (2005), Mussa (2007), and Ernest Preeg (2003), among others, have argued that China's persistent, large-scale, one-way intervention in the exchange market since 2003—at the same time that China's global current account surplus was large and growing and its real effective exchange rate was depreciating—constitutes strong evidence of currency manipulation. Here, currency manipulation can be interpreted to mean persistent policy efforts either to push the real effective exchange rate away from its equilibrium or to prevent it from returning to equilibrium. Those same authors, along with Timothy Adams (2006), David Dodge (2006), Mervyn King (2005), and the IMF's Independent Evaluation Office (IEO 2007), among others, have also suggested that the IMF has been found wanting or worse in its implementation of exchange rate surveillance.

Some other economists—including Anderson (2006a, 2007c) and Frankel (2006)—regard the renminbi as misaligned (undervalued) but do not regard China’s exchange rate policy as meriting a “manipulation” finding. In its semiannual Reports to the US Congress on International Economic and Exchange Rate Policies, the US Treasury has become increasingly critical of China’s exchange rate policy but has declined to name China as a manipulator because it could not establish “intent” to manipulate.³³ In its recent consultation reports on China (see IMF 2004 versus IMF 2006a), the IMF has moved from criticizing China’s currency regime as insufficiently “flexible” to acknowledging that the renminbi is (also) “undervalued”; it has never, however, accused China of manipulating the value of the renminbi. This view is consistent with IMF Managing Director Rodrigo de Rato’s (2006) repeated statements that he does not think it would be appropriate for the Fund to serve as a global “umpire” for the exchange rate system. In June 2007 the Fund obtained agreement from the membership to revise its 1977 Principles for the Guidance of Members’ Exchange Rate Policies (IMF 2007a, 2007b), which the Fund felt was out-of-date and did not give it enough authority to be more activist on discouraging antisocial exchange rate policy; while the antimanipulation principle was maintained without alteration as a membership obligation, a new principle was added, recommending that members avoid exchange rate policies that result in “external instability.” This new principle was regarded as helpful because it is based on outcome not intent and because it would give the Fund the latitude to label a currency as “fundamentally misaligned” without going the full monty to manipulation.

While the ongoing debate on the consistency of China’s exchange rate policy with IMF surveillance guidelines has many facets, the opposing main lines of argument for the defense and the prosecution can be summarized as follows.

China’s exchange rate policy is being unfairly singled out for criticism. China is not the only country to have recorded large percentage or absolute dollar increases in reserves in recent years, or to have a large global current account surplus relative to its GDP, or to have had a depreciation in its real effective exchange rate (Keidel 2005). Analysis by the US Treasury (2005, appendix) shows that different single indicators produce different orderings of manipulated currencies. It is strange—as argued by Fan in his comment on this chapter—that the country accumulating surpluses is blamed as the manipulator, while the country accumulating deficits (the United States) is not. The international community ought to be concentrating instead on how to put some disciplines on excessive money creation by weak currency countries. The Fund’s charter permits

33. The IMF did name China as a currency manipulator in 1992–94; see Lardy (1994, 86–90), Frankel and Wei (2007), and Henning (2007).

members a wide choice of currency regimes, including fixed exchange rates, and defense of a fixed exchange rate can involve heavy exchange market intervention. A country that maintains the same parity over an extended period, as China did from October 1997 until July 2005—even resisting pressures to devalue during the Asian financial crisis—cannot be “manipulating” since it has not taken any active measures to obtain an unfair competitive advantage. Requiring China to undertake a large revaluation of the renminbi would risk social instability and would infringe unduly on China’s national sovereignty. The concept of currency manipulation itself is ill-defined and nonoperational since many government policies affect exchange rates and the intent of these policies cannot be identified clearly.³⁴ If a question arises on policy intent, the strong benefit of the doubt should go to the country. After having weighed the evidence, neither the IMF nor the US Treasury has found China guilty of currency manipulation.

The IMF was timely in its criticism of the inflexibility of the renminbi, and labeling China as a currency manipulator would only have discouraged reform. The IMF has no set of penalties (other than the extreme and unlikely one of expulsion from the Fund) for noncompliance with a member’s obligations.³⁵ No country has yet been found in violation of its Article IV obligations since the second amendment of the Fund’s Articles of Agreement in the early 1970s, and the requirement to prove intent under the 1977 guidelines on exchange rate surveillance would not have supported a more activist stance on China’s exchange rate policies. The term “manipulation” has a conspiratorial connotation that makes it unworkable for negotiations involving sovereign nations. The Fund means the Fund’s Executive Board, and there was no consensus among the Fund’s major shareholders for a more aggressive stance toward China’s exchange rate policy. The Fund should not seek to serve as global “umpire” for the exchange rate system because such a role would conflict with the Fund’s role as trusted advisor to its members.

Critics of China’s exchange rate policy and of Fund surveillance of that policy do not find such arguments persuasive.

China’s exchange rate policy has come under increasing international criticism because that policy is thwarting external adjustment, because it runs counter to China’s international obligations as a Fund member and because China is moving too slowly to change it. It is unprecedented for a country of China’s size to run a global current account imbalance (of either sign) of 11 percent or more of GDP. There is no other case of a systemically important country that meets all four of the following criteria: It

34. Crockett (2007) argues that the macroeconomic policy mix can affect the exchange rate—just as exchange market intervention can.

35. Eichengreen (2007) notes that the Fund has long had only limited leverage with surplus countries that do not borrow from the Fund.

has been intervening in the exchange market to the tune of roughly 10 percent of its GDP for several years running; its global current account surplus relative to GDP has almost quadrupled between 2002 and 2007; its real effective exchange rate by various measures has actually depreciated over this period (see footnote 3); and its domestic economy has been booming. Unlike major oil exporters, China's rapidly rising international reserves do not reflect the conversion of wealth from nonrenewable resources underground into financial assets above ground (Truman 2007). The IMF charter and guidelines do not prohibit exchange market intervention, but they do discourage prolonged, large-scale, one-way intervention because that particular kind of intervention is symptomatic of a disequilibrium exchange rate, which is costly both to the home country and its trading partners. Depending on what is happening to a country's balance of payments, a misalignment of the real exchange rate can occur just as easily from nonmovement as from excessive movement of the nominal exchange rate; similarly, a given level of the nominal exchange rate may be fine when a country's global current account is in deficit or in small surplus but can be problematic when there is a persistent, very large surplus. Blocking needed real exchange rate movement by intervening to keep the nominal rate fixed or quasi-fixed can therefore legitimately be classified as currency manipulation (Goldstein 2004, 2006c, 2007a). Accepting the argument that currency manipulation should be permitted for domestic employment reasons would make it impossible to have meaningful international guidelines discouraging competitive depreciation. If one accepted the Fund's (or the US Treasury's) standard of proof for "intent" to manipulate, there could never be a violation, short of a manipulation "confession" by the country. Judging whether China's exchange rate policy qualifies as manipulation is not a close call that involves giving the benefit of the doubt to the country. It is as clear a case of manipulation as arises outside of textbooks.

The Fund has done serious damage to its reputation both by not identifying earlier the growing undervaluation of the renminbi and by refusing to enforce its regulatory responsibility for discouraging currency manipulation.³⁶ Had Fund management and staff been warning the Chinese authorities, say since 2004, that their persistent, large exchange intervention was thwarting external adjustment and was in danger of breaching China's obligations, the Fund would have enhanced its credibility inside and outside China as evidence mounted of the internal and external costs of an inflexible and increasingly undervalued renminbi. Major shareholders of the Fund could perhaps have been persuaded to support this policy line if Fund management and staff had made the effort. IMF Manag-

36. In recent years, the Fund's forecasts for China's global current account surplus have also been systematically too low—seemingly damaging the Fund's diagnosis and policy prescription for exchange rate policy.

ing Director de Rato gave the game away early on by characterizing the issue not as potential manipulation violation but instead solely as a difference of opinion on the optimal speed of renminbi appreciation.

Through its rulings, the WTO has helped to define what is and what is not internationally acceptable trade policy; by rejecting its regulatory role, the Fund can claim no such clarification on exchange rate policy. “WTO compatibility” means something; no one speaks of “IMF compatibility” because no one knows what it is. A finding of manipulation by the Fund would have exerted more pressure for a change in Chinese exchange rate policy than has a difference of opinion between China and the Fund on the optimal speed of adjustment to greater exchange rate flexibility—both because countries are sensitive to alleged breaches of their international obligations and because such a finding from the Fund could aid chances of success for cases taken to the WTO using exchange rate–related reasons (e.g., Article XV frustration cases). There was nothing missing in the 1977 guidelines for exchange rate surveillance that would have prevented the Fund from enforcing its principle against currency manipulation. The June 2007 revision of these guidelines has added a new principle on avoiding “external instability,” but unlike the antimanipulation guideline, the new guideline is only a recommendation—not a membership obligation—and hence, may have little effect. One could easily substitute another (more neutral-sounding) term for manipulation—say, destabilizing exchange market intervention—without changing the substance of Fund surveillance.

Last but not least, the critics assert that by rejecting its regulatory role as global umpire for exchange rates and by not enforcing its guidelines on exchange rate surveillance, the Fund has set the stage for national legislatures (e.g., the US Congress) to step in to fill the breach, with a higher consequent risk of tit-for-tat protectionist trade policy. Perceived “fairness” in exchange rate policy is a sine qua non for a win-win “grand bargain” between the industrial countries and the emerging economies on market access and power-sharing in the governance of the international economy—but this perceived fairness will not take root without the Fund serving as an unbiased, competent global umpire (Goldstein 2006a).

In chapter 8, Mussa appraises Fund surveillance toward China’s exchange rate policies. He contrasts the good job that the Fund has done in recognizing and addressing the problem of global payments imbalances (including the correction of the large US global current account deficit) with the “catastrophic failure” on surveillance of China’s exchange rate policies. He emphasizes that since 2002, the Chinese authorities have used massive, largely sterilized intervention in exchange markets to resist substantial and warranted appreciation of the renminbi—while China’s global current account surplus has exploded. He argues that the real exchange rate of the renminbi has become increasingly undervalued and is

being kept in that position by Chinese policies that are intended to resist significant renminbi appreciation.

Mussa maintains that before the summer of 2006, IMF reports spoke only vaguely about the desirability of greater flexibility of the renminbi—without stressing the need for major appreciation—and that the Fund’s managing director (de Rato) denied the Fund’s regulatory role over members’ exchange rate policy and failed to point out forcefully to the Chinese authorities their general and specific obligations on exchange rate policy. His bottom line verdict is that the Fund’s application of surveillance to China’s errant exchange rate policy qualifies as “. . . Gross misfeasance, malfeasance, and nonfeasance by the Managing Director and more generally by the IMF.”

