The US as a Net Debtor:
The Sustainability of the US External Imbalances

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Executive Summary

Recent headlines touting the latest upswing in the monthly trade deficit have underscored the size of the United States trade deficit. A trade deficit of around $420 billion in 2003 became a deficit of roughly $500 billion in 2003 and is on track to reach $600 billion in 2004. If oil prices stay high and U.S. growth does not falter, the trade deficit will be even larger in 2005 – likely well above $650 billion. Imports are currently growing slightly faster than exports. Yet even if imports grew at the same pace as exports, the large gap between the size of the U.S. import base and size of the U.S. export base would lead the U.S. trade balance to deteriorate. These trade deficits are large absolutely, large relative to U.S. GDP and large relative to the United States' small export base. They imply an even larger deficit in the broader measure of the United States' external balance, the current account[1] and a rapid increase in the United States' net external indebtedness.

The U.S. trade deficit is the counterpart to low U.S. savings. In mid-late 1990s, the current account deficits reflected a combination of low private savings and strong private investment, not large budget deficits. The financial resources needed to support a surge in private investment were imported from abroad, allowing both consumption and investment to rise. Since 2001, however, the current account deficit has reflected a widening government deficit, not strong private investment. The U.S. now borrows from abroad to allow the government to run a large fiscal deficit without crowding out private investment, even as growing consumption (and necessarily, very low private savings) reduce the United States' ability to finance the fiscal deficit and private investment domestically.

No matter what their cause, the large ongoing deficits created when spending exceeds income have to be financed by borrowing from abroad (or by foreign direct investment or net foreign purchases of U.S. stocks). The broadest measure of the amount the United States owes the rest of the world – the net international investment position or NIIP – has gone from negative $360 billion in 1997 to negative $2.65 trillion in 2003. At the end of 2004, we estimate the net international position will be negative $3.3 trillion. Relative to GDP, net debt rose from 5% of GDP in 1997 to 24% of GDP at the end of 2003. It is likely to reach 28% of GDP by the end of 2004 and then keep on rising. Trends are no more encouraging when U.S. external debt is assessed in relation to U.S. export revenues. Exports as a share of GDP dipped a bit during the Asian crisis but then recovered and stood at 11% of GDP in 2001. But exports then slipped dramatically between 2001 and 2003, falling to a low of 9.5% of GDP in 2003 before starting to recover in 2004. Rising external debt and falling exports is never a good combination. At an estimated 280% of

[1] The current account is the sum of the trade balance, the balance on labor income, the balance on international investment income and unilateral transfers (foreign aid and remittances).

exports at the end of 2004, the U.S. debt to export ratio is in shooting range of troubled Latin economies like Brazil and Argentina.[2]

A large, and rapidly growing, stock of external debt – the legacy of our past current account deficits - has not, to date, been much of a burden on the U.S. economy. The U.S. has had no difficulty adding to its external debt stock to finance ongoing current account deficits. Moreover, interest payments on existing external debt have not been much of a burden on the U.S. economy. The United States has lots of external assets as well as lots of external liabilities. Since U.S. assets have had so far a higher rate of return than U.S. liabilities, the U.S. earned more on its assets than it paid on its liabilities in 2003.

This relatively positive state of affairs, however, is likely to change. The limited cost of the existing U.S. debt reflects unusually low U.S. interest rates, and external investors' willingness to continue to finance large U.S. current account deficits at these low rates. As debt stocks rise and interest rates return to more normal levels, the need to make net payments on the existing debt stock will start to exert a small, but still noticeable drag on the economy. The fall in interest rates reduced interest payments on existing US external debt by roughly $130 billion between in 2000 and 2004.[3]

The rapid deterioration of US net external debt position implied by large trade and current account deficits cannot continue indefinitely. At some point, the interest rate that the U.S. needs to pay to attract the external financing it needs to run ongoing deficits will rise, slowing the U.S. economy and improving the trade balance even as higher interest rates increase the amount the U.S. must pay to its existing creditors. The vulnerabilities associated with being a major net debtor are attenuated by the dollar's continued position as a reserve currency, but not entirely eliminated.

Large current deficits in the U.S. have to be offset by current account surpluses elsewhere. Rising U.S. debt implies that foreigners are increasingly their holdings of financial claims on the U.S.. Both Europe and East Asia (taken as a region) run substantial current account surpluses vis-à-vis the U.S.. However, the major European currencies float freely against the dollar while most Asian currencies do not. China, Malaysia, Hong Kong explicitly peg their currencies to the dollar, and other countries often intervene heavily to prevent their currencies from appreciating against the dollar (and the Chinese renminbi). Recent data leaves little doubt that the reserve accumulation

[2] Before its crisis, Argentina's debt to export ratio varied between 375% and 425%, depending on world commodity prices. Brazil's debt to export ratio reached 400%, but it now is heading down and is below 300% on the back of current account surpluses and strong export growth following the 2002 depreciation of the real. See Magnus (2004) for a chart comparing the United States rapidly rising debt to export ratio with that of many emerging economies.

[3] The $130 billion estimate comes from taking the estimated stock of U.S. liabilities at the end of 2003 (10.52 trillion) and multiplying that stock by the difference between the 2000 rate of 3.61% and the 2003 rate of 2.40%. Implicitly, we are assume that the 2004 rate will be the same as the 2003 rate, and that 2004 payments can be estimated by multiplying the end 2003 debt stock by the average 2003 interest rate. Returns on the United States $7.9 trillion in external assets have also fallen between 2000 and 2004, but not by as much. If payments on US assets and payments on US liabilities both returned to 2000 levels, the net U.S. interest bill would rise by about $45 billion.

of Asian central banks is financing a growing share of the United States' current account deficit. The BIS estimates central banks accumulation of dollar reserves provided $441 billion of the $531 billion needed to finance the United States' 2003 current account deficit. The U.S. trade deficit, in turn, provides an enormous stimulus to East Asian economies.[4]

So far, the U.S. has been able to pass most major financial risks off to its creditors – a most unusual outcome. But that means that the United States' creditors are taking on the risk. East Asian central banks and many other U.S. creditors risk large losses should the dollar eventually depreciate against their currencies, and those U.S. creditors holding long-term bonds risk additional losses should U.S. interest rates rise.

This system – a system that Dooley, Folkerts-Landau and Garber (2003, 2004 a, b) have labeled Bretton Woods Two (BWII) -- has provided the U.S. with the financing it needed in 2002, 2003 and 2004 to run large current account deficits. But the tensions created by this system are large, large enough to crack the system in the next three to four years.

- Right now, the US has to mortgage one year's worth of export revenues every two years to finance its trade deficit. That is not a sustainable pace. It is hard to run a current account deficit of more than 5% of GDP off a roughly 10% of GDP export base. U.S. external debt is no longer small in relation to United States' small export sector.
- A widening trade deficit will lead the U.S. current account deficit to reach $670 billion, or 5.7% of GDP, in 2004. That deficit is poised to expand further in 2005. If imports and exports grow at average rates in 2005, the trade deficit will widen to $670 billion (5.5% of GDP), and the current account deficit may well reach $770 billion (6.3% of GDP).
- This estimate implicitly assumes that the average price for imported oil in 2005 will be the same as the average price in 2004, which we estimate will be around $42 a barrel (for West Texas Intermediate/ sweet light crude). Since current market prices are well above this level, our base forecast assumes that oil will fall during the course of 2005. If oil ends up averaging $52 a barrel without triggering a major slowdown in U.S. growth, higher oil prices will add roughly $50 billion, or 0.4% of GDP, to the U.S. import bill, and a comparable amount to the 2005 current account deficit if higher oil imports are not offset by higher exports to oil-producing countries. Conversely, if oil falls back to $32 a barrel, that will directly subtract 0.4% of GDP from the U.S. external deficit.
- After 2005, barring a recession or a major fall in the dollar, the U.S. current account deficit is likely to continue to expand. The dollar's recent depreciation against the euro has not been matched by a comparable depreciation against

[4] East Asia runs a current account surplus with the rest of the world, with its large surplus in bilateral trade to the U.S. offsetting deficits from commodity exporting regions. Intra-regional trade in East Asia has been growing, but some of that growth stems indirectly from growing trade with the U.S., as many Asian economies are supplying components or capital goods to China, which is becoming the world's manufacturing center.

many other U.S. trade partners. The real value of the dollar remains close to its 1990-2004 average, a level that is probably consistent with continued, albeit more modest, increase in the trade deficit. As favorable shocks to income payments from the recent fall in US interest rates dissipate, net income payments will turn negative, adding to the current account deficit. The likely outcome, absent any major policy changes: current account deficits of 7% of GDP in 2006, and of more than 8% of GDP in 2008. The net debt is on track to increase to about 50% of GDP and almost 500% of export revenues in 2008.

- This deficit is neither financed by foreign direct investment in the U.S. nor by foreign purchases of U.S. stocks. Outward foreign direct investment has substantially exceeded inward foreign direct investment over the past few years, so the U.S. needs to finance outward foreign direct investment of $100-$150 billion as well as a current account deficit of at least $550 billion. The annual borrowing need of the United States is $700 billion or more. Unless trends change that will only grow.
- The "resource gap", i.e. the gap between the U.S. trade balance and the trade balance required to stop the increase in the U.S. net external debt to GDP ratio is above 5% of GDP. This means that stabilizing the external debt to GDP ratio at current levels would require reducing the trade deficit (augmented by unilateral transfers and labor payments) by about 5% of GDP, even with optimistic assumptions about the real interest rate on U.S. net external debt.
- Over time, the amount of adjustment needed to stabilize the external debt to GDP ratio is likely to become larger for two reasons: 1) a higher debt stock implies a larger trade surplus to stabilize the debt ratio; 2) delayed stabilization and higher external debt stocks will lead to higher interest rates and lower growth, thus further increasing the trade surplus necessary to stabilize the debt ratio.
- The U.S. current account balance does not need to go to zero to stabilize the U.S. external debt to GDP ratio. But analysts who argue that a current account deficit of 2% or 3% of GDP is sustainable miss an important point. As interest payments on the growing net external debt of the United States rise, a current account deficit of 2-3% of GDP likely will imply a trade deficit of no more than 1% of GDP. Consequently, the trade deficit will have to move to close to balance to bring the current account deficit down to a level consistent with long-run external debt sustainability.
- Private investors are unlikely to be willing to finance deficits of that magnitude at current low interest rates, particularly since the adjustment in the dollar required to eventually stabilize the external debt to GDP ratio implies large capital losses for holders of low-yielding dollar denominated securities (if the adjustment occurs through a fall in U.S. growth, equity investors in the U.S. will take losses). Asian central banks have been willing to finance U.S. deficits despite the risk of future capital losses to support their own export-led growth. However, the scale of financing required from Asian central banks to sustain current account deficits of this magnitude likely exceeds the absorption capacity of Asian central banks. If current trends continue, Asian

central bank reserves would have to rise from an estimated $2.4 trillion at the end of 2004 to close to $5 trillion dollars at the end of 2008 to support a rise in U.S. net external debt from $3.3 trillion to $7.4 trillion. Chinese and Japanese reserves would need to rise from an estimated $1.4 trillion at the end of 2004 to $2.9-3.0 trillion. That implies an annual increase in China and Japan's reserves of more than $350 billion over the next four years.

- This calculation likely *understates* the amount of financing the U.S. would need from central bank reserves to sustain current trends. Foreign central banks, mostly East Asian central banks, provided the lion' share of the financing for the 2003 U.S. current account deficit,[5] and look to be providing a large share of the financing for the 2004 deficit. As debt levels rise, private investors are likely to become less willing to finance ongoing U.S. current account deficits at anything like current interest rates. Unless foreign banks step up their financing, the U.S. would need to adjust.
- Valuation effects – capital losses for non-residents, capital gains for residents – have limited the increase in the U.S. NIIP in 2002 and 2003. The depreciation in the real value of the US dollar in 2002-2003 increased the dollar value of U.S. external assets (many of which are denominated in foreign currencies), and the rising value of U.S. external assets helped offset the impact of ongoing flow deficits on the NIIP. However, the scope for large valuation gains is likely to be more modest going forward, as the prospective valuation gains from adjusting vis-à-vis Asian currencies are much more modest than the valuation gains from adjusting vis-à-vis the major European currencies. Moreover, the U.S. should not count on being able to fool all of the people all of the time: expected persistent real depreciation of the U.S. dollar would lead foreigners to require ex-ante higher returns on their U.S. dollar asset holdings to minimize their capital losses.

No doubt the dollar's position as the world's reserve currency and the depth of U.S. financial markets creates an intrinsic source of demand for both dollars and dollar denominated assets. However, this could prove to be mixed blessing. The dollar's privileged position could increases the risk that the world will finance large U.S. trade deficits for too long, leading to excessive U.S. debt accumulation. This will let U.S. delay needed adjustment, but increase the cost of the adjustment when it finally happens.

Pulling off the adjustment needed to unwind the current U.S. external deficit smoothly will be a major policy challenge, both for the U.S. and the world. Nonetheless, one thing should be clear: it will be far easier for the needed adjustment to happen smoothly if it starts sooner rather than later: Smooth adjustment means a trade deficit that now exceeds 5% of GDP gradually falls, with the U.S. adding to its external debt stock both absolutely and in relation to its income during the adjustment process. Our projections suggest that the U.S. external debt to GDP ratio will almost double over the medium-long run –

[5] See Higgins and Klitgaard (2004). They argue that the BIS data on dollar reserve accumulation provides a better measure of central bank financing of the U.S. current account deficit than the U.S. balance of payments data, since the BIS data captures central bank funds intermediated through private foreign banks and broker-dealers.

peaking at around 50% of GDP after 2010 -- *even if* the U.S. trade deficit started to shrink by about 0.5% of GDP annually.[6] Such a measured adjustment would eliminate the trade deficit by 2015; faster adjustment would be hard to square with sustained US and global growth.

If the U.S. waits until its debt to GDP ratio is already at 40 or 50% of GDP before beginning the needed adjustment, the U.S. will have less leeway to allow its external debt to rise during a process of gradual adjustment. Not only will the needed adjustment be larger, but the adjustment will likely happen much faster. Such sharp adjustment would not pleasant, either for the U.S. or for the rest of the world.

As many analysts have noted, reducing the U.S. trade deficit will require that US income grow faster than consumption and overall domestic expenditure. The only way this can happen without a slowdown in U.S. growth is if exports growth picks up the slack, and net exports start to drive the U.S. economy. The rest of the world, and in particular dynamic Asian economies, must shift from relying on U.S. demand to spur its growth to providing a surplus of demand that helps support U.S. growth, just as the U.S. must shift from an economy driven by consumption growth to an economy driven by income growth. In other words, current patterns need to reverse themselves.

