
Principal Findings and Policy Implications

The International Debt Cycle

Chapter 1 considers the seeming anomaly of US external deficits and net external debt from the standpoint of the theory of the “international debt cycle.” This theory identifies four stages. “Young debtor” countries have net external debt and current account deficits financed by capital inflow in response to high domestic return on capital, which in turn reflects these countries’ low endowment of capital. “Mature debtor” countries are beginning to repay debt so they have current account surpluses. “Young creditor” countries have net external assets and run current account surpluses to finance their outflows of capital. “Mature creditor” countries have net assets but are gradually exhausting them by running current account deficits, essentially “clipping their coupons” and consuming out of accumulated external wealth. In principle, as a country develops, it should go in only one direction through this cycle, from young debtor to, eventually, mature creditor.

Fischer and Frenkel (1974) developed a theoretical model that supported this pattern of debt stages. Buiter (1981) suggested a different model in which rich countries with a high rate of “pure time preference” (the “impatience” component of the interest rate) would be chronic debtors and those with a low time preference would be chronic creditors. The United States does not fit the traditional stages, because it falls into the “young debtor” class (external debt, current account deficit) even though it is not a poor, developing country. Moreover, the United States has transited from being a young creditor in the initial postwar decades to

being a mature creditor (net creditor but current account deficit) before turning into a young debtor. Although the Buiter proposal might explain the US pattern, the simplest measure of the pure rate of time preference is the real Treasury bill (the only rate at which consumption can be transferred risk-free across time), and this rate has actually been somewhat lower for the United States (1.1 percent average for 1949–2003) than for Germany (2.2 percent) and Japan (1.5 percent).

Chapter 1 develops a dataset on the net international investment position (NIIP) for 45 countries from 1970 through 2003. Where data from the International Monetary Fund (IMF) are not directly available, these estimates are based on cumulating current account balances backward from the earliest year for which the NIIP estimate is available. One important pattern found in the data is that the NIIP, which is the difference between assets and liabilities, is typically much smaller than the underlying gross asset and liability positions. For the United States, gross external liabilities in 2004 were 107 percent of GDP, while gross assets were 85 percent of GDP. The difference amounted to net liabilities of 22 percent of GDP. But the large gross values on both sides mean that moderate proportional changes in the underlying gross amounts (for example, from revaluation effects) can exert a leveraged impact on the net amount. Other countries have even higher gross/net ratios. The 2003 average of external assets and liabilities for Belgium, for example, was 390 percent, while its NIIP was 42 percent of GDP.

Chapter 1 finds that the debt cycle theory is more often contradicted than confirmed by the data for industrial countries, but tends to be more supported by the evidence for developing countries. Only 41 percent of the available country-year observations for industrial countries showed them to be net creditors, whereas 85 percent of the developing-country cases confirmed their net debtor status. Similarly, there was a relatively high (32 percent) incidence of “wrong direction” changes in industrial-country status from one period to the next.

Switzerland (a net creditor at a remarkable 150 percent of GDP), Belgium (42 percent), Japan (38 percent), and Germany (7 percent) have been persistent net creditors (joined only in the 1990s by Norway at 60 percent). But there is a surprisingly large group of industrial countries that have shown a persistent trend of net debtor status, including Australia, Canada, Denmark, Finland, Ireland, New Zealand, Spain, and Sweden. They have been joined as net debtors by another surprisingly large group of countries that have run down earlier net external assets and transited into net external liability positions, including Austria, Greece, the Netherlands, Portugal, the United Kingdom, and the United States (figure 1.4 in chapter 1). The time path of the US NIIP from +11 percent of GDP in 1970–75 to –21 percent in 2000–03 lies essentially in the center of a similarly downward-sloping field of observations for this “creditor-to-debtor”

group. Although there is a global discrepancy in which the sum of net liabilities of net debtor countries exceeds the sum of net assets of net creditor countries, even a country-by-country imputed allocation of this discrepancy does not transform any of the industrial-country debtors into creditors. The broad message is that the debt cycle is by no means a heavily dominant pattern for industrial countries, and thus its violation by the United States is by no means unique.

Chapter 1 concludes by presenting evidence for industrial countries that shows a negative correlation between the growth rate and the change in NIIP. Each percentage point of additional average annual growth is associated with a 1.5 percentage point reduction annually in the NIIP as a percent of GDP. Applying the estimated relationship to the United States essentially explains the deterioration of the US NIIP from 1990 to 2002, lending support to the view that higher US growth than in other industrial countries has been a major factor in its eroding net external asset position.

Valuation Effects, Asymmetric Returns, and Economic Net Foreign Assets

Chapter 2 examines structural features of the US NIIP that tend both to make its burden less than might otherwise be expected and to limit the pace of its deterioration to less than might be anticipated from the size of the current account deficit. US external assets tend to be more in equities and its liabilities more in debt. This means that price inflation, which boosts the value of equities but not debt, and dollar depreciation, which revalues foreign equities but not dollar-denominated debt, generally alleviate the net international liability position of the United States. At end-2004, 58 percent of gross US external assets were in direct investment and portfolio equities, compared to 37 percent of foreign assets in the United States. This differential gives rise to a favorable annual drift of an estimated \$50 billion annually for the US NIIP from rising equity prices.

An estimated 63 percent of US external assets are in foreign currencies.¹ Taking specific countries' shares in US foreign assets into account, there was a weighted appreciation of foreign currencies against the dollar by 24 percent from end-2001 to end-2003, which would have predicted a favorable valuation change of about \$1 trillion. The official US NIIP estimate for net exchange rate valuation effects in this period is instead \$647 billion. As a central estimate, each percentage point decline in the dollar against foreign currencies tends to improve the NIIP by about \$40 billion, or 0.33 percent of GDP. If there is a small secular downward trend in the real value of the dollar (as suggested by the IMF real exchange rate

1. All direct investment and portfolio equity and 30 percent of US residents' holdings of foreign bonds.

index but not the US Federal Reserve's index), then even without major correction of the overvalued dollar, there is an additional contribution to favorable drift in the NIIP from the exchange rate valuation effect. The overall effect of both the price and exchange valuation effects is to curb the pace of decline in the US NIIP, by perhaps 0.5 percent of GDP annually and as much as 1 percent if the "other" statistical "manna from heaven" continues at its average of about \$60 billion each year. Unfortunately, this favorable drift is not nearly large enough to outweigh the adverse trend associated with current account deficits on the order of 6 percent of GDP and rising.

