
Interest Rates, Exchange Rates, and International Adjustment

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Introduction

In June 2003, we published the first of a series of notes that developed our views of the key features of the global monetary system and its future direction. Taken together, this series has come to be known as the “Bretton Woods II” view, a reference to analytical parallels made with the postwar fixed rate system.¹

When we first wrote on the nature of the global financial system, the general view was that the global current account imbalances were generated by U.S. savings and fiscal behavior, and that the problem would have to be solved by sharp dollar depreciation. Interest rates would have to rise, both to implement a secular shrinkage of U.S. demand and to control the rapid growth phase of the business cycle, then just taking off following the 2001 recession. Asian countries were thought to be tangential to this central problem: their growing surpluses and reserves were believed to be excessively cautious hangovers from an effort to build precautionary reserves after the 1997–1998 Asian financial crisis. To the extent that China’s currency policy was discussed, it was raised in order to warn China that its economy might overheat rather than to warn about the global macroeconomic effects of Asian development strategies. Analysis was carried out on a country-by-country basis, either of the U.S.-centric or small open economy sort, without much attention paid to why the global macroeconomic system had assembled itself together, and how it was operating as a whole.

We argued in 2003 and early 2004 that due to the nature of the de facto global system, nominal and especially real interest rates would remain

unusually low at any given phase of the business cycle. Our view was that the huge underemployment and tremendous savings in China and the rest of Asia were the driving forces of the global system, and that the United States was essentially a passive center country, but willing to absorb these low cost savings. As its development strategy, China/Asia would continue to pump out savings and therefore cheap goods to the rest of the world. This state of affairs would keep real interest rates and inflation low in the long term, while at the same time financing the U.S. current account deficit. Other currencies would appreciate against the dollar, but only the floating currencies would jump immediately. The currencies of the countries actually driving the system would appreciate only gradually. This delayed appreciation would cause regions with problematic economies, particularly Euroland, to stagnate even more, putting intense political pressure on their monetary authorities.

We also argued that the prevailing effect of the system was to neutralize somewhat the forces of protectionism that always arise in industrial countries when a poorer country tries to develop via industrial exports. This decrease in protectionist sentiment would occur through allowing rich countries industrial capital access to the cheap labor in the developing country's export sector, thereby splitting and co-opting the usual protectionist political coalitions.

At the time these were published, these notes provided a strong explanation and fit for the then-current state of the global economy, and for many of the anomalies that existed. More than that easy fit, these notes provided a strong contrarian forecast on global and regional interest rates, exchange rates, inflation rates, economic growth, and global imbalances. Also at the time of publication, these forecasts on asset prices and the duration of the system were many sigmas away from the conventional analysis and forecasts, so these attracted more than their share of attention and criticism.

That the forecasts have been on target for the last three years may be a matter of good analysis or good fortune. But this analysis has, in the nature of things, led to a more general acceptance of the view in the financial markets, to the extent that clients, accepting of these forecasts, now just want to hear the risk scenarios revolving around this central view. This is much less true of the academic and official sector discourse,

where even after several years we are still often on the defensive against strongly held views that the global financial system will collapse very soon, all the more likely for not having collapsed already.²

Whatever the judgment that hindsight will deliver on these academic disputes, it is clear that the global monetary system that we have described has some legs to it. So rather than fight old battles over the probability of imminent collapse, we think it is time to analyze the dynamics and evolution of the system *given that its basic parameters will last for some time*.

A Differing Base of Premises

In this paper, we set out in greater detail how we think about the dynamic forces emanating from the emergence of China and Asia as major players in world capital and foreign exchange markets. Conventional analyses have been based for several years on the assertion that the Bretton Woods II system cannot hold together for much longer. This judgment may or may not turn out to be correct, but this contention does not offer any guidance if the system does survive for an extended time period, as we believe it will. The framework developed below also provides a guide to the dynamics of the system following a variety of changes in the economic environment.

For the sake of simplicity, our framework has divided the world into three regions, emerging Asia, the United States, and Euroland.³ Euroland includes all countries outside the United States with open capital markets and market-determined exchange rates. We will use the euro to stand for the currencies of these countries, since it is the dominant currency among them. Asia includes all countries with relatively closed capital markets and managed exchange rates, and we use the renminbi to stand in for their collective currencies.

Some observers have questioned the usefulness of aggregating the managed rate countries into a single zone because of the differing incentives and constraints facing these countries. We agree, for example, that current account surpluses and reserve growth for China, oil-exporting countries, and Japan are products of quite different developments and incentives, and are likely to have different degrees of persistence over time.⁴ Our forecast is that individual countries will join and exit the bloc

of countries that manage their dollar exchange rates, and their various management regimes will find different degrees of success, but the bloc will nevertheless remain a lasting and economically important feature of the international monetary system.⁵

The analysis will lean on four assumptions, which we believe are realistic. These four tenets dramatically simplify the dynamics of a three-region analysis:

1. *Asian financial markets are poorly integrated with the other two regions because of capital controls and the threat of sovereign interference with capital flows.* This situation allows Asia to manage the dollar-renminbi exchange rate so that the renminbi appreciates in real terms slowly over an adjustment period of many years.
2. *The U.S. and Euroland financial markets, in contrast, are very well integrated and their respective assets are very close substitutes.* This assumption is consistent with a great deal of empirical work, especially on the ineffectiveness of sterilized intervention. The United States and Euroland do not manage the euro-dollar exchange rate.
3. *The dominant change in the economic environment that is driving the main features of the world economy is the rapid growth of savings rates and the level of savings in Asia, and their exportation of this surplus to the rest of the world.*
4. *The United States and Euroland differ in their capacities to utilize Asian savings, with the United States having a much greater absorptive capacity.*

Some of the significant departures of our analysis from the conventional approach include the following points:

- 1a. Conventional analysis considers Asian financial markets sufficiently integrated with international markets so that Asian governments will not be able to manage real exchange rates at reasonable costs. In particular, this view holds that they will be unable to fend off hot money inflows. Moreover, they will not want to distort real exchange rates for much longer in order to encourage export-led growth.
- 2a. Conventional analysis assumes that the United States and Euroland financial markets are not well integrated. Diversification of Asian reserves is thought to have an important effect on the dollar-euro exchange rate.

Yet this assumption seems to us inconsistent with substantial evidence that intervention and reserve management by U.S. and Euroland authorities have not had a large or lasting effect on industrial country exchange rates.

3a. The conventional analysis usually identifies a fall in the U.S. household savings rate or a rise in the government fiscal deficit rate as the driving force behind the U.S. current account deficit.

4a. Yet U.S. interest rate movements have not been consistent with this assumption—these rates have been falling instead of rising. To circumvent this contradiction, it is conventionally asserted that interest rates and asset prices are being driven by incorrect expectations, a misunderstanding of the dangerous nature of the system, or bubbles.

Analysis

In our framework, the fundamental shock to the system is a change in the supply of savings from Asia and a suspension of the usual home bias in allocating these savings across world markets. It may not seem all that important to decide whether it will be because U.S. savings fell or Asian savings increased to drive the pattern of current accounts we now see. But determining this is, in fact, crucial for understanding the current system and the direction it will take.

Asian real exchange rates are not market-determined prices, but instead are heavily and successfully managed by Asian governments. As noted above, the conventional analysis assumes this troublesome fact will soon go away. We argue that this policy behavior will *eventually* go away, but that right now it is a central feature of Asian development policies and will not dissipate for a long time. It follows that if the rest of the world now is to adjust to a savings shock emanating from Asia, the primary adjustment mechanism will not be changes in Asian real exchange rates.

To manage real exchange rates in today's environment, Asian governments must intervene in foreign exchange markets. The part of the intervention that is sterilized is, in fact, intervention in credit markets. Asian finance ministries or central banks sell domestic securities, thus reducing the supply of loanable funds to domestic borrowers, and buy foreign

securities, thereby increasing the supply of loanable funds in the United States and Euroland. The resulting shift in interest rate differential is possible because of effective capital controls. In other words, Asian governments can manage exchange rates and interest rates because, as a matter of official policy, if not private preference, their domestic assets are made imperfect substitutes for foreign assets in private portfolios.

Figures 7.1 and 7.2 summarize the current state of the global financial system. Long-term U.S. real rates fell to half their previous cyclical peak for two years during the rapid growth phase of this business cycle. These rates have recently begun to rise, but are still substantially below their cyclical peak. This situation is reflective of low real interest rates throughout the industrial world. Simultaneously, the U.S. current account deficit has grown steadily as a ratio to U.S. GDP. Whatever one might think about low saving rates in the United States, this is clear evidence that the supply of savings pushing into the United States, regardless of price, has dominated a demand-pull effect of foreign savings coming into the United States for half a decade.

Because Asian exchange rates are actively managed, the eventual adjustment must proceed through current account balances, other cross

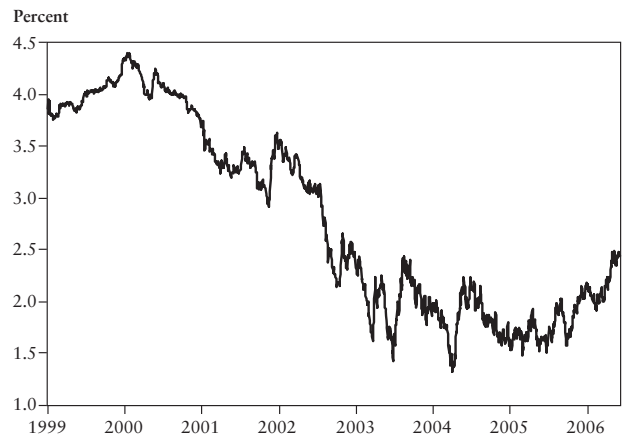


Figure 7.1
10-Year Treasury Inflation-Protected Security Yield
Source: Federal Reserve Board.