In making his case, Mussa explains that official intervention in the exchange market is always carried out for “balance of payments purposes,” that China’s holding of foreign exchange reserves has gone beyond any reasonable standard of prudence, that China has been the only major player in the world economy that is making a large and negative contribution to resolving global payments imbalances, that China’s intervention has been too prolonged and massive to suggest anything but a consistent effort to resist renminbi appreciation, and that failure by the Fund to enforce its regulatory role on exchange rate policy only serves to prompt others—including national legislatures—to seek redress through other channels.

In his comment on chapter 8, Steven Dunaway responds to Mussa’s criticism of IMF surveillance toward China. He notes that a significant part of the Fund’s surveillance work—especially on a sensitive issue like exchange rate policy—is done out of the public eye and must be done that way in order for the Fund to maintain its role as a trusted policy advisor. He goes on to argue that the Fund has been pressing China to increase the flexibility of the renminbi since 1999 and that the Fund’s managing director, in meetings with Premier Wen Jiabao, stressed the need for greater flexibility and appreciation of the renminbi. Dunaway saw the 2004–06 Fund staff reports for China as conveying a clear picture of evolving IMF staff views on China’s exchange rate policy. The main difference between the IMF and the Chinese authorities was on the speed of implementation of policies for rebalancing the Chinese economy, including removing the distortions associated with the prevailing exchange rate regime.

Summers, in commenting on Fund surveillance in chapter 9, is—like Mussa—highly critical of the Fund’s performance. He concludes that if anything, Mussa’s indictment of their surveillance toward Chinese exchange rate policy probably “understates” the case against the Fund. He characterizes the job that the Fund had done on this matter over the past four years as “. . . indefensible” and argues that the Fund’s “culture” on exchange rate surveillance clearly needs to change.

Congressional Currency Bills

Increasingly frustrated with the uninterrupted rise in China's bilateral (with the United States) and global trade surpluses and with the failure of bilateral negotiations to produce a faster and larger appreciation in the renminbi, the US Congress had signaled its intention to pass new currency laws that would penalize any US trading partners that have "manipulated" and/or "fundamentally misaligned" currencies. These bills would replace the Omnibus Trade and Competitiveness Act of 1988 with new legislation that both has more "teeth" to induce compliance and limits the discretion of the US Treasury to avoid a designation of manipulation by arguing that there is insufficient evidence to prove intent to manipulate.

The first such currency bill to gain attention was the bill introduced by Senators Charles Schumer (D-NY) and Lindsey Graham (R-SC) in the US Senate in the fall of 2003; this was a China-specific bill that would have authorized a 27.5 percent tariff on imports from China if negotiations were unsuccessful in eliminating the undervaluation of the renminbi. While 67 senators expressed their intention to vote for the Schumer-Graham bill, its sponsors never brought their bill to a formal vote—delaying a vote several times to see if new bilateral negotiations with China would produce evidence of greater progress and finally, in early 2007, agreeing to join with Senators Max Baucus (D-MT) and Charles Grassley (R-IA) in sponsoring new legislation. Since then, three prominent currency bills have been introduced. The Senate Finance Committee bill (S1607) is sponsored by Senators Schumer, Grassley, Graham, and Baucus (hereafter, SGGB bill), and the Senate Banking Committee bill (S1677) is sponsored by Senators Christopher Dodd (D-CT) and Richard Shelby (R-AL). There is also a House bill (HR 2942), sponsored by Representatives Duncan Hunter (R-CA) and Timothy Ryan (D-OH). The SGGB bill was voted out of the Senate Finance Committee by an overwhelming 20-1 vote; similarly, the Dodd-Shelby bill was endorsed by the Senate Banking Committee by a 17-3 margin. In March 2007, testifying before the Senate Finance Committee, Senator Schumer predicted that the SGGB bill would garner bipartisan support in this session and would be "veto proof."

In chapter 6 of this volume, Gary Clyde Hufbauer and Claire Brunel lay out and discuss the main features of these three bills. Here, it is sufficient to note that

- the US Treasury would continue to provide biannual reports to Congress, identifying countries with manipulated or fundamentally misaligned currencies;
- the criteria for judging a currency to be manipulated would draw heavily on the pointers identified in the 1977 IMF guidelines on exchange rate surveillance (and in the US 1988 Omnibus Act), with the

exceptions that proof of intent is not required and that the US bilateral trade imbalance with that country is an additional indicator;

- where (e.g., SGGB bill) fundamental misalignment replaces manipulation, a distinction is made between misalignment attributable to a list of specific government policy actions (like those used to identify manipulation) and misalignment attributable to other causes (presumably including market failure), with penalties much greater for the former than the latter;
- penalties for noncompliance are usually graduated (as the period of noncompliance get longer)—for example, these penalties may begin with negotiations with the US Treasury and a call on the IMF to initiate a “special consultation” with the country; later on (e.g., after 30 or 180 days), the US executive director at the Fund would be asked to oppose any rule change that benefits the country (e.g., an increase in its quota or any IMF financing), the country would not be able to qualify for “market economy” status, and the country’s goods would not be eligible for purchase by the US federal government; further down the road (e.g., after 270 or 360 days), various trade policy measures would kick in (e.g., the Treasury could file a WTO Article XV frustration case, or a misaligned exchange rate would be actionable as a countervailing subsidy, and/or the United States would initiate a WTO dispute settlement case and would consider remedial intervention); and
- there is usually a presidential waiver of the penalties in cases of vital economic and security interests, although some bills (e.g., SGGB bill) provide for a congressional override.

Not surprisingly, these bills have provoked a heated debate about their desirability and likely effectiveness both within the United States and abroad.

Those opposing these bills offer the following arguments. Such national currency legislation will usurp the authority of both the IMF and the US Treasury to deal more effectively and less confrontationally with international disputes involving exchange rate policy. The IMF has just revised and strengthened its guidelines on exchange rate surveillance, and those new guidelines should be given a chance to work. Similarly, the Strategic Economic Dialogue (SED) with China is making progress the old fashioned way, through consultation and discussion. The US Congress has neither the objectivity nor the expertise to render sound judgments on other countries’ exchange rate policies. Whatever their original intent, these currency bills will ultimately become instruments of protectionism—much like the US experience with antidumping legislation. Econometric analysis by Frankel and Wei (2007) finds that “political” variables like the bilateral trade imbalance and the US unemployment rate (in presidential election

years) have played as important a role in earlier Treasury manipulation findings as have legitimate economic variables, like the global current account imbalance, the estimated degree of currency misalignment, and the size of changes in international reserves. Although the new currency bills (unlike the original Schumer-Graham bill) may be technically “WTO compatible,” the odds that the United States will actually win these cases before a WTO panel is low because the bills pursue arguments of dubious legal merit. Inserting currency matters into the WTO adjudication process would also risk “politicizing” the WTO dispute settlement process and weakening support for it around the world.

Moreover, these new congressional currency bills will not be effective in producing a faster and larger appreciation of the renminbi or in reducing the US global and bilateral trade deficits. Those policymakers in China who favor bolder currency reform will find their influence weakened by US legislation because reform will then look like capitulation to the demands of the US Congress. The IMF will likewise find it harder to enforce its new currency guidelines because it will look as if it is acting as a surrogate for the US government rather than as an objective international umpire. These bills contain no measures to improve the US saving-investment imbalance. They also run the risk of igniting trade policy retaliation and copycat currency bills abroad, thereby producing a completely unworkable and inconsistent network of exchange rate policy guidelines.

Those defending these currency bills offer a different perspective. The currency oversight process is badly broken—both internationally and in the United States. The IMF has not sent even one special consultation to investigate exchange rate policy abuses in 20 years—much less made a finding of currency manipulation. The Fund has been asleep at the wheel in identifying and discouraging currency manipulation in China. In a similar vein, the US Treasury has not enforced the currency manipulation provisions of the 1988 Omnibus Act in the face of overwhelming evidence that China has been thwarting external adjustment. The quiet bilateral diplomacy championed by Treasury Secretaries John Snow and Henry Paulson has produced precious little progress on the renminbi—especially when measured, as it should be, in terms of real effective exchange rates—and the currency deliverables from the SED have also been meager to date. Yes, if both—or even either—the Fund and the US Treasury were exercising their currency oversight responsibly, congressional action would be unnecessary. But even a “third best” policy response to a serious problem is better than no response at all. Congress is not usurping anything. The US constitution gives Congress the authority over currency matters, and Congress has seen fit to delegate that authority to the executive branch (the Treasury)—but such delegation is conditional on the Treasury performing well (Henning 2007). If currency oversight is neglected, it is perfectly reasonable for Congress to reassert its authority in this area—at least temporarily—until the Fund and the Treasury show signs of better perfor-

mance. It is not “protectionist” for Congress to complain that another country (China) is not taking seriously its obligations on exchange rate policy as a member of the Fund, any more than it is protectionist for the United States to complain about China’s enforcement of intellectual property rights. Condoning currency manipulation and allowing a “free for all” in the global exchange rate system is not the friend of open markets.

Defenders of these bills might also argue that it remains to be seen whether congressional currency bills will be effective in inducing faster appreciation of the renminbi. The US government does not refrain from criticizing publicly China’s human rights abuses for fear it will slow reform; what is different about exchange rate policy? Congressional currency bills are part of the negotiation on exchange rate policy, and they may alter (in the desired direction) the cost-benefit calculations in Beijing about how fast to move on renminbi appreciation.

Hufbauer and Brunel explain that the three leading currency bills have five features in common: They would eliminate “intent” in determining whether or not manipulation or misalignment has taken place; they invoke unilateral and multilateral trade remedies if the offending country does not act to correct the manipulation/misalignment; they instruct the US Treasury to make a forceful case in the IMF; they set out deadlines for action, ranging up to 360 days; and some of the bills contain waivers that delay or override US remedies.

Hufbauer and Brunel reach four main conclusions. First, as stand-alone measures, congressional currency bills are unlikely to have much effect in persuading Beijing to implement a faster appreciation of the renminbi; however, drawing on the literature on economic sanctions, multilateral pressure—of which such bills may be a part, along with pressure from the IMF and the European Union—could be more effective in inducing action in the right direction. Second, trade remedy measures, sought in the WTO or under US laws, are best justified as levers to induce more forceful IMF action and to focus Beijing’s attention on currency issues. Third, if an enlarged congressional voice on currency issues is heard only in exceptional circumstances, it may be helpful; on the other hand, if congressional committees continually pressure foreign countries over matters like the size of US bilateral trade imbalances, they could severely disrupt the international system. And fourth, since congressional currency legislation could spawn copycat legislation abroad, Congress should limit trade measures to situations where the foreign country is a major commercial player, is manipulating its currency via large-scale, persistent, one-way intervention as determined by the IMF, and is both running a large global current account surplus and has accumulated international reserves beyond an adequate level for prudential purposes.