The rate of return on US foreign assets has consistently exceeded that on liabilities by about 1.2 percent annually over the past two decades. The theory of portfolio balance might suggest such a pattern, because the United States is a safe market in which foreigners may wish to place the lower-risk, lower-return part of their portfolio, while US residents may seek to place the higher-risk, higher-return portion of their portfolios abroad. Direct investment is the category accounting for higher earnings abroad. From 1992 to 2004, the return on US direct investment abroad averaged 7.1 percent annually, whereas the return on foreign direct investment in the United States averaged only 2.5 percent. The stock of direct investment is \$3.3 trillion on the asset side and \$2.7 trillion on the liability side. Even if both were equal at \$3 trillion, the 4.6 percentage point differential would generate a surplus of about \$140 billion annually on the earnings account for direct investment. This is more than enough to offset the deficit in earnings on bonds and loans. However, in this category, foreigners hold about \$7.6 trillion whereas US citizens hold only about \$3.9 trillion abroad, so each percentage point rise in the interest rate will boost the US earnings deficit on bonds and loans by about \$37 billion annually, suggesting some vulnerability as the interest rate cycle returns to more normal rates.

The net result has still been a persistent surplus for the United States in capital income, amounting to \$52 billion in 2003 and \$36 billion in 2004. This calls into serious question the economic meaning of the US net international liability position of \$2.5 trillion at the end of 2004. Economically meaningful debt generates net capital income payments, not net receipts. The data are probably not bad enough to attribute much of the paradox to undercounted foreign assets (though the true value of foreign direct investment in the United States may, in particular, be less than the accounting value). Instead, the structural asymmetry in direct investment returns seems to be the dominant factor. To obtain a better idea of the economic significance of net foreign assets (and especially the economic burden of net foreign liabilities), chapter 2 proposes the metric of capitalized net capital income (CNCI), as opposed to the usual accounting concept (NIIP). It does so by discounting the annual flow of net earnings on

capital income by the 10-year bond rate (i.e., treating the year's capital income as a prospectively infinite stream at the same absolute magnitude and obtaining the present value of that stream). The result is a positive rather than negative CNCI amounting to 11.7 percent of GDP in 2003 and 7.2 percent in 2004, but falling to 2 percent in 2005 and -8 percent in 2006 based on the projections of chapter 3. For other industrial countries, in contrast, capital income shows the expected sign given the NIIP, suggesting that the need to make this alternative calculation is primarily important for the United States.

The chapter closes with two additional debt concepts: the present value of net foreign assets (PVNFA), a concept familiar in the context of World Bank estimates for developing countries; and a short-term debt equivalent, the net receivable credit payments within one year (NRCPOY). The PVNFA, which is the concept relevant for the long-term burden of the debt if the principal as well as interest is to be repaid (rather than rolled over as implicitly assumed in the CNCI), shows the end-2004 position at -1.5 percent of GDP, negative and hence a net debtor position, but small. The NRCPOY, the measure most relevant for short-term vulnerability, shows a net debtor position of 1.1 percent of GDP at end-2004, but the size of this net negative position is only one-twentieth that of the more familiar NIIP. The summary implication of these estimates is that in economic and even cash-flow vulnerability terms, the United States is only now entering into meaningful net debtor territory. At the same time, these alternative concepts change the level but not the time trend of the US external asset position. Over the next few years, that trend remains sharply negative.

Forecasting the US Current Account Deficit and Net Foreign Assets

Judging the severity of the problem (if any) posed by prospectively rising net US external liabilities and by the US current account deficit requires having some sense about where they are headed. This in turn requires some framework for forecasting the current account and net foreign assets (both accounting NIIP and economic CNCI). Chapter 3 develops two variants of a forecasting model of the workhorse "elasticities" variety for this purpose. Imports respond to foreign GDP growth (income effect) and to the real exchange rate (price effect). Exports similarly respond to domestic GDP growth and the real exchange rate. Cyclical departures of growth from the trend are also incorporated. In the more conventional version, the income elasticity for US imports is higher than that for US exports, based on the Houthakker-Magee asymmetry (HMA) model typically found in statistical estimates. In the preferred version, however, the arguments of Krugman (1989) and Gagnon (2003) are drawn upon to set

the income elasticities as symmetric (the KGS model).² The more buoyant trend of past US imports associated with trend income growth is then captured instead by incorporating variables for the rates of growth of capacity of foreign suppliers of US imports and US suppliers of exports. Both models specifically incorporate the initial asset and liabilities stocks of direct investment, portfolio equity, and all credits (bonds and loans). Specific rates of return for each class are then used to calculate capital income.

Simple statistical regressions find that the exchange rate impact on trade takes place as a weighted average of one- and two-year lags. This is important for the projections because it means that there is a “pipeline effect” to be expected for the US trade balance going forward from the dollar depreciations that occurred in 2003 and 2004.

Chapter 3 first tests the models using “backcasts” that compare past trends in the current account against what the models would have predicted. The KGS model is somewhat better in predicting, especially on the side of exports. The models are then used, in conjunction with estimates of the actual current account outcome in 2004, to project the current account, NIIP, and CNCI for 2005–10. The baseline assumptions are that the dollar remains unchanged at its real level in the first five months of 2005; real US growth averages 3.5 percent; and the 10-year bond rate rises from about 4 percent in 2004 to 5.5 percent by 2006. Direct investment flows are projected on the basis of past relationships to GDP, and the current account deficit each year is treated as cumulating into bond debt owed to foreigners.

The two models find that the US current account deficit is likely to rise to a range of 7.3 to 8.1 percent of GDP by 2010, after a temporary slowdown in the pace of its widening in 2005–06 as a result of exchange rate pipeline effects. The NIIP reaches a net liability position of about 52 percent of GDP in both models, and the CNCI moves from +7 percent of GDP in 2004 to net liabilities of about 23 percent by 2010. The chapter discusses the even more pessimistic projections of Mann (2004) and Roubini and Setser (2004), and sets forth the reasons for the differences. One source of moderately more optimistic results here is the explicit inclusion of lagged exchange rate effects. Another crucial difference is that the projections here apply a continued favorable differential in the rate of return on direct investment abroad as opposed to foreign direct investment in the United States. Even though these and other factors soften the projected trends, the results here are similar in qualitative terms to those of the two other studies: The US current account is on a trajectory of ever-widening

2. In the HMA model, the income elasticity for US imports is set at 1.7 and that on US exports at 1.0. In the KGS model, both are set at 1.5, and the elasticity for capacity growth is similarly set at 0.75 on both sides.

deficits rather than headed toward correction to a more sustainable deficit of, say, 3 percent of GDP.