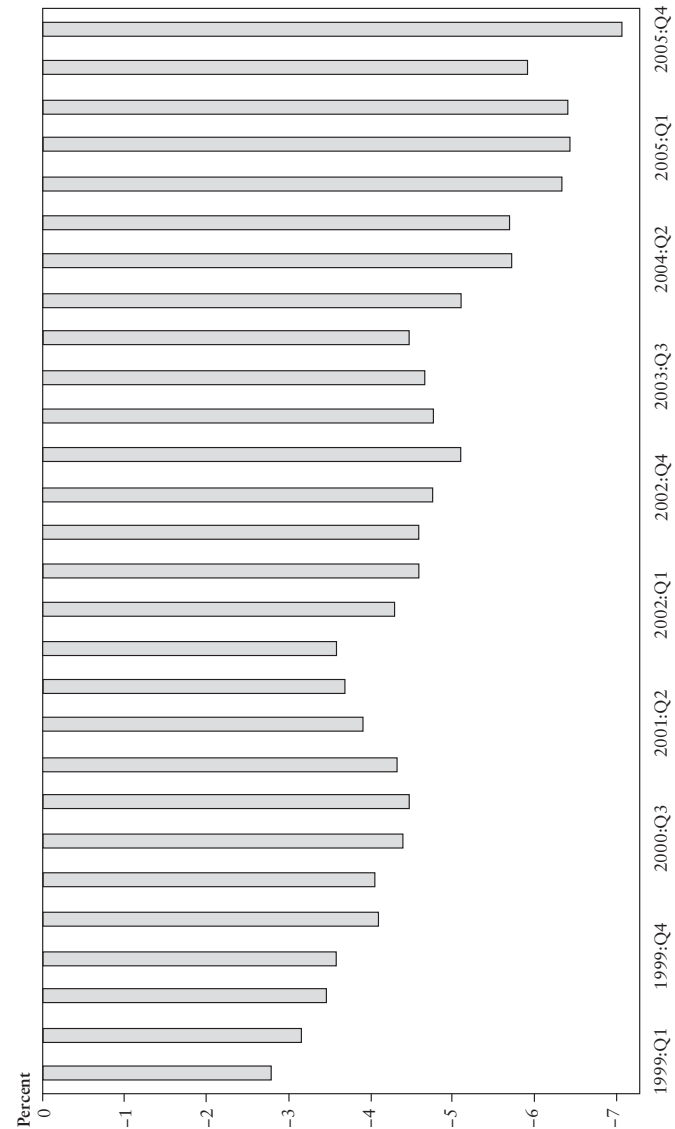


Figure 7.2
U.S. Current Account Balance, 1999:Q1 to 2005:Q4
Source: U.S. Bureau of Economic Analysis.

rates, and real interest rates. To understand current accounts we have to understand savings and investment behavior. The question is, how are savings and investment changed in the United States, Euroland, and elsewhere as Asian savings are offered to the rest of the world? In particular, can we understand why real interest rates might fall in both the United States and Euroland, while current account balances adjust by very different amounts? In our view, this is a very easy case to understand.

We can illustrate our approach first with a set of figures focusing on interest rates and current accounts for Asia, the United States, and Euroland, and then with another set focusing on net foreign debt positions and exchange rates.

Figure 7.3 shows real interest rates for the United States, Euroland, and Asia on the vertical axes. The horizontal axes represent the domestic savings, investment, and current accounts for these three regions. The upward sloping curves labeled S are national savings. The curves labeled S' are national savings augmented by imports or exports of savings through horizontal shifts. The downward sloping curves labeled I are investment. For convenience, we start with balanced current accounts at a common interest rate, but any starting point for the separate economies will do as long as real rates are the same in the United States and Euroland.

A policy to divert Asian savings to the United States and Euroland reduces the supply of savings available in Asia, and shifts the Asian supply curve to the left. In Asia, a current account surplus is generated and Asian interest rates rise. In this exercise, we assume that savers in Asia are paid the initial interest rate r_0 , investors are charged r_1 , and the resulting excess of savings is dumped on the global financial market for whatever rate of return it may bring. The financial markets allocate these new savings to the United States and Euroland to re-equate the real rates of interest in the two zones.

In the United States and Euroland, as Asian savings push in, the augmented savings supply curves shift to the right. The real interest rate in the United States and Euroland falls as we move down the investment demand curves, and the financial markets distribute the added savings across the two zones. The demand curves are downward sloping because investment increases relative to domestic savings as interest rates fall.

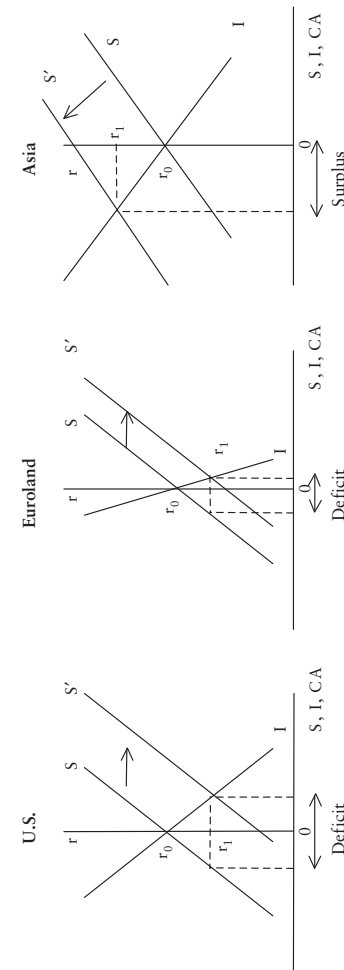


Figure 7.3
 Current Account and Interest Rates in the U.S., Euroland, and Asia
 Note: S stands for savings, I for investments, CA for the current account, and r for the interest rate.
 Source: Authors' calculations

Moreover, consumption rises with a fall in interest rates, so domestic savings fall as well. The rise in consumption and investment is matched by an inflow of foreign savings and, by definition, the current account deficit, initially marked at zero, increases. The increase in Asia's current account surplus is matched by the sum of the increases in the current account deficits of the United States and Euroland.

In the United States, the increase in savings demanded is large because investment and savings are quite sensitive to the rate of interest.⁶ Euroland sees the same qualitative changes. But its investment and the current account deficit increase only slightly because there are few profitable investment opportunities, and personal consumption is not very responsive. The fundamental factor driving the different responses of the United States and Euroland current account deficits is the different amount of opportunities to efficiently use foreign savings as the interest rate falls in both regions.

An important aspect of the adjustment process is how private arbitrage fosters the equalization of real rates of return on capital invested in the United States and Euroland. Later, when we turn to exchange rate determination, we will use the result that real interest rates are equalized by flows of savings. It is clear, however, that expected rates of return on capital in the United States and Euroland could be equalized by expected real exchange rate changes, in addition to real interest rates.

During the adjustment period, this apparent indeterminacy between real interest rates and expected changes in real exchange rates is resolved at the end of the period. When the new equilibrium is established, there is no reason to predict that the real exchange rate between the euro and the dollar will continue to change over time. Since looking forward at the end of the adjustment period, the capital stocks must have the same expected rate of return, it follows that real interest rates must be the same at that time. Across time, arbitrage will ensure that during the adjustment period any capital put in place in the United States and Euroland that will remain in place in a new steady state must have the same rate of return.

For Asian governments, the preferred policy over time is to allow gradual real exchange rate appreciation. This adjustment over time reduces their intervention in credit markets and their exports of savings. By the

end of the adjustment period, real interest rates will have equalized across the three regions.

Turning now to the foreign exchange markets, there are three keys to understanding the behavior of the three cross exchange rates.

First, looking ahead for some years, Asian governments can and will manage the real dollar value of their currencies. They can do so because capital controls make Asian domestic assets imperfect substitutes for U.S. and Euroland assets in private portfolios. Yet over time, as capital controls become less effective and their domestic asset markets are integrated with international capital markets, their ability to manage their real exchange rate will erode. The Asians' desire to maintain the system will also erode as their surplus labor is absorbed. But they will manage rates as long as they can because undervaluation is an important part of their development strategy.

Second, in the long run, say ten years more or less, the real value of the three currencies will have to adjust to changes in the three region's international investment positions generated during the adjustment period. Asia's net asset position will improve while the U.S. and Euroland positions will deteriorate by relatively large and small amounts, respectively.

The relationship between the long-run exchange rate and the net foreign debt position of each region is not controversial, and is the centerpiece of most analyses about the ultimate depreciation of the U.S. dollar. As a country's net foreign debt increases, larger trade balance surpluses are needed to service its net debt. So a fall in net foreign assets is associated with a depreciation of the real exchange rate. The implication of these increasing current account deficits is that the dollar and the euro must depreciate against the renminbi, but the dollar must depreciate by more. Therefore, the dollar must depreciate against the euro.⁷

Third, normally today's exchange rates would reflect these long-run expectations to some degree. But intervention by Asian governments is sufficient to manage the strict dollar-renminbi exchange rate. Intervention will not keep the renminbi undervalued forever, but it can extend the adjustment period. As we have argued elsewhere, from China's perspective, the preferred path for Asian real exchange rates is a gradual appreciation toward their new long-run values.

In contrast, the euro cross rates both today and along the adjustment path are determined by private investors. The relevant context for these portfolio choices is that dollar and euro assets are close substitutes.⁸ The key implication is that once the system is fully understood, the euro and the dollar must depreciate at the same rate over time relative to the renminbi. Recall that real interest rates on capital invested in the United States and Euroland are equalized by net savings flows. It follows that investors must expect the euro-dollar exchange rate to remain unchanged. Put another way, both currencies must depreciate, and be expected to depreciate, at the same rate against the renminbi.

The result of a leftward shift in Asian savings exports is then an immediate euro appreciation against the dollar and the renminbi, followed by a constant dollar/euro exchange rate. This means that there will be immediate, maximal political pressure for relief in a Euroland unable to absorb the shock easily and continuous, though declining, pressure thereafter.

These results are illustrated in Figure 7.4. Starting from an initial value of the renminbi-dollar rate in the top panel and a renminbi-euro rate in the bottom panel, we can follow the effects of an increase in Asian savings exports and intervention. These increases raise interest rates faced by domestic investors in Asia and lower interest rates in the United States and Euroland. Asia generates a current account surplus matched by deficits in the United States and Euroland. This situation continues until Asian savings exports and intervention return to normal levels. In the top panel of Figure 7.2, this interval is from 0 to T. The eventual fall in the dollar against the renminbi from A to B is required to close the trade deficit, and even to generate the trade surplus needed to service the higher level of U.S. debt at time T and after.

Absent intervention, we would expect an immediate depreciation of the dollar; but this can and will be delayed by intervention.⁹ Along the adjustment path AB, the dollar is supported by a flow of outside intervention. Private investors know the dollar will depreciate but nevertheless are willing to hold the stock of dollars, reduced by Asian purchases of U.S. assets.¹⁰ U.S. debt to foreigners is growing more rapidly than it would have if the fall in interest rates had been partially offset by a market-determined depreciation of the dollar.