In his comment on chapter 6, Stephen Roach emphasizes that China’s large bilateral trade surplus with the United States reflects the fact that China produces and assembles a broad set of products that satisfy US con-

sumers. Eliminating China's bilateral surplus would still have left the United States with over a \$600 billion global current account deficit in 2006; putting pressure on a bilateral exchange rate will not solve a multi-lateral trade deficit.

Roach argues that the root cause of the large US external imbalance is the extraordinary lack of US domestic saving, and this saving deficit must be addressed if the United States is to make genuine progress—beginning with the US government. He stresses that the unwillingness of the US body politic to embark on the heavy lifting of education reform and other human capital investments leads to China bashing. He worries that the US Congress has lost sight of what he regards as the true objective of globalization, namely, “. . . to trust in economic partners to act out of collective interests in making the world a better and more prosperous place.”

The conference's wrap-up panelists also comment on issues related to these congressional currency bills (see chapter 9). Fan acknowledges that the size of China's global current account surplus is unprecedented, but he thinks it is insufficiently appreciated that several other features of China's current situation are also unprecedented, including the size and composition of China's labor force, the role that foreign direct investment and multinational companies play in China's foreign trade, and the prolonged US global current account deficit in a global monetary system based on the dollar standard. In relative terms, China's external imbalance is not out of line with those of its Asian neighbors.

Crockett points out that it is very difficult to define exchange rate manipulation because so many policies affect exchange rates. While he sees dangers in an incremental approach to eliminating the misalignment of the renminbi, he feels the concept of incrementalism is so deeply ingrained in the Chinese leadership's approach to reform and has produced such positive overall results in the past that it is very unlikely that China would opt for a large, sudden renminbi revaluation.

Summers concludes that any approach that seeks to blame the Chinese exchange rate for the concerns of US middle-class workers is based on flawed economic judgment. That said, it is perfectly appropriate to be deeply concerned about the adverse effects of China's exchange rate regime on global imbalances and global financial conditions. If the US Congress is to become more activist on exchange rate policies of other economies, any legislation should take the form of a sense-of-the-Congress resolution urging more aggressive engagement on China's exchange rate policies through the IMF.

Bergsten offers a different perspective. He agrees that China's integration into the world economy presents a variety of unprecedented challenges. He does not think it would be feasible to engineer a substantial reduction in the US global current account deficit without also achieving a sizeable reduction in China's global current account surplus. He argues that China is clearly violating key IMF rules of the game on exchange rate

policy, and this combination of a large disequilibrium with “unfair” policies is motivating congressional proposals. He does not think any of the major currency bills now before the US Congress could properly be labeled as “protectionist.” If neither China nor the IMF acted in a timely way to correct the large undervaluation of the renminbi, he would be in favor of a more activist WTO in helping to rein in unfair exchange rate policies. While this approach has pitfalls, it would be better in the end than doing nothing.

Policy Implications and Options

The preceding discussion illustrates that multiple considerations are bearing on how China should conduct its exchange rate policy in the period ahead. In order to clarify the options available, it may be useful to frame the choice in terms of two competing strategies. The first we call “stay the course.” The second we call the “three-stage approach.”

The stay-the-course strategy begins from the proposition that no one should care much about exchange rate policy for its own sake. It is basically a facilitating mechanism for more fundamental objectives. From this bottom-line perspective, China’s existing exchange rate policy could be regarded by its supporters as quite successful. After all, the average annual rate of growth since the July 2005 reform has been above 10 percent. Core inflation has been low. The 2007 spike in the CPI is mainly attributable to an excess demand for pork and a few other food products and should prove temporary. Bank credit growth, after running way ahead of targets in 2003, the first quarter of 2004, and the first half of 2006, is back in a reasonable range. The listing of four large state-owned commercial banks and sale of minority stakes to foreign strategic investors has gone well. The investment share of GDP has leveled off after several years of rapid increase. Yes, there are pockets of overheating, but the recent series of increases in both interest rates and reserve requirements, along with the continuation of heavy sterilization and targeted window guidance, should be able to take care of them. The stock of outstanding sterilization instruments relative to GDP has, as indicated earlier, grown enormously in recent years but is still low relative to the shares in some other Asian economies.

Contrary to the predictions of many outside analysts, it has been possible to implement a gradual appreciation of the renminbi vis-à-vis the dollar and still conduct a reasonably independent monetary policy without being overwhelmed by foreign capital inflows; when those inflows have gotten large, it seems to be more because of the attractions of the booming equity and property markets than because of strong speculation on further renminbi appreciation. Some progress has meanwhile been made, both in liberalizing further the capital outflow regime and strengthening

the structure of the foreign exchange market. Yes, external criticism of China's mushrooming global current account surplus and of the scant appreciation of the renminbi's real effective exchange rate is on the rise. But the George W. Bush administration is on record as opposing new currency bills cum trade sanctions in the US Congress, preferring instead to stick with negotiations within the SED framework. The IMF has a revised set of guidelines for exchange rate surveillance, but the new managing director, Dominique Strauss-Kahn, may not wish to begin his term with a confrontation on China's exchange rate policy when he is simultaneously trying to garner support for IMF reform in other areas.

Seen from this perspective, some would say that the sensible strategy is to make only minor modifications to China's existing exchange rate policy. The strategy going forward would then contain the following key elements: The renminbi would continue to be allowed to appreciate at a moderate but controlled pace against the dollar—say 5 to 8 percent a year. The scale of China's exchange market intervention would control the pace of renminbi appreciation. Coming on top of the 15 percent nominal appreciation already achieved between July 2005 and January 2008, this would produce a nontrivial cumulative appreciation vis-à-vis the dollar over the next few years—presumably enough to keep foreign criticism at bay. Several substitutes for larger exchange rate appreciation, such as reduced value-added tax (VAT) rebates and less favorable tax and tariff treatment for exporters, would continue to be employed to put upward pressure on export prices and/or to reduce the profitability of exporting. Also the central government would lean harder on both banks and local authorities not to finance or expand production in industries with clear excess capacity. More foreign buying trips could be arranged to publicize Chinese purchases of big-ticket US exports (e.g., Boeing aircraft). If China's global current account surplus and reserve accumulation prove more resistant to these measures than expected, restrictions on capital outflows can be liberalized somewhat further. The daily fluctuation band for the renminbi vis-à-vis the dollar, which was increased from 0.3 to 0.5 percent in May 2007, could also be increased to, say, 0.8 percent, so as to increase uncertainty for speculators betting on renminbi appreciation.

If all this is doable, what then are the objections to the stay-the-course option? The short answer is that renminbi undervaluation and China's external imbalance are much bigger than they were, say, four years ago, and the size and duration of the problem mean that small and gradual policy responses are not likely to be effective.³⁷

Recall that in 2003, China's global current account surplus was about 3 percent of GDP, and the undervaluation of the renminbi was probably on

37. On the same day that China's new currency regime was announced, Goldstein and Lardy (2005b) argued that the size of the revaluation was likely way too small to achieve any of the authorities' objectives.

the order of 15 to 25 percent. At that point, it would probably have been possible to eliminate China's entire current account imbalance—albeit not also its capital account surplus—with a 15 percent step revaluation of the renminbi, without doing undue harm to the domestic economy; indeed, in 2003 we recommended (Goldstein and Lardy 2003b) such action as the first stage of what we called “two-stage currency reform,” where the second stage entailed floating of the renminbi and a gradual lifting of capital account restrictions once China's financial sector was on a firmer footing. In 2007 China's global current account surplus was 11 percent of GDP, and renminbi undervaluation is much larger (conservatively, at least 30 to 40 percent). No longer can the exchange rate disequilibrium be eliminated in one step without a large contractionary impact on the domestic economy. And with such a large difference between the actual and equilibrium exchange rates, any “staged” approach to renminbi appreciation brings with it the challenge of coping with a “one-way bet” for speculators.

Consider several other features of the stay-the-course strategy.

First, tax and tariff substitutes for renminbi appreciation are not likely to have much impact. Reductions in the VAT rebate rate on exports cannot be expected to have a major effect on the export performance of firms because the magnitude of VAT rebates is small relative to the value of exports and, unlike appreciation, reducing rebate rates does nothing to make imported goods cheaper in China. In 2006, for example, VAT rebates on export goods were only 4.7 percent of the value of exports.³⁸ So if the government cancelled VAT rebates entirely, it would have an effect on the trade balance similar to an appreciation of the renminbi of slightly more than 2 percent. In practice, the scope of adjustment of VAT rebate rates is limited. For example, in the most comprehensive adjustment, which was announced in June and took effect July 1, 2007, the government eliminated rebates for 553 products and reduced the rate of rebate on another 2,268 products. But combined, these account for only 37 percent of all products.

The effect of adjustments in the export-processing regime likely will be even less significant than the adjustment of VAT rebate rates. On July 23, 2007 the authorities added 1,850 products to the “restricted list” for import processing. That means that starting August 1, firms importing parts and components to be assembled into exports could no longer import these items free of both import duties and VAT. Rather, firms now have to deposit with the government an amount equal to half of the import and VAT duties, with these amounts to be refunded when the related final goods are exported. The government estimated that this measure would increase costs to export-processing firms by RMB600 million (Shi Lu 2007). But this was extremely unlikely to dampen the growth of processed exports since

38. Total rebates were RMB428.49 billion, of which RMB61.3 billion was payment covering arrears. RMB367.19 billion was 4.7 percent of the value of exports in 2006.

it represents only 2 percent of the value of processed exports affected by the new restrictions and less than 0.1 percent of all processed exports.

Second, gradual appreciation of the renminbi vis-à-vis the US dollar may do little to produce much of an appreciation in China's real effective exchange rate, and it is the latter that matters for China's competitiveness and for engineering a reduction in China's global surplus via traditional relative-price channels.

Despite announcements at the time that China unveiled its new currency regime that henceforth the renminbi would be managed against a "basket" of major currencies (rather than the US dollar alone), studies show that the renminbi movements continue to be dominated by movements in the dollar (Frankel and Wei 2007). But if the US dollar declines further over the next several years, the renminbi will, as it has during the 2002–07 period, show much less appreciation in real effective terms. As noted earlier, whereas by January 2008 the renminbi has appreciated by 15 percent relative to the dollar since June 2005, the renminbi's has appreciated in real effective terms by only 8 percent. Betting against a dollar decline over the next few years seems a long shot. The global US current account deficit, while no longer growing as a ratio to US GDP, is expected to remain at 5 to 6 percent of GDP over the next few years (Cline 2007). Also, the weak US housing market and consensus projections of somewhat weaker GDP growth in 2008 suggest that relative interest rate movements are apt to be putting downward pressure on the dollar. If, say, the dollar declines on a real effective basis by 10 percent over the next two years, the real effective appreciation of the renminbi under a stay-the-course policy may be too small to make much of a dent in China's huge external surplus. If the dollar decline is more pronounced, this conclusion is reinforced.