The large U.S. current account deficit reflects macroeconomic policy choices, notably the large U.S. fiscal deficit and East Asian government's policies of reserve accumulation to support export-led growth. Consequently, the needed adjustment in the U.S. current account deficit will happen smoothly only if backed by supportive macroeconomic policies, including:

- Fiscal adjustment in the United States. A low savings economy like the U.S. can only run large budget deficits without crowding out domestic investment by drawing on the world's savings. Right now, the U.S. depends on Asian reserve accumulation for cheap financing of its budget deficits cheaply. Put differently, if the U.S. continued to run a large deficit and Asia reduced its pace of reserve accumulation, U.S. interest rates would have to rise, crowding out productive investment. Recently, the U.S. has sacrificed exports (and jobs in export sectors of the economy) for cheap financing from East Asia (and jobs in interest sensitive sectors of the economy). The U.S. economy can only reduce its dependence on cheap financing if the U.S. government reduces its own borrowing need.
- Exchange rate adjustment and policies that support demand growth in East Asia. A current account deficit of nearly 6% of U.S. GDP cannot be reduced if the fastest growing, most dynamic parts of the world economy continue to maintain exchange rates that suppress domestic consumption by keeping the domestic price of imports high. Europe has already let its exchange rate adjust, and, even with policies directed at supporting domestic demand growth, the aging, already developed economies of Europe will not be able to contribute as much to global demand as younger, more dynamic economies.

[6] Since 2001, the U.S. trade deficit has deteriorated at a similar pace. Such adjustment requires US exports to grow roughly twice as fast as US imports.

- China sits at the center not just of East Asia's economy, but also of the global economy. China is now too big not to play a more constructive role in global economic management. Given its large stock of reserves, its rapidly expanding economy and its ability to attract $50 billion a year in foreign direct investment, there is no reason why China should not run a modest current account deficit. The rest of Asia will not adjust if China does not adjust.

Introduction

This paper analyzes the sustainability of U.S. external deficits[7] and the "Bretton Woods Two" international monetary system that is integral to their financing. It therefore examines the sustainability of what Larry Summers has called the "balance of financial terror"[8] – a system whose stability hinges on the willingness of Asian central banks to both hold enormous amounts of US Treasuries (and other US fixed income securities) and to add to their already enormous stocks to provide the ongoing financial flows needed to sustain the U.S. current account deficit and the Bretton Woods Two system. Our analysis suggests that the Bretton Woods Two system is fragile, and likely will prove unstable. Even if the United States continues to be able to borrow on terms that other, comparable, debtors could not imagine, our analysis suggests that the U.S. is on an unsustainable and dangerous path.

The basic tools of our analysis may not be familiar to those who follow the American economy. However, they should be familiar to students of emerging economies, who traditionally have had to worry about external sustainability. At the same time, some of the details of the analysis will seem strange to students of emerging economies, since the U.S. is in no way a typical external debtor. Most emerging economies do not have negative real interest rates on their debt, or see their net international investment position as their currency depreciates.

Our analysis is organized into six sections.

- The first section reviews developments since 2001, highlighting the United States growing external deficit, the marked changes in the way this deficit is being financed and the now significant net debtor position of the United States.
- The second examines the macroeconomic sources of the U.S. external imbalance, highlighting the how the recent increase in the trade deficit has been driven by the

[7] Indeed, a number of authors have recently expressed serious concerns about the sustainability of the current U.S. fiscal policy, current account deficits and external debt accumulation. They include Rubin, Orszag and Sinai (2004), Summers (2004a, b), Rogoff (2003, 2004), Obstfeld and Rogoff (2004), Godley et al. (2004), Roach (2004a, b), Wolf (2004a, b) Mussa (2004), Truman (2004), Mann (2004) and IMF (2004a, 2004b). For different views from the Fed, see Kohn (2003), Greenspan (2003) and Gramlich (2004). However, the Fed's views may have changed: the minutes of the June 29th-30th FOMC meeting suggest growing concern (http://www.federalreserve.gov/fomc/minutes/20040630.htm) and five Fed governors have publicly expressed concern about the size of the U.S. current account deficit. Godley (1995, 1999), Mann (1999, 2003), Obstfeld and Rogoff (2000) and Freund (2000) provided early studies on the sustainability of U.S. current account deficit. Godley in particular highlighted the risks created by the deterioration in the private sector's net financial account (private savings-investment) during the late 1990s. See also the materials in Roubini's Global Macro site section on the U.S. current account sustainability: http://www.stern.nyu.edu/globalmacro/cur_policy/cad.html.

[8] Summers (2004a).

deterioration in the government's financial position, not by strong private investment (the "twin deficits" phenomenon[9]).

- The third section lays out three scenarios for the evolution of the U.S. external deficit, as well as the scale of the adjustment in the trade balance (non-interest current account) that is required to stabilize U.S. external debt – i.e. to produce a stable debt to GDP ratio. Barring a sharp contraction in the U.S, the US trade deficits won't disappear quickly, so in any smooth adjustment scenario the U.S. stabilizes its external accounts at a higher net external debt level.
- The fourth section highlights how a higher debt level will eventually make the United States vulnerable to financial shocks. One of the problems with financing a large external debt with near negative real interest rates is that it simply does not get any better: the balance is risks is weighted toward a negative shock.
- The fifth section looks at the counterpart to U.S. deficits: rising East Asian foreign exchange reserves. It tries to assess the willingness of Asian economies to continue to accumulate claims on an ever more indebted United States without demanding a higher premium to compensate for the growing risks.[10]
- The last section presents our conclusion and policy prescriptions to prevent the current U.S. global imbalances from causing severe financial and economic distress to the U.S. and global economy.

All this points to one simple conclusion: the U.S. needs to start adjusting now in order to maximize the chances for a relatively smooth adjustment process. The U.S. external imbalance is too large to be closed quickly without a hard landing if adjustment is delayed. The large deficits in the early stages of a smooth adjustment path will result in significant additional debt accumulation.

While many parts of our analysis overlap with existing assessments of U.S. external sustainability, we think our work adds several new dimensions to existing analysis. We carefully examine the financing of U.S. external imbalances, and estimate the scale of reserve accumulation that would be needed to sustain large U.S. current account deficits. We look at the currency composition of U.S. external assets to assess the scope for further valuation gains. We calculate the scale of the trade adjustment required to stabilize the U.S. debt to GDP levels, both at current levels and at higher levels. We provide scenarios outlining the future evolution of the U.S. net international investment

[9] The theoretical and empirical academic literature on the relation between fiscal policy, the current account and the real exchange rate is quite wide. For a recent study that includes a survey of this literature see Kim and Roubini (2004).

[10] Eichengreen (2004) emphasized that continued reserve accumulation by Asian economies requires coordination to overcome potential collective action problems, since an individual East Asian central bank would be better off if it held its reserves in say euros rather than in dollars, while other Asian economies continued to hold their existing reserves in dollars and add to their dollar assets. Indeed, Asians can defect either by accumulating smaller amounts of reserves or by diversifying their holdings of existing reserves away from US dollars towards Euros and other currencies. The incentives for first are limited because of domestic support for export led growth; but the incentives for latter are significant given scope for large financial losses on holdings of U.S. dollar reserves.

position if the trade deficit widens, if the trade deficit stays roughly at its 2003 level and if the trade deficit starts to narrow significantly.

Section 1. Review of Recent Developments

1.1. The current account deficit.

The current account deficit is the sum of the trade balance, the balance on investment income, the balance on labor income (usually small) and unilateral transfers (foreign aid and remittances).[11] However, since net investment income has recently fluctuated around zero, the current account balance recently has been equal to the trade balance plus U.S. transfers (both foreign aid and remittances sent to their home country by U.S. workers). The U.S. has run large current account deficits since 2000 – with deficits of $413 billion in 2000, $386 billion in the recession year of 2001, $474 billion in 2002 and a record $531 billion in 2003. [12] Current trade data suggests a 2004 current account deficit above $670 billion, or 5.7% of GDP, with about $50 billion (0.4% of GDP) of the deterioration stemming from the rising cost of oil imports.

	2000	2001	2002	2003	2004 (f)	2005 (f)
Trade balance	-378	-363	-422	-497	-609	-673
Unilateral transfers	-56	-47	-59	-68	-78	-82
Balance on labor income	-5	-6	-5	-5	-5	-5
Balance on investment income	26	30	12	38	22	-22
Current account balance	-413	-386	-474	-531	-669	-783

The 2000 deficit itself was the product of a noticeable shift relative to 1997, when the U.S. current account deficit was only $136 billion. The Asian financial crisis led East Asia as a whole to shift from a substantial current account deficit to a significant surplus; the sharp fall in Asian currencies and a booming U.S. economy meant that this swing was offset largely by a widening of the U.S. current account deficit. However, the large – and one would expect temporary – swing in the U.S. current account deficit that followed naturally from a contracting Asia and a booming U.S. persisted even after East Asia resumed strong growth and the U.S. economy cooled.

The gap between the United States' $1.5 trillion import base (estimated to rise to around 1.7 trillion in 2004) and its $1 trillion in U.S. exports base (estimated to rise to around 1.15 trillion in 2004) makes the U.S. trade deficit difficult to close quickly in the absence of a sharp recession. U.S. exports have to grow at a significantly faster percentage rate than U.S. imports just to prevent the trade deficit, in dollar terms, from widening. 10% export growth sounds good, but 10% export growth combined with 10% import growth

[11] Unilateral transfers generally average a bit under 0.5% of GDP.

[12] Data on the U.S. current account, savings and investment come from the Bureau of Economic Analysis (http://www.bea.gov/beahome.html) that publishes comprehensive National Income and Product Accounts (NIPA).

implies a substantial – roughly $50 billion -- widening in the trade deficit. 10% export growth and 5% import growth only reduces trade deficit by about $25 billion.

1.2. The capital account.

Large, ongoing current account deficits have to be financed with capital inflows. A $500 billion current account deficit implies that foreigners are either lending the U.S. $500 billion, providing $500 billion in FDI, buying $500 billion of U.S. stocks or a mix of all three. Indeed, the current account balance (appropriately corrected for valuation effects) is, by definition, equal to the change in the net international investment position.[13]

There clearly has been a major change in the composition of financial inflows to the U.S. since 2000. Rather than relying on inward foreign direct investment to finance a portion of the current account deficit, the U.S. now is borrowing from abroad to finance its outward FDI. Financing from official central banks (through the purchase of reserve assets, mostly U.S. treasuries but also some other securities) and from private purchases of U.S. government Treasury bills has surged. Foreigner inflows have moved from financing private sector investment to financing the growing budget deficit.

Net financial flows to the U.S.
(positive = net inflow, negative = net outflow)

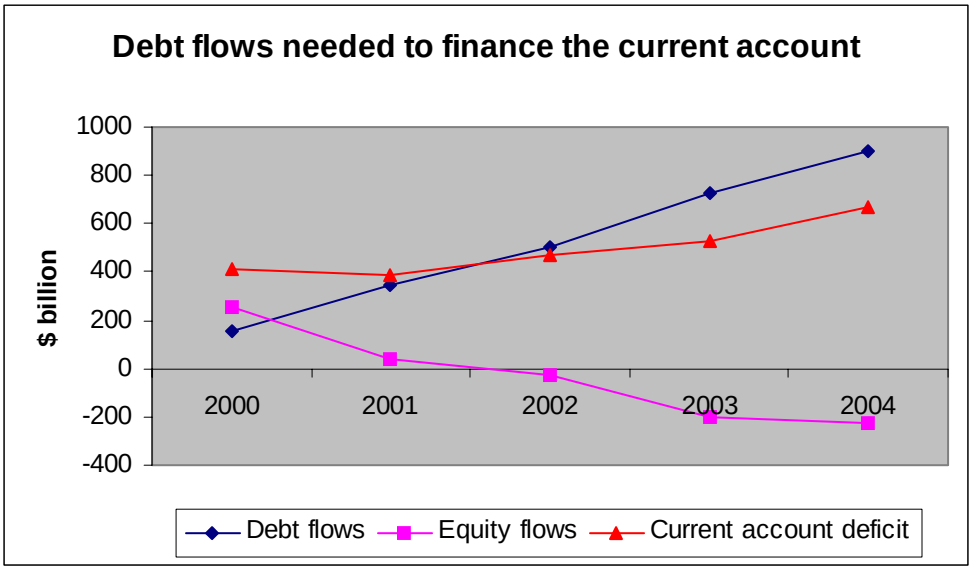
	2000	2001	2002	2003	2004 (h1)	2004 (f)
Reserves (net)	41.5	22.7	110.7	250.6	203.4	*406.8*
Of which, U.S. treasuries	-5.2	33.7	60.5	169.9	164.7	*329.4*
Foreign private purchases of US treasuries	-70.0	-14.4	100.4	113.4	101.0	*202.0*
Currency	5.3	23.8	21.5	16.6	6.9	*13.9*
Securities (net)[14]	338.0	310.0	301.4	178.7	103.8	*207.7*
Of which, debt securities	267.7	300.4	269.8	241.8	152.8	*305.7*
Of which, equity securities	93.1	12.6	37.5	-63.2	-49	*-98*
FDI (net)	162.1	24.5	-62.4	-133.9	-65.4	*-130.8*
Claims reported by non-banks (net)	31.9	57.6	32.6	55.1	-18.8	*-37.6*
Claims reported by banks (net)	-31.7	-7.5	66.1	65.2	-46.2	*-92.5*
Net financing	477.1	416.1	570.2	545.8	284.7	*569.4*

It should be noted that simply annualizing the financial flows reported in the first half of 2004 fails to provide sufficient financing to cover our estimated current account deficit. Moreover, the pace of foreign official purchases of U.S. Treasuries has slowed from the first half. Something else will have to give. The pace of U.S. purchases of foreign equities probably fell, and the U.S., in all probability, will resume receiving net inflows from banks and non-banks (the last two lines in the net financial flows table).

[13] Data on the Net International Investment Position of the U.S. come from the Bureau of Economic Analysis (http://www.bea.gov/bea/di/home/iip.htm), as does data on the current and capital account.
[14] Securities (net) is not the sum of debt and equity securities. The debt and equity securities series are taken from the NIIP data, which provides a more detailed breakdown than the capital account data.

The data on the breakdown between purchases of equities and debt is not reported in the quarterly balance of payments data, but data from the annual report on the Net International Investment Position and data reported by the Treasury. There is little doubt that debt claims now make up the majority of securities purchased by foreigners.[15] Indeed, since 2002 the U.S. has been financing its external equity investments (both foreign direct investment and portfolio equity) by selling debt to foreigners, effectively acting as a financial intermediary as well as a net borrower. This only adds to the United States ongoing need to attract non-FDI and non-equity financial inflows: the U.S. needs to place debt abroad to finance its current account deficit, its net outward FDI and its net purchase of foreign equities.