The two models are then used to investigate the impact of alternative adjustment scenarios involving varying degrees of further dollar depreciation and changes in assumed foreign and US growth rates. In a favorable adjustment case in which there is a further real appreciation of foreign exchange rates against the dollar by 21 percent above the level of the first five months of 2005, and in which foreign growth accelerates by 0.75 percentage point annually for three years, the current account deficit falls to a range of about 3 percent of GDP in the period 2008–10. Policy parameter measures show the following impacts by the third year: Each percentage point real depreciation of the dollar brings about a 0.14 percent of GDP adjustment in the current account; each year-percentage point rise in foreign growth contributes 0.39 percent of GDP adjustment; each year-percentage point slower US growth, 0.43 percent of GDP; and each percentage point increase in the interest rate on a sustained basis adds 0.43 percent of GDP to the deficit.

The Role of Fiscal Adjustment

Chapter 4 examines the relationship between adjustments of the US fiscal deficit and the external current account deficit. The linkage between the two is based in part on the national income accounts identity, whereby the excess of domestic investment over domestic saving must equal the excess of imports over exports. At the intuitive level, this means that if resources used domestically exceed resources available domestically, supplementary resources from abroad must close the gap. Because the fiscal deficit is dissaving by the government, a wider fiscal deficit means a greater savings gap that needs to be filled by foreign resources, boosting the current account deficit.

When private investment and private saving change, the fiscal deficit will not move in lockstep with the external deficit. A striking paradox of the 1990s was that the current account deficit was widening even as the fiscal accounts were swinging from deficit to surplus. The reason was that the gap created by a surge in investment and a collapse in personal saving more than offset the swing from fiscal dissaving to saving. The breakdown of the “twin deficits” parallel movement in the 1990s does not mean that fiscal accounts can be ignored in seeking external adjustment going forward.

Chapter 4 considers the relationship between the fiscal balance and the strength of the dollar. In the normal or benign region, a wider fiscal deficit tends to push up interest rates and the dollar, so part of a normal external correction involves reducing the fiscal deficit, the interest rate, and the strength of the dollar. However, in a crisis zone in which the fiscal deficit

has become so large as to shake confidence, the dollar might collapse rather than strengthen from further widening of the fiscal deficit.

The chapter reviews the sources of the United States' fiscal deterioration from a federal surplus of 2.4 percent of GDP in 2000 to a deficit of 3.6 percent of GDP in 2004. Although the recession of 2001 was initially a significant factor, the dominant influence was the tax cuts adopted in 2001 and 2003. The Organization for Economic Cooperation and Development (OECD 2004b) has estimated that in the absence of the tax cuts, the 2004 fiscal deficit might have been only 1 percent of GDP. The tax cuts thus contributed 2.6 percent of GDP to the fiscal deficit on a cyclically adjusted basis. Tax revenues fell from 20.9 to 16.2 percent of GDP from 2000 to 2004, in part because revenues were exaggerated in 2000 from unusually large capital gains associated with the stock market boom. Spending rose only from 18.4 to 19.9 percent of GDP, although the underlying rise was greater because falling interest rates cut the net interest bill from 2.3 to 1.4 percent of GDP. Falling interest rates had already contributed to deficit reductions in the 1990s, along with the "peace dividend" after the end of the Cold War, which cut defense spending from 5.3 percent of GDP in 1990–91 to 3 percent in 2000–01. Neither a further fall in interest rates nor a further reduction in defense spending can be expected to help narrow the deficit going forward; indeed, rising interest costs can be expected as the interest rate returns to more normal levels from its historic lows.

Chapter 4 also examines the decline in personal saving in recent years. Personal saving fell from 7 percent of disposable income in 1991–92 to about 1 percent by 2004, a decline equivalent to about 4.5 percent of GDP. The ballooning of household wealth in the stock market bubble, and then the offsetting of the fall in stock prices by the surge in housing prices (and the more widespread ownership of homes than stocks) were almost certainly key forces inducing falling saving. Although as a result households may have perceived that they were saving adequately in terms of the changes in their balance sheets, they in fact successively saved less out of current income, which is what matters for the gap between domestic use and availability of resources, and hence for the current account. Although a slowdown in rising asset prices might begin to bring about some revival in personal saving, there is no known public policy remedy capable of doing so.

The baseline projections of the Congressional Budget Office (CBO) show the federal deficit easing to 3 percent of GDP in 2005 (perhaps somewhat less with tax revenue running ahead of expectations) and 1.2 percent by 2010. However, the CBO emphasizes that the ground rules for its projections require the assumption of current law, which does not take account of further revenue losses if the tax cuts are made permanent and the alternative minimum tax is reformed (as the Bush administration seeks).

If in addition discretionary expenses grow at the same rate as GDP rather than only by the rate of inflation, the overall result boosts the CBO's baseline deficit to 3.2 percent by 2010. Gale and Orszag (2004) judge that the most realistic baseline outlook is for the deficit to remain at about 3.5 percent of GDP over 2005–14.

Chapter 4 briefly examines the longer-term fiscal problem. The CBO's central baseline forecast under current policies places the deficit at 14.4 percent of GDP by 2050. The driving force is a widening of Medicare-Medicaid expenditures from the current level of about 4 percent of GDP to about 12 percent, an increase far more important than the widening of the Social Security deficit from 4 to 6 percent of GDP. The chapter estimates that simply freezing the real level of Social Security benefits (by shifting from wage indexing to consumer price indexing) would eliminate the 2 percent of GDP increase in the Social Security deficit, and that limiting the "excess cost" growth of medical expenses per beneficiary above GDP growth per capita to 0.5 percent annually instead of the expected 1.7 percent would limit Medicare-Medicaid spending in 2050 to 9 percent of GDP. Together with tax increases by 1 percent of GDP, these two reforms would limit the long-term deficit to 2.5 percent of GDP and hold down federal debt held by the public to 50 percent of GDP instead of the remarkable 185 percent in the CBO long-term baseline.