Third, with US interest rates falling while Chinese rates are rising, the interest rate differential is widening in favor of renminbi-denominated assets, which—combined with a large gap between the actual and equilibrium values of the renminbi—is likely to lead in the period ahead to larger capital inflows. Small increases in the daily fluctuation band of the renminbi—or even marked differences in the monthly rate of renminbi appreciation—are not apt to offset this increasing incentive for capital inflows. Foreign investors who can make a good guess about the trend rate of appreciation will wait out short-term volatility. By the same token, even if restrictions on capital outflows are eased further, Chinese residents may reason that (with the renminbi expected to appreciate and with the Shanghai stock market outperforming many foreign markets over the past few years) this is not a good time to purchase foreign rather than domestic assets.

Fourth, if monthly intervention in the exchange market continues at anywhere near the \$40 billion monthly rate in 2007, the sterilization task will become harder over time, and the burden placed on the banking system will grow. Recall that sterilization involves not only selling new steriliza-

tion bills/bonds to the banks to mop up much of the new reserve accumulation but also rolling over the existing stock of such instruments. Changing the mix among sterilization tools from bill/bond sales to increases in banks' reserve requirements does not really solve the problem because the low interest rate paid on reserves held at the central bank acts as a "tax" on the banks in much the same way as does the low interest rate on sterilization bills/bonds. As indicated earlier, this tax on banks due to sterilization operations is getting larger over time and is already a significant drain on their profitability. Banks' profitability (via interest rate margins) will also be squeezed over time by the increasing availability of alternatives to bank deposits and to bank loans for China's savers and borrowers. If bank profitability gets too low, more costly public-sector bailouts of the banks will be required.

Fifth, if exchange market intervention and sterilization continue at high levels, the Chinese authorities will continue to foster a monetary disequilibrium that will perpetuate the large external imbalance. As Mussa argues, the demand for base money is growing briskly in China, and the supply of base money has to grow briskly to accommodate that demand. But if the central bank's large-scale sterilization operations push the growth of net domestic assets to negative, then Chinese residents will reduce their expenditure and borrow money from abroad to satisfy the growing demand for base money—generating the very current account surplus and net capital inflow that the authorities claim they wish to reduce. To correct that monetary disequilibrium, the amount of sterilized, exchange market intervention has to be reduced. The relevant question is not whether sterilization (in isolation) can be continued indefinitely but rather whether large-scale sterilization can be continued at the same time that China is making significant progress in reducing its huge external imbalance.

Sixth, if the real exchange rate of the renminbi does not appreciate very much (i.e., the renminbi remains highly undervalued), it will be very difficult to reduce investment in tradable-goods industries with a tendency toward excess capacity since such industries will then have an export safety valve to dispose of their excess domestic production and to cushion what would otherwise be a steeper fall in their profits. And other (nonexchange rate) approaches to reducing capacity in excess supply industries do not seem to be making much headway. Anderson (2007c) notes that Chinese steel production is still outpacing domestic demand for steel by a wide margin. Trying to make real progress toward achieving domestic consumption-led economic growth, while there is a large undervaluation of the real exchange rate, is like pushing a very large boulder uphill.

And seventh, foreign pressure for China to move faster on renminbi appreciation appears to be building. In 2003 US Treasury Secretary John Snow could offer intensified bilateral negotiations and quiet diplomacy as a preferred approach to encouraging China to accelerate its currency reform. Similarly, in 2003–04 US senators contemplating the introduction of

currency bills could be persuaded to hold their fire on the argument that China was on the verge of significant currency reform and that perhaps China's growing external surplus would prove temporary. In 2003 the Republicans held a majority in both the Senate and the House. Now, after three meetings of the SED, pleas for more patience are harder to sell because the deliverables on renminbi appreciation from the earlier approach have been modest. We are also not so far away from the 2008 US presidential election, in which states that have been most affected by competition from China (e.g., Ohio) could play a pivotal role in the outcome. Looking across the Atlantic, in 2003 the average value of the euro-dollar exchange rate was \$1.13; today, the euro is above \$1.40. If the euro area is not to suffer an excessive deterioration in its competitiveness, some other currencies will need to appreciate faster than the euro; the renminbi could be a leading candidate for that role. France also has a new president who has already expressed a keen interest in the external adjustment problem and has called specifically for a faster pace of renminbi appreciation. In Asia, as noted earlier, several of China's neighbors have permitted their own real exchange rates to appreciate significantly (20 percent or more on a trade-weighted basis) over the past four to five years; they may start asking, if we have already made our contribution to the global payments problem, why has not China done more? And perhaps the new managing director of the Fund, Dominique Strauss-Kahn, will reason that if he is to solve the Fund's identity crisis and establish some credibility for the Fund's new guidelines on exchange rate surveillance, he will not be able to avoid having the Fund label the renminbi as at least "fundamentally misaligned" if not "manipulated."

If the stay-the-course strategy does not look so promising, what is the relevant alternative? In our view, a bolder approach is called for that would permit China to catch up in correcting its very large external disequilibria, while still keeping a lid on domestic social pressures.³⁹ We label this the "three-stage approach" to currency reform. It would have the following broad outlines.

In stage one, to begin immediately, China would undertake a 15 percent revaluation/appreciation of the renminbi (from its existing level). This rise in the renminbi could be implemented either by a step revaluation or by allowing the exchange rate to appreciate by that amount in a relatively short period. The daily fluctuation limit on the renminbi with respect to the major currencies would also be increased to 1 or 1.5 percent. The Chinese authorities would accompany these exchange rate moves with an ex-

39. Prasad (2007, 3) also argues that now is the time for China to abandon its incremental reform approach in favor of something bolder: "One key principle...is to recognize that there are inherent limits to the incremental reform strategy that has worked well in the past. At a certain level of development and complexity of an economy, the connections among different reforms become difficult to ignore."

pansion and redirection of government expenditure aimed at existing weaknesses in China's social safety net (i.e., health, education, and pension systems). A package of trade adjustment assistance would be introduced to help cushion the impact of the initial renminbi revaluation on China's traditional (low-margin) export industries. Existing restrictions on capital outflows would be retained or liberalized only modestly. China would drop its insistence that the renminbi exchange rate is solely a matter of national sovereignty and would work with the IMF on the design and execution of the three-stage approach.

In stage two, the government would allow the renminbi to continue to float upward over the next several years, albeit at a gradual pace, say, 6 to 8 percent a year.⁴⁰ Limits on foreign ownership of China's banks would be reduced in an effort to improve credit allocation. Interest rate liberalization would continue. Debate within China would accelerate on greater central bank independence and on the merits of an inflation targeting approach to monetary policy (Goodfriend and Prasad 2006). Restrictions on capital inflows and outflows would continue to be liberalized but at a gradual pace.

Finally in stage three, say, four to six years down the road, intervention in the exchange market, along with sterilization operations, would be reduced still further, and the daily fluctuation limit on the renminbi would be dropped—so that the renminbi became essentially “floating.” Monetary policy would continue to evolve toward an inflation targeting framework. Depending on how much progress had been made on bank reform, restrictions on capital flows could be liberalized much more substantially.

In our view, such a three-stage approach to renminbi reform would offer advantages over the stay-the-course option.

The immediate 15 percent revaluation/appreciation of the renminbi would represent a credible “down payment” on removing the large existing undervaluation of the renminbi. It would eliminate the need to play around with minor substitutes (e.g., reductions of VAT rebates for exporters) for exchange rate action. It would push the renminbi's real effective exchange rate in the right direction and provide some immediate offset in case of a further depreciation of the dollar. Since the initial revaluation would not be so large, and since it would be accompanied by both an expansion/redirection of government expenditures and introduction of a trade adjustment assistance program, the contractionary effects of revaluation on the economy—as well as income losses in traditional export industries—should be manageable, especially in view of China's relatively high growth rate. Increased expenditure on the social safety net would also reduce the need for such high precautionary saving on the part of households. The immediate 15 percent revaluation would also reduce

40. This pace of appreciation would have to be adjusted upward if China continued to achieve rapid productivity growth in export industries, a phenomenon discussed earlier.

the expected gain from speculating on the future appreciation of the renminbi, since the gap between the actual and equilibrium rates would be smaller than before. The immediate 15 percent “down payment,” along with the agreement to work with the IMF in implementing this currency reform, should reduce foreign criticism of China’s slow pace of reform—particularly in, but not limited to, the US Congress—and it should lessen the risk of protectionist trade policies being adopted at China’s expense. The increase in the daily fluctuation limit for the renminbi—if utilized—would permit greater flexibility of the renminbi and provide some increased room for maneuver in the independence of monetary policy—maneuver that would also be enhanced by stopping well short of the elimination of existing restrictions on capital inflows. The greater independence of monetary policy would in turn allow the central bank to act more preemptively in its interest rate policy decisions.

The reduction in both exchange market intervention and sterilization operations in stages two and three would not only further push the real effective exchange rate of the renminbi in the right direction but also help to correct any monetary disequilibrium and reduce the strains on the banking sector. By liberalizing the capital outflow regime only slowly, there would be a degree of “insurance” against large-scale capital flight if a large, unexpected negative shock occurred during the currency reform process. The increase in foreign ownership limits on China’s banks would provide a potential longer-term increase in bank profitability to help offset any transitional strains associated with remaining sterilization operations. Discussions of greater central bank independence and of the merits of an inflation targeting framework would anticipate the need for a new nominal anchor, as the fixity of China’s exchange rate continued to decline.

Finally, in stage three, China should be close to eliminating any remaining undervaluation of the renminbi. It should also be closer to four of its longer-term goals: a truly market-determined exchange rate, an effective framework for independent monetary policy, a more open capital account, and a more harmonious relationship with its trading partners.

References

- Adams, Timothy D. 2006. The IMF: Back to Basics. In *Reforming the IMF for the 21st Century*, ed., Edwin Truman. Washington: Institute for International Economics.
- Ahearne, Alan, William Cline, Kyung Tae Lee, Yung Chul Park, Jean Pisani-Ferry, and John Williamson. 2007. *Global Imbalances: Time for Action*. Policy Briefs in International Economics 07-4 (March). Washington: Peterson Institute for International Economics.
- Anderlini, Jamil. 2007. “China’s Strong Earnings Growth Inflated by Stock Market Bull Run,” *Financial Times*, August 28, 13.
- Anderson, Jonathan. 2004. *China: Reminders on the RMB*. UBS Investment Research, Asian Economic Comment (November 5).
- Anderson, Jonathan. 2006a. *The Complete RMB Handbook*, 4th ed. UBS Investment Research, Asian Economic Perspectives (September 16).