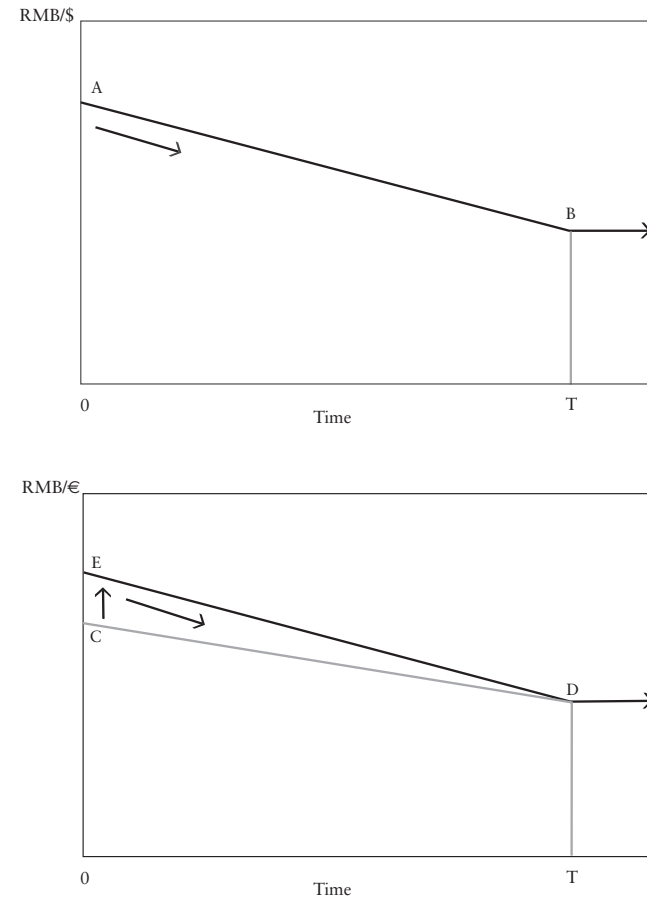


Figure 7.4
Exchange Rates
Source: Authors' calculations

In the bottom panel of Figure 7.4, the renminbi-euro rate starts at C and must eventually move to D, a much smaller depreciation. Like the United States, Euroland will accumulate debt (or reduce net assets below their previous path) during the eventual adjustment period. But in this case Asian governments are not intervening to manage the exchange rate either at point C or along the adjustment path. The question is then, where will the market set euro exchange rates?

We can make our analysis more realistic and much more transparent by assuming that U.S. and Euroland assets are close substitutes in private portfolios. This is an important departure from the usual portfolio balance model because it implies that the currency composition of Asian intervention is of secondary importance. If euro and dollar assets are close substitutes in private portfolios, Asian governments could intervene in either dollars or euros to stabilize the dollar value of their currencies. Moreover, diversification of Asian reserves would have little or no lasting effect on the dollar-euro exchange rates, contrary to a key conclusion of the conventional view.¹¹ This is because the irrelevance of Asian reserve diversification is consistent with a very large body of empirical evidence that sterilized intervention has had no lasting effect on exchange rates among industrialized countries.¹²

The practical importance of this assumption is that the two adjustment paths in Figure 7.4 must have the same slope. If these did not, more rapid dollar depreciation against the renminbi, relative to euro depreciation against the renminbi, implies an expected depreciation of the dollar against the euro. Since interest rates in the United States and Euroland are the same, arbitrage would be profitable. Private investors would immediately bid for euros against dollars and would do so until the euro jumps to E. From this initial appreciation, the euro now depreciates against the renminbi at the same rate as the dollar. Note that along this adjustment path the euro, as the key and only freely priced currency in the global financial system, overshoots and remains “overvalued” relative to the dollar and the renminbi throughout the adjustment interval, although the degree of overvaluation shrinks over time.

Therefore, for senior European financial officials to claim that a small Euroland current account position means that the European Union is

neither part of the problem nor of the solution is a position divorced from reality. In particular, successfully arguing that *China should not speed up the appreciation of the renminbi, for this would place maximal pressure on the euro to appreciate against the dollar* is exactly opposite of the intent.

We can now review our current account analysis. The euro has appreciated against the renminbi and the dollar, so Euroland’s current account deficit, already increased by the fall in interest rates, tends to widen. The dollar is unchanged against the renminbi and has depreciated against the euro, so the already increased U.S. current account deficit is reduced. These second-round effects on the current account positions of the three regions do not alter our basic story, assuming that the reactions to absorbing interest rates changes will be very different in the United States and in Euroland.

Interest and Exchange Rates with Disturbances Along the Adjustment Path

Of course, changes in many domestic and international economic conditions will shift the dollar-euro exchange rates along the adjustment path set out in the previous section. The framework we have developed is useful to evaluate changes in the economic environment during the adjustment process, and the peculiar nature of the global system produces some remarkable and unanticipated results.

1. *A Stronger Euroland Outlook*

Suppose, for example, that at time t_1 an improved outlook for profits in Euroland generates a positive shift in the demand for investment in Euroland. Figure 7.3 suggests that Asian savings will shift from the United States to Euroland for the balance of the adjustment period and that interest rates in both regions will rise.

The effects on exchange rates are illustrated in Figure 7.5. With more Asian savings going to Euroland and less to the United States, at the end of the adjustment period, at T, the euro will be weaker and the dollar stronger than would have been the case. If Asian intervention at t_1 keeps the dollar from jumping from its initial value at F in Figure 7.5, the euro

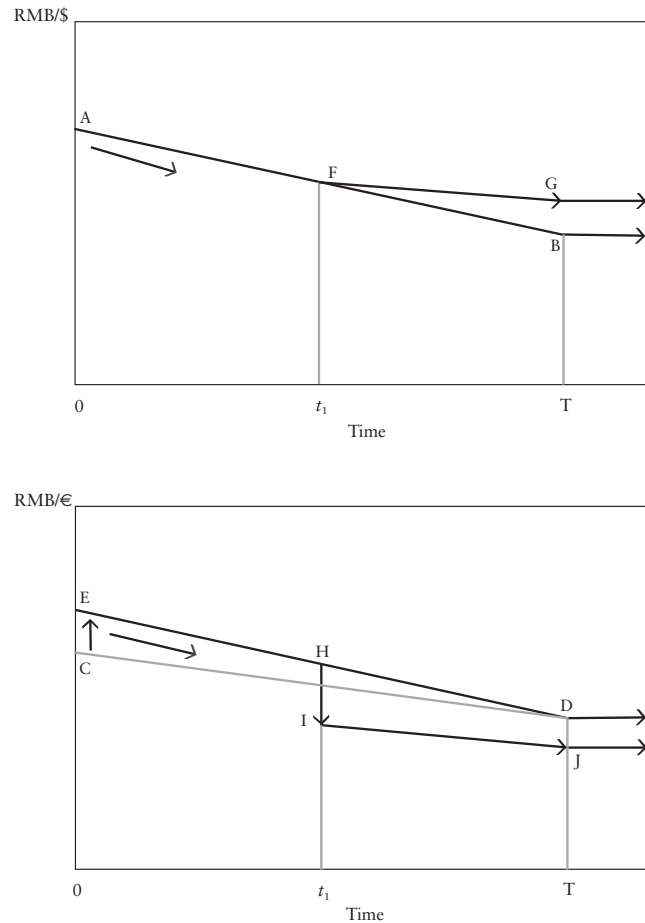


Figure 7.5
Exchange Rates
Source: Authors' calculations

depreciates sharply at t_1 for two reasons. First, it must now reach level J at T, and it must now depreciate more slowly to match the dollar's reduced rate of depreciation.

2. A Weaker Euroland Outlook

A weaker outlook for Euroland investment would have symmetric effects. In this case there would be deterioration in the final expected debt position of the United States and an improvement in the final debt position of Euroland. This scenario would require a more rapid rate of dollar depreciation against the renminbi and another move up for the euro. Interest rates in both regions would fall.

3. A Stronger Outlook for the United States

Changes in U.S. growth and investment would have similar effects. As U.S. growth increases, so does the expected stock of U.S. debt. The greater long-run depreciation would not affect the current level of the renminbi-dollar exchange rate, but would require a more rapid appreciation of the renminbi against the dollar for the balance of the adjustment period.

The euro would appreciate against the renminbi and the dollar for two reasons. First, its long-run level would jump, as Euroland would have a higher net asset position than before, and second, the euro would have to appreciate immediately in order to match the dollar's higher expected depreciation rate against the renminbi.

This situation is illustrated in Figure 7.6. The expected renminbi-dollar exchange rate at T shifts down from B to G, and the expected renminbi-euro rate moves up from D to K. The euro immediately jumps from H to I as again the change in the euro is amplified by arbitrage between dollar and euro assets. Interest rates in both regions would rise.

4. More War or Katrina

The United States might not experience the strong growth discussed earlier. For instance, expanded expenditures for war or a larger fiscal deficit and demand for capital following destruction of U.S. capital would increase U.S. demand for foreign savings and lead to increased U.S. indebtedness at T. Therefore, the analysis in scenario 3 still applies. The euro appreciates against the dollar. Global interest rates rise.

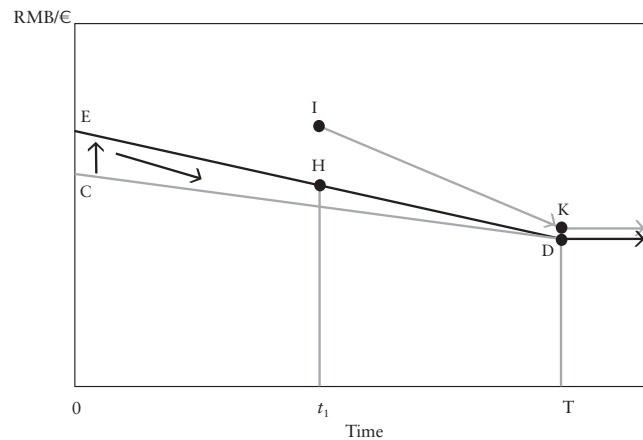
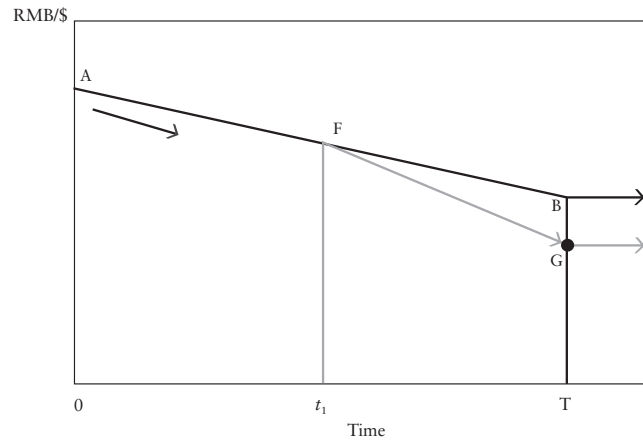


Figure 7.6
Exchange Rates
Source: Authors' calculations

5. Protectionism Surges; Oil Exporters Start Consuming Asia's Surplus Savings

It turns out that all of these potential events have the same impact on interest and exchange rates.