	2000	2001	2002	2003	2004 (h1)
Current account deficit	-413	-385	-474	-531	-313
Portfolio equity (net)	93	13	38	-63	-45
FDI (net)	162	25	-62	-134	-65
Total financing need net of equity	158	347	498	728	423



1.3. The net international investment position.

The U.S. net international investment position (NIIP) is the total stock of accumulated foreign claims on the United States (both debt and equity) minus the stock of US claims on the rest of the world. The NIIP was positive until 1989 (valuing assets and liabilities at market value), then slowly deteriorated through the 90s. The NIIP was only negative $306 billion in 1995. However, the pace of deteriorated accelerated markedly as the decade progressed. Tille (2003) calculated that the deterioration in the NIIP averaged

[15] TIC and BEA.

less than $50 billion a year between 1982 and 1995. However, an average deterioration of $178 billion a year between 1995 and 1999 led the NIIP to reach –$1 trillion.

The pace of deterioration has accelerated in this decade: large recent current account deficits have implied rapid deterioration in the NIIP.

	2000	2001	2002	2003	2004 (f)[16]
NIIP ($ billion)	1583	2314	2553	2651	3320
As % of GDP	-16.3	-22.9	-24.4	-24.1	-28.4
As % of exports	-149	-231	-262	-260	-291
Net equity position	192	-102	173	729	949
Net debt position	-1777	-2212	-2729	-3380	-4269
From the current account	-413	-386	-474	-531	-669
Valuation changes	-123	-345	236	432	[0]

A roughly $800 billion improvement in the net equity position over between 2001 and 2003 helped to offset rapid deterioration in the net debt position. It also should be noted that the combined current account deficit in 2001, 2002 and 2003 was $1391 billion, yet the U.S. NIIP only deteriorated by $1068 billion. This is because the NIIP reflects both ongoing deficits, which add to the stock of external claims on the United States, and changes in the valuation of the existing stock of US assets and U.S. liabilities.

What explains these gains – particularly the large valuation gains in 2003?

Changes in stock market values are not the answer. The U.S. stock market did increase substantially in value in 2003, but so did European and Japanese stock markets. Rising foreign stock markets increased the value of U.S. external assets, but rising U.S. stock markets increased the value of foreign assets in the U.S (U.S. external liabilities). So long as movements in global equity prices are correlated, they have little overall impact on the net U.S. investment position.[17]

The valuation gains are largely the product of the dollar's adjustment against the major European currencies – the euro, the pound and the Swiss franc. An asset worth say $100 Euros was worth maybe $90 in 2001 is now worth more than $125 dollars, though its precise value depends on the latest moves in the euro/dollar. Because an overwhelming share of U.S. foreign equity assets are in Europe, the fall in the dollar relative to the major European currencies had a major impact on the value of US assets abroad (just as

[16] We assume that the U.S. finances net purchases of $150 billion in foreign equities and FDI with net debt inflows of an equal amount, leading the net debt position to deteriorate by more than the current account.

[17] See Tille (2003) for analysis of the relative impact of dollar appreciation between 1999 and 2001 and falls in U.S. and foreign stock markets on the U.S. net international investment position. By the end of 2003, the value of U.S. holdings of foreign equities (and FDI) slightly exceed foreign holdings of U.S. equities (and foreign FDI). This largely reflects the large valuation gains the U.S. enjoyed from a falling dollar. But the gap remains small enough ($800 billion) that even a 20% increase in global equity markets would deliver only a $160 billion net improvement in the U.S. net international investment position.

the rise in the dollar in 2001 reduced the value of U.S. assets abroad). Indeed, since Europe accounts for a much larger share of the US foreign equity investments than of the U.S. trade, the recent adjustment against the Euro had a big and immediate impact on the U.S. NIIP, but only a small impact to date on the U.S. trade though the full impact of the 2003 euro/ dollar adjustment has yet to manifest itself on the trade balance because of J-curve lags.

	2003 data
FDI[18]	
% in Europe	54%
% in Europe, Canada and Australia	67%
Portfolio Equity	
% in Europe	56%
% in Europe, Canada, Australia	63%
U.S. trade	
% with Europe	22%
% with Europe, Canada and Australia	43%

In a sense, by adjusting against the Euro area but not against the Asian area (BIS, 2004), the dollar adjusted in a way that delivered the biggest possible valuation gains to existing U.S. external assets while offering the prospect of only relatively modest gains in the current account. A comparable adjustment against the major Asian currencies would not deliver comparable valuation gains.[19]

U.S. investments denominated in European currencies and in other currencies that have already adjusted against the dollar are about three and a half times as large as U.S. investments in East Asia, so the prospective valuation gains from changes in Asian exchange rates are much smaller than the valuation gains realized from adjusting against the Euro. Compare, for example, the impact of a 20% fall in the dollar against Europe, Canada and Australia against the impact of a 20% fall in the dollar against the major Asian currencies. Using 2003 data on the currency composition of U.S. holdings of FDI and long-term foreign securities, a 20% fall against the European currencies, no change in the Asian currencies and a 10% fall against all other currencies produces a one off

[18] Data from BEA. Data on the country by country breakdown of U.S. FDI is only available on a historical cost basis. See Abaroa (2004) and Borga and Yorgason (2004).

[19] Gourinchas and Rey (2004) lay out a theoretical framework where large exchange rate moves improve the United States' net external debt position in the short-run by increasing the value of the United States external assets, and in the medium-term by improving the trade balance. They note that current account deficits can be financed either by future export growth, or by large future returns on a country's net holdings of foreign assets. Since the currency composition of the United States external debt is favorable (US liabilities are in dollars, while they estimate 55% of US foreign assets are denominated in foreign currency), dollar depreciation tends to deliver net valuation gains to the United States. Adjustments against the Euro, so far, has not delivered improvements in the United States trade balance with the Euro area, let alone its global trade balance – whether because of J-curve effects or because Euro-area trade accounts for a relatively small fraction of total U.S. trade. However, adjustment against the Euro did deliver large, immediate valuation gains.

valuation gain of $575 billion.[20] A 20% fall against the Asian currencies, no change against European currencies, the Canadian dollar and the Australian dollar produces and an additional 10% fall against all other currencies produces a valuation gain of $210 billion. In other words, even if the U.S. is only half way through a 20% decline in the dollar against all currencies, the U.S. has realized far more than half of the potential valuation gains from dollar depreciation by depreciating first against Europe, Canada and Australia.

Currency Composition of Select U.S. external assets[21]

US external assets: FDI, equity securities and long-term debt securities

Assets denominated in European currencies, Canadian dollars and Australian dollars	$2.57 trillion
Assets denominated in Japanese yen and other Asian currencies	$0.73 trillion
Assets denominated in other currencies	$0.63 trillion
Assets denominated in U.S. dollars (long-term debt securities)	$0.33 trillion
Total	$4.26 trillion

It should be noted that the currency composition of U.S assets and liabilities is the opposite of a typical net international debtor. The average emerging economy with a large debt stock has debts denominated in a foreign currency while the United States' external debt is largely denominated in its own currency. A typical emerging economy consequently sees its net debt increase substantially as its currency depreciates. The U.S. in contrast, saw the value of its euro denominated assets increase while the value of its dollar denominated external liabilities (and some assets) stayed constant.

1.4.The net international investment position and the current account.

By virtue of the dollar's position as a reserve currency, the U.S. traditionally has been able to borrow from abroad at low rates. Many U.S. external assets, in contrast, earn a

[20] Incidentally, $575 billion is not far from the $668 billion in valuation gains in 2002-03, when the dollar fell substantially against the Euro and other European currencies. Between January 2002 and February 2004, the dollar declined by 43% against the Euro (it subsequently has rebounded back from 1.29 to around 1.21-1.22), 30% against sterling, 51% against the Australian dollar, and 20% against the Canadian dollar. It also fell by a smaller magnitude against the yen. See BIS (2004)

[21] Data from the Bureau of Economic Analysis, particularly Borga and Yorgason (2004), and U.S. Treasury (2003). FDI data is on a current cost basis. On this basis, total U.S. external assets at the end of 2003 totaled $7.20 trillion (v. 7.86 trillion at market value), and total U.S. liabilities totaled $9.63 trillion (v. 10.51 trillion at market value), so the US NIIP on a current cost basis is –2.43 trillion at rather than –2.65 trillion. Our calculation only looked at the currency composition of $4.26 trillion of the $7.20 trillion total in U.S. external assets. Implicitly, we are assuming that the remaining assets – mostly claims reported by banks and non-banking concerns -- are denominated mostly in dollars. This is likely to be correct, though we know it is not entirely accurate: U.S. government reserve assets are part of the total, and they are denominated in foreign currency. However, U.S. official reserves are relatively small. Gourinchas and Rey (2004) concluded that 55% of end 2002 U.S. external assets (with FDI valued at historical cost) were denominated in foreign currency, which works out to $3.55 trillion in external assets. Taking into account valuation gains during the course of 2003, our estimate of $3.93 trillion in foreign currency denominated external assets is consistent with their calculation.

high rate of return. Consequently, even after the U.S. net international position turned negative, the U.S. often has had a positive balance on investment income. The extra income from the high rate of return on U.S. external assets compensated for the fact that U.S. external debts exceeded U.S. external assets. In this way too, the U.S. differs from a typical emerging economies, since most emerging economies have to pay a significant premium to borrow from abroad (or to attract FDI), while a large fraction of their foreign assets are in low yielding liquid foreign reserves. Consequently, even an emerging economy with external assets and liabilities of equal size typically has to pay far more on its liabilities than it earns on its assets.

This discrepancy between U.S. payments on its external debts and U.S. earnings on its external assets widened after 2000, as the cost of servicing the United States external debt fell faster than the returns on U.S. assets. The fall in the interest rate the U.S. paid on its stock of debt more than offset the impact of a rapid increase in total external debt. Extraordinarily low U.S. "policy" interest rates reduced U.S. external debt service from 360 billion (on 8.9 trillion in gross liabilities) to 250 billion (on 10.5 trillion in gross liabilities).[22]

	2000	2001	2002	2003
U.S. gross liabilities	8934	9205	9166	10515
Average cash return	3.61	2.77	2.74	2.40
Income payments	-322	-255	-251	-253
U.S. gross assets	7350	6891	6661	7863
Average cash return	4.73	4.12	3.99	3.70
Income payments	348	284	264	291
NIIP	1583	2314	2553	2651
Inv. Income balance	25	29	13	39

To date, the United States has been able to pull off an extraordinary coup. The U.S. is now a large net debtor; but rather than having to make major payments to the rest of the world, the investment income balance (the difference between what the U.S. pays and what it receives from the rest of the world) has fluctuated between a small deficit and a small surplus. Moreover, the deterioration in the United States' net international investment position since 2000 has not translated into higher income payments, nor reduced the United States' ability to finance its large ongoing trade deficit.

Of course, as U.S. interest rates increase and the net foreign debt continues to surge, the balance on investment income will turn negative. This may happen sooner than many expect: data from the second quarter to 2004 figures shows a positive (quarterly) balance of only $ 2.5 billion (with income receipts of $86.9 billion and income payments of $84.2 billion). The balance on investment income is likely to turn negative in 2005, and grow thereafter. Richard Berner (2004) and his team at Morgan Stanley have estimated that

[22] We have calculated the average returns on U.S. foreign assets and liabilities by taking the ratio of income payments and receipts from the current account to the stock of U.S. foreign liabilities and assets.

rising interest payments could add $60-70 billion to the U.S. current account deficit over the next two years.

What explains the United States ability to attract large net capital inflows to fund its current account deficit? The standard answer – that the current account deficit reflects the United States' unique attractiveness for foreign investment -- rings less and less true. Inward FDI has fallen substantially since the dotcom bust in 2000, and U.S. outward FDI now exceeds inward FDI by a substantial margin. Foreigners have also lost interest in the U.S. stock market. In contrast, foreign purchases of U.S. debt, particularly relatively low yielding U.S. treasury bills have surged. Foreigners are investing in the U.S. not for attractive returns, but for the perceived safety and security of U.S. debt markets.

But this only heightens the core puzzle of the U.S. external account. Standard economic theory suggests the currency of a country with a large, growing external debt and a large ongoing trade deficit should fall over time. Why should foreigners want low-yielding dollar denominated claims when large ongoing trade deficits and a growing stock of net debt imply that the dollar is likely to fall in value?

The key to answering this puzzle is that an increasing portion of the United States current account deficit is being financed not by private investors, but by foreign central banks. Specifically, most Asian economies have been building up their reserves, either to maintain a fixed exchange rate or to offset pressure for currency appreciation in the context of a managed float. A large share of these reserves are invested in the U.S., typically in U.S. treasuries or other safe assets (central banks seeking a bit higher return than offered by U.S. treasuries often invest in agency bonds). Growing U.S. net external debt implies growing assets abroad and recently, Asian current account surpluses and the resulting increase in central bank reserves have accounted for a large share of those assets.

$ billion

	2000	2001	2002	2003	2004 YTD	*2004 (f)*
Net U.S. debt position[23]	1777	2212	2729	3380		*4269*
Foreign holdings of US treasuries[24]	1015	1040	1239	1528	1799	*2069*
O/w treasuries held by foreign central banks	609	619	763	934	1084	*1238*
Dollar reserves (BIS data)[25]	1384	1467	1652	2093		
Asian reserves (IMF data)	1069	1189	1437	1911	2178	*2445*

[23] The net debt position is closely related to the net international investment position, which is the sum of the net debt position and the net equity position. Recently, the U.S. has been financing its current account deficit largely by adding to its net debt, not by adding to the stock of equities (stocks and foreign FDI) held abroad. Indeed, recently, the net debt position has been deteriorating more rapidly than the net international investment position, both because the U.S. has been borrowing from abroad to finance its FDI and purchase of foreign equity assets and because the U.S. has enjoyed substantial valuation gains on its foreign equity assets.

[24] U.S. Treasury (http://www.treas.gov/tic/index.html)

[25] BIS (2004). The series comes from subtracting the historical changes in the dollar reserves from the end of 2003 stock data. The BIS has not published revised historical stock data, but the changes in the flow numbers from the 2003 BIS report clearly imply some revisions.