- Anderson, Jonathan. 2006b. *The Sword Hanging over China's Banks*. UBS Investment Research, Asian Focus (December 15).
- Anderson, Jonathan. 2007a. *The New China: Back to the Real World*. UBS Investment Research, Asian Economic Perspective (March 1).
- Anderson, Jonathan. 2007b. *No Really, How Competitive Are China's Exports?* UBS Investment Research, Asian Focus (April 16).
- Anderson, Jonathan. 2007c. *The Real Case for Revaluation*. UBS Investment Research, Asian Focus (July 13).
- Anderson, Jonathan. 2007d. *Is China Export Led?* UBS Investment Research, Asian Focus (September 27).
- Anderson, Jonathan. 2008. *Four Big Numbers*. UBS Investment Research, China Focus (January 15, 2008)
- Bai Chong-En, Chang-Tai Hsieh, and Yingyi Qian. 2006. *The Return to Capital in China*. NBER Working Paper 12755 (December). Cambridge, MA: National Bureau of Economic Research.
- Bergsten, C. Fred. 2005. "An Action Plan to Stop the Market Manipulators Now," *Financial Times*, March 14.
- Bergsten, C. Fred. 2007. The Chinese Exchange Rate and the US Economy. Testimony before the Hearing on the Treasury Department's Report to Congress on International Economic and Exchange Rate Policy and the Strategic Economic Dialogue, Committee on Banking, Housing, and Urban Affairs, January 31. Washington.
- Bernanke, Ben. 2006. The Chinese Economy: Progress and Challenges. Remarks at the Chinese Academy of Social Sciences, Beijing, December 15, 2006.
- Bosworth, Barry. 2004. Valuing the RMB. Paper presented at the Tokyo Club Research Meeting, February.
- Chinese Bank Regulatory Commission. 2007. *2006 Annual Report*. Available at www.cbrc.gov.cn (accessed on September 14, 2007).
- Cheung, Yin-Wong, Menzie D. Chinn, and Eiji Fujii. 2007. *The Overvaluation of Renminbi Undervaluation*. NBER Working Paper 12850 (January). Cambridge, MA: National Bureau of Economic Research.
- Cline, William. 2005. *The United States as a Debtor Nation*. Washington: Institute for International Economics.
- Cline, William. 2007. Estimating Reference Exchange Rates. Paper presented at the workshop on policy to reduce global imbalances, sponsored by Bruegel, the Korea Institute for International Economic Policy, and the Peterson Institute for International Economics, Washington, February 8–9.
- Cooper, Richard. 2005. *Living with Global Imbalances: A Contrarian View*. International Economics Policy Brief 05-3. Washington: Institute for International Economics.
- Crockett, Andrew. 2007. The International Financial Architecture and Financial Stability. Dinner speech at the 50th anniversary celebration of the Bank of Ghana, August.
- de Rato, Rodrigo. 2006. A Call for Cooperation: What the IMF and Its Members Can Do to Solve Global Economic Problems. Speech at the Peterson Institute for International Economics, Washington, April 20.
- Dobson, Wendy, and Anil K. Kashyap. 2006. The Contradiction in China's Gradualist Banking Reforms. *Brookings Papers on Economic Activity* (Fall): 103–48.
- Dodge, David. 2006. The Evolving International Monetary Order and the Need for an Evolving IMF. Speech at the Woodrow Wilson School, Princeton University, Princeton, NJ, March 30.
- Dooley, Michael, David Folkerts-Landau, and Peter Garber. 2003. *An Essay on the Revived Bretton Woods System*. NBER Working Paper 9971 (September). Cambridge, MA: National Bureau of Economic Research.
- Dunaway, Steven, and Xiangming Li. 2005. *Estimating China's Real Equilibrium Exchange Rate*. IMF Working Paper 05/202 (October). Washington: International Monetary Fund.

- Dunaway, Steven, Lamin Leigh, and Xiangming Li. 2006. *How Robust Are Estimates of Equilibrium Real Exchange Rates for China?* IMF Working Paper 06/220 (October). Washington: International Monetary Fund.
- Eichengreen, Barry. 2004. *Global Imbalances and the Lessons of Bretton Woods*. NBER Working Paper 10497 (May). Cambridge, MA: National Bureau of Economic Research.
- Eichengreen, Barry. 2007. A Blueprint for IMF Reform: More than Just a Lender. *International Finance* 10, no. 2: 153–75.
- El-Erian, Mohamed. 2007. "Foreign Capital Must Not Be Blocked," *Financial Times*, October 3.
- Frankel, Jeffrey. 2006. On the Yuan: The Choice Between Adjustment Under a Fixed Exchange Rate and Adjustment Under a Flexible Exchange Rate. In *Understanding the Chinese Economy*, ed. Gerhard Illing. Munich: CESinfo Economic Studies.
- Frankel, Jeffrey A., and Shang-Jin Wei. 2007. Assessing China's Exchange Rate Regime. *Economic Policy* 22, no. 51: 575–627.
- Goldstein, Morris. 2004. *Adjusting China's Exchange Rate Policies*. Institute for International Economics Working Paper 04-1. Washington: Institute for International Economics.
- Goldstein, Morris. 2006a. "Exchange Rates, Fair Play, and the 'Grand Bargain,'" *Financial Times*, April 21.
- Goldstein, Morris. 2006b. Renminbi Controversies. *Cato Journal* 26, no. 2 (Spring/Summer).
- Goldstein, Morris. 2006c. Currency Manipulation and Enforcing the Rules of the International Monetary System. In *Reforming the IMF for the 21st Century*, ed. Edwin Truman. Washington: Institute for International Economics.
- Goldstein, Morris. 2007a. The IMF as Global Umpire for Exchange Rate Policies. In *C. Fred Bergsten and the World Economy*, ed. Michael Mussa. Washington: Peterson Institute for International Economics.
- Goldstein, Morris. 2007b. *A (Lack of) Progress Report on China's Exchange Rate Policies*. Peterson Institute for International Economics Working Paper 07-5 (June). Washington: Peterson Institute for International Economics.
- Goldstein, Morris, and Nicholas Lardy. 2003a. "A Modest Proposal for China's RMB," *Financial Times*, August 26.
- Goldstein, Morris, and Nicholas Lardy. 2003b. "Two-Step Currency Reform for China," *Asian Wall Street Journal*, September 12.
- Goldstein, Morris, and Nicholas Lardy. 2004. *What Kind of Landing for the Chinese Economy?* Policy Briefs in International Economics 04-7. Washington: Institute for International Economics.
- Goldstein, Morris, and Nicholas Lardy. 2005a. *China's Role in the Revived Bretton Woods System: A Case of Mistaken Identity*. Institute for International Economics Working Paper 05-2. Washington: Institute for International Economics.
- Goldstein, Morris, and Nicholas Lardy. 2005b. "China's Revaluation Shows Why Size Really Matters," *Financial Times*, July 22.
- Goldstein, Morris, and Nicholas Lardy. 2006. China's Exchange Rate Dilemma. *American Economic Review* (May): 422–26.
- Goldstein, Morris, and Michael Mussa. 2005. "The Fund Appears to Be Sleeping at the Wheel," *Financial Times*, October 3.
- Goodfriend, Marvin, and Eswar Prasad. 2006. *A Framework for Independent Monetary Policy in China*. IMF Working Paper 06/11 (May). Washington: International Monetary Fund.
- Green, Stephen. 2007a. This . . . is . . . Sparta!!! *Standard Chartered on the Ground—Asia* (April 12).
- Green, Stephen. 2007b. China: Calling all PBoC FX Sterilization Geeks. *Standard Chartered on the Ground—Asia* (June 18).
- Henning, C. Randall. 2007. *Congress, Treasury, and the Accountability of Exchange Rate Policy: How the 1988 Trade Act Should Be Reformed*. Peterson Institute for International Economics Working Paper 07-8. Washington: Peterson Institute for International Economics.
- IEO (Independent Evaluation Office, International Monetary Fund). 2007. *An IEO Evaluation of the IMF's Exchange Rate Policy Advice, 1999–2005* (May). Washington: International Monetary Fund.

- IMF (International Monetary Fund). 2004. *People's Republic of China: 2004 Article IV Consultation*. IMF Country Report 04/351 (November). Washington.
- IMF (International Monetary Fund). 2006a. *People's Republic of China: 2006 Article IV Consultation*. IMF Country Report 06/394 (October). Washington.
- IMF (International Monetary Fund). 2006b. *Methodology for CGER Exchange Rate Assessments* (November). Washington.
- IMF (International Monetary Fund). 2007a. *Review of the 1977 Decision—Proposal for a New Decision* (May 22). Washington.
- IMF (International Monetary Fund). 2007b. *IMF Surveillance—The 2007 Decision on Bilateral Surveillance* (June 21). Washington.
- Ito, Takatoshi. 2004. The Yen and the Japanese Economy, 2004. In *Dollar Adjustment: How Far? Against What?* ed. C. Fred Bergsten and John Williamson. Washington: Institute for International Economics.
- Keidel, Albert. 2005. *China's Currency: Not the Problem*. Policy Brief 39 (June). Washington: Carnegie Endowment for International Peace.
- Keidel, Albert. 2007. *China's Financial Sector: Contributions to Growth and Downside Risks* (January 25). Washington: Carnegie Endowment for International Peace. Available at www.carnegieendowment.org (accessed on August 31, 2007).
- King, Mervyn. 2006. Speech at the Indian Council for Research on International Economic Relations, New Delhi, India, February 20.
- Kroeber, Arthur. 2007. The Incredible Shrinking FX Fund. *China Insight*, no. 41 (August 16). Dragonomics Research and Advisory.
- Lachman, Desmond. 2007. "Complacency at the IMF," *Gazeta Mercantil*, October 3.
- Lardy, Nicholas R. 1994. *China in the World Economy*. Washington: Institute for International Economics.
- Lardy, Nicholas R. 2006. *China: Toward a Consumption-Driven Growth Path*. Policy Briefs in International Economics 06-6. Washington: Institute for International Economics.
- Lardy, Nicholas R. 2007. China: Rebalancing Economic Growth. Available at www.chinabalancesheet.org.
- Lee Kuan Yew. 2001. Interview with the *Wall Street Journal*, April 26.
- Lee Hsien Loong. 2001. Speech at the Parliament, Singapore, May 16.
- Ma Guonan, and Robert McCauley. 2007. *Do China's Capital Controls Still Bind? Implications for Monetary Autonomy and Capital Liberalization*. BIS Working Paper 233 (August). Bank for International Settlements. Available at www.bis.org.
- McGregor, Richard. 2007. "China's Trade Surplus Overshadows Talks," *Financial Times*, May 11.
- McKinnon, Ronald. 2007. Why China Should Keep Its Dollar Peg. *International Finance* 10, no. 1: 43–70.
- Meade, James E. 1951. *The Balance of Payments*. London: Oxford University Press.
- Morrison, Wayne, and Marc Labonte. 2007. *China's Currency: Economic Issues and Options for U.S. Trade Policy* (updated July 15). Washington: Congressional Research Service. Available at www.fas.org (accessed on September 17, 2007).
- Mundell, Robert. 2004. China's Exchange Rate: The Case for the Status Quo. Paper presented at the International Monetary Fund seminar on the Foreign Exchange System, Dalian, China, May.
- Mussa, Michael. 2005. Sustaining Global Growth While Reducing External Imbalances. In *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, ed. C. Fred Bergsten and the Institute for International Economics. Washington: Institute for International Economics.
- National Bureau of Statistics of China. 2007. *China Statistical Abstract 2007*. Beijing: China Statistics Press.
- Obstfeld, Maurice, and Kenneth Rogoff. 2006. The Unsustainable US Current-Account Position Revisited. In *G-7 Current Account Imbalances: Sustainability and Adjustment*, ed. Richard Clarida. Chicago: University of Chicago Press.