5a. For example, effective protectionist measures against Asian exports in both the United States and Euroland would forcibly reduce net savings transfers to the United States and Euroland from Asia by forcing a reduction in Asia's net trade surplus.

5b. Similarly, a decline in net Asian savings exported to the United States and Euroland would occur if a larger share of U.S., European, and Asian income is transferred to oil exporters via terms of trade shifts. As the oil exporters start to consume a high fraction of this transfer, fewer excess savings are available to accumulate U.S. and Euroland debt.

Each of these developments can be analyzed as illustrated in Figure 7.7.

In all these events, expected U.S. net debt at T is reduced, which raises the terminal exchange rate from B to G. Euroland net debt also falls, which raises the renminbi-euro rate from D to K. We assume that on its new path, the renminbi-dollar rate does not jump up at t_1 , but the rate of dollar depreciation is reduced, so that the new path for the renminbi-dollar rate is FG. The renminbi-euro rate must reach K at T, and the path from t_1 must have the same slope as FG; that is, the renminbi-euro rate must have the same expected rate of depreciation as the renminbi-dollar rate. The conclusion is that the euro can either depreciate or appreciate immediately against the dollar, depending on the relative change in debt stocks in response to the new environment. There is no necessary direction of effect for this key exchange rate. Interest rates will rise both in the United States and Euroland because of the reduction in available savings.

A useful rule of thumb is that events that change expected U.S. and Euroland debt stocks and real exchange rates in opposite directions generate large and immediate changes in the dollar-euro rate when these expectations change. The market rate changes in the same direction as the change in the expected future rates. Events that move both expected debt stocks in the same direction have ambiguous effects on the exchange rate at the point where expectations change.

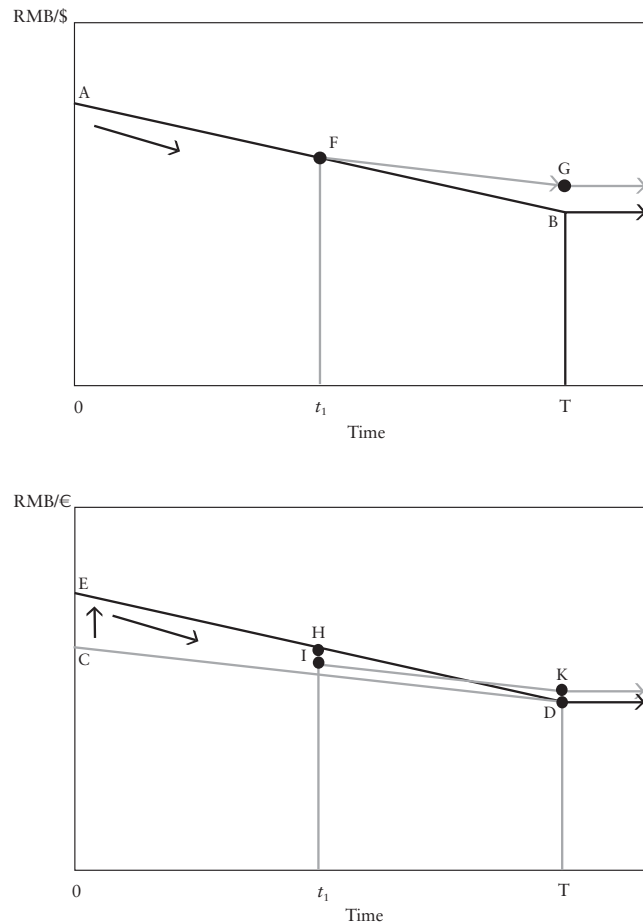


Figure 7.7
Exchange Rates
Source: Authors' calculations

Further Thoughts on Asset Markets

The apparent failure of dollar exchange rates to respond to unprecedented recent and projected U.S. current account deficits is an important challenge for economic analysis. It is generally agreed that a substantial increase in projected debt levels should be associated with expectations that the real exchange rate will eventually depreciate. If private investors regard financial assets denominated in different currencies and issued by residents of different countries as perfect or very close substitutes, then the current exchange rate should be tied to the expected future exchange rate through the interest parity condition. Taken together, these ideas suggest that the dollar should have declined several years ago against the floating currencies when expectations about future U.S. debt levels were revised.

Suppose, for example, that some event generates a forecast that U.S. debt will increase from 0 to 60 percent of U.S. GDP, and then stabilize at that level at some arbitrary future date, T . Most analysts would agree that a real depreciation of the dollar by time T will be a part of the adjustment process required to service this higher level of debt.¹³ If the dollar is expected to be lower at T , if interest parity holds, and if real interest rate differentials are not affected by the shock that generated the increase in expected debt, then the real exchange rate must depreciate immediately, and by the same amount as the long-run expected value when expectations change.

Research on exchange rates since the early 1970s has been dominated by attempts to reconcile the data to this elementary notion that increases in projected debt levels should be accompanied by expectations in real exchange rate depreciation. In the early years of floating rates, the question was why exchange rates were much more variable than reasonable estimates of long-run expected values. The current debate asks why market rates now are so stable in the face of strong presumption that the long-run expectation for the U.S. net foreign indebtedness has changed by a large amount.

To be sure, the market could have gotten it wrong then and could be getting it wrong now. If so, a crisis with sharply rising interest rates and sharply falling dollar exchange rates could be imminent, as conventional

analysts predict. But it seems prudent to carefully consider alternative possibilities that are *currently* consistent with the salient evidence.

An Attempt to Reconcile Current Exchange Rates and Expectations

Market exchange rates need not move in lockstep with expected exchange rates if interest rates change or if interest rate parity does not hold. An approach that was popular in the early 1980s to explain “excess volatility” of market exchange rates explored the assumption that interest rate parity may not hold if assets denominated in different currencies or issued in different countries are not close substitutes.¹⁴ That is, if residents of a country for some reason prefer domestic assets, they would have to be compensated with higher expected yields to move away from their preferred portfolio. If rates of change toward a stable long-run equilibrium varied, it follows that current exchange rates could be much more variable than long-run expected exchange rates. Moreover, sterilized intervention alters relative supplies of securities, and could have some influence on expected rates of change and the levels of exchange rates.

In the current context, the implications of this portfolio balance approach are straightforward. If foreign residents prefer home securities and those preferences are unchanged, U.S. residents must pay a premium to finance a current account deficit. If we assume domestic interest rates are not affected by the shock that increases U.S. foreign debt, foreign investors must be induced to hold the growing stock of dollar-denominated claims on the United States by an extra expected return in the form of expected appreciation of the dollar. Since at T the dollar has to be below its current level because of increased U.S. indebtedness to foreigners, and since it must be expected to appreciate from now to T, the dollar must depreciate by even more now.

At first glance, this does not seem to help much in understanding the current situation where, it is argued, the dollar has not depreciated enough. But this can be rationalized by assuming the initial shock was a spontaneous increase in preferences for dollar assets (Blanchard, Giavazzi, and Sa 2005). If foreigners want dollar assets, they can obtain them through current account surpluses and in the interim will accept

a lower expected yield on the dollar assets they do hold. It follows that even though the dollar is expected to be lower at T, it may not fall much initially because an expected depreciation is consistent with an otherwise unsatisfied demand for dollars during the adjustment period.

Is Exchange Rate Intervention a Plausible Driver of the System?

Identifying plausible reasons for a shift in preferences toward dollars remains a serious problem.¹⁵ One explanation holds that if changes in governments’ balance sheets are not systematically offset by private investors, the shift in currency preferences could be associated with government policies. In particular, sterilized intervention could account for expected increases in U.S. net international debt, but only gradual adjustment in dollar exchange rates.

But there are a number of reasons that the portfolio balance approach was placed on a back burner of the profession’s research agenda. First, a very large empirical literature was unable to find any lasting effect of intervention on interest rates or exchange rates. Second, imperfect substitution is usually modeled as aversion to exchange rate volatility. But sensible estimates of the degree of risk aversion needed to match exchange rate data seemed implausible. Third, imperfect substitution could be related to default risk or capital controls, but this has generally been assumed to be irrelevant for industrial countries.

Finally, Dornbusch (1976) showed that monetary policy and associated changes in real interest rate differentials could account for exchange rate volatility with perfect substitution and stable long-run expected values for real exchange rates. In an era where monetary policies were quite variable, this solved the theoretical puzzle of the day and moved portfolio balance models to the history of thought reading list.

Nevertheless, it is clear that home bias in goods, equities, and other financial assets remains a central fact and puzzle for international economics.¹⁶ Obstfeld (2004) presents a thoughtful review of these issues; he suggests that a new theoretical basis for the portfolio balance approach will emerge from his work with Ken Rogoff on the implications of imperfect goods market integration. Such an explanation would be welcome,

but in the interim we remain largely in the dark about the source of home bias for assets and its implications for models of portfolio behavior.

Our own home bias in these matters is that capital controls and the threat of sovereign interference with foreign investment is the most compelling argument behind a portfolio balance framework.¹⁷ It follows that the portfolio balance approach is more likely to be useful in understanding the behavior of countries or groups of countries whose governments dominate private portfolio decisions through controls and intervention and manage their exchange rates.

In our framework, the shift in preferences toward dollars is not just *qualitative* but is *measured* by increases in international reserves of governments managing their exchange rates. Moreover, sterilized intervention is effective in altering interest differentials and exchange rates *between* managed economies and an integrated international capital market. But shifts in the composition of reserves do not change exchange rates *within* the larger integrated market.