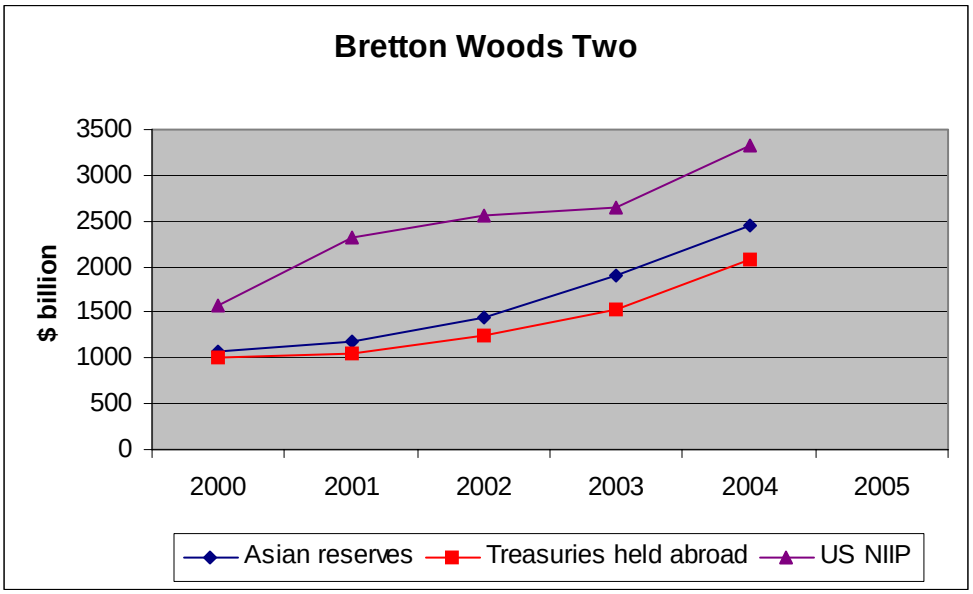
O/w Japan and China	523	611	752	1071	1271	*1471*

Moreover, it is likely that the official U.S. data understates the United States current dependence on financing from foreign central banks. Higgins and Klitgaard (2004) of the Federal Reserve Bank of New York have highlighted that the increase in dollar reserves in the BIS data exceeds the official inflows recorded in the U.S. data, and argued that there is good reason to believe that the BIS data is more accurate than the U.S. commerce department's data.[26]

$ billion

	2000	2001	2002	2003	2004 YTD	*2004 (f)*
Reserves (net) – US data	43	28	114	249	202	*404*
Change in BIS dollar reserves[27]	51	83	185	441		

But no matter what the data source, one fact is clear: from 2002 on, the United States has relied heavily on reserve accumulation by foreign central banks to finance its current account deficit. Indeed, as the chart "Bretton Woods Two" shows, the increase in U.S. Treasuries held abroad has been highly correlated with Asian reserves. Of course, not all Asian reserves are invested in Treasuries, and not all Treasuries held abroad are held by Asian central banks. But Asian financing of the U.S. fiscal deficit is large enough are that the two tend to rise in strong parallel. We return to these topics in sections 3 and 4.



[26] The BIS data comes from the dollar assets reported to the BIS by foreign central banks, the U.S. data comes from surveys of foreign holdings, updated by data on newly reported transactions from U.S. broker-dealers. See the appendix in Higgins and Klitgaard (2004)

[27] BIS (2004), changes in dollar reserves at constant exchange rates. Note that the 2004 data updated the data for earlier years, as well as providing the BIS's estimate for the increase in dollar reserves in 2003.

Section 2. The Current Account as the Savings-Investment Balance

2.1. The current account as the difference between national savings and investment

A basic identity of macroeconomics links a country's trade balance – or more specifically its current account balance -- to the difference between national savings (the sum of private and public savings) and national investment. If savings exceed domestic investment, the country is exporting capital and necessarily will run a current account surplus. If investments exceed savings, the country must borrow from abroad (import capital) to fund the excess of domestic investment relative to domestic savings and it necessarily runs a current account deficit. There is no mystery behind this analysis. National savings are the difference between national income and national consumption (the sum of private and public consumption). If private consumption is rising faster than income, private savings necessarily are falling – and higher consumption implies higher imports, since a fraction of consumption is going towards imports.[28] An increase in investment similarly implies an increase an aggregate demand, and therefore an increase in imports, as does an increase in government spending/ a fall in taxes (i.e. larger budget deficit and a fall in public savings). [29]

The expanding U.S. trade and current account deficit reflects the fact that U.S. total consumption has grown faster than U.S. income over an extended period of time. As Steven Roach has emphasized, U.S. national savings fell from around 10% of GDP in the 60s and 70s to about 6% in the 1980s and a bit under 5% in the 1990s. The fall would have been much sharper in the 1990s if not for government surpluses, i.e. government savings.[30] National savings fell even further after 2000, recently averaging only 3% of GDP.[31]

Falling national savings does not necessarily imply a widening current account. If both savings and investment fall, the current account will remain constant. But if investment stays constant, either a fall in private savings (i.e. private consumption is increasing faster than national income) or a fall in public savings (i.e. a larger budget deficit driven by higher public spending or lower revenues) leads to a growing current account deficit. The current account can also increase if savings stays constant and investment increases.

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[28] See Mann (2004) for an interesting decomposition of the U.S. trade deficit. The deficit is entirely the product of a deficit in autos and consumer goods. U.S. trade in capital goods remains in rough balance. Her analysis graphically illustrates how a boom in consumption (a fall in savings) resulted in a widening deficit in consumer goods, and thus a rising overall trade deficit.

[29] For simplicity, we assumed that when one component of aggregate demand goes up (be it consumption or investment or government consumption), GDP or output remains unchanged; thus, for every dollar increase in domestic expenditure on C or I or G, the trade balance worsens by a dollar. If such increase in aggregate demand leads to some increase in output, a dollar of increase in C or I or G will lead to a worsening of the trade balance that is less than a dollar. This latter case is more realistic.

[30] Godley et al. (2004) estimate that private sector expenditure (consumption and investment) increased faster than income "by an amount equal to 12% of GDP" between 1992 and 2000.

[31] Stephen Roach, August 16, 2004, Twin Deficits at a Flash Point, MSDW Global Economic Forum.

Conversely, the U.S. can only rely on foreign savings to consume more than it produces (or to fund a growing budget deficit) if the rest of the word produces more than it consumes, and therefore generates savings that are lent to the United States.

2.2. 1990s: a widening of the U.S. current account reflecting a surge in investment

During the 1990s, the U.S. current account went from an approximate balance in 1990 and a small deficit during the first part of the 90s[32] to a 4% plus deficit by the year 2000. This deterioration stemmed primarily from an investment boom: private savings did fall throughout the decade, but the fall in private savings was partially offset by rising public savings. The U.S. went from a $290 billion fiscal deficit to a $250 billion fiscal surplus. Private savings fell faster than public savings rose, leading U.S. national savings to fall bit in the 1990s. But private investment also increased sharply. By importing capital from abroad during the boom years of the 1990s, the US was able to have its cake and eat it too. The expected returns from high levels of investment promised higher future incomes, and the U.S., in effect, borrowed against that future income to support high current levels of consumption.

Current account deficits are neither intrinsically bad or good; a country with a low level of debt may want to borrow from abroad to finance the imports associated with a surge in investment while a country with a large existing debt stock generally would be well advised not to borrow from abroad to finance a large budget deficit (and associated imports). In one case, the current account deficit is associated with a surge in investment that should provide higher future incomes; in the other, the additional debt is being taken on largely to finance current consumption (assuming the deficit does not reflect high levels of public investment). Consequently, the initial widening of the U.S. current account following the Asian crisis posed little concern: the U.S. still had a relatively low level of external debt, the rising deficit was driven primarily by an investment boom and it was financed mostly by equity/FDI inflows. The US in the 1990s was like a fast growing firm that has more investment than savings internal to the firm and has thus to rely on external capital markets to finance its investments.

2.3. "Twin deficits" since 2001: recent worsening in the current account reflecting the large and growing fiscal deficits.

The current account deficit has remained large after 2000, but it no longer reflects an up-tick in private investment. Rather, it stems from a sharp fall in national savings. The bursting of the high tech bubble led national investment to fall by almost 4% of GDP between 2000 and 2003 (with a small recovery in 2003). If national savings had remained constant, the fall in investment should have led to an improvement of the U.S. current account of about 4% of GDP as well. However, the U.S. current account deteriorated by over 1.0% of GDP between 2000 and 2003, going from a deficit of 4% of GDP in 2000 to a deficit of 5.0% of GDP in 2003. National savings fell by more than investment,

[32] 1990 was an unusual year for many reasons. The U.S. received substantial transfers to help pay for the Gulf War and the U.S. went into a recession while growth in the rest of the world – particularly in Europe – was strong.

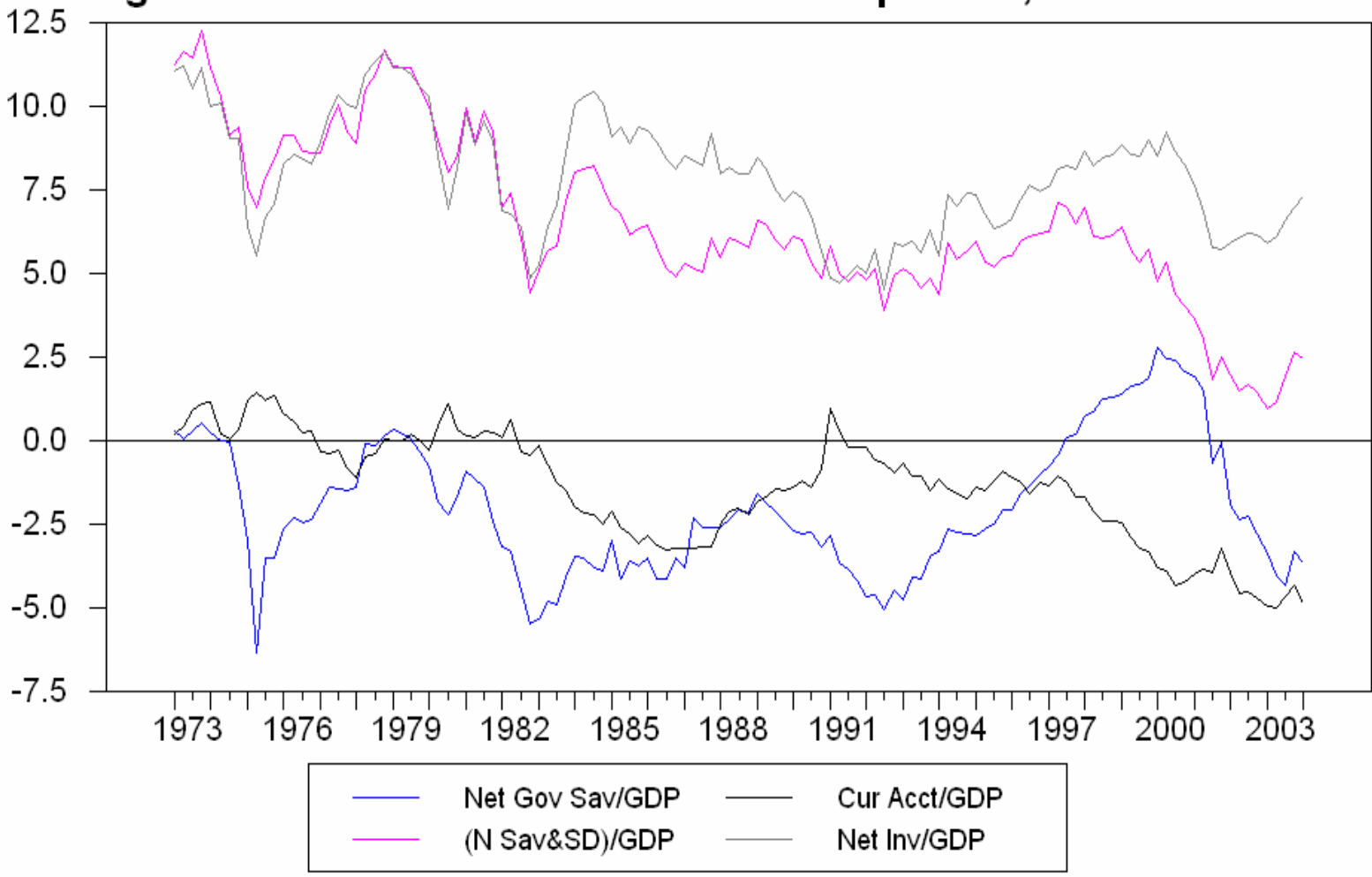
leading the U.S. current account balance to worsen. National savings fell mostly because the fiscal balance went from a 2.5% of GDP surplus in 2000 to a deficit of about 4% of GDP in 2003. The 6.5% of GDP fall in public savings overwhelmed the fall in investment and even offset a small rise in private savings.

The deficits since 2000 reflect the need for a low savings country to borrow from abroad to finance large budget deficits, not the need for a low savings country to borrow from abroad to finance a surge in investment without reducing its current consumption. There was a case for running counter-cyclical fiscal policy to moderate the economic impact of the end of the 1990s boom, but not a case for using the need for temporary stimulus to institute a permanent, and in our view reckless, tax cuts even as government expenditure was growing rapidly.[33]

Recessions usually lead to significant improvements in the current account. The 2001-02 slump in the U.S., however, produced only most changes in the overall current account deficit, as rising government expenditures, falling government taxation and rising consumer spending offset a sharp fall in private investment. The net effect was a small dip in the current account during the recession, and now a sharp expansion in the current account deficit as the economy recovers. Private savings remain low, the fiscal deficit remains large (it expanded in 2004 even though economy growth picked up) and the recovery is increasing investment demand.

[33] For an analysis of the U.S. fiscal position, since Rubin, Orszag and Sinai (2004).

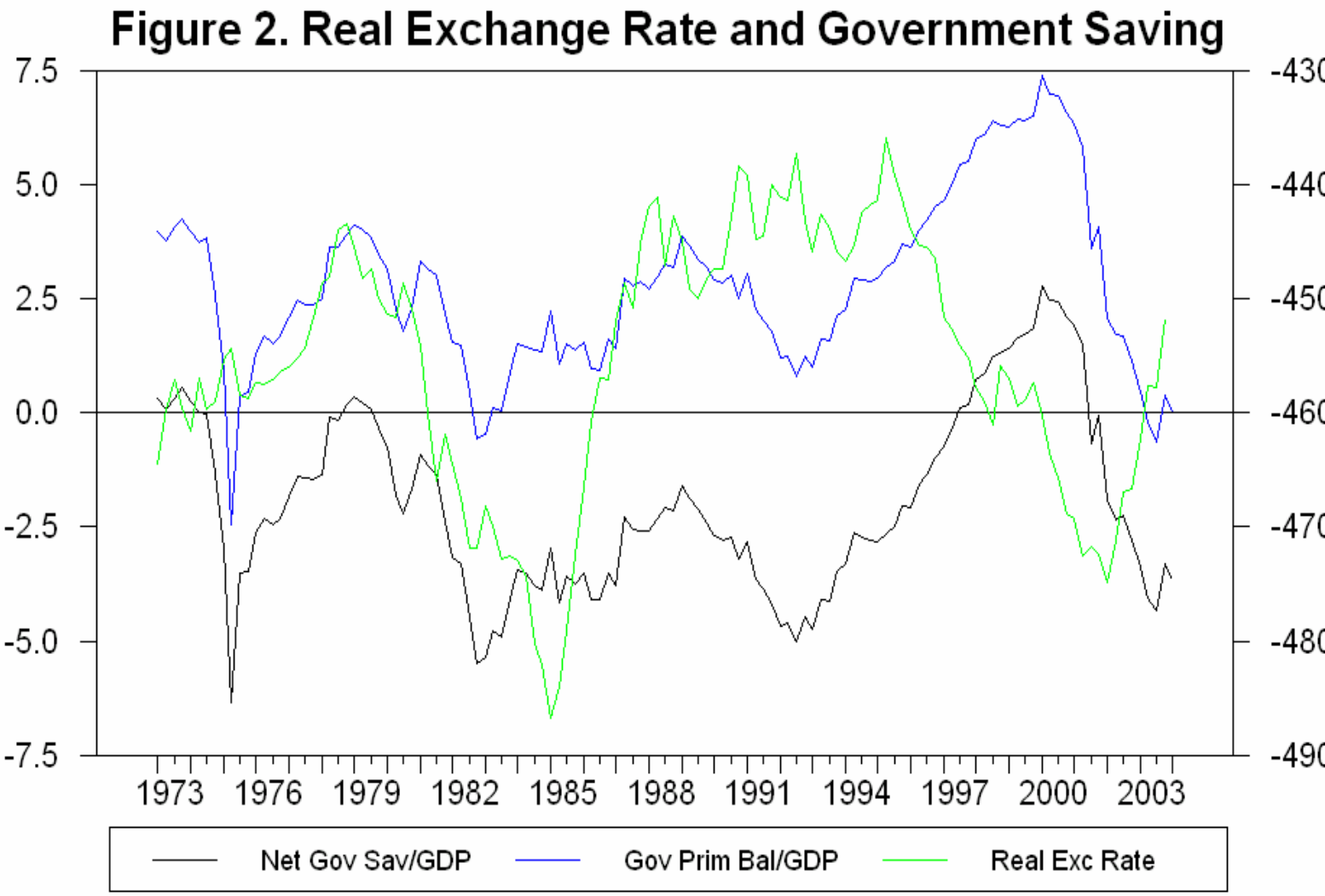
Figure 1. Current Account and Its Component, 1973-2004:1