Appendix 4A develops a formal model linking the fiscal balance to the current account balance in a general equilibrium framework. Its equations include the national accounts identity; the relationship of consumption to disposable income and the interest rate; investment as a function of the interest rate and GDP; the real exchange rate as a function of the interest rate and domestic relative to foreign growth; the interest rate as a function of the size of the fiscal deficit, the excess of GDP over its potential, and the price level; and the price level as a function of the levels of GDP and the real exchange rate. The model captures key feedback effects. These tend to be negative (i.e., undermining initial effects) for exchange rate depreciation. A decline in the dollar boosts net trade and hence GDP and consumption, pushing up the interest rate and thereby pressing the exchange rate upward again even as higher consumption increases imports through the income effect. In contrast, feedback effects from fiscal correction tend to be positive (self-reinforcing). Not only is government dissaving lower, but the induced decline in GDP as well as the decline in the disposable portion of income (if taxes are increased) curtails imports; and the decline in the interest rate from lesser fiscal pressure contributes to a decline in the exchange rate, which helps narrow the trade deficit.

Various simulations with the model show that fiscal adjustment of a given amount tends to yield a trade balance adjustment that is about 40 percent as large; that an exogenous initial decline in the dollar by itself

has only a limited effect on the current account; and that the most effective external adjustment occurs when an exchange rate decline is accompanied by a sizable fiscal adjustment. The main thrust of the analysis is to emphasize the crucial role of fiscal adjustment. With the assumed parameters, the model estimates indicate that the size of the fiscal adjustment would need to be 4 percent of GDP, even if accompanied by a 25 percent decline in the dollar, and a modest temporary acceleration in foreign growth, in order to curb the trade deficit from its initial level of 5.2 percent of GDP to 3.1 percent. The model is “comparative static” and does not have specific forecast dates. The model may be unduly pessimistic, in part because normal offsetting influences such as an easing in monetary policy when fiscal policy is tightened (Taylor rule) might not be applied when there is a perceived need to correct the external deficit. Even so, in broad terms, the estimates suggest that it will be necessary to eliminate the fiscal deficit entirely as the fiscal policy role in cutting the US current account deficit to a target of about 3 percent of GDP by 2010. Forceful fiscal adjustment will be required to attain US external adjustment.

Sustainability and Risks of the Current Account Deficit

Chapter 5 examines the vulnerability of the US economy to the large and growing US current account deficit. It first considers potential portfolio satiation for foreigners’ demand to accumulate still more US assets. The US current account deficit amounted to 35 percent of the aggregate current account surplus of countries in surplus among the 45 major economies in the early 1990s, and this share rose to over 90 percent by 2001–02. Net US external liabilities rose from 4 percent of global net liabilities of countries in liability positions in 1989 to 54 percent by 2002. Against other benchmarks, however, the relative size of US liabilities is considerably smaller. US net foreign liabilities at end-2002 amounted to only 5.4 percent of US household net wealth (including real estate). This comparison strongly supports the view that any net external debtor difficulties for the United States would be from a liquidity rather than a solvency problem.

Gross US external liabilities rose from an estimated 5.7 percent of rest-of-world gross financial assets (including domestic) in 1992 to 13.2 percent in 2002 and 14.6 percent in 2004. When the baseline projections of chapter 3 are applied against an estimated baseline for rest-of-world assets, this share is projected to rise to about 16 percent by 2010. If one accepts 30 percent as the notional ceiling for holding foreign assets in household portfolios abroad (because of “home bias”), this calculation suggests that the United States is not yet close to bumping up against a ceiling in foreigners’ demand for US assets.

Private foreign investors nonetheless appear to have grown more wary of US assets, probably because of the prospects for falling returns after incorporating exchange rate risk, rather than portfolio satiation. As a result, the financing for US deficits has shifted toward the foreign official sector. Official capital inflows—primarily the purchase of US assets (mainly Treasury bonds) for reserves held by foreign central banks—amounted to \$278 billion in 2003 and \$395 billion in 2004, or about 30 percent of gross capital inflows. By late 2004, there were signs that foreign central banks might diversify away from the dollar, possibly weakening this source of demand going forward.

Chapter 5 examines the traditional thresholds for debt problems in developing countries. These are found to be of limited relevance for the United States for several reasons. First, the CNCI net asset concept is still slightly positive, in contrast to the accounting-based NIIP net asset concept at -22 percent of GDP at end-2004, and hence much further away from the critical net debt threshold of 40 percent of GDP often cited for developing-country debt. Second, empirical studies show no correlation of industrial-country sovereign risk spreads with the ratio of net external debt to GDP, despite a strong negative correlation found for developing countries. Third, the usual ratios with exports as the base tend not to be relevant for the United States because the country's liabilities are in US currency, so the normal key role of exports in generating foreign exchange to service debt denominated in foreign currency is absent. Indeed, the normal developing-country problem from an exchange rate crisis—which balloons the size of foreign debt relative to domestic currency GDP as the exchange rate falls—is turned on its head for the United States. As shown in chapter 2, a fall in the dollar instead balloons the dollar value of equity assets abroad while leaving US external liabilities virtually unchanged in dollar terms, improving rather than worsening the net debtor position.

Short-term risks nonetheless exist. The principal risk is that a loss of confidence in the dollar could precipitate a “hard landing” of the US economy. A major decline in foreign financing of the US current account deficit would place upward pressure on interest rates in the US capital market. If the Federal Reserve thought that a steep fall in the dollar would boost prices through the effect on prices of imports as well as the boost to capacity utilization associated with higher exports and lower import volumes, it might further increase interest rates (or be unprepared to limit their rise in the market). The large presence of financial derivatives also suggests some risk of financial disruption resulting from sharp movement in the dollar or the interest rate. A major rise in the long-term interest rate could push the economy into recession, even if the Federal Reserve did not raise the short-term policy rate (although the resulting combination of a steep yield curve with recession would be unusual). The experience of late 1987 provides some sense of such risks. Concern about the falling dollar at that time, and disagreement between US and German authorities

on interest rate policy, contributed to the largest single-day collapse in the stock market in US history in October 1987. On balance, however, a hard landing for the dollar and for the economy is still probably not the most likely outcome, but the chances of this outcome will rise as the US current account deficit continues to rise and the net foreign asset position (whether NIIP or CNCI) erodes further.