While we use China/Asia and the renminbi as shorthand for the managed fixed-rate region and its currency, we do not argue that China alone is large enough to dominate international interest and exchange rates. However, we estimate that countries that actively manage their exchange rates comprise about one-third of world GDP and savings. The shock to the global system that we model is a substantial increase in savings rates and levels among this group. These effects are coupled with a decision of governments in the managed-rate region to put a large share of the increase, about half, into foreign assets.

We could extend the portfolio balance model as well to economic relationships within the international capital market, meaning to the relations between the United States and Euroland, but we do not do so for two reasons. First, the reasons for rejecting this model in the past are still very powerful. Second, a three-zone portfolio balance model is very difficult to work with, particularly when we are interested in studying the endogenous responses of exchange rates and real interest rates to various shocks. Since such models have a low insight to equation ratio, we stick with the perfect substitutes model for the United States and Euroland. Our guess is that introducing a little bit of home bias in these portfolios will do little violence to our results.

Conclusion

To summarize the results presented in this paper, given the shift to a global financial system with a long-term rise in exports of Asian savings, and an understanding that this system will persist, includes recognizing that:

- A substantial immediate appreciation of the euro against the dollar will take place. As one of the only key prices allowed to move freely, this will entail a painful overshooting.
- Real interest rates in the United States and Euroland will remain low relative to historical cyclical experience, but will converge slowly toward normal rates as Asian financial markets become integrated with international markets.
- The dollar and the euro will gradually depreciate relative to the renminbi but, after the initial euro appreciation against the dollar, these currencies will *remain constant relative to each other in the absence of further disturbances*.
- A shift to a more rapid expected growth in Europe would *depreciate* the euro relative to the dollar and renminbi and raise interest rates in the United States and Europe.
- More rapid expected growth in the United States would tend to *depreciate* the dollar relative to the euro and renminbi. Because the dollar–renminbi exchange rate is managed, the dollar would not fall immediately but would begin to depreciate more rapidly. The euro would appreciate immediately and then match the dollar's more rapid rate of depreciation against the renminbi.
- Shifts in the currency composition of Asian reserves from dollars to euros would have little or *no lasting effect* on dollar-euro exchange rates.
- Effective protection in the United States and Euroland or a fall in the savings rate in Asia would generate a stronger dollar in the long run. The immediate effect would be less rapid dollar depreciation against the renminbi. The euro could go either way against the dollar.
- In real terms, the dollar will eventually have to depreciate relative to the renminbi. But most of the adjustment in the U.S. trade account will come as U.S. absorption responds to increases in real interest rates. Slow adjustment in the composition of U.S. output toward traded goods

over an extended time period will not require unprecedented dollar depreciation.

- High oil prices and high consumption by oil exporters would generate a slower rate of dollar depreciation against the renminbi and higher interest rates in the United States and Euroland. The dollar-euro rate could go either way.

Notes

1. See Dooley, Folkerts-Landau, and Garber 2003a, 2003b, 2004a, 2004b, 2004c, 2004d, 2005a, 2005b, and Dooley and Garber 2005. Many of these can be found at <http://www.frbsf.org/economics/conferences/0502/index.html>.
2. See Eichengreen 2004, Obstfeld and Rogoff 2004, Obstfeld 2005, and Roubini and Setser 2005.
3. Because there is no necessity of geographic contiguity, we have referred to these regions in other essays from the functional viewpoint as the trade account region, the center country, and the capital account region.
4. See Dooley and Garber 2005, p. 158–160.
5. We have consistently argued that the system, *not its current manifestation in the orientation of particular countries to these three blocs*, would last for the foreseeable future: “Fixed exchange rates and controlled financial markets work for twenty years and countries that follow this development strategy become an important periphery. These development policies are then overtaken by open financial markets and this, in turn, requires floating exchange rates. The Bretton Woods system does not evolve, it just occasionally reloads a periphery.” See Dooley, Folkerts-Landau, and Garber 2003b, p. 3.
6. This means that there are many viable projects or confident consumers ready to go with a small improvement in financing costs relative to Euroland.
7. In our view, the amount of the eventual dollar depreciation is often overestimated. Recall that the primary factor driving the increase in the U.S. trade and current account deficit is the relatively strong response of U.S. investment and consumption to a decline in interest rates. Over the adjustment period interest rates will rise, thereby causing an equally strong reverse effect; this will help reduce the U.S. deficit. The exchange rate adjustment therefore must be consistent with a slow shift in U.S. output toward traded goods.
8. See Henderson and Leahy (2005) for a three-country analysis of intervention where imperfect asset substitution is assumed for all three regions.
9. We could replace time with net debt on the horizontal axis and have a diagram similar to that presented in Blanchard, Giavazzi, and Sa (2005). The case we present here is similar to their discussion of intervention following a shift in preferences away from U.S. goods. The interested reader is encouraged to work

through their analysis of an imperfect substitutes model. Their analysis assumes that interest rates are unchanged and changes in absorption are assumed to be related to fiscal policies.

10. The portfolio balance equilibrium is based on the idea that residents of all countries prefer home assets but can be moved away from their preferred portfolio by differences in expected yields; that is, by interest differentials adjusted for expected changes in exchange rates.

11. See Eichengreen 2005.

12. We have also explored the effects of diversification under the assumption of imperfect substitution between dollar and euro assets. Our conclusion was that it is not in the interests of Asian governments to diversify, and recent data from the International Monetary Fund shows that they have not done so through the end of last year. See Dooley, Folkerts-Landau, and Garber (2004a). The argument presented here suggests that Asian governments can diversify if they choose to do so, but that this would have no lasting effect on dollar exchange rates.

13. See Lane and Milesi-Ferretti 2004 and 2005 for discussion and evidence.

14. See Branson and Henderson 1985 for a survey.

15. Cooper (2001, 2004) offers a compelling argument for a change in private preferences for U.S. assets. We agree that this is part of the story but focus here on governments’ portfolio choices.

16. See Obstfeld and Rogoff 2000.

17. See Dooley and Isard 1980.

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Comments on “Interest Rates, Exchange Rates, and International Adjustment” by Michael P. Dooley, David Folkerts-Landau, and Peter M. Garber

Catherine L. Mann

Are global imbalances here to stay for a long while or are the adjustment mechanisms of our economic theory classes soon to come into play? When this comment was originally written in June 2006 for delivery at the conference, the dollar had been depreciating against the major freely traded currencies for about four years, but had moved much less against the managed currencies of the other important trading partners, including, in particular, the Chinese renminbi. The Dooley, Folkerts-Landau, and Garber (DFG) collection of papers have been described as “Bretton Woods II” for the central role the near-peg of the renminbi to the dollar plays in the world’s current account imbalances.

Then and now, my framework for assessing global imbalances takes the form of the four Cs. The first C is consumption. In mid-June 2006, U.S. consumption had been driving both GDP growth and import growth, contributing to the U.S. side of the global imbalance. The second C is codependency, which describes the nature of the relationship between the U.S. current account deficit and the capital inflows from other countries. The U.S. imbalance occurs in a global context of policy choices and habits. Complacency is the third C—the apparent stability of the global macroeconomic situation contributed to complacency on the part of both policymakers and the private financial community that this situation of “balanced imbalance” could continue indefinitely. The fourth C is crisis. At the Boston Fed conference held in mid-2006, I noted that while we surely had the first three Cs in place, the important question was whether the fourth C is on the horizon, and if not, why not?

In the end, DFG predicted that forces of constancy (a fifth C!) would prevail, meaning that a crisis would not ensue. At the time, I tended to agree

with them, although our analyses took somewhat different paths. The different paths yielded different implications for how long the stability of global imbalances could last, and, in the end, I was less sanguine than DFG about the path of stability they foresaw continuing indefinitely.

Indeed, in the intervening two years, U.S. consumption has slowed, and the current account has narrowed. Codependency, and its associated buildup of financial assets, has become more noticed by the countries lending to the United States, with the rise of sovereign wealth funds a consequence. Complacency reigned until it did not—with the subprime crisis delivering the “proper jolt” that I noted in my closing remarks would change the dynamics of the system.

Overview of DFG and Where I Differ

First, DFG see the main factor driving the global imbalance as Asian savings. While I agree that Asian saving is important, it takes two domestic imbalances to create a global imbalance. The U.S. household consumption story is our domestic part of the global imbalance. A second part of DFG’s analysis is the relationship between the dollar exchange rate and the U.S. current account deficit. They argue that the dollar exchange rate, as of June 2006, had not responded to the large U.S. current account deficit. In contrast to this view, in an essay written in 2002 and published in 2003, titled “How Long the Strong Dollar?,” I argued that the dollar exchange rate did respond at that time to the projected high share of U.S. assets in private portfolios of global investors. What has happened subsequently to the exchange rate, particularly evinced in the different movement of the Federal Reserve Board’s “major trading partners” currency index versus that of the other important trading partner (OITP) index, is that Asian official purchases have taken up the slack in private investors’ purchases of U.S. assets. Subsequent to 2006, although Asian official purchases remain large, there has been an accelerated appreciation against the dollar by those managed currencies.

The third key part of the DGF analysis is that, in their view, future adjustment will take place in two steps. As the first step, U.S. domestic demand would slow in response to rising real interest rates, which would be a consequence of the second step—a gradual integration of Asian

private finance into global capital markets and the associated equalization of higher real interest rates around the world. In contrast, I argued then and maintain now that, while there was (and in fact did occur, over the last year) certainly the potential for the first step of their analysis, this was not on account of integrating Asia into global capital markets, which is too gradual a transition to explain near-term changes in interest rates. Rather, any rise in interest rates would more likely be due to a Federal Reserve policy shift that was accompanied by other central banks around the world. Removing the accommodative monetary stance would represent the recognition by U.S. policymakers of their possible awakening from complacency regarding the role of U.S. consumption in maintaining these global imbalances. On the other hand, the continued (as of 2006 anyway) low-risk, low-inflation, and low-term premia on longer-term U.S. assets suggested a continued complacency on the part of the private financial markets. At the June 2006 conference I asked, “Does this complacency raise the prospect for crisis, or is this complacency well founded in the constancy of exchange rates underpinning Bretton Woods II?”