If the U.S. maintains its current fiscal policies it would likely continue to run a fiscal deficit of about 4% of GDP for the next decade. Such a fiscal deficit (negative public savings) implies a "twin" current account deficit of about 5% of GDP if current rates of private savings and private investment are maintained, and a larger current account deficit if private investment increases and private savings stay constant. Of course, a fiscal deficit in the 4-5% of GDP range could well have an impact on private savings and investment. The fiscal deficit could start to crowd out private investment, particularly if foreign investors become less willing to finance the U.S. deficits and real interest rates rise. At some point US taxpayers may start to realize that fiscal deficits today imply tax hikes (or fewer government benefits) tomorrow and may start to save in anticipation of the future hit to their real income implied by large current deficits (Ricardian equivalence). Indeed, unless the U.S. can rely on foreign savings indefinitely, private savings must increase over time to restore financial balances in the private sector.[34]

A key question that national accounting does not answer, though, is what is the interest rate that will lead foreigners to hold financial claims on the U.S. economy – and specifically U.S. government debt -- as a large fraction of their financial assets. So long as the U.S. is running ongoing fiscal deficits financed in part by external capital flows, it

[34] See Godley et al. (2004)



needs to convince foreigners to increase their holdings of U.S. government debt. If they are not willing to do so at the existing interest rate, the interest rate must rise. The higher interest rate both helps the U.S. government attract needed financing, and reduces private demand for financing, since higher interest rates reduce private investment (crowding out). Higher interest rates also reduce private consumption (while increasing private savings). Higher interest rates would thus reduce the overall current account deficit even if the U.S. did not reduce its fiscal deficit. This, though, is hardly a good way to bring about the needed current account adjustment. The U.S. has to pay higher interest rates to finance a large fiscal deficit, and lower private investment implies lower growth.

Section 3. The sustainability of the U.S. external deficit

3.1. The sustainability of the U.S. current account deficit and external debt accumulation.

The sustainability of large ongoing current account deficits – and the associated gap between national savings and private investment that requires the U.S. to import savings from abroad -- ultimately hinges on the amount of external debt that the U.S. economy can sustain. Common sense says that as person or a firm's debt increases, it will have to pay higher interest rates to compensate creditors for greater risk and, should debt levels rise high enough, eventually it would lose the ability to take out more debt. The same is

true for a nation. As a country's debt level increases, at some point financial markets start to limit its ability to take on new debt – that is to finance on current account deficits by borrowing from abroad. As students of recent emerging market crises know, the market can swing from being willing to finance large ongoing current account deficits (and overlook the macroeconomic and policy problems that gave rise to them) to being unwilling to finance further deficits quite quickly.[35] Modern financial markets have many virtues, but they are not necessarily known for facilitating the smooth adjustment of large macroeconomic imbalances.

The sustainability of any country's external debt is partially a function of other countries' willingness to provide the indebted country with sufficient financing at a low enough cost to make the external debt burden viable. In the case of the U.S., the real question is not whether the U.S. can sustain its current debt burden – it clearly can, if it adjusts. Rather, the key question is when will the United States ever rising debt burden constrain the United States ability to continue to finance large – and if current trends continue, growing – current account deficits.

There is no easy answer to way to answer what the upper limit on the United States' external debt is, or put differently, when the United States debt will exceed the world's willingness to hold claims on the U.S. economy. Alan Greenspan has argued that financial integration is increasing foreign demand for U.S. assets[36] and higher demand for U.S. assets plus new financial technology that allow higher levels of leverage will allow the U.S. to continue to build up its external debt. But even if Greenspan is correct, the pace of U.S. debt accumulation may exceed the pace that is allowed by improvements in financial technology. The minutes of the June 29th-30th FOMC meeting indicate growing concern with the U.S. external imbalance inside the Fed: "the staff [of the Federal Reserve Board] noted that outsized external deficits could not be sustained indefinitely....the possibility that the adjustment could involve more wrenching changes could not be ruled out."[37]

Others point out that some advanced economies have accumulated net international debt of more than 50% of GDP without obvious adverse effects. Australia's net international investment position is a negative 64% of GDP. New Zealand and Canada also have substantial negative net international investment positions. Many emerging economies

[35] Rubin, Sinai and Orszag (2004) emphasize the risk of the U.S. could experience a different kind of discontinuity in their analysis of the risks associated with large ongoing budget deficits: a sharp increase in the price the U.S. government has to pay to borrow as foreigners become less willing to hold dollar denominated U.S. assets.

[36] See his November 2003 speech at:
http://www.federalreserve.gov/boarddocs/speeches/2003/20031120/default.htm

[37] The analysis, as usual for the Fed, was cautious and included all sorts of caveats: "the historical evidence indicated that such deficits could be quite persistent, and the adjustment of imbalances was not necessarily imminent. The adjustment, once under way, might well proceed in a relatively benign fashion." Still, this new staff report suggested increasing alarm at the Fed, which had not previously expressed concern about the U.S. current account deficit. See FOMC, June 29th, 2004. However, the fall of 2004, no less than five Fed governors have expressed concerns about the size of the U.S. current account deficit.

do too, though usually with less pleasant results. There are, however, good reasons to believe that the U.S. cannot sustain as high a debt level as many smaller economies.

- First, the pace of accumulation matters as well as the size of the debt stock. Australia and Canada have sustained high debt levels for a long time in part by keeping their trade close to balanced. Their ongoing current account deficits reflect payments on existing debt, not structural trade deficits – a stable debt to GDP ratio is consistent with ongoing current account deficits, but not ongoing trade deficits. The U.S. does not (yet) have as much debt as these high debt economies, but the U.S. debt to GDP ratio is on track to rise at a rapid clip. Annual U.S. current account deficits of more than $600 billion and more require that the U.S. attract a large share of all new cross-border investment. Right now, U.S. deficits are estimated to suck up 2/3s of the world total current account surplus.

- Second, it is a lot easier for a small economy to have a large external debt stock than the world's largest economy. A $100 billion economy with a 100% of debt to GDP ratio needs to place $100 billion of asset abroad, its assets will still account for a relatively small share of the world's savings. If the U.S. had a comparable level of debt, it would need to place $11 trillion in debt abroad; claims on the U.S. would account for the majority of cross border assets.

- Third, the U.S. external debt needs to be assessed in relation to its exports as well as GDP. A country that exports 50% of its GDP is better position to sustain a higher debt to GDP ratio than a country that exports 10% of its GDP, like the United States. Australia's debt to export ratio is around 400%, despite a negative 64% of GDP net international investment position, because its exports to GDP ratio is around 16-17%.[38] The U.S., which currently only exports about 10% of its GDP, will push the limits of a country's debt to export ratio before it touches the limits of the debt to GDP ratio. [39]

It is reasonable to suspect that the willingness of foreigners to hold financial claims on the U.S. – particularly claims that have relatively low interest rates -- will hinge in part on

[38] See www.abs.gov.au/Austats/. Canada's net international investment position was at high as 40% of GDP in the mid-1990s, but it has subsequently fallen to about 30% of GDP, and Canada exports are more than the U.S. New Zealand's net international investment position is around 80% of its GDP, but New Zealand also exports 30-35% of its GDP, so its debt to export ratio is below that of the United States, despite having a much higher international debt.

[39] Note that Obstfeld and Rogoff (2000, 2004) argue that the US small tradeables base requires a larger amount of exchange rate adjustment to get the current account adjustment, and that the overall need for large current account adjustment implies large exchange rate adjustment. Obstfeld and Rogoff (2004) estimate that the trade weighted value of the US dollar may have to depreciate by as much as 40% to restore the external balance. BIS (2004) calculations suggest the US dollar has returned to levels of the mid 1990s now, a level that produced slow deterioration in current account, not major improvements or even stability. Consequently, it is reasonable to think that the current exchange rate adjustment is only the beginning – current adjustment may be enough to slow the pace of deterioration but not enough to lower current account deficit as a share of GDP.

the external credit worthiness of the United States. One of the weaknesses of analysis that argues that current U.S. deficits are sustainable because a relatively small fraction of the world's total financial wealth is invested in the United States is that it is entirely divorced from any analysis of the "credit" fundamentals of the United States. The world's appetite for low yielding U.S. assets that offer little protection against the risk of further dollar depreciation may be satiated well before the world's appetite for dollar assets is satiated. As understanding of the risks associated with lending to a large debtor with ongoing external deficits grows, the United States creditors could start charging higher rates to lend their savings to the U.S., forcing the U.S. either to cut back on its external borrowing or commit a higher share of its future income to make payments to foreigners.

Thus, we propose two different, but closely related ways, of assessing the United States creditworthiness. First, we have also constructed a simple model to examine the evolution of the U.S. current account and its net international investment position. This model is not complex: the current account balance is the sum of the trade balance, the balance on transfers and the balance on investment income. The trade balance and the balance on transfers are exogenous to the model, they hinge on assumptions about the pace of export growth, import growth and GDP growth. Since deficits have to be financed, ongoing deficits imply growing external debt and a deteriorating balance on investment income. This model allows us to test the sensitivity of the U.S. external balance to different assumptions about export and import growth as well as to different assumptions about the relative returns on U.S. external assets and U.S. external liabilities. The key to producing a useful model is to set the key parameters at reasonable levels.

Second, we use resource gap analysis to determine the conditions that would prevent the U.S. external debt to GDP ratio from rising. This analysis lets us determine the amount of adjustment that is needed to keep the debt to GDP ratio from rising from current levels, and the amount of adjustment needed if the debt to GDP ratio rises to a higher level before the U.S. starts to adjust. These calculations require only a few variables – an estimate of the debt to GDP ratio, an estimate of the real growth rate and an estimate of the real interest rate the U.S. will have to pay on its debt. The amount of adjustment typically rises along with the level of debt, all other things being equal. Realistically, though, other things will not be equal: higher debt levels typically imply less growth and higher real interest rates, and thus more adjustment. This analysis helps to explain the debt to GDP paths that emerge from our simple model under different assumptions.

3.2. U.S. External Debt Dynamics: Forecasting the U.S. NIIP.

The U.S. NIIP to GDP ratio – which for the sake of simplicity we will call the U.S. external debt to GDP ratio – stood at 24% of GDP at the end of 2003. Both export and import growth have been strong in 2004 and nominal GDP looks likely to increase by 6.5% (consistent with a 4% increase in real GDP and a 2.5% increase in the price level, or a 4.5% increase in real GDP and a 2% increase in the price level). We further assume that transfer payments will rise in line with nominal GDP and the cost of servicing the United States' existing debt and the return on the United States' existing assets will

remain roughly at their 2003 levels. Under these conditions, the U.S. trade deficit would increase to about $610 billion, and the U.S. would run a current account deficit of $670 billion. About $50 billion of the deterioration in the trade balance is due to higher oil prices, but the other $60 billion reflects strong import growth. Since the real dollar is expected to remain roughly constant, there will not be offsetting valuation gains on the existing stock of U.S. external assets. Consequently, we expect that the U.S. NIIP will deteriorate by an amount equal to the current account deficit, and reach 28% of GDP at the end of 2004.

The future path of the U.S. NIIP is more uncertain. It obviously depends on the performance of the U.S. economy (which influences the pace of import growth), the performance of the global economy (which influences export growth), the price of oil, the value of the dollar and, as we emphasized earlier, U.S. fiscal policies. We consequently developed three scenarios.

- Our first scenario tries to outline the likely impact of current fiscal policies, assuming that the U.S. dollar remains roughly constant in real terms and the U.S. economy continues to grow. The September value of the JP Morgan dollar (93.4) happened to be identical to the average value of the JP Morgan real dollar index between 1990 and 2003 (93.4). The dollar slipped a bit in early November, but so long as the dollar does not fall substantially more, we assume that average US and world growth rates will lead imports and exports to grow at their 1990-2004 average rates. In other words, we assume that a real exchange rate close to the average real exchange rate from the past 14 years will result in average export and import growth rates over the past 14 years, export growth of 5.5% and import growth of 7.25%.[40]
- Our second scenario examines what would happen if the trade deficit remained constant in real terms at around 5.0% of GDP. Since the 2004 deficit is likely to be a bit larger than 5% of GDP, this scenario implies that exports will need to grow faster than imports in 2005 to offset the deterioration in the trade balance that occurred in 2004. After 2005, both exports and imports will grow in line with nominal GDP. We believe this scenario would require some additional depreciation in the dollar, probably on the order of 5-10% in real terms.[41] The November 2004 slide in the real dollar would not only need to be sustained, the dollar would also need to fall a bit more.
- Our third scenario examines what would happen if exports grew substantially faster than imports, allowing the trade deficit to shrink by about 0.5% of GDP

[40] If the export and import growth observed in the first half of this year are sustained in the second half of the year, import growth between 2000 and 2004 will be about 4.8% and export growth was about 2.25%, so we are assuming both that stronger U.S. and global growth leads to higher growth rates in both imports and exports. We are also implicitly assuming that the fall in the dollar from its 2001 highs leads to some improvement in the relative growth rate of exports and imports, the ratio between import growth and export growth would fall from over 2 to below 1.5

[41] Godley et al (2004) estimate that at the current level of the real dollar, the U.S. trade deficit would stabilize at around 6% of GDP.

annually.[42] Since we are not assuming a slowdown in the U.S. – export growth needs to be particularly strong to offset continued import growth, so we are assuming exports grow at 9.5% and imports at 5.1%. In broad terms, this scenario implies that net exports begin to make a substantial contribution to U.S. economic growth, that imports remain constant as a share of GDP, and that the trade deficit shrinks because exports grow as a percentage of GDP. Consequently, this scenario likely implies substantial dollar depreciation and a significant fiscal adjustment. Godley et al (2004) and Michael Mussa have suggested that a 10% depreciation in the real dollar produces a 1% of GDP improvement in the trade balance. If their analysis is correct, this scenario implies a steady yearly 5% depreciation in the real dollar over ten years, or about a 50% real depreciation total.[43]

The following table summarizes the assumptions in each of these three scenarios.[44]

Key assumptions	Baseline	Modest Adjustment	Strong (but smooth) Adjustment
Nominal GDP growth	5.1%	5.1%	5.1%
Real GDP growth	3.5%	3.5%	3.5%
Import Growth	7.25% (average of past 14 years)	5.1% (in line with growth in nominal GDP)	5.1%
Export Growth	5.5% (average of past 14 years)	8.7% in 2005, and then 5.1% (in line with nominal GDP).	9.0%
Income payments	Between 2004 and 2008, the nominal returns on the external assets held	Between 2004 and 2008, the nominal returns on the external assets held	Between 2004 and 2008, the nominal returns on the external assets held

[42] Initially, the gains would be smaller than 0.5% of GDP, as the U.S. has to fight against the handicap created by its relatively large import base and relatively small export base. At the size of the export base rises in relation to GDP, the stronger growth rate in exports produces a larger impact on the trade deficit.