More fundamentally, even if foreign investors give the United States an unlimited length of rope by continuing to finance ever-greater buildups in US external liabilities, there is a problem of long-term burden for the US economy as it becomes increasingly indebted abroad. To the extent that the borrowing is primarily directed not toward financing investment but rather toward financing high levels of private consumption and government dissaving, the accumulation of foreign debt amounts to mortgaging the country's economic future. Eventually, there will be a price to pay in the form of a major terms of trade loss as the external debt is serviced. This will reduce the real standard of living of US citizens—many of them of the next generation—from levels otherwise attained as real consumption is eroded through higher import prices. Injudicious, and perhaps inequitable, deferral of the adjustment burden into the distant future is a fundamental reason to address the external deficit even if a sharp break in confidence and a hard landing are considered unlikely.

Illustrative simulations of the long-term problem compare early adjustment with delayed adjustment. Under delay, the baseline current account deficit reaches about 10 percent of GDP and the NIIP reaches -70 percent of GDP by 2015, at which time it is assumed that a severe adjustment will be required involving a large depreciation. For identical NIIP levels of -50 percent of GDP by 2024, more moderate early adjustment involves lesser terms-of-trade loss than later adjustment. The sharper depreciation in the later adjustment accomplishes more of the adjustment in exchange rate valuation gains on foreign assets, however. There is minimal difference between average real consumption under early as opposed to late adjustment, barring a severe recession in the latter case. Instead, the true cost of delay is in distributional inequity between the present and the future. Early adjustment distributes the reduction in consumption from the nonadjustment baseline relatively evenly between the first decade (by 4.6 percent of cumulative GDP) and second decade (by 8.8 percent of GDP, from an unrealistic baseline). In contrast, the delayed adjustment scenario imposes no reduction in consumption from the baseline in the first decade, but sharply higher consumption losses on households in the second decade (12.5 percent of cumulative GDP) as the consequence of postponing reduced consumption.

The views of US policymakers have tended to shift from judging the current account deficit as benign in the late 1990s, when investment was high and fiscal accounts strong, to greater concern by 2004 (Greenspan

2004a, Summers 2004). The debate among economists has placed portfolio optimists (e.g., Richard Cooper, "Two Views on the US Deficit," *Financial Times*, October 31, 2004) against pessimists (Obstfeld and Rogoff 2004), but even Cooper's analysis assumes the US deficit will stabilize at \$500 billion annually rather than rising to the \$1.2 trillion amount forecast in the baseline for 2010 in chapter 3. Chapter 5 finds the estimates of required exchange rate adjustment in the present study to be more consistent with the Obstfeld-Rogoff results than with more optimistic diagnoses.

Other important recent analyses include Blanchard, Giavazzi, and Sa (2005) and Gourinchas and Rey (2005). The former use a portfolio preference model to show that relatively large ongoing real depreciation of the dollar will be required if the large US current account deficit continues. The reason is that foreigners wish to hold a smaller share of their portfolios in US assets than do US citizens, because of "home bias." Each reduction in US net assets by \$1 will induce less than \$1 in foreign holdings, unless there is an accompanying decline in the exchange rate that shrinks the proportion that dollar assets would otherwise reach in the foreigners' portfolios. Blanchard, Giavazzi, and Sa suggest that ongoing real depreciation of the dollar in the range of 2.5 to 3 percent annually could be required, even after taking account of favorable exchange rate valuation effects.

Gourinchas and Rey focus on an explanatory model identifying the exchange rate adjustments imposed by market forces in response to variations in the trade balance and capital earnings balance from a long-term downward path. They can statistically explain about 60 percent of exchange rate variation over a three-year horizon. They find that about one-third of adjustment is contributed by exchange rate valuation effects, about the same proportion as found in the present study using a completely different methodology. They argue that the US imbalance is smaller today than it was in the mid-1980s, despite the larger current account deficit relative to GDP, because the larger foreign asset base provides more leverage for the exchange rate valuation effect. However, their analysis nonetheless implies extremely adverse long-term trends in the current account and net foreign liabilities, placing their position closer in qualitative terms to those of Obstfeld and Rogoff and Blanchard, Giavazzi, and Sa than might be inferred at first reading.

Three recent studies associated with the Federal Reserve Board are on the one hand more optimistic, but on the other envision surprisingly little scope for fiscal adjustment to reduce the current account deficit. Croke, Kamin, and Leduc (2005) examine past current account adjustment experiences among industrial countries and find that the "disorderly adjustment" (i.e., hard landing) scenario relating a currency plunge to a recession has not been typical. However, several of their findings imply a relatively painful US adjustment, even if a plunge in the dollar is not the cause. Thus, in distinguishing contractionary from expansionary adjust-

ments, the authors find larger current account deficits (averaging 6 percent of GDP) among the contractionary group (versus 3 percent for the expansionary group). The contractionary group had higher imports relative to exports, and had preadjustment growth above the OECD average. All three of these contractionary-adjustment characteristics are applicable to the United States today.

Erceg, Guerrieri, and Gust (2005) have developed an experimental macroeconomic model with the much-cited result that \$1 in fiscal adjustment induces only 20 cents in trade balance adjustment. However, the model contains key assumptions about household behavior (“Ricardian” offsetting increases in consumption that offset one-half of fiscal adjustment) and policy reaction functions (monetary policy offsets and longer-term fiscal policy reversals) that would seem to stack the cards against the efficacy of fiscal policy in curbing the external deficit.

Simulations of the Federal Reserve Board’s FRB/Global macroeconomic model provide the basis for the diagnosis by Ferguson (2005) that the large US current account deficit was not caused by fiscal erosion, but is mainly due to acceleration in productivity growth, a downward shock to the household saving rate, a decline in investment abroad, and an increase in global financial integration. However, for technical reasons set forth in chapter 5, considerable caution would seem warranted in relying on these results.