- Park, Yung Chul. 2007. Comments delivered at the conclusion of the workshop on policy to reduce global imbalances, sponsored by Bruegel, the Korea Institute for International Economic Policy, and the Peterson Institute for International Economics, Washington, February 8–9.
- People's Bank of China. 2008. *China's Monetary Circulation Equilibrium in 2007* (January 11). Available at www.pbc.gov.cn (accessed on January 11, 2008).
- People's Bank of China, Monetary Policy Analysis Small Group. 2007. Report on Implementation of Monetary Policy, Second Quarter 2007 (August 8). Available at www.pbc.gov.cn (accessed on August 8, 2007).
- Podpiera, Richard. 2006. *Progress in China's Banking Sector Reform: Has Bank Behavior Changed?* IMF Working Paper 06/71 (March). Washington: International Monetary Fund.
- Prasad, Eswar S. 2007. *Is the Chinese Miracle Built to Last?* Cornell University, Ithaca, NY. Photocopy.
- Prasad, Eswar, Thomas Rumbaugh, and Qing Wang. 2005. *Putting the Cart Before the Horse? Capital Account Liberalization and Exchange Rate Flexibility in China*. IMF Policy Discussion Paper 05/1 (January). Washington: International Monetary Fund.
- Preeg, Ernest. 2003. Exchange Rate Manipulation to Gain an Unfair Competitive Advantage. In *Dollar Overvaluation and the Global Economy*, ed. C. Fred Bergsten and John Williamson. Washington: Institute for International Economics.
- Roach, Stephen. 2007. *Playing with Fire*. Morgan Stanley, Global Economic Forum (April 30).
- Setser, Brad. 2007. Central Banks Came Close to Financing Almost All of the US Current-Account Deficit Over the Past Four Quarters. Brad Setser's Blog, Roubini Global Economics, New York, October 2. Available at www.rgemonitor.com/blog/setser.
- Shi Lu. 2007. "New Policy on Processing Trade to Involve Exports Valued at \$30 Billion," *China Economic News*, September 17, 8–9.
- Shu, Chang, and Raymond Yip. 2006. Impact of Exchange Rate Movements on the Mainland Economy. *China Economic Issues* 3/06 (July). Hong Kong: Hong Kong Monetary Authority.
- State Administration of Foreign Exchange, Balance of Payments Analysis Small Group. 2007. *Report on China's 2006 Balance of Payments* (May 10). Available at www.safe.gov.cn (accessed on May 10, 2007).
- Summers, Lawrence H. 2004. The United States and the Global Adjustment Process. Third Annual Stavros S. Niarchos Lecture, Institute for International Economics, Washington, March 23.
- Summers, Lawrence H. 2007. "Funds that Shake Capitalist Logic," *Financial Times*, July 29.
- Truman, Edwin. 2005. *Postponing Global Adjustment: Analysis of the Pending Adjustment of Global Imbalances*. Institute for International Economics Working Paper 05-06. Washington: Institute for International Economics.
- Truman, Edwin. 2007. *Sovereign Wealth Funds: The Need for Greater Transparency and Accountability*. Policy Briefs in International Economics 07-6. Washington: Peterson Institute for International Economics.
- US Department of Labor, Bureau of Labor Statistics. 2007. Import/Export Price Indexes. Washington. Available at <http://data.bls.gov> (accessed on September 14, 2007).
- US Treasury Department. 2005. *Report to the Congress on International Economic and Exchange Rate Policies* (May). Washington.
- Williamson, John. 2003. The Renminbi Exchange Rate and the Global Monetary System. Lecture at the Central University of Finance and Economics, Beijing, October.
- World Bank. 2007. *China Quarterly Update* (September). Washington. Available at [http://site/resources.worldbank.org](http://site.resources.worldbank.org) (accessed on September 12, 2007).
- Yu Yongding. 2007a. Global Imbalances and China. *Australian Economic Review* 40, no. 1: 3–23.
- Yu Yongding. 2007b. Ten Years after the Asian Financial Crisis: The Fragility and Strength of China's Financial System. *IDS Bulletin* 38, no. 4 (July).

Comment

China's Industrial Investment Boom and the Renminbi

JONATHAN ANDERSON

As a long-time fan of Morris Goldstein's and Nicholas Lardy's work, it is a pleasure to comment on their paper, a pleasure compounded by the fact that the authors have clearly done yet another excellent job. Indeed, I have yet to see anyone else succeed in laying out the terms of the "great renminbi exchange rate debate" so succinctly and even-handedly and in language accessible to the layman as well.

Needless to say, it makes the reviewer's job all the more difficult, essentially consigning one to pick at the remaining nits along the way. Luckily, at least two important issues are worthy of further commentary—issues I thought were not completely resolved in the paper itself and that also cut to the very heart of the China question.

In order to frame the questions correctly, it is helpful to summarize what is known about the Chinese external economy, so let us begin with a simple review of the facts at hand.

The Trade Balance

Over the past two decades, the mainland economy has nearly always recorded a surplus in manufacturing trade—but a relatively mild one. Between 1994 and 2004, the average trade surplus was more or less steady

Jonathan Anderson is managing director, Global Emerging-Markets Economist at UBS Investment Bank.

at 2 percent of GDP, hardly a matter for global attention or breathless commentary in the financial press. In the second half of 2004, however, things changed dramatically. By the end of the year, the surplus had risen above 3 percent of GDP. The average for 2005 was nearly 5 percent, rising to 7 percent in 2006 and an estimated 9 percent of GDP for 2007. China had never before seen such levels nor such a rapid increase.

Where did the sudden jump in the surplus come from? Clearly not from rising exports: Headline export growth fell gradually but steadily from 2003 through 2007, very much in line with the slowing momentum in China's neighboring economies. Rather, the main shock was a dramatic fall in import growth. In 2003 mainland imports increased by 35 percent in real terms, but by the first half of 2005, the growth rate had fallen to zero. While imports did recover somewhat over the past two years, that recovery has been anemic: around 10 percent real growth on average, far below the pace of export expansion.

Why were imports falling? Looking at the detailed statistics, the turnaround came almost completely from net trade in heavy industrial products: aluminum, machine tools, cement, key chemical products, and especially steel and steel products, which single-handedly account for at least one-quarter of the entire increase in China's trade balance.

Finally, why heavy industrial sectors? The answer lies in part in the intensive mainland investment boom of 2001–04, which resulted in a dramatic and historically unprecedented increase in the ratio of heavy industrial production to GDP between 2003 and 2006 and, in part, in the sharp slowdown in the pace of domestic construction demand in 2004–07 on the heels of macro tightening measures. As a result, by our estimates, Chinese heavy industrial producers have displaced imports (and in some cases taken over export markets as well) to the tune of 6 to 7 percent of GDP over the past four years. No other segment of the economy saw anything close to the same volatility; the capacity buildout in export-oriented light manufacturing and domestic services sectors was much more moderate, and demand trends in these areas were more stable.

In short, the story of China's trade surplus is to a large degree a story about heavy industry, with large swings in the supply-demand balance in a concentrated part of the economy.

Saving and Investment

Exactly the same is true in China's saving and investment behavior. As a macroeconomic identity, the dramatic rise in China's trade and current account balance is reflected in a rising gap between gross domestic savings and gross domestic investment—and once again, the mainland had never before seen anything close to the stunning increase in the gap over the past four years.

Where did the gap come from? Certainly not from falling investment: In fact, after a sustained rise in the beginning of the decade, China's investment/GDP ratio was broadly stable from 2003 to 2007. Instead, the culprit is rising savings. Based on official headline macro accounting figures, China's gross domestic saving rate was less than 40 percent of GDP in 2002; by 2006, only four years later, the saving rate had jumped to over 50 percent, a considerable feat for any economy and unprecedented in China.

Why the sudden rush of savings? The best work in this area comes from Bert Hofman and Louis Kuijs of the World Bank, whose latest research is also featured in this conference volume; their findings show that the household saving rate did not change at all as a share of GDP since the beginning of the decade, and the same is true for the estimated government saving rate. Instead, the entire 10-plus percentage-point increase in national savings as a share of the economy came from the corporate sector.

And not just anywhere in the corporate sector. We do not have complete data for earnings at the sectoral level, but the available figures for the industrial economy point to a dramatic upsurge in heavy industrial sectors—i.e., the same steel, machinery, and chemicals manufacturers who were responsible for the rise in the trade surplus. From only 40 percent of total ex-mining industrial profits at the beginning of the decade, heavy industries accounted for nearly 70 percent by the first three quarters of 2007.

Interestingly, this upsurge in gross earnings came at a time when average profit *margins* in these industries actually *fell*. How is this possible? Simple: As seen earlier, heavy industrial production *volumes* rose dramatically as a share of GDP—i.e., the increase in overall activity greatly outweighed the moderate decline in unit margins.

At the end of the day, the story is very much the same as it is for the trade surplus: large and concentrated capacity increases in heavy industry, which (against the backdrop of weaker domestic industrial demand) end up pushing out imported products to take over local market share, followed by an export surge in some cases. The resulting increase in the volume of gross domestic corporate earnings—offset by falling foreign corporate earnings due to the loss of export orders to China—essentially explains the sharply rising gap between saving and investment at home.