[43] There is no doubt that a large exchange rate adjustment is needed, but the 50% real depreciation produced by this rule of thumb appears a bit excessive. Also, the impact of a fall in the real exchange rate may not be entirely linear; a 10% fall may generate an improvement of 1% of GDP, but a 20% fall might produce an improvement of more than 2% of GDP.

[44] A few caveats are worth emphasizing. First, the assumed returns on U.S. external assets and liabilities are based on the assumed average return across all U.S. assets and liabilities. We did not do a disaggregated calculation that tries to capture different returns on debt and on equity, for example. Returns are defined in terms of cash flow – i.e. the income payments that show up in the current account divided by gross assets or liabilities. Second, we did not build any valuation changes into the model. In scenarios with dollar depreciation, the dollar depreciation would tend to reduce the NIIP slightly – though, unless the depreciation occurs mostly against the euro, the pound, the Swiss franc and the Canadian dollar – future depreciation will likely produce proportionately smaller valuation gains than the 2002-2003 depreciation. Third, we did not try to model the United States' current need to borrow to finance net FDI outflows. This could be modeled, for example, by making the U.S. stock of debt liabilities increase by an additional $100 billion a year, and have that offset by rising equity assets of $100 billion. Such a refinement would not change in the deterioration in the U.S. net asset and liability position. Yet if the U.S. systematically earns substantially higher returns on its FDI/ equity assets than on it has to pay on its liabilities, the gains from this kind of financial intermediation would help offset the trade, transfers and remittances balance. However, the scale of this financial intermediation is relatively small, so any gains would have to be enormous to have a major impact on the overall forecast.

	by the U.S. will rise from 3.7% to 4.7%, and the returns foreigners receive on the US assets (U.S. liabilities) will increase from 2.4% to 4.8%. Growing U.S. debt will lead the returns foreigners demand on U.S. to rise to 5.1% in 2010 and 5.7% in 2012 .	by the U.S. will rise from 3.7% to 4.7%, and the returns foreigners receive on the US assets (U.S. liabilities) will increase from 2.4% to 4.8%. After 20087, both rates then converge to 5.1%, to the nominal and real interest rate on U.S. external debt is equal to nominal and real U.S. growth.	by the U.S. will rise from 3.7% to 4.7%, and the returns foreigners receive on the US assets (U.S. liabilities) will increase from 2.4% to 3.6%. After 2008, returns on U.S. liabilities rise to 4.1%.
Implicit exchange rate assumption	Real exchange rate remains around 93 (on the JP Morgan real exchange rate index)	Real exchange rate depreciates – roughly to the mid or upper 80s on the JP Morgan real index -- and then stabilizes.	Real exchange depreciates substantially over time.
Implicit fiscal policy adjustment	Fiscal deficit remains @ 4% of GDP	Fiscal deficit remains constant or is reduced somewhat	Fiscal deficit is reduced to 2% of GDP by 2008 and eliminated by 2012.
Implicit oil price assumption	Annual average price of WTI is $42/ barrel	Annual average price of WTI is $42/ barrel	Annual average price of WTI is $42/ barrel

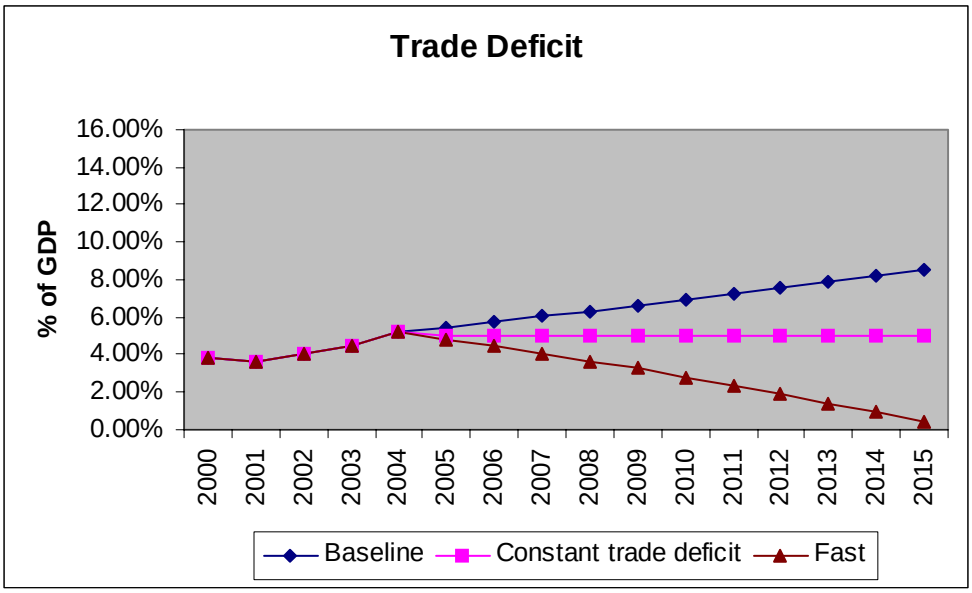
Our long-range forecasts do not depend heavily on our oil price forecast. If sweet light crude stayed at its current price in the mid 50s, the mechanical impact of a $10 rise in the oil price would add about $50 billion (0.4% of GDP) to the annual trade deficit. Conversely, if oil fell back to its average price in 2003 of around $32 a barrel, the mechanical impact of lower oil prices would subtract around $50 billion (0.4% of GDP) from the trade deficit.[45] For the sake of simplicity, all our forecasts assumes that oil will stay at its 2004 average of around $42 a barrel, so implicitly we are assuming the spot price of oil falls from its current highs. The price of oil can have a substantial impact on the size of the trade deficit for any given year, but the overall pace of import and export growth matters far more.

Our assumptions for import and export growth do not emerge from a formal model, but they are based on what models and previous empirical estimates suggest it would be reasonable to forecast.[46] It is worth recalling that the trade deficit expanded slightly

[45] The overall impact of higher oil prices is more complex. To the extent that higher oil prices slow the US economy, they reduce non-oil US imports and thereby improve the trade balance. Higher oil prices increase the purchasing power of oil exporters, who are likely to buy more from the US. But they also slow the economies of oil-importing US trading partners, and thus reduce their demand for US exports.

[46] Godley et al (2004) assume slightly lower real GDP growth than we do (3.2% v. 3.5%), and they estimate that at this growth rate, and with strong 4% growth in world output, the U.S. primary external balance (the balance on trade, transfers and remittances) would stabilize at about 6% of GDP as a result of the lagged impact of the dollar's depreciation in 2002 and 2003. They note that this forecast is "rather optimistic." Godley et al. model import and export prices, something we do not attempt to do. But if you assume that import and export prices are constant, their underlying growth rates for the U.S. and their empirically determined elasticities (1.7 for U.S. import growth, 1.4 for U.S. export growth) are consistent

throughout the first part of the 1990s even though the real dollar was below 90 – i.e. at a level substantially below its current level. Standard formal analysis of the U.S. trade account finds that the income elasticity of U.S. imports is greater than the income elasticity for U.S. exports (the Houthakker-Magee asymmetry), so the trade deficit has a tendency to expand unless the dollar depreciates over time.[47]



Our forecasts for future income payments assume that the U.S. continues to benefit from the dollar's position as a reserve currency. A nominal rate on U.S. external liabilities of between 4.1% and 4.7% in 2008 is hardly high[48]; it corresponds to a real rate of between 2.5% and 3.1% if inflation is around 1.6%. Consequently, in all our scenarios, the real interest rate on the net U.S. debt would remain slightly lower than the real growth rate of 3.5%.

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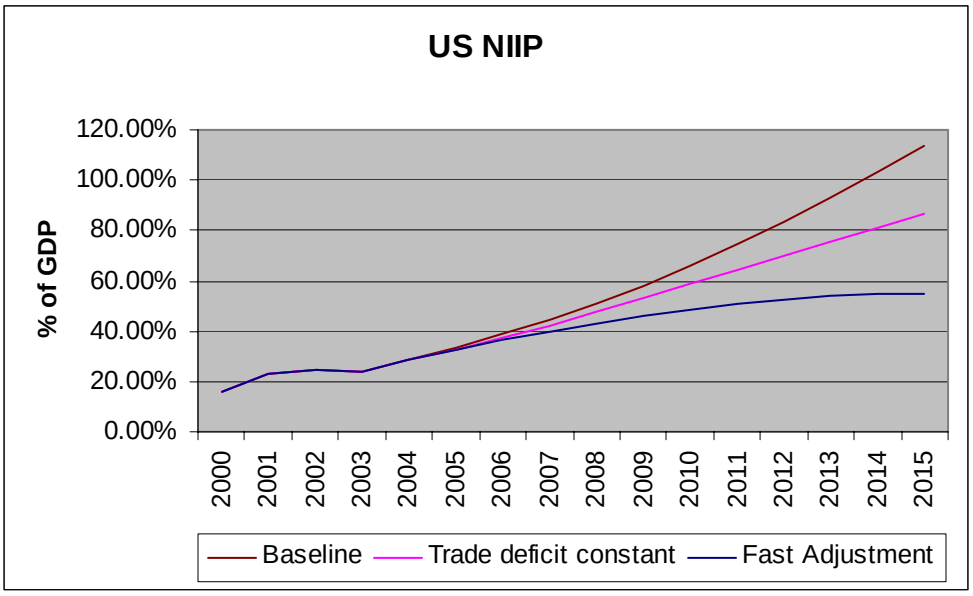
with import growth of around 5.4% and export growth of 5.6%, a result that is close to export and import growth rates in our "modest adjustment to keep the trade deficit constant as a share of GDP" scenario.

[47] See Mann (1999, 2004) for a more detailed discussion of this asymmetry. Some may argue that such income elasticities may change over time in ways that may help to reduce the U.S. trade deficit; but there is not, so far, evidence of this happening. If anything, all the evidence is that the famous "Houthakker-Magee asymmetry" is still robust. This well known empirical regularity is that that the U.S. import elasticity to US income is greater than the foreign income elasticity for U.S. exports. Thus, even if the U.S. were to grow as fast as the rest of the world, the U.S. trade balance would worsen as import demand would grow faster than foreign demand for US exports, at unchanged exchange rates. Consequently, the world needs to grow much faster than the U.S. for the U.S. trade deficit not to deteriorate. But in the last decade U.S growth has been greater than its OECD trade partners, especially Europe and Japan. Developing countries now account for a significant share of U.S. trade, but growth in the developing world also has been highly variable.

[48] Godley et al. (2004) estimate the average U.S. interest rates on its stock of external liabilities will rise to 5.5% by 2008, in line with Treasury bill rates. Mann (2004)'s no further dollar depreciation scenario assumes that U.S. interest rates will rise to a bit below 6% by 2006. This is one reason why her "no dollar depreciation" trajectory has a larger current account deficit than we do: 13% of GDP in 2010. She, like us, thinks the pace of current account deterioration in a "no dollar adjustment scenario" is too fast to be sustained.

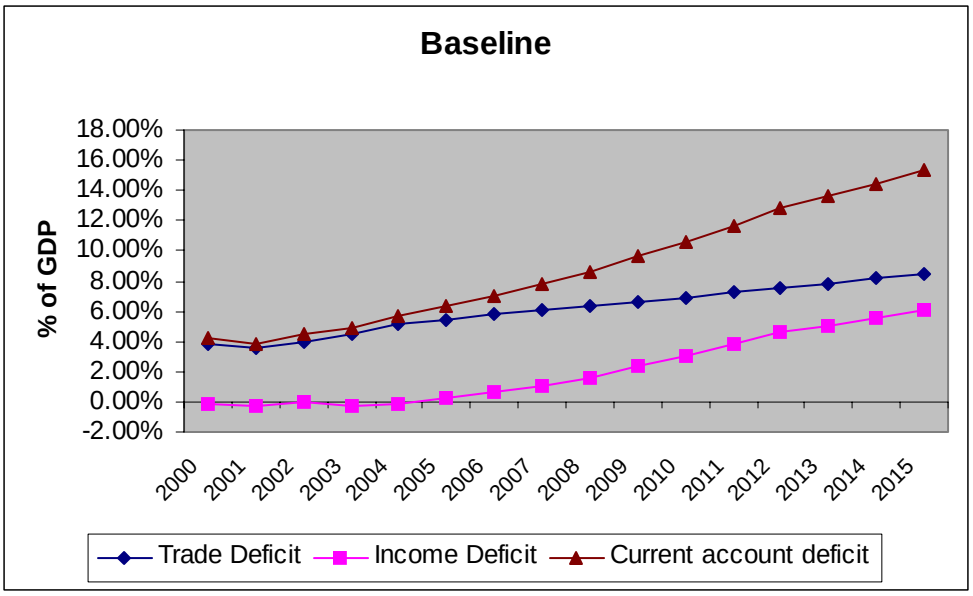
In our baseline scenario, we assume that rising U.S. external debt after 2008 does leads the nominal interest rate on U.S. external debt eventually to rise to 5.7%, and the real rate to rise to around 4%. This is in some ways an optimistic assumption, given the deterioration that would occur in the United States external position in this scenario. With an external net debt of 60% of GDP and a large trade deficit that augers a fast rising debt to GDP ratio, the real interest rate on U.S. debt would still only be a half percentage point above the real growth rate.