Finally, Bernanke (2005) attributes the widening US current account deficit primarily to the drop in investment in other countries and hence the emergence of a “global saving glut,” rather than to a rising US fiscal deficit. His implied policy seems to be to tolerate large current account deficits and wait for investment abroad to revive. However, a close look suggests that this proposition fails key tests. The fair US share of any saving glut from the drop in investment in East Asia and Latin America after the financial crises of 1997–98 would be only about 0.7 percent of US GDP, far too small to explain the widening of the current account deficit. Also, the plunge in the interest rate in the United States after 2001 was in the short-term policy rate (federal funds rate) rather than the long-term rate, but the long-term rate is the market rate that should have fallen if the main influence had been excess saving abroad. Low interest rates were made at home by the Federal Reserve, not abroad. Bernanke would seem to give far too little weight to US fiscal policy as the source of erosion in the US current account. A foreign saving glut certainly did not force the United States to cut taxes for a decade.

Global Impact of US External Imbalance

Chapter 6 examines the impact of the US external imbalance on the rest of the world. For the past decade, the rising US trade deficit has been a

major source of demand for the rest-of-world economy. The current account deficit amounted to 2.2 percent of rest-of-world GDP by 2004. The increment to demand has been the highest for developing countries, whose trade balance with the United States rose from 1 percent of their aggregate GDP in 1992 to 4.7 percent in 2002. For Mexico, the upswing amounted to 8 percent of GDP, and for China, 4.9 percent. China's bilateral trade surplus with the United States stood at 8.8 percent of Chinese GDP in 2002. The challenge going forward is for the rest of the world to find domestic sources of demand to replace that from US trade deficits as the United States carries out external adjustment.

The demand placed on global capital markets by the rising US external deficit did not lead to higher global interest rates, an effect that potentially could have undermined the favorable demand effects of the US deficit for the rest of the world. Instead, with the US recession in 2001, US interest rates fell to historically low levels. Moreover, although the rise in the US current account deficit coincided with a decline in capital flows to emerging markets after 1996, the criterion for diagnosing an adverse shock from "crowding out" in world capital markets was not met: International interest rates not only did not rise, they fell sharply. Rising current account surpluses in developing countries by 1999 and thereafter reflected a new phase of export-led growth, fueled in considerable part by exports to the US market.

Moreover, developing countries began to accumulate large reserves in this period. Stiglitz (2003) has criticized this phenomenon as a failure of the global financial system, because low interest earnings on reserves compared with high interest rates on domestic bonds issued to finance reserve accumulation impose costly losses on developing countries. While there was some truth to this argument in the immediate aftermath of the East Asian crisis in 1997–98, the massive reserve holdings by 2003–04 of such countries as China, Korea, Taiwan, and even India far exceeded any prudent levels necessary to protect against external shocks, and instead represented the consequence of export-led growth spurred by increasingly undervalued exchange rates. Indeed, rigidly pegged exchange rates (China, Hong Kong, Malaysia) or de facto quasi-fixed exchange rates (Singapore, Taiwan, Thailand) against the dollar—kept from appreciating through large interventions to purchase reserves—meant that by 2002 and thereafter, the leading developing countries were a source of the problem of international imbalances rather than innocent victims of them. Their exchange rate policies were blocking the full extent of real exchange rate correction needed for the United States to carry out its external adjustment.

When (and if) US external adjustment begins, other countries will need to sustain their growth by shifting toward greater domestic demand. The experience of the 1980s cycle of US imbalances showed that although a

hard landing was avoided, there were strong signs of deceleration in growth abroad as the United States curbed its external deficit. As the US current account deficit fell from 3.4 percent of GDP in 1987 to 0.8 percent in 1991–92, growth in the other six large industrial countries fell from 5.3 to 2.2 percent, and growth in the rest of the world fell from 5.2 to 2.5 percent. Even allowing for other influences (Gulf War oil shock, German reunification), that pattern serves as a caution underscoring the importance of boosting demand abroad as the United States adjusts.

Chapter 6 concludes with an analysis of the extent and pattern of further exchange rate realignments likely to be needed to enable the United States to reduce its current account deficit to a sustainable level of 3 to 3.5 percent of GDP. Appendix 6A develops a simple optimization model that minimizes the departure of changes in individual countries' current account balances from a prescribed pattern, subject to the constraint that the resulting weighted-average real exchange rate depreciation for the United States meets a target consistent with this US current account target. The criterion for prescribed current account change is a 40 percent uniform reduction in current account surpluses, which generates the desired global counterpart of the targeted reduction in the US deficit. The appendix gauges the list of "optimal" exchange rate changes against the dollar against the 2002 average, and examines the extent of correction already experienced through March 2005. The finding is that whereas the euro and currencies of several other industrial countries have already appreciated by close to the "optimal" amount, Japan and especially China and other East Asian economies have a long way to go in terms of further appreciation against the dollar. This analysis tends to confirm the notion that to date, the euro has borne a disproportionate share of the international adjustment process. The analysis of exchange rate realignment also shows, however, that if there were to be a generalized move in exchange rates against the dollar, the trade-weighted real appreciations for most countries would tend to be modest, even though their real appreciations against the dollar itself would be large.

The chapter argues that it is strongly in the long-run interests of developing countries to participate in generalized adjustment to permit the United States to achieve its external adjustment. The alternative of prolonged and growing US deficits followed by some form of crisis and hard landing, with high global interest rates and low US growth levels, can only be counterproductive to the growth of developing countries. Moreover, a benefit of appreciation against the dollar for many developing countries would be a reduction in the burden of their external debt, as dollar-denominated debt would become smaller relative to domestic currency GDP levels. The chapter emphasizes, however, that there is a "prisoners' dilemma" of policy coordination, because each country acting in isolation will tend to fear severe loss of competitiveness if it appreciates its currency against the dollar but other countries do not.

Policy Implications

Importance of Adjustment

A central policy conclusion of this study is that it is increasingly important that the United States reduce its external current account deficit. This deficit is no longer benign, as it arguably was in the late 1990s when it was financing high levels of investment instead of high levels of consumption and large government dissaving. Although the true economic burden of net US foreign liabilities is still minimal, that burden will grow substantially. Moreover, the large size of the deficit poses the risk of a hard landing in the event of a loss of confidence, especially because the deficit is likely to continue to rise as a share of GDP. Even if confidence were to be maintained indefinitely, the external deficit would eventually lead to a large burden on future consumers as a consequence of overconsumption today.