Expenditure Balances

Pause for a second and consider what this saving-investment gap means for the composition of total expenditure in the economy. Mathematically, if savings rise by 10 percent of GDP relative to investment, then net exports of goods and services increase by 10 percent of GDP as well—and domestic expenditure must fall by the same amount. If for some reason

the investment share of the economy remains constant, then it must be the case that the consumption share declines by 10 percentage points.

Here is a thumbnail sketch of how the linkages have worked in China. Assume an economy growing at 8 percent year over year in real terms, with both consumption and investment growing at precisely the same pace—i.e., all domestic expenditure ratios are stable. Now assume that a big investment boom pushes overall growth to 10 percent year over year by increasing the investment share of the economy by two percentage points per year, with the trade balance initially unchanged. If real household income and consumption growth remains unchanged at 8 percent, then by definition the consumption share of GDP will fall by two percentage points per year.

Next, imagine that the pace of investment expenditure eventually subsides but is broadly offset by rising capacity creation from the earlier boom, which pushes up net exports by 2 percent of GDP per year. Again, the economy continues to grow at 10 percent—and again, if consumer incomes and spending are still growing at 8 percent, then the consumption share continues to fall by two percentage points per year.

A key assumption here is that households do not capture any increased income from the rise in domestic industrial capacity and corporate earnings, but in the Chinese context, where state firms generally do not pay dividends and there is also no clear mechanism to transfer their earnings back to the government “owners,” this makes good sense to most observers.

Thus far, this is a very good description of what has actually happened in the mainland economy over the past five years—i.e., an initial sharp rise in the investment/GDP ratio, followed by a decline, which was more than offset by a rising net export balance, and a continued, sustained fall in consumer incomes and spending as a share of the economy.

But this does not necessarily reflect consumer “weakness,” in the sense that the best available data show household incomes and consumption rising steadily at 8 percent per year or more in real terms. It could easily be argued that nothing changed for consumers in China—it is just that investment activity and then productive capacity exploded all around them, pushing up the level of GDP without giving them any stake in the additional growth.

And Now for the Fun Part

To sum up, so far I have examined the linkages between (1) the rise in the trade surplus, (2) the rise in trend growth, (3) the sharp increase in the saving-investment balance, and (4) the falling consumer share in the economy. As it turns out, the underlying driver of all these phenomena is the

heavy industrial investment and capacity boom of the past five years. Without much exaggeration, if you can explain heavy industry, you can explain China.

And so far, I have not touched on anything remotely controversial. These are simply the starting facts, well recognized by most economists who look at the mainland.

This brings me to the “elephants in the room”—i.e., two remaining questions I have not yet addressed and which effectively hold the key to the entire debate. First, why did China have an industrial investment boom in the first place? And second, what does this have to do with the value of the renminbi?

With these questions we exit the realm of established facts and enter the world of conjecture and strong debate. There are at least three competing explanations (and likely many more) for what has been seen in China in recent years.

The first is rising competitiveness. In this view, China may not have had a strong trade surplus historically, but over the past five years the economy underwent a strong positive productivity shock, driven by improvements in infrastructure, technological capability, and human capital. For a given level of the real exchange rate, it became much more profitable to produce in higher value-added sectors, and the mainland began to rapidly move up the technology chain, taking over capital-intensive industries and displacing imports as it went.

The second is structural underpricing of capital. Here the main focus is artificially low real interest rates in China, which lead to artificially high investment in capital-intensive sectors, which in turn leads to displacement of imports and higher net exports—and in the context of a quasi-pegged exchange rate, the rising surpluses effectively prevent the central bank from raising interest rates due to fears of speculative pressures and increasing sterilization losses. This vicious circle feeds on itself as the domestic liquidity impact of ever-increasing foreign exchange intervention fuels the next round of capital investment.

The third is mistiming of the domestic cycle. The idea here is that the 2001–04 upturn was fueled primarily by a boom in housing and auto expenditure—i.e., very material- and infrastructure-intensive demand categories. Tight supply conditions and surging profits induced a strong investment reaction from machinery, steel, and other heavy industrial producers; however, by the time capacity came on line, the authorities had already tightened aggressively to prevent overheating in construction and auto lending. Domestic suppliers woke up with a significant excess capacity “hangover” and again displaced imports, shipped products abroad, and pushed up the trade surplus.

Does it matter which of these explanations is correct? From the viewpoint of currency dynamics and exchange rate policy, it matters very much

indeed. In the first instance, China is undergoing a sharp structural depreciation of the productivity-adjusted real exchange rate and presumably needs both large and continuous renminbi strengthening for a good while to come in order to rebalance the economy. The second case has less to say about the level of the exchange rate per se; rather, the key is renminbi flexibility, which would remove the policy straitjacket on interest rate adjustment and domestic monetary tightening. And as for the third story, here the currency does not play any role at all in the initial supply shock, nor is it clear whether there are any implications for the exchange regime over the longer term; it is simply a matter of waiting for the market to clear away excess productive capacity.

Now, readers of Goldstein's and Lardy's previous work will know that Goldstein has been a strong proponent of the first explanation and that Lardy has written extensively on the second—and anyone who has looked at my own writing will know that I tend to favor the third case. So what better place than a comprehensive report on exchange rate issues coauthored by Goldstein and Lardy to tackle the evidence head on and try to reach some final conclusions?

After reading the paper, however, it does not feel as if we quite get there. The authors do spend a good bit of time on each point, but the discussion is rather more focused on outlining the debate as I did a few paragraphs ago and then restating findings from previous work. And at the risk of oversimplification, to the extent that Goldstein and Lardy do draw conclusions in the paper, they run as follows: (1) the rising current account surplus is by definition convincing evidence of structural productivity gains and therefore substantial long-term undervaluation, and (2) the large foreign exchange reserve accumulation and sterilization effort by the central bank are by definition signs of loss of control of domestic monetary policy. It should be clear from the earlier discussion that I would not necessarily agree a priori with either of those points.

There are of course obvious rejoinders to my mild complaints. This is, after all, a review paper and was never meant to provide final answers to the big questions of the day. Moreover, does it really matter anyway? Whatever the driving force, the fact that China has seen a high and sharply rising current account surplus over the past few years clearly means that the currency is undervalued in a near-term, workaday sense, and at least some real exchange rate appreciation is part of the policy prescription in all three of the cases I outlined above.

Fair enough indeed. But on the other hand, given the importance now ascribed to the renminbi exchange rate on the global stage—and nowhere is this more true than in the US policy circles at which this paper is aimed—and the very different implications for the magnitude and urgency of adjustment, it would be imperative to have more to go on in drawing conclusions at the end of the day.

A Final Diversion

Having gone through the above discussion, we are now ready to deal with one final issue. As it turns out, in addition to the “standard” questions about the renminbi exchange rate, Goldstein and Lardy also spend a surprising amount of time on a working model of the Chinese currency and monetary system that makes very little sense to me.

The basic outline is as follows. Practitioners familiar with central bank balance sheets will be aware that the outstanding stock of base or “high powered” money is equal by definition to the sum of net foreign assets (NFA) and net domestic assets (NDA) of the central bank, with the latter defined as total domestic claims less domestic non-base-money liabilities. Now, when China runs a large balance-of-payments surplus, the People’s Bank of China (PBC) is forced to intervene in the foreign exchange market and buy up foreign exchange reserves in order to maintain the renminbi quasi-peg. If the PBC buys foreign exchange, it automatically creates new domestic liquidity as the offsetting portion of the transaction. So if we compare the central bank balance sheet before and after a large foreign exchange purchase, we would find that NFA has increased, with base-money liabilities rising by an equal amount, and that NDA is initially unchanged.

In the case of the mainland economy, the PBC has been unwilling to accept the enormous base-money expansion that these foreign exchange purchases would entail and as a result has been sterilizing liquidity through domestic debt issuance as well as other channels. By and large, these operations have led to a fall in base money on the central bank balance sheet and a rise in other liabilities—in other words, a drop in NDA.

Now, for anyone looking at this process from the outside, there are two possible explanations for what is going on. One is that the drop in NDA is an endogenous reaction to (or “caused by”) the rise in NFA, and the other is just the reverse—i.e., that declining NDA is somehow causing the increase in NFA.

The first is what we might call the “balance-of-payments approach to the monetary accounts” and is the model that most working economists in China would use to analyze the effects of central bank policy: In the face of large external surpluses, the PBC uses sterilization policy to avoid a massive blowout in domestic base-money growth, but the surpluses themselves are the result of other factors that have little or nothing to do with the behavior of base money in a direct sense.

The latter, by implication, is called the “monetary approach to the balance of payments” and argues that conventional wisdom has it backwards: Actually, PBC sterilization is the main reason that the mainland has a trade surplus in the first place. This explanation, put forward by Michael Mussa (chapter 8 in this conference volume), suggests that by holding

base-money growth below the rate of overall broad-money growth, the PBC is forcing Chinese consumers to curtail spending.

It is easy to see the temptations of this latter story, as it offers the economic equivalent of a “unified field theory,” purporting to link exchange rate policy to both the rise of China’s trade imbalance and the fall in consumer spending in one fell swoop. However, against the backdrop of mainland experience, it does not seem to hold up very well at all.

To begin with, Mussa’s model hinges crucially on two key assumptions: that (1) households and firms hold a constant share of monetary balances in cash, and (2) banks have a constant base-money multiplier—i.e., that banks do not hold variable excess reserve balances as a share of deposits, neither of which is remotely true in practice. In fact, the ratio of cash to M2 has been both volatile and falling, on average, for the past two decades, and one of the reasons the ratio of base money to GDP could fall to 35 percent in 2005 from nearly 39 percent over the preceding decade without causing any trend slowdown in credit or broad-money growth is precisely that banks were stuffed with excessive reserve liquidity balances to begin with. Unfortunately, if these two assumptions are removed, the story breaks down completely—i.e., there is nothing left upon which to hang a “monetary approach” argument.

Nor have we seen any related signs of stress on balance sheets in China: Money market interest rates and long-term bond yields remained at rock-bottom levels from the beginning of the sterilization era in 2002 right through the end of 2006, and the mainland property and equity markets actually went through an unprecedented boom. This is hardly a picture of domestic agents scrambling to find funding in order to prop up their monetary holdings.

The biggest problem, however, is that the story does not fit the broader facts in China as laid out earlier on. Mussa identifies slowing consumer spending and rising household savings as the main drivers of the trade imbalance, but as seen above, the household saving ratio has not increased at all in the mainland. Instead, what really needs to be explained is the sharp rise in corporate savings together with the concomitant and equally sharp increase in domestic heavy industrial supply relative to demand, and the “monetary approach” is essentially helpless here (in fact, the model seems to predict a *fall* in corporate saving rates as Chinese firms borrow from abroad to prop up domestic activity in the face of a base-money crunch).