The Cs Framework and Data

Codependency of habits and policies here and abroad has yielded global imbalances both on the real side and on the financial side. What habits are these? The habit on the part of the United States to consume more than it produces and the habit on the part of some of other countries abroad to consume less than they produce. Policies here and abroad have tended in the past to exacerbate those habits. For example, the personal income tax cuts in the United States have tended to promote personal consumption as well as reduce national savings. The extended period of low interest rates tended to support equity and housing prices, both of which tended to promote U.S. consumption through increased wealth. With the change in monetary stance (up until the 2007 subprime crisis), at least one U.S. policy had moved toward neutral. By contrast, abroad, the policy to maintain relatively depreciated exchange rates (although less so starting in mid-2006) had tended to buttress the habit of production in excess of consumption, which was most evident in parts of Asia.

Codependency, even now as of mid-2008, is stable and this apparent stability can produce policy and private complacency about assessing risks. In addition, this apparently stable situation does not necessarily yield a desirable trajectory. Why is this stable codependency undesirable? The stable production-consumption imbalances are mutually reinforcing, so they are stable. On the other hand, these production-consumption imbalances yield undesirable domestic trajectories because these are associated with resource misallocations that damage potential growth. The capital, sectoral, and geographical misallocations in China, and to some degree in India, were noted in other papers and comments during the conference. A persistently undervalued exchange rate undermines the development of a nation's banking system, directs credit away from services toward tradeable goods, and focuses investment to port areas.

Resource misallocations also can be measured from the standpoint of potentially vulnerable financial asset positions. One is the growing U.S. net international investment obligation that is increasingly exposed to changes in interest rates and the increasing concentration of foreign official holders of U.S. official assets. The financial vulnerabilities probably matter more in the short run given the liquidity of the markets. Overall, policymakers, who can change course, should not exacerbate the habits and behaviors that are much more difficult to alter.

What is the evidence for the four Cs framework? The adjustment challenges facing the United States, and in the context of global exchange rates the rest of the world too, is daunting, as shown in Figure 7.8. The present imbalances observed in the U.S. current account and trade deficit are unprecedented over the floating rate period. Some observers of these data look to exchange rate adjustment as a way of achieving U.S. external balance—a twenty-first century redux of the late 1980s and early 1990s. But those observers must be careful what they wish for. Although the current account deficit was relatively narrow during these years, and the dollar very competitively priced, the overall macroeconomic situation in the United States and some other parts of the world was not so salubrious. A decomposition of the U.S. trade deficit reveals that it is not just Asian savings that drives global imbalances, as shown in Figure 7.9. Nearly the entire U.S. trade deficit in most recent years, and in fact for virtually all of the last 25 years, comes from large and widening deficits on consumer

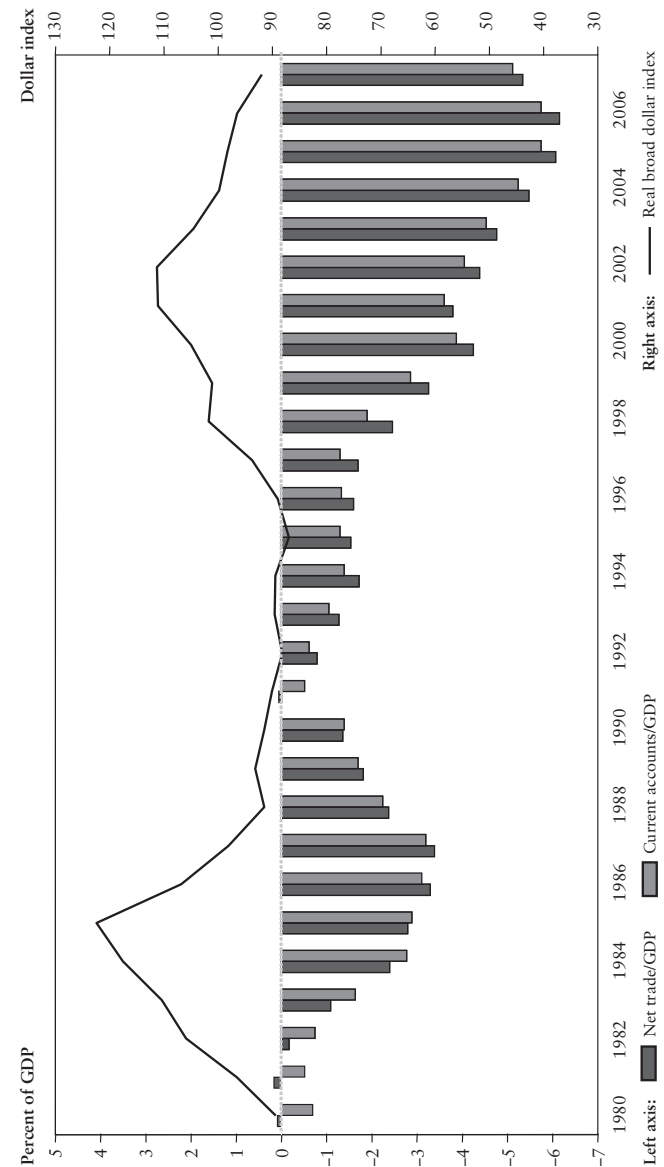


Figure 7.8
Real Broad Dollar Index and the U.S. Trade and Current Account Balances as a Percent of GDP
Source: U.S. Bureau of Economic Analysis.

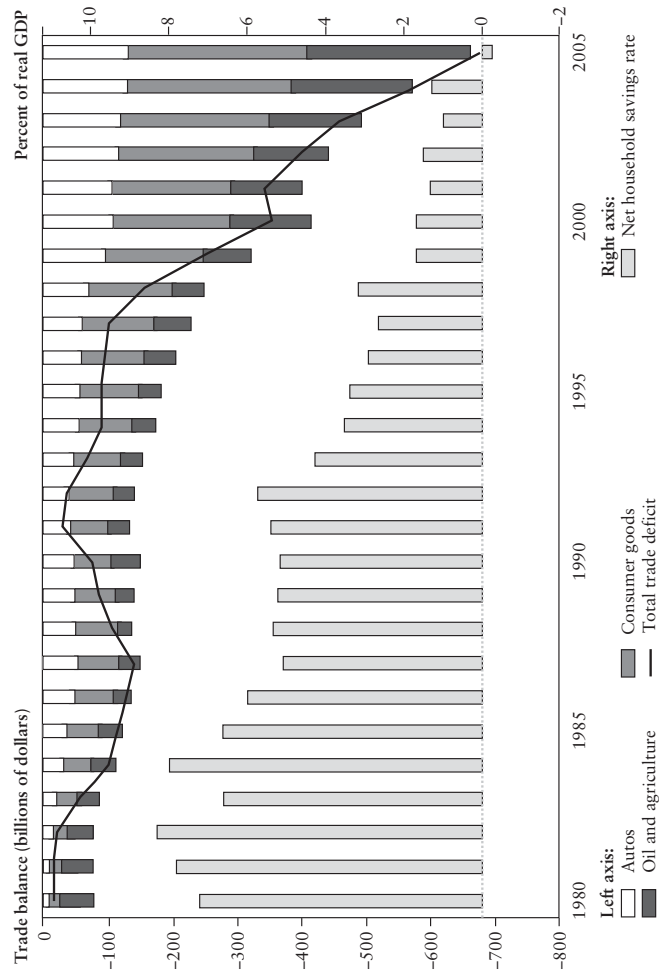


Figure 7.9
 U.S. Trade Balance by Selected GDP Categories, and Net Household Savings Rate
 Source: U.S. Bureau of Economic Analysis and Federal Reserve Board.

goods, autos, and energy. Placed against the trade deficit is the household saving rate, which has trended downward, significantly so since the early 1990s. The “ocular regression” of the correlation between consumer-type imports, overall net imports, and the household saving rate is supported by more sophisticated econometric techniques (Mann and Plück 2007). Some researchers have questioned the calculation of household saving (for instance, see Cooper 2005). Making adjustments to wealth, education, and so on may adjust the level, but does not change the downward trend, and it is the trend that drives the important relationship. Finally, note that the overall U.S. trade deficit is in categories of trade that are not investment-related: capital goods and industrial supplies and materials account for about 30 percent of imports and 44 percent of exports, but are not shown because this category is about in-trade balance.

Examining the current accounts and trends for a range of countries further indicates that the Asian savings phenomenon is not the whole story behind these global imbalances, as illustrated in Table 7.1. The trend toward net external saving is most pronounced for Asia, but it is not exclusively an Asian story.

The second part of the DFG argument, at least through mid-2006, was that the dollar was not responding to the U.S. imbalance. Well, then and

Table 7.1
 Increases in Savings: Current Accounts as a Percent of GDP

	1998	2004	2005	2006	2007
	(percent)				
European Union	2.6	0.5	-0.2	-0.7	-1.0
Japan	3.0	3.7	3.0	3.9	4.5
China	3.3	3.6	7.2	9.4	11.7
Developing Asia	2.6	2.6	4.1	5.9	6.9
Western Hemisphere	-4.5	1.0	1.4	1.5	0.6

Source: International Monetary Fund, World Economic Outlook Database, 2007.

Note: Data for 2007 are projections.

now, I'd argue both yes and no. The behavior of the exchange value of the dollar in recent years is similar to that observed during the 1990s—the major currency index has adjusted relatively more whereas the OITP index has adjusted a lot less. The differential adjustment may matter more today than in the early 1990s because of the changing shares of the United States's trading partners, particularly for imports; see Figure 7.10. Clearly, against some currencies, the dollar has adjusted. But why more against some compared to others? In 2002, I calculated that the widening trajectory for the U.S. current account deficit implied that a growing share of the increase in global financial wealth would have to be invested in U.S. securities, so as to not exert downward pressure on the dollar and upward pressure on interest rates (Mann 2003). Those calculations showed that more than 100 percent of the increase in global non-U.S. financial wealth would have had to be invested in U.S. securities in order to support the dollar at that time. Well, that shift in investment did not happen, and so a general downward move in the dollar started in 2002.

However, the dollar has not completely adjusted, and the relatively less adjustment in Asia and the region's financial means used to avoid adjustment is partly contributing to the financial vulnerability of the global economic system. This situation is shown in Figure 7.11. As the depreciation of the dollar started against the major currencies, the United States' share in global capital imports started to contract, consistent with the pullback by foreign investors from maintaining a too-high share of U.S. assets in their portfolios. However, official investors came in to augment demand for U.S. securities so as to maintain the U.S. share in global capital imports. The preponderance of official investors from the OITP countries explains the differential behavior of the two exchange rate indexes. This official behavior is not new and it continues even in 2008. It has frequently been the case that the official share in U.S. capital imports has been high in periods when the dollar has been under downward pressure.