Assuming that the deficit is a “problem” cannot be taken for granted—economists have debated whether it is in fact a problem, and if so, how severe are the risks it poses. With the deficit at about 6 percent of GDP and headed to 7½ to 8 percent by 2010, however—far above the range of 4 to 5 percent associated in the past with corrective adjustment in industrial countries—by now, the better part of judgment is almost certainly that reduction of the deficit to a more sustainable level should be a high policy priority.

US Fiscal Adjustment

The first major policy implication of this study is the need for a major correction in the US fiscal deficit. Reasonable baseline estimates show the budget deficit continuing in the range of 3 to 3.5 percent of GDP, taking into account the Bush administration’s goal of making the tax cuts permanent. Chapter 4 and the general equilibrium model developed there strongly suggest that the budget deficit should be completely eliminated rather than merely cut in half (as the administration seeks) if the current account deficit is to be cut to the range of 3 percent of GDP. A reasonable target would be to reach a zero federal deficit by 2010. This goal would require reducing the deficit by an average of 0.6 percent of GDP each year between now and then.

Identifying the components of expenditure cuts or tax increases that should be adopted to cut the budget deficit is beyond the scope of this study. However, discretionary spending is so small a part of total spending that it seems likely some role will have to be played by raising taxes (or avoiding making the recent tax cuts permanent). The decline of fiscal reve-

nue from about 20 to 16 percent of GDP has been the driving force in the US swing from fiscal surplus to deficits.

Fiscal adjustment would also ideally be accompanied by at least a partial reversal of the downward trend in personal saving over the past decade. The greater the rebound in personal saving, the smaller the needed fiscal correction. Unfortunately, no policy measures have been shown to have a reliable influence on boosting personal saving, despite myriad tax-advantaged saving mechanisms.

If fiscal correction is not achieved or is only minor (for example, if the fiscal deficit continues at 3 percent of GDP), then the external account is unlikely to adjust by much, even if further real depreciation of the dollar occurs. Under these circumstances, it would be increasingly likely that an eventual external sector adjustment would occur in an undesirable manner, such as a slowdown in growth or even recession. One way this could occur would be if the Federal Reserve were to feel compelled to raise interest rates more than otherwise desirable in order to compensate for the lack of fiscal restraint, in the face of growing inflationary pressure on the economy as it moved beyond potential capacity.

Failure to adjust fiscal policy would also push the US policy mix toward a combination inappropriate from the standpoint of exchange rate correction. A tight monetary policy combined with a loose fiscal policy would boost interest rates and hence, attract foreign capital and keep the dollar from falling as much as would be desirable for external adjustment.

Exchange Rate Realignment

Chapter 6 strongly suggests the need for appreciation against the dollar of the currencies of Japan, China, the other East Asian economies, and also some of the Latin American economies. The massive intervention of central banks to avoid appreciation of the Japanese yen, Chinese renminbi, and other Asian currencies should be discontinued. An objective of international financial and economic policy should be to achieve differentiated further appreciation of currencies against the dollar broadly along the lines identified in chapter 6.

The simplest and perhaps most desirable way to facilitate the necessary exchange rate developments would be for central banks to stop intervening in exchange markets and allow their exchange rates to appreciate. In the key case of China, the mid-July 2005 decision to shift from a fixed rate against the dollar to a managed float against a basket was potentially a major breakthrough. However, its potential for contributing to global adjustment will be frustrated if the authorities intervene heavily to keep the currency only minimally stronger than before. More generally, the "prisoners' dilemma" that inhibits each country from acting alone may necessitate some form of coordinated currency appreciations along the lines of the Smithsonian Agreement of 1971 and the Plaza Accord of 1985.

US policymakers should consider convening an international monetary conference in 2006 in which countries would be expected to set forth their proposed means of participating in the international adjustment that is the necessary counterpart to US external adjustment. For this purpose, the United States would need to have its own house in order by moving ahead with a credible plan to eliminate its fiscal deficit over the next few years. The objective would be a major coordinated appreciation of currencies (especially the yen and East Asian currencies) against the dollar, supported by a commitment to refrain from accumulating reserves until a target range of appreciation against the dollar (such as 20 percent) has occurred.

Domestic Demand Policies

The US current account deficit was about 2½ percent of rest-of-world GDP in 2004 (chapter 6), so cutting the deficit by half (to about 3 percent of US GDP) would withdraw nominal demand equivalent to about 1¼ percent of nominal GDP for the rest of the world. Taking account of terms of trade effects, the withdrawal of real demand would amount to perhaps 1.8 percent of rest-of-world GDP in real terms. Sustained global growth will require increased domestic demand abroad in this order of magnitude as the United States carries out external adjustment. The shift in demand would be phased over time (perhaps four years), but would still represent a substantial and necessary annual increase in domestic demand in the rest of the world. It is useful to consider what policies might contribute to this adjustment.³

For Europe and Japan, spurring domestic demand has proven difficult over the past decade. The usual recommendation for Europe is structural change (e.g., liberalization of labor markets). Such reforms could raise demand for investment. However, carrying out structural reforms usually takes several years, and slack demand resulting from US external adjustment is presumably already in the pipeline as a result of the rise of the euro against the dollar from 2002 to 2004, meaning that the demand issue is likely to arise sooner rather than later. Moreover, fiscal policy is not an attractive instrument for boosting European demand, because of difficulties already faced in meeting fiscal targets under the European Union's Stability and Growth Pact. This would suggest that monetary policy will have to be the principal tool for boosting domestic demand to offset falling demand from the United States. The implication is that the European Central Bank should either ease interest rates or at least not increase them if growth picks up.

3. See, in particular, Mussa (2005).

Much the same diagnosis applies to Japan's policy options, although the nature of its structural problem has been different (including, in particular, a weak banking system). Japan's public debt stands at 164 percent of GDP on a gross basis and 84 percent on a net basis (deducting what some would consider questionable assets), and it is not in a position to embark on wider fiscal deficits as a means of stimulating demand (OECD 2004c). So again, it is likely to be monetary policy that will be necessary to help assure that Japan's demand remains sufficient as US adjustment takes place. This primarily implies holding the interest rate at very low levels as growth proceeds.