I would add as a final note that for Goldstein and Lardy’s purposes, the story is downright redundant as well. If you conclude, as the authors have done both here and elsewhere, that the explosion in Chinese high value-added investment and subsequently in net high value-added trade is tied to a pegged/undervalued renminbi, then as discussed above you already have a “unified field theory” that explains the rise of the trade

surplus, the increase in gross corporate saving, the falling household share of economic activity, and the sharply skewed sectoral growth pattern, all in terms of the exchange rate—and all without having to resort to problematic theories of monetary balance sheet adjustment in the process. In this light, it is all the more surprising that they chose to give the monetary approach arguments such prominence in their paper.

Comment

Renminbi Revaluation and US Dollar Depreciation

FAN GANG

In addition to providing an excellent overview of all the issues in the debate on China's exchange rate regime and policies, Morris Goldstein and Nicholas Lardy make very strong and convincing arguments that the current gradual, small-step renminbi revaluation policy is costly for China for several reasons, among which are the following:

- growing protectionism against China's exports (or possible sanctions against it for alleged "manipulation" of its exchange rate) or the slow-down of the world economy caused by the global imbalances, both of which will make China gain less anyway from its undervalued currency;
- domestic overliquidity, which would lead to either overheating and inflation or asset bubbles, thus severely damaging China's long-term growth; and
- structural distortions caused by repressed interest rates and an undervalued currency, which may also lead to economic, financial, and social problems.

Fan Gang is director of the National Economic Research Institute, China Reform Foundation, and economics professor at Peking University, China.

Therefore, Goldstein and Lardy recommend faster revaluation and greater flexibility in the exchange rate regime for the sake of China's own interests.

Risks Associated with Different Approaches

China's monetary authority is aware of the costs and risks of quick and large renminbi revaluation, as China is facing increasing external trade frictions and domestic overheating. However, they might also be weighing the costs associated with the alternatives—i.e., the consequences of fast and large revaluation of the renminbi in a short period to meet the requirement of the US Congress and market speculators, say, a 30 percent renminbi revaluation in one year. The following might be some of their concerns.

First is job loss, which is the fundamental reason many political forces in China oppose large appreciation. There is a thing called "Chinese domestic politics." Compared with US domestic politics, which is very often used as an excuse for US foreign policies, Chinese domestic politics involves a much larger number of people, such as 300 million underemployed rural laborers, who earn about US\$500 per year, and another 300 million immigrant workers, who earn about US\$1,000 per year. Such domestic politics constrains policymakers from making a move when they are facing high pressure to create more jobs to ease social disparities.

But this is not the only problem. If the large appreciation were to solve the problem of China's external imbalance once and for all, the Chinese authorities would take the action. They would supplement it with financial subsidies to those who would suffer from the shocks caused by such currency revaluation. But the problem is that the Chinese authorities might not be sure that the problems would be solved that way. Jobs might be lost, but those lost jobs would not go to the United States but to countries such as Vietnam and Bangladesh, and the US current account deficit as a whole, or even the deficit with China, would remain unchanged. US politicians would be eased for a while but would still not be satisfied.

Meanwhile, more importantly, the US dollar has historically been falling against major world currencies, sharply in recent months, due to the subprime mortgage turmoil and other reasons. And it has been predicted to depreciate further no matter how much the renminbi appreciates.

So, given the expectation that the US current account deficit will remain unchanged and the US dollar will fall further, it seems rational for Chinese policymakers to believe that even if the renminbi were revalued by 30 percent today, the US Congress and market speculators might request another "jump" again very soon.

Even worse, between the large shocks (to the Chinese economy) caused by large revaluations, there would be greater speculation and greater capi-

tal movement, inward and outward, through various channels. China's immature and fragile financial system would not be able to bear those risks.

In summary, in the view of Chinese policymakers, the costs or risks associated with a quick revaluation are larger, and less predictable and manageable, than the costs associated with the current gradual approach, if their calculation goes beyond immediate consequences.

Equilibrium Exchange Rate?

The argument for quick revaluation of the renminbi is based on the assumption that there is a reasonably stable equilibrium exchange rate, which China should try to approach as soon as possible. But the problem here is that given the fast changes in the structure of the world economy and the recent turmoil in global financial markets, which is associated with global overliquidity with oversupplied US dollars, any exchange rate equilibrium for the renminbi may be very short-lived one way or another.

When it comes to their own interests, the Chinese take a long-term perspective rather than a short-term view. Today's China is different from Japan of the 1980s, with which many like to compare today's China. China is still a country with an per capita income of \$2,000, and Japan was not a developing economy after World War II. While Japanese blue-collar workers earned a wage 80 percent that of their US counterparts in the 1980s, Chinese workers today earn 30 to 50 times less than what their US counterparts earn. China has a long way to go before it catches up. And during this long drive, China will face many risks and obstacles, which may require exchange rate adjustment one way or another. From this point of view, it may be wise for China to take small steps for any short term and avoid overshooting and large swings. It is also necessary to keep capital controls for a while to avoid being overexposed to risks in a highly volatile international financial market.

This does not mean that China should not go for a market system or financial-market liberalization with a free floating exchange rate regime in the long run. A developing country with very low bases needs to have different approaches to market-oriented transition. And hasty liberalization of the financial system and capital account when the whole domestic system (not only the financial but also all economic, legal, and political components) is still underdeveloped may lead to significant slowdown in both economic development and financial maturity, as shown by the Asia financial crisis of the late 1990s. Compared with Indonesia and Thailand, China is an even more complex, low-level developing economy with greater disparities and disorders. A gradual approach to currency revaluation may be more of "equilibrium" in terms of long-term economic development.

Manipulation and Surveillance

With the current account surplus up to 8 percent of GDP and increasing, China is now blamed as a country with “fundamental misalignment” in its exchange rate, even called a manipulator of its exchange rate.

First, it should be recognized that China’s domestic structural problems have been contributing to the global imbalance. The most fundamental “misalignment” is actually its domestic saving and consumption imbalance, not the exchange rate disequilibrium. No matter how quick currency revaluation is, if the system repeatedly generates a saving rate up to 50 percent of GDP, the surplus will not be effectively reduced. Changing this situation requires reforming China’s fiscal, financial, and social systems, as well as further economic development and employment generation.

In terms of exchange rate policy, it should also be recognized that it might be too late for China to give up the fixed exchange rate regime and go back to a more flexible exchange rate. As recently as 2003, the US government and the International Monetary Fund (IMF) applauded China for holding on to the fixed regime against market speculation for renminbi devaluation. China was benefiting from its policy of a stable exchange rate at that time too. So why have policymakers realized the need for change after so long?

However, how can one call a system moving away from a fixed regime (which has long been “compatible” with IMF rules) to managed floating as manipulation under the same IMF framework? Should it go back to the fixed regime to avoid being blamed for manipulation?

More importantly, it seems strange that the “surplus accumulator” is now blamed for manipulation, not the “deficit accumulator.” According to banking theory and practice, loans create deposits (otherwise who would take the deposits?), debts create credits (people buy bonds only when bonds are issued), and deficits create surpluses, not the other way around! Why should one not ask the question, where are the US dollars or US dollar debt assets held by many countries as foreign exchange reserves coming from in the first place? Why is a money printer not “manipulating” but the ones who accept the money are?

One should not forget that, while globalization has proceeded in production and financial markets, the world does not yet have a global currency or a global central bank, and it has not had a gold standard since the Nixon Shock in 1970. As a result, we have currency asymmetry, or a monetary system in which some economically and financially stronger countries issue their own currencies, which serve as reserve currencies for others (who pay seigniorage, as they should).

In such an asymmetric system, when “private goods” (national currency) serve as public goods (international currency), the first problem one should be prepared to face is how to discipline money printing in order to

avoid moral hazard. The reserve currency country could be tempted to print too much money for its own interests. It may not have an exchange rate policy per se; it simply does not need one because exchange with it is everyone else's problem. However, its fiscal and monetary policies all matter in determining how much money should be printed. And as the currency is used internationally, the risks from overliquidity will spread easily to all corners of the world and be shared by all nations that buy financial assets or hold reserve assets denominated in that currency (similar to what has happened in the current subprime mortgage crisis). Without an effective mechanism to prevent oversupply of reserve currency, there will be global overliquidity and repeated devaluation of the reserve currency.

Therefore, the IMF should first check US fiscal and monetary policies before checking whether developing countries are doing things (such as revaluation) to accommodate the falling US dollar. Unfortunately, just the opposite has happened because such surveillance of US policies does not exist, and the IMF was not created for that purpose in the first place. As a result, similar exchange rate problems have repeatedly arisen since the 1970s. Now it is the renminbi's turn.

We are in a typical, not unique, situation under the current global monetary arrangement: A country that does not fully, immediately, and quickly or "flexibly" accommodate US dollar depreciation may be blamed as a manipulator and be subjected to IMF surveillance.

Concluding Remarks

The Chinese currency should be revalued as China's productivity is increasing, and the country should improve its domestic economic structures so that the saving rate can be decreased in order to reduce the current account surplus. However, remember that the exchange rate involves at least two currencies, not one. The causes of the problem may also be on the other side of the equation. Finding out all causes of the problem may not mean that they are fixed soon, but at least it allows for a better understanding of the distribution of responsibility and the difficulties on both sides of the equation.

Global overliquidity and the repeated decline of the US dollar are part of a symptom of the profound cause of the ongoing global imbalance—i.e., the global monetary system itself, known as Bretton Woods II since 1970, the year that marked the abandonment of the gold standard in the global system. What has happened since is still to be fully understood. We are still searching for an agenda to improve global governance for more stable and balanced globalization.

References

- Anderson, Jonathan. 2006. *The Complete RMB Handbook*, 4th ed. UBS Investment Research Asian Focus, September 16.
- Fan, Gang. 2006. Currency Asymmetry, Global Imbalances, and Rethinking of the International Currency System. In *Global Imbalances and the US Debt Problem: Should Developing Countries Support the US Dollar?* ed., Jan Joost Teunissen and Age Akkerman. Forum on Debt and Development.
- McKinnon, Ronald. 2005. *Exchange Rates under the East Asian Dollar Standard: Living with Conflicted Virtue*. Cambridge, MA: MIT Press. (Chinese translation, 2005; Japanese, forthcoming 2007).
- McKinnon, Ronald. 2006. China's Exchange Rate Trap: Japan Redux. Paper prepared for the American Economic Association Meetings, Boston, January 7.
- Mundell, Robert. 2004. China's Exchange Rate: The Case for the Status Quo. Paper presented at the International Monetary Fund seminar on the Foreign Exchange System, Dalian, China, May.
- Prestowitz, Clyde. 2005. *Three Billion New Capitalists: The Great Shift of Wealth and Power to the East*. New York: Basic Books.