Scenarios of Adjustment

So, how might adjustment take place? One partial-equilibrium approach is to consider only adjustment via changes in growth—a slowdown in U.S. economic activity and a boom abroad. At the other partial-equi-

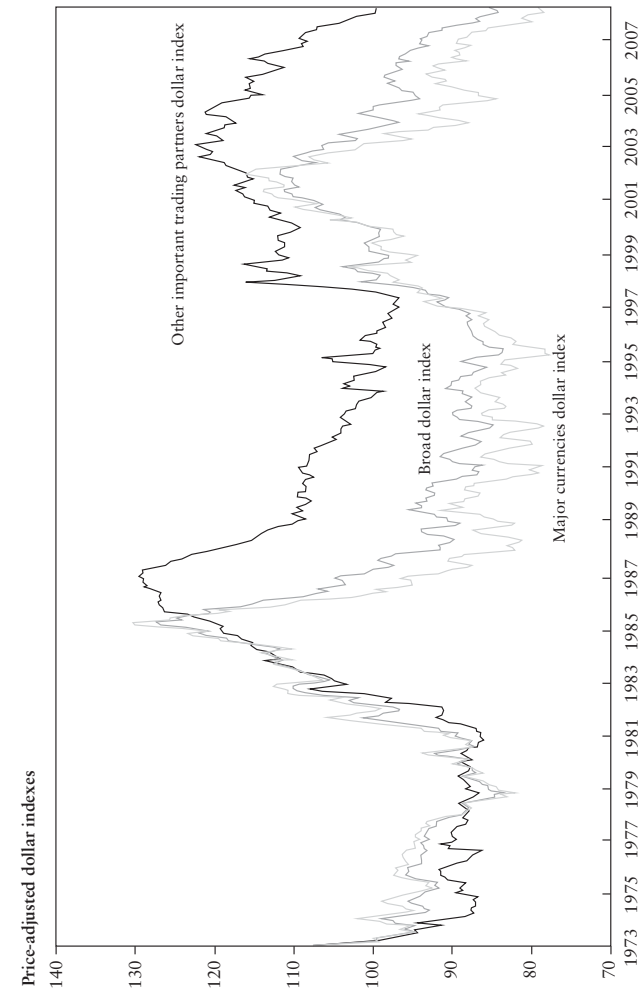


Figure 7.10
The Exchange Value of the U.S. Dollar as Measured by Selected Indexes
Source: Federal Reserve Board.

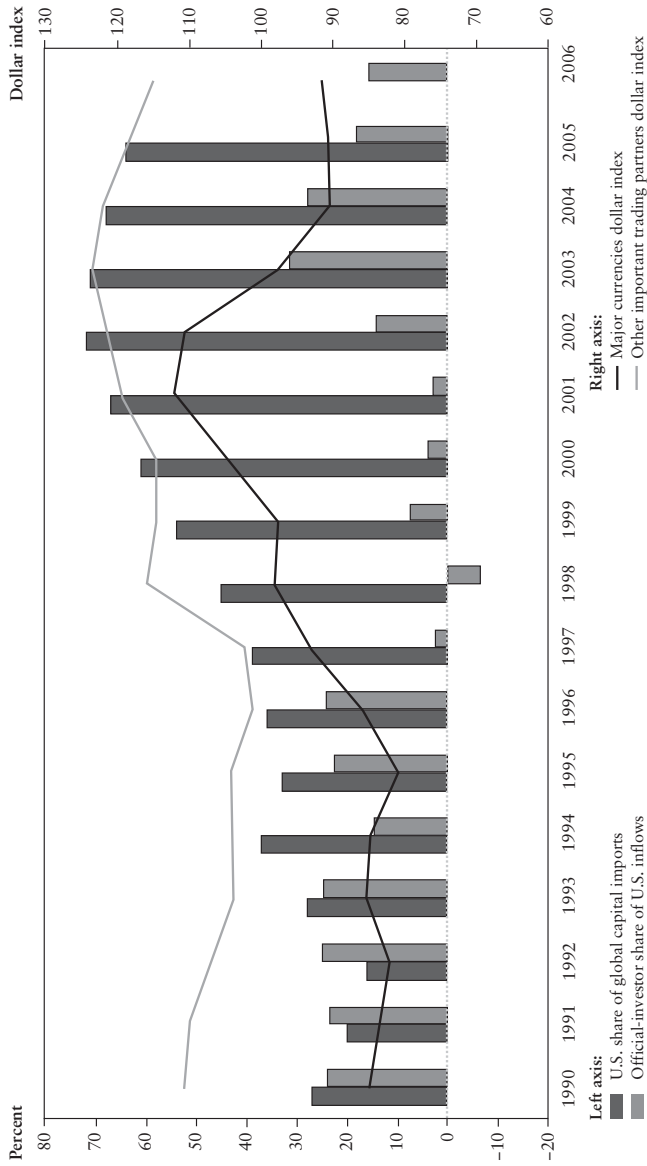


Figure 7.11
 U.S. Share of Global Capital Imports, Official Inflows, and Real Exchange Rates
 Source: IMF *World Economic Outlook Database*, U.S. Bureau of Economic Analysis, and Federal Reserve Board.

librium extreme, all adjustment could take place via movements in the exchange value of the dollar.

Based on parameters estimated in Mann and Plück, an “average” non-U.S. domestic demand boom improves, albeit slightly, the U.S. trade deficit. On the other hand, a modest U.S. slowdown dramatically reduces the U.S. side of the global imbalance. With regard to exchange rate changes, estimates using the exchange rate scenario in Truman (2005) show that a big exchange rate change vis-à-vis Asian currencies shifts U.S. consumer spending dramatically away from those imports and raises and shifts U.S. exports away from Europe toward Asian markets. The magnitude of the shifts in net exports to Asia could sum to about 7 percent of the region’s GDP.

Therefore, both growth and relative price adjustments are needed. Ending global codependency requires big adjustments to U.S. domestic demand and to currencies in Asia. Part of this adjustment must be led by changes in policy. But that requires a change in policymakers’ complacency regarding the current situation. This is exactly why it is not likely to happen any time soon. (And indeed, the response to sluggish consumption growth in the United States is to lower interest rates and issue tax rebate checks, policies which are opposite to the adjustment in consumption necessary to narrow the U.S. side of the external imbalance.) As with DFG’s Bretton Woods II, codependency and complacency suggest that the current situation will persist, but for somewhat different reasons than these authors propose.

In 2006, I was less sanguine than DFG. On the real side, the misallocations of resources were already noted, and were leading to political pressures, at least in the United States, to remedy the situation. On the financial side, the U.S. share of global capital imports remains high, private inflows are a smaller share of those capital imports, and the official purchases of U.S. assets are increasingly concentrated nationally. I suggested in 2006 that the private financial markets may be waking from their complacency, or could do so quickly given a proper jolt. I argued then that, from the standpoint of politics and private finance, the situation may be more vulnerable than DFG suspect. Only future research will show the extent to which the magnitude of the subprime meltdown was related to global external imbalances.

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Comments on "Interest Rates, Exchange Rates, and International Adjustment" by Michael P. Dooley, David Folkerts-Landau, and Peter M. Garber

Eswar S. Prasad

This is a paper by Dooley, Folkerts-Landau, and Garber, so almost by construction it is an interesting paper and when all is said and done you know exactly where they stand on the issue of global imbalances. Given that this is an issue that a lot of us worry about, after a first reading of the paper you get the sense that it is time to go home and catch up on your sleep because all is well in the world, things are going to adjust smoothly, and life is going to be all right.

Beginning in 2003, these three authors went out on a limb in a very constructive way. Not only did they come up with an internally consistent approach that rationalizes global imbalances, but they also made a prediction that, as they note in this conference paper, was "many sigmas away" from the conventional wisdom. So, in this new paper they take a brief moment to gloat, and while conceding that some of what has happened since may be chalked up to fortune, overall they contend that their analysis got it all right.

The basic thesis of the paper is that global imbalances are an equilibrium outcome, that they are sustainable over the medium-term horizon, and that they will eventually fade away without any major disruptions in the countries involved. I would like to focus on whether this sort of laissez-faire approach to the adjustment process is ideal. In my view, sustainability is not really the issue. The issue is whether the current state of policies is optimal, and one can think about this question in two ways. First, we should consider whether the risks of a bad outcome have increased very significantly. Second, even if the potential risks do not pan out in a disruptive manner, is this approach the right way that policy-makers should be thinking about these global imbalances?

The first question is about whether there are really significant risks, or whether the whole notion of global imbalance is just an organizing principle that perhaps gives my former employer, the International Monetary Fund, a new mandate to go around banging heads by saying, “Look, global imbalances are a problem. Let’s all sit down at the table and figure out what you need to do for yourself and for the greater good of the world economy.” I think there is some truth to that point of view, because ultimately what might be a way of trying to resolve the global imbalances will, in a sense, resolve imbalances in the individual countries. This will entail attempting to get China and much of emerging Asia to increase domestic consumption, trying to get more flexible exchange rates, reducing government consumption in the United States, and perhaps starting Europe on the process to real growth. These are all goals that are intrinsically valuable and perhaps will reduce the risks associated with global imbalances, so it may be a very useful organizing principle to get reforms started that are really essential to the long-term health of the international financial system and global economy. Such reforms would address the distortionary consequences that should be part of the welfare calculations resulting from the current state of global imbalances. See Figure 7.12, which shows how total capital flows (private plus official) have been going from relatively poor nonindustrial economies to advanced industrial economies, a direction exactly opposite the one predicted by theory; Figure 7.13 shows a similar calculation but excludes the United States.

There is still the question of whether the current situation is really one of reserve imbalances, where the huge and growing hoards of reserves by some emerging market countries portend dysfunctionality somewhere else. But remember that no one is forcing the Chinese to accumulate more reserves and to use their foreign exchange to buy more U.S. government bonds and finance U.S. consumption. Is it simply just puritanical tendencies on our part that are causing us to think about the behavior of certain consenting adults as abnormal?