All these assumptions are somewhat arbitrary. They are meant to be illustrative. Adjustment in the U.S. external balance could come about through a fall in U.S. imports rather than a rise in U.S. exports, a scenario that would likely imply slower growth in both the U.S. and the world. Current exchange rates may be consistent with a stable U.S. trade deficit as a share of GDP, not a widening trade deficit, slowing the pace of debt accumulation. In a sense though, the precise details do not matter. The first scenario models any combination of growth and real exchange rates that leads the trade deficit to expand, the second models any combination that produces a constant trade deficit, and the third models any combination that leads to a sustained fall in the trade deficit. The bottom line is fairly clear: unless the trade deficit shrinks substantially, US external debt levels will rise rapidly, no matter what other assumptions are made.



3.2.1. Baseline Scenario.

In our baseline scenario, the U.S. external accounts start looking quite bad quite fast. In 2006, the current account is 7.1% of GDP and net US external debt is almost 40% of GDP; in 2008 the current account deficit is 8.6% of GDP and net external debt exceeds 50% of GDP.



In our judgment, the deterioration in the U.S. external accounts implied by the baseline scenario is too rapid to be viable. As the table below indicates, the current account balance becomes exceptionally large in relation to U.S. export revenues, in part because of income payments on the United States' fast growing debt stock. If the U.S. was on a trajectory that led debt levels to rise rapidly, external investors would be unwilling to provide the financing needed for large external deficits without substantially higher interest rates – interest rates that would slow the economy and reduce the pace of US import growth. The U.S. would be forced to begin to adjust.

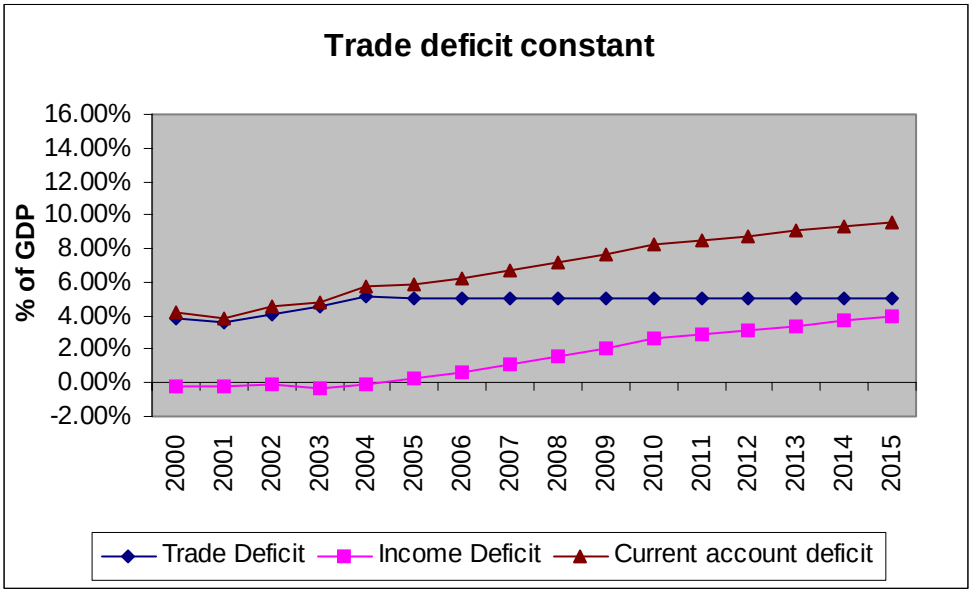
Flow indicators – Base scenario

	2004	2008	2010	2012
Trade balance (% of GDP)	-5.21	-6.32	-6.91	-7.54
Trade, transfers and remittances balance (% of GDP)	-5.87	-6.99	-7.58	-8.20
Income balance (% of GDP)	+0.15	-1.63	-3.05	-4.60
Income as % of exports	--	16	31	46
Current account (% of GDP)	-5.72	-8.61	-10.63	-12.80
Current account as % of exports	59	86	106	127

3.2.2. Trade deficit constant as a share of GDP

In our second scenario, the trade deficit remains constant at around 4.5% of GDP. In our view, this likely requires additional adjustment, i.e. a further fall in the dollar and/or some reduction in the fiscal deficit. Modest adjustments, though, are not enough to substantially change the basic analysis. The U.S. simply is not on a sustainable path so long as the trade deficit remains at close to current levels. Ongoing trade and current

account deficits imply a growing external debt stock, and payments on the stock of debt start to lead the current account to widen significantly.

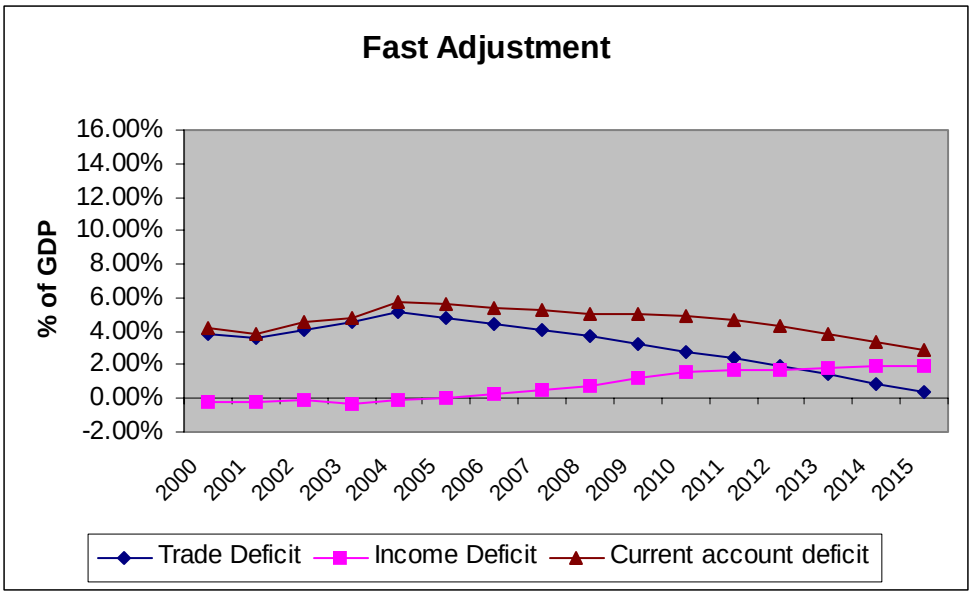


Flow indicators – constant trade deficit

	2004	2008	2010	2012
Trade balance (% of GDP)	-5.21	-5.01	-5.01	-5.01
Trade, transfers and remittances balance (% of GDP)	-5.87	-5.62	-5.62	-5.62
Income balance (% of GDP)	+0.15	-1.53	-2.60	-3.15
Income as % of exports	--	15	26	32
Current account (% of GDP)	-5.72	-7.15	-8.22	-8.77
Current account as % of exports	59	72	83	88

3.2.3. Strong, Smooth, Sustained Adjustment

Only in a scenario where there is a significant reduction in the trade deficit between 2005 and 2015 is the U.S. on a path that will eventually lead the debt to GDP ratio to stabilize. So long as the adjustment in the trade deficit is smooth, the debt to GDP ratio still stabilizes at a much higher level. If the trade deficit falls by half a percent per year for the next ten years, leading to a small trade surplus in 2015, the U.S. debt to GDP ratio stabilizes at around 55%. The cost of servicing this debt is not small, even with relatively favorable interest rate assumptions: annual interest payments are 1.5-2.0% of GDP from 2010-2015 (with an implicit nominal interest rate on the U.S. net external debt stock of only about 3.5%).



Rising income payments are an important reason why improvements in the current account lag improvements in the trade balance: in this scenario, the current account deficit remains 5.1% of GDP in 2008 even though the trade balance has fallen to 3.7%. The current account balance is 5% of GDP in 2010 even though the trade deficit is 2.8% of GDP. The underlying size of the 2004 U.S. current account deficit is masked by unusually low U.S. interest rates, so the current account balance is on track to deteriorate naturally as interest rates rise. Adjustment in the trade deficit is needed simply to prevent the current account deficit from widening. The current account deficit will be around 3% of GDP even when U.S. debt to GDP ratio stabilizes.

Flow indicators – strong, smooth adjustment

	2004	2008	2010	2012
Trade balance (% of GDP)	-5.21	-3.67	-2.82	-1.90
Trade, transfers and remittances balance (% of GDP)	-5.87	-4.29	-3.43	-2.51
Income balance (% of GDP)	+0.15	-0.77	-1.53	-1.75
Income as % of exports	--	7	13	13
Current account (% of GDP)	-5.72	-5.08	-4.96	-4.27
Current account as % of exports	59	45	41	33

3.3.1. Intertemporal budget constraints and the theory of debt sustainability.

The basic theoretical criterion for external solvency is simple: the country must pay off its current debt over time (the intertemporal budget constraint). Such a restriction rules out Ponzi schemes where a country borrows to pay for the interest payments on its net external debt. This condition implies that the sum of all future current accounts (or, equivalently, the discounted sum of all future trade balances) must be equal to the initial foreign debt of the country. An indebted country which is initially running a trade deficit

eventually will need to run trade surpluses to remain solvent. But a country can accumulate a large stock of debt so long as it can, over the infinite future, repay that stock by running small external surpluses (that is, making net payments on its existing stock) over a very long time.[49] The formal criteria that emerge from the requirement for eventual repayment provide little practical guidance for assessing external sustainability.[50] In practice creditors will conclude that an indebted country's promise to run future trade surpluses is not credible well before it reaches any theoretical maximum for external debt accumulation.

3.3.2. A stable debt to GDP ratio and the "resource gap".

Most practical analysis of external sustainability looks at a more indirect measure of external sustainability, namely the conditions that lead to a stable *foreign liabilities to GDP ratio* (for simplicity, we call this the debt to GDP ratio, though in reality some foreign claims will be equity claims, not debt claims). A country whose debt to GDP ratio is on track to increase without bounds clearly will become insolvent at some point. Therefore, looking at the scale of adjustment needed to stabilize the external debt to GDP ratio eventually offers a useful basis for assessing external sustainability.

This type of analysis only indicates the amount of adjustment needed to prevent the debt to GDP ratio from growing without bound, not what level of debt is unsustainable. A country with a debt to GDP ratio of 50% of GDP may need to adjust more than a country with a debt to GDP ratio of 25%, but the higher debt level may be as sustainable as the lower debt level.

Using a stable foreign liabilities to GDP ratio as a proxy for external sustainability leads to the concept of the "resource gap".[51] The resource gap is the difference between the a

[49] Similar conceptual difficulties in determining solvency emerge when one considers whether a country's government, rather than the country as a whole, is solvent, i.e. whether the (domestic and foreign) public debt of a government is sustainable or not. This is important because, in practice, a large fraction of the foreign debt of a country may be government debt. Again the theoretical criteria for government solvency are quite loose. Specifically, as long as the discounted value of the government debt is not increasing without bounds in the infinite time limit, the public sector is solvent; this means only that the government cannot increase its debt faster than the real interest rate on this debt or, equivalently, that is must run persistent trade surpluses over time to avoid a Ponzi game where new borrowing occurs to finance the interest rate on the old debt. Subject to this constraint, any path of the fiscal (cum interest) surpluses/deficits such that the infinite sum of all fiscal balances is equal to the initial debt of the government is consistent with public sector solvency. The stock of public debt could increase without limit as long as it does not increase faster than the real interest rate. The solvency constraint requires that the discounted value of primary balances should be at least equal to the initial public debt; if a government is initially running primary deficits and has a stock of initial debt, it needs to run primary surpluses over time to remain solvent. But it does not necessarily need to start running primary surpluses immediately so long it runs primary surpluses at some point in the future.

[50] Mathematically, the need to eventually repay requires that the discounted value of the country's foreign liabilities not grow without bounds in the infinite limit. The stock of foreign liabilities of the country can increase as long as it does not increase faster than the real interest rate the country has to pay on its debt.

[51] Formally what matters for external sustainability are the net foreign liabilities of a country rather than its gross external debt. Such liabilities included both external debt and equity claims of non residents net of

country's trade, transfers and remittances balance (the non-interest current account, or the primary external balance) an economy can run without seeing its debt to GDP ratio rise and the country's *actual* trade, transfers and remittances balance.[52] The size of the required trade, transfers and remittances surplus is a function of the differential between the real interest rate and the growth rate of the economy and the country's debt levels.[53]

The bigger the gap between real interest rates and real growth rates and the bigger the debt stock, the larger the trade surplus that is needed to keep the debt to GDP ratio from rising, so do high real interest rates. One important note: if the real interest rate exceeds the real growth rate in the economy, a stable debt to GDP ratio requires that a country run a trade surplus but not a current account surplus. A country can maintain a stable debt to GDP ratio with a small trade surplus even if a negative balance on income payments leads to a current account deficit.

Emerging economies often end up defaulting on their external debt, both because they have to pay high real interest rates to borrow and because most of their external debt is denominated in foreign currencies. The currency composition of the debt matters, since the devaluation needed to generate improvements in the trade balance simultaneously increases the real value of their debt stock.[54] This can produce a debt trap that leads to default.

Since most U.S. debt is denominated in dollars, United States debt levels would have to rise to very high levels before outright default is a realistic risk. No matter: for a country like the U.S. with an substantial initial debt stock and a large trade deficit, the adjustment – likely both a recession and/or a sharp fall in the dollar and/or a sharp increase in real interest rates – needed to stabilize the United States' external debt to GDP ratio would feel like a crisis. The practical risk facing the United States is not that its debt will reach

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the foreign assets of the country. We will interchangeably use the terms foreign debt, foreign liabilities and NIIP even if, formally, foreign debt excludes non-debt assets and liabilities relative to non-residents.

[52] Thus, our measures of the "resource gap" are based on measures of the current and permanent "non-interest account", not just the strict "trade balance".

[53] A similar practical criterion can be used to assess the sustainability of public debt: public debt can be viewed as sustainable as long as the public debt to GDP ratio is non-increasing. In a country where the public debt to GDP ratio is growing, the fiscal "primary gap" is the difference between the fiscal primary balance and the primary balance required to stabilize the debt to GDP ratio.

[54] Both movements of the real exchange rate and terms of trade shock importantly affect debt dynamics. For a country whose foreign debt is in foreign (domestic) currency a real depreciation of the currency leads to an increase (decrease) in the foreign debt to GDP ratio (as it increases (decreases) the real value of foreign currency denominated liabilities (assets) of a country) and will worsen (improve) the debt sustainability of a country. A larger (smaller) trade surplus will be required to stabilize the debt to GDP ratio when a real depreciation increases the debt to GDP ratio. Argentina is a prime case in point. Similarly, a negative terms of trade shock (a fall in the relative price of the exports of a country) will also lead to an increase in the debt to GDP ratio (as it reduces the real income of the country) and will thus require a larger trade surplus adjustment to avoid an unsustainable increase in the debt to GDP ratio. While a real depreciation increases the stock for debt (relative to GDP) for a country with foreign currency debt, it may also improve the external balance, helping to improve external sustainability. A real depreciation in conjunction with a large stock of foreign-currency denominated debt unambiguously hurts fiscal sustainability, since a real depreciation does not automatically lead to improvements in the primary fiscal balance.

a level where the U.S. won't be able to pay, but rather that the U.S. will have to undergo a wrenching period of slow growth and a weak dollar (perhaps combined with high domestic interest rates to convince foreign creditors to rollover their dollar debts) to demonstrate that its debt is not on an ever increasing trajectory.