For developing countries, boosting domestic demand to compensate for US external adjustment will likely involve some easing of both fiscal and monetary policy. In countries such as Brazil, where interest rates are extremely high, the reduction of inflationary pressures from an appreciation of the currency against the dollar would provide a favorable environment for reducing interest rates, thereby stimulating investment. Brazil has little scope for fiscal expansion because it already has a relatively high level of public debt. For China, the principal concern in recent years has been that the economy might be overheating, given sustained growth of around 9 to 10 percent. Therefore, an easing in demand associated with US external adjustment might be welcome and at least initially not require any particular policy offset. Even so, because the rising bilateral trade surplus with the United States contributed about 0.5 percent additional annual growth to the Chinese economy over the past decade (as the surplus rose from about 4 to 9 percent of China's GDP), a swing to a declining surplus with the United States could eventually exert enough demand reduction to require offsetting policy measures.

More generally, there should be ample scope for shifting toward domestic demand in developing countries, where the more typical problem is curbing excess demand. Nonetheless, unless conscious policy strategies are adopted, the shift from US to domestic demand could be less than successful, as suggested by the growth slowdown during the previous episode of US external adjustment.

This outline of possible policy approaches warrants an important caveat: The resulting policy mix pattern could hinder the exchange rate adjustment. The ideal policy combination for external adjustment is for the deficit country to undertake fiscal contraction accompanied by unchanged or expansive monetary policy, easing interest rates and bidding down the currency to a more competitive level. The country in surplus does the opposite: It eases fiscal policy to boost demand, and leaves monetary policy unchanged or tightens it so that the potential correction in the exchange rate is not thwarted. But if Europe and Japan cannot apply fiscal stimulus and must resort to monetary stimulus, their policy mix will tend to inhibit the appreciation of their exchange rates. Similarly, if the United

States fails to achieve much fiscal correction and instead applies monetary restraint as a substitute, this will tend to curb the depreciation of the dollar.

Ideally, the most that this policy mix problem would do would be to ensure against a downward overshooting of the dollar. But this consideration does suggest that there may be important limits in the extent to which monetary policy can compensate for constrained fiscal policies in the international adjustment process.

Exchange Rate and Trade Regime Interaction

If a wide array of countries do not allow market forces to bid up their exchange rates against the dollar, and, in particular, if China does not do so, there could be increasing policy attention to retaliatory measures. One approach to keeping any such retaliation as benign as possible for the international trade and financial system might be to apply a countervailing duty against exchange rate subsidization of exports within the framework of the antisubsidy rules of the World Trade Organization (WTO). An official policy accumulating large amounts of reserves to keep a currency undervalued would fit the economic concept of a policy measure that has the effect of subsidizing exports. It can be argued that although the WTO definition of subsidies typically envisions direct payments of public revenue to exporting parties, there are sufficient references to exchange rate practices in the existing WTO antisubsidy rules to encompass remedies against an undervalued exchange rate supported by large intervention.⁴

The IMF, for its part, is supposed to indicate when it believes a country is “manipulating” its exchange rate, and for fixed exchange rates (such as that still maintained by Hong Kong), when the rate should be shifted to a new level because of “fundamental disequilibrium.” It is thus plausible that the IMF could be asked (e.g., by the United States) to bring a determination that a country (e.g., China) is engaging in currency manipulation or (in the case of Hong Kong) failing to adjust a fixed exchange rate in fundamental disequilibrium. With such an IMF determination in hand, the United States might find it easier to win a WTO case on countervailing duties against exchange rate subsidization.⁵ International blessing for the imposition of a trade penalty would be far preferable to

4. For a legal argument along these lines, see China Currency Coalition (2004).

5. Article XV, paragraph 2, of the General Agreement on Tariffs and Trade provides that “contracting parties . . . shall accept the determination of the Fund as to whether action by a contracting party in exchange matters is in accordance with the Articles of Agreement of the International Monetary Fund” (WTO 2005). It also provides (paragraph 4) that “Contracting parties shall not, by exchange action, frustrate the intent of the provisions of this Agreement. . . .” (WTO 2005).

unilateral US action widely perceived to be in violation of US international obligations.

It would be far better if countries were to allow markets to boost exchange rates against the dollar. Any recourse to trade penalties—even ones sanctioned by the IMF and WTO—would be inappropriate until the alternative of suasion had been shown to fail. The alternative of unilateral trade penalties without international approval was applied by the Nixon administration in 1971, when it imposed a 10 percent import surcharge and suspended convertibility of the dollar into gold prior to the exchange rate realignment of the Smithsonian Agreement. A comparable unilateral action today would do serious damage to the fabric of globalization. The alternative of a penalty sanctioned by IMF and WTO rules would likely be seen as much more supportive of the international economic rules of the game.

Withholding Tax on Nonresident Investment Income

Finally, there are grounds for concern that market forces by themselves may not suffice to achieve the extent of real depreciation of the dollar consistent with a more desirable US external balance.⁶ If it becomes increasingly clear that the dollar is remaining substantially overvalued (e.g., in comparison with a 20 percent further real appreciation of foreign currencies as quantified in chapters 3 and 6), US policymakers should consider using tax incentives to help moderate foreign capital inflows—the underlying force keeping the dollar overvalued. A withholding tax on nonresident capital income earnings on assets held in the United States would be a market-friendly instrument for this purpose. The size of the tax could be gauged to the degree of diagnosed dollar overvaluation. US authorities presumably would need to secure the cooperation of their foreign counterparts for this purpose, as it would be counterproductive if foreign authorities imposed retaliatory taxes on US earnings abroad. The grounds for such cooperation would be a shared perception that the wide US imbalance poses an ongoing and rising threat to international economic stability.

A withholding tax would reduce the return to foreign investors, thereby curbing capital inflows and hence reducing capital market pressure holding the dollar above levels compatible with long-term targets for the current account deficit and net external debt. One way of thinking about such a tax is as follows. It may well be that the rest of the world considers the US capital market an ideal place to invest, in comparison with their home capital markets. Individual foreign investors, however, might have

6. See, in particular, the discussion in chapter 5 on Gourinchas and Rey (2005) and the analysis of the long-term burden of rising external debt.

a collective impact that causes instability for the system by prolonging overvaluation of the dollar to the point where the deficit and net US external debt reach ever more dangerous proportions. A tax would then be a way of internalizing the individual externalities. The tax would also be a means of sharing the rent otherwise going to foreign investors with the future generation of US citizens, who otherwise will bear the sole burden of servicing the debt incurred by excessive consumption of the present generation.