Some argue that maybe we just have to get ourselves in tune with the new reality. I think, however, that view ignores a number of potential problems because at present we are at an equilibrium that is sustained at some level by official flows. Peter Garber and his co-authors have nicely

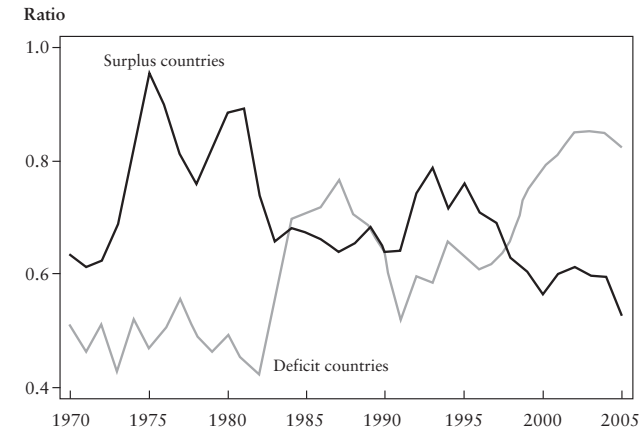


Figure 7.12
Relative Incomes of Capital-Exporting and Capital-Importing Countries
(Relative Per Capita GDP, Weighted by Current Accounts)
Source: Prasad, Rajan, and Subramanian (2006).

Note: For each year, we separate our sample of countries into two groups—those with current account surpluses and those with deficits in that year. For the first group, we then take each country’s share of the total current account surplus accounted for by all countries in that group. We then multiply that share by the relative PPP-adjusted per capita income of that country (measured relative to the per capita income of the richest country in the sample in that year). This gives us a current account-weighted measure of the relative incomes of surplus countries. We do the same for current account deficit countries. This enables us to compare the relative incomes of surplus versus deficit countries in each year.

pointed out how this current situation, which has been sustained for a number of years, makes a great deal of sense. For instance, by putting its reserve accumulation in U.S. dollars, China could in fact be locking itself into its current exchange rate regime and creating a sustainable equilibrium. But again, I think the importance of official flows tends to be overstated in some cases because at the margin—and the margin is typically where the action takes place—there are some trigger events, although Peter was quick to dismiss some of them, which can tip the balance rather quickly. Some of these events could generate enough shifts in private capital flows that you would have broader effects.

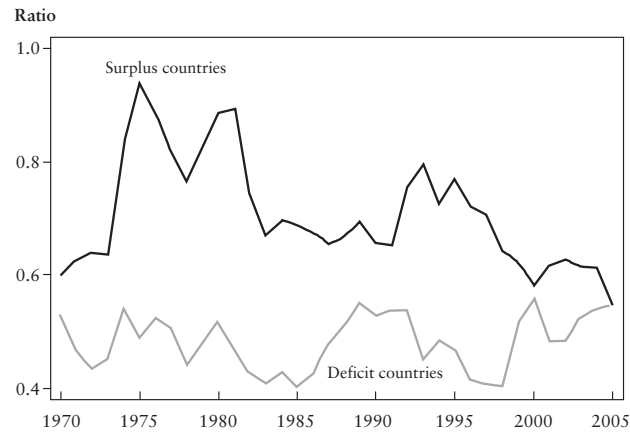


Figure 7.13
Relative Incomes of Capital-Exporting and Capital-Importing Countries,
Excluding the United States (Relative per Capita GDP, Weighted by Current
Accounts)
Source: Prasad, Rajan, and Subramanian (2006).

In sum, I believe that it is important for us to be thinking about the underlying issues that need to be resolved in order to deal responsibly with these global imbalances. Yet I should add that the connection between the current state of doing nothing and doing the right thing is not immediately obvious. If you did in fact have China doing the right things, it is not entirely obvious that these actions would have the desired effect of reducing current account imbalances. For instance, if China undertook serious financial sector reforms, it is not immediately obvious that this would help redress the global current account imbalances. This reform would of course help China make its long-term growth more stable and sustainable.

Perhaps the excessive focus on global imbalances as *the* problem to be contained may not be the right angle to approach what are in many respects larger structural issues that need to be addressed. Having framed the issue this way, one can then ask whether the scenario that Peter and his co-authors have laid out is the right one. What they posit is a gradual adjustment scenario where, for instance, there is a gradual appreciation

of China's currency and other things adjust slowly. Here is where I take issue with their framework because, although this paper does not explicitly state it, the underlying assumption is that benign neglect is the right approach. Their argument hangs on the notion that so long as there are no huge shocks to the international financial system, there is going to be a very sensible and smooth adjustment process. I take issue with this stance because it essentially takes as its foundation maintaining the exchange rate regime as a crucial part of the adjustment strategy. This requires certain policy distortions—in my view major policy distortions—like financial repression and capital controls.

I will use China as a specific example partly because I know China a little better than other economies, and also because I think it highlights some of the key issues. Ultimately, my contention is that the right way for China to be generating growth is not through repressing its domestic financial and capital markets. Now, in this conference paper and in earlier work, Peter has argued that foreign direct investment is going to be the way around financial sector problems within China, which he views as essentially unsolvable in the near future. As Larry Lau pointed out in an earlier session, however, foreign direct investment really comprises a very small portion of the financing that is available for China's domestic investment. So a robust domestic financial system is really crucial for the intermediation of capital that drives investment. As do many of the East Asian countries, the Chinese save a lot, but much of this savings is intermediated through a very weak financial system.¹ So unless you get that adverse situation sorted out, things are not going to get much better in terms of China's balance of growth, something that I believe is really important to emphasize rather than just focusing on GDP.

This example illustrates why some policies that remain on the periphery of the current consideration of global imbalances start to play an important role in the inevitable adjustment. This is why I think it is crucial to consider the interacting relationships between different policies. Ultimately it is difficult to foster financial sector reform; in the case of China this mostly involves banking sectors. It is difficult to have banking sector reform unless you have market signals acting through interest rates from which the banks can take cues. Moreover, it is really difficult to have an autonomous monetary policy, notwithstanding moderately

effective capital controls, unless you have exchange rate flexibility. Having exchange rate flexibility is hardly an end in itself, but it does deliver some very important benefits by providing a way in which the central bank can generate market signals to manage investment and credit growth. Flexible exchange rates enable financial sector reforms and, in a sense, enable a more efficient allocation of credit, which I think is really important for the economy (Prasad 2008).

Ultimately, the approach I think that will work in redressing these imbalances will look at the overall policy landscape on the underlying distortions and institutional weaknesses that represent departures from a first-best situation. I have emphasized the investment side but I think the consumption side is important as well. It is only if and when you have financial market development that some of the liquidity constraints in China's economy are going to start loosening up and perhaps increase consumption. Again, the effect on the current account in the short term is far from obvious. You could have the net effect on saving and investment going the other way such that current account surplus even rises. But in terms of the longer-term objectives, I think the focus should be on strengthening internal financial markets in these developing countries. This is why I'm concerned that maintaining the current stance of policies that make the current equilibrium hang together might lead to a much more adverse outcome in the longer run. For instance, Figure 7.14 shows how the faster-growing developing countries have been exporting capital during this decade, some of this in the form of official accumulation of international reserves. The net effect, however, is reducing the amount of capital available for investment in developing nations, and this is not conducive to long-run growth.

Ultimately, even though we live in a second-best world, I think there is some truth that underlies Peter's notion that trying to undertake a big bang sort of financial sector reform in China or trying to solve the Europe's structural problems in a very rapid way may not quite work. But I think that the Dooley, Folkerts-Landau, and Garber papers may be shifting the balance toward complacency, as Cathy Mann pointed out. This is not really the ideal way to approach the problem of global imbalances. Even if these imbalances do not require a crisis to get resolved, they do really serve as an opportunity to focus on some of the underlying

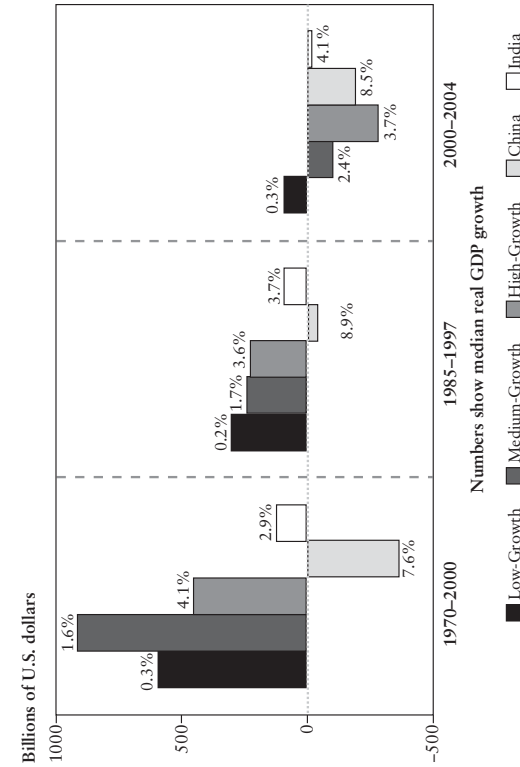


Figure 7.14 Allocation of Capital Flows to Nonindustrial Countries (Cumulative Real Current Account Deficits)
 Source: Prasad, Rajan, and Subramanian (2006).
 Note: The nonindustrial countries in our sample are split into three groups with roughly equal total populations in each group. China and India are treated separately. Each panel shows the cumulative current account deficits (in billions of U.S. dollars, deflated by the U.S. CPI indexed to 1 in 2004) summed up within each group over the relevant period. A negative number indicates a surplus. Median real GDP growth rates for the countries in each group (after averaging over the relevant period for each country) are also shown.

problems enabling their continuation. I would prefer policymakers to focus on these long-term issues.

In an ideal world, relatively capital-poor economies would have better financial systems that would effectively intermediate both domestic savings and foreign capital, and thereby achieve higher growth rates through both direct and indirect benefits accruing from financial integration.² Advanced economies would generate surpluses to finance investments in developing countries, rather than running deficits to finance consumption. The emphasis on the current state of global imbalances might be refocused to examine what these patterns of international financial flows are signaling about more basic problems in different parts of the world economy. Whether or not these global imbalances are destined to end in a bad manner, they are a sign of things gone awry.

Notes

1. See Chamon and Prasad (2008) for an analysis of the determinants of China's household saving rate.
2. See Prasad, Rajan, and Subramanian (2006) for an analysis of "uphill" flows of capital, including the possible reasons and consequences.

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Appropriate Adjustment Considerations and Policies