3.3.4. The current and permanent resource gap for the United States

The current resource gap.

At the end of 2003, the net foreign liabilities of the U.S. (at market value) were 24.1% of GDP. The trade deficit for the year was 4.52% of GDP and unilateral transfers were 0.61% of GDP. Consequently, the balance of trade, transfers and remittances was a negative 5.13% of GDP. Net factor payments – mostly the balance on investment income -- were a positive 0.30% of GDP, producing a current account deficit of 4.83% of GDP.

The first point to observe here is that, at *current* values, net factor payments are still positive, even though the U.S. is a net debtor. As discussed earlier, the average return on U.S. assets abroad was greater than the average return on U.S. foreign liabilities. So, at 2003 values, the nominal interest rate on the net debt of the U.S. was a negative 1.5% (net debt times a negative rate produces a positive income stream). With inflation close to 1%, the real interest rate was roughly –2.5% (-1.5% - 1%). Real GDP growth in 2003 was 3%.

Based on these figures, the external debt stabilizing trade, transfers and remittances balance is:

$(r - g)\ D/Y = (-0.025 - 0.03) * 24.1\% = -1.33\%$

In other terms, since the current real interest rate is below the real growth rate of the economy, the U.S. can run forever a trade, transfers and remittances deficit equal to 1.33% of GDP (a trade, transfers and remittances balance of approximately 1.3% of GDP translates into a trade deficit of around 0.7% of GDP) and still stabilize the external debt ratio.

However, this is hardly comforting, since the actual non-interest rate balance (trade deficit plus remittances) was 5.13%. Stabilizing debt levels at 2003 levels would require shrinking the trade balance deficit from 5.13% of GDP to 1.33%; the *current resource gap* is 3.8% of GDP (1.33% - 5.13%). Conversely, maintaining the 2003 trade deficits, real growth rates and real interest rates would lead to the external debt to GDP ratio would increase by about 3.8% per year.[55]

In 2004, the U.S. debt to GDP ratio will be higher – probably close to 28%. We estimate that the trade deficit will be around 5.21% of GDP, and the balance on trade, transfers and remittances will be around 5.87% of GDP – about 0.75% of GDP worse than in 2003. The nominal interest rate on the U.S. net external debt probably became a bit less

[55] We say "about" as compounding changes slightly the correct figure.

favorable to the U.S. – we estimate it at around -1.2% rather than –1.5%. With inflation of around 2%, than produces a real interest rate of around –3.2%. With real growth of around 4%, that produces a real rate minus real growth term of around –7.2%. Ironically, this negative number in conjunction with higher debt level increases the sustainable balance on trade, transfers and remittances to a deficit of 2.0%.

$$(r - g)\, D/Y = (-0.032 - 0.04) * 28\% = -2.0\%$$

The current resource gap for 2004 therefore would be around 3.87% of GDP (5.87%-2.0%), about the same in 2003. Improvements in the real interest rate minus real growth term offset the deterioration in the trade balance. However, the long-term value for the real interest rate on U.S. external debt is currently very low and that is driving strong real growth. As real interest rates rise and real growth slows a bit, the resource gap is likely to rise.

Permanent Resource Gap

3.2.3. The "permanent" or the "current" values of the resource gap

If the current real interest rates, GDP growth rates or the trade balance differs substantially from their likely medium or long-run values, many argue that debt sustainability analysis should be based on the "permanent" rather than "current" resource gap. In other words, stabilization of the debt to GDP ratio should be considered in a medium term perspective, not a short term one.[56] For example, if a recession temporarily increases a country's primary fiscal deficit and lowers its real growth rate, it may make sense to look at the cyclically adjusted primary deficit and the country's average growth rate when assessing long-term fiscal sustainability.[57]

What are reasonable estimates for the permanent rather than the current, values for growth, real interest rates and the trade balance in the U.S.? Consensus estimates put the U.S. potential real growth rate at around 3.5% -- a bit above 2003 levels and a bit below 2004 levels.

Estimating the permanent real interest rate on the net U.S. external debt is complicated. On one hand, dynamic efficiency would suggest that the long run real interest rate should

[56] This is particularly important in the fiscal context, since a recession tends to both lower the growth rate and, given automatic fiscal stabilizers, to reduce the country's primary balance. A recession therefore works against fiscal sustainability. It is less obvious for the case of the external sustainability; while a recession tends to work against fiscal sustainability, a recession can improve a country's trade balance and thus its external solvency.

[57] There are risks associated with using long-term values as well. The IMF, for example, assumed Argentina's growth rate would pick up substantially when assessing Argentina's fiscal sustainability in 2000 and 2001. But the assumption that Argentina's recession was temporary was a poor one. Argentina's recession was likely to be prolonged, since a prolonged recession was a necessary condition for correcting Argentina's substantial real overvaluation through deflation. It only makes sense to use better numbers for long-term sustainability analysis when there is a plausible reason to believe that the country's conditions will improve. For more, see the IMF Independent Evaluation Unit's report on Argentina (2004).

be higher than the growth rate, and rising levels of external debt would also suggest that real interest rates should rise over time. On other hand, the U.S. has consistently obtained a higher rate of return on its external assets than it has had to pay on its external liabilities, lowered the effective rate the U.S. has to pay on its external debt.[58]

The permanent long-term value for the real interest rate on U.S. external debt is likely to be higher than its current value, but we also do not know how much higher. Consequently, we consider three scenarios for the long-run real interest rate: in the benign scenario, the real interest rate is 1.5%, a rate well below the real growth rate, in the middle scenario, the real interest rate is equal to the growth rate, i.e. 3.5%; in the malign scenario (alas, also the scenario that is more consistent with economic theory), the real interest rate is 2% larger than the real growth rate. Such a differential is consistent with a real interest rate of 5.5% and real growth of 3.5%, or a real interest rate of 3.5% and the real growth rate is 1.5%.

For the sake of simplicity, assume that the permanent balance on trade, transfers and remittances is roughly in its current range. This is not an unreasonable assumption: a permanent trade, transfers and remittances deficit around the 2003 level of around 5.08% of GDP is hardly small. On the other hand, it likely understates the true permanent trade deficit if there is not additional dollar depreciation. 2003 real growth was a bit below the estimated long-run potential of the U.S. and higher real growth would tend to widen the trade deficit. As indicated in our previous analysis, we suspect that the dollar would need to depreciate a bit from its current levels to keep the permanent deficit in the 5% of GDP range.

At these estimated permanent values, the debt stabilizing trade balance is 0% if we assume that the permanent (r-g) differential is 0%. It is about a negative 0.5% of GDP if we assume that such differential is -2% (=0.24.1*-0.02), that is to say, a stable debt ratio is consistent with a permanent trade, remittances and transfers deficit. It is a positive 0.5% of GDP if the differential is a positive 2%, that is to say, if the real interest rate exceeds the real growth rate, the U.S. must run a trade, transfers and remittances surplus to keep its debt to GDP ratio stable. This calculation shows that the United States resource gap is primarily a result of our large current trade deficit, it does not depend heavily on the estimated real interest rate/ growth differential. Since net foreign debt was around 25% of GDP in 2003, a 1% change in the real interest rate minus growth differential changes the resource gap only by 0.25% of GDP. Even a 4% shock to the r-g ratio changes the resource gap only by 1% of GDP. Our estimate of the permanent resource gap is very insensitive to even large changes in the permanent (r-g) ratio.

[58] In 2003, the US also benefited from a large one off gain resulting from the dollar's depreciation against the euro, which increased the value of the United States' European assets; this gain can be modeled as a fall in the real rate the U.S. has to pay the world on its liabilities. In other words, a sharp real depreciation of the US dollar that increases the value of existing US external assets is equivalent, in the national accounting system, to a temporary one year reduction in the real service cost of net foreign debt. A sustained slow depreciation can be interpreted as an ongoing reduction in the real cost of servicing the United States external debt. Unfortunately, the 2003 gains are unlikely to be repeated consistently. Such gains require that the US dollar depreciates by 20% against the euro and other European currencies every year. The US will not receive a similar valuation gain should the dollar depreciate against Asian currencies.

Estimating the resource gap at higher levels of debt

Given the large gap between the trade deficit that is consistent with a stable debt to GDP ratio (even under the most optimistic assumptions) and the current trade deficit, it is safe to say that the U.S. debt to GDP ratio is not going to stabilize at current levels. Even if the trade deficit were to start narrowing in 2005 or 2006, it will take several years before it reaches a level consistent with a stable (or even a slowly rising) debt to GDP ratio.

Consequently, it is interesting to analyze what the resource gap would be if the US were to maintain current levels of the trade deficit throughout the decade. If current policies are consistent with a trade deficit (including remittances) in the 5.0% of GDP range, this scenario is consistent with maintaining current policies through 2010. If, as is more likely, current policies are consistent with a slowly deteriorating trade balance, this scenario is consistent with some fiscal tightening and real depreciation. We therefore think this analysis is consistent with the second scenario in our previous analysis.

If the U.S. maintains a 5% of GDP trade plus transfers and remittances deficit through 2010, the real interest rate is 3.5% and real growth is around 3.5%, the U.S. external debt/ GDP ratio will rise by 5% annually. The U.S. external debt to GDP ratio will therefore increase by approximately 30% over six years, and reach 58% of GDP in 2010 (28%+30%).

So long as the r-g differential stays at zero, the resource gap remains constant at 5% of GDP even as debt levels rise. In practice, though, rising debt ratio are likely to increase the real interest rate and reduce the long run growth rate. It is certainly not far fetched to assume that the r-g differential is 2% or even 3% if the debt ratio were allowed to rise to between 55 and 60% of GDP. High debt levels also magnify the impact of any differential between real interest rates and real growth rates. A 1% differential, a 5% of GDP trade, remittances and transfers deficit and a 55% debt to GDP ratio implies a resource gap of 5.55%, a 2% differential implies a gap of 6.1%, and a 3% differential implies a gap of 6.65%, and so on. Higher debt levels consequently have two costs: first, they tend to increase the gap between real interest rates and real growth, and second, they tend to magnify the impact of any differential.

These sensitivity stress tests suggests that there are significant costs involved in not closing the resource gap as fast as possible: if debt ratios were allowed to increase for a number of years before being stabilized, the resource gap could become as much as 2% of GDP higher (6.65% v. the 4.5% level) than it would be if the resource gap were to be eliminated in 2004.

Resource gap analysis also helps to explain the outcomes of our earlier simulations. In the first simulation, the trade deficit is widening, and a rising trade deficit and growing debt levels are leading real interest rates and real growth rates to converge and then for the real interest rate to exceed the real growth rate. The resource gap is widening, and the U.S. is a long-way way away from external sustainability. In the second scenario, the

U.S. the trade, transfers and remittances deficit remains constant at 5.6% of GDP, slowing the pace of debt accumulation. The resource gap is not getting worse, but it also is not getting better. Not surprisingly, the debt to GDP ratio that emerges from this scenario is close to the debt to GDP ratio we calculated using some simple assumptions about the resource gap – the basic dynamics are the same. In the third scenario, a steady fall in the trade deficit is wiping out the resource gap, and overwhelming the slow rise in the real interest rate the U.S. has to pay on its debt stock. The resource gap is shrinking over time.

Resource gap analysis in 2010 using our three scenarios

	Estimated trade, transfers, and remittances deficit	Real interest rate	Real growth rate	Differential	Debt to GDP ratio	Debt stabilizing trade deficit (surplus)	Gap
Baseline	7.6%	3.8%	3.5%	+0.3%	66%	(0.2%)	7.8%
Constant trade deficit	5.6%	3.3%	3.5%	-0.2%	59%	0.1%	5.5%
Fast adjustment	3.4%	1.9%	3.5%	-1.6%	49%	0.8%	2.6%

Two points are worth emphasizing. First, in all of our scenarios, the real interest rate – real growth differential remains modest. We are implicitly assuming that the U.S. dollar remains the world's reserve currency, and the U.S. can continue to borrow at a much lower real rate than other, comparably indebted countries. Second, in all three scenarios, the resource gap remains substantial in 2010.

This underscores an important point: so long as the adjustment needed to close the resource gap happens smoothly, the U.S. debt to GDP ratio will continue to rise during the adjustment process. A steady 0.5% fall in the resource gap starting in 2005 still leads the debt to GDP ratio to rise by 25% of GDP in our fast adjustment scenario, as the debt to GDP ratio goes from a bit under 30% of GDP to around 55% of GDP before starting to fall. If the U.S. lets its debt to GDP ratio rise to 50% of GDP without important adjustments, a smooth adjustment path would imply that the debt to GDP ratio would peak well above 75% of GDP (at higher debt levels, the adjustment has to happen faster to avoid an even higher peak).[59]

[59] Richard Cooper (2004) has recently argued that the U.S. can sustain a $500 billion current account deficit indefinitely, since a constant nominal current account deficit implies a shrinking current account deficit as a share of GDP in a growing economy. Cooper does not explicitly assess whether current fiscal policies (in conjunction with low private savings) and current exchange rates are at all consistent with a current account deficit that falls in relation to GDP and a trade deficit that falls even faster as a share of GDP. Our analysis suggests that current policies imply a current account deficit that is growing both in

Section 4. The consequences of a large net external debt.

The first, and most obvious, consequence of relying on foreign savings to finance domestic investment is that foreigners get the proceeds that flow from their investments. Net interest payments on U.S. external debt will soon start to exercise a drag on the U.S. economy. An economy that is running a trade deficit has to rely on foreign borrowing, not ongoing export earnings, to finance interest payments on its existing stock of debt. As net interest payments rise, a given capital inflow can finance a smaller trade deficit (since some of the capital inflow has to cover interest payments on existing debt). Alternatively, the U.S. will have to borrow more (and attract larger capital inflows) to be able to run the same trade deficit. Our simulations indicate that it is not unrealistic to believe that net interest payments will be above 2.5% of GDP in 2010 if the U.S. does not adjust, and 1.5% of GDP even if the U.S. does adjust.

The second cost of running a large structural current account deficit is that a large ongoing deficit constrains a country's ability to run an even larger current account deficit in the event of an economic boom. The U.S. has a substantial deficit right now even though the economy is not firing on all cylinders – over the past few years, consumption growth has been strong but investment has not, and employment and wage growth have been anemic. If investment boomed, consumption stayed at its current level and the government remained a large net borrower -- i.e. national savings stayed constant -- the current account necessarily would widen. However, a widening deficit would likely lead to an increase in the interest rate the U.S. would need to pay attract the external capital needed to finance the current account deficit. At some point, rising interest rates would tend to choke off the boom. The large existing current account deficit makes a replay of the 1990s unlikely – the U.S. cannot experience a simultaneous boom in investment and consumption.

Third, as the U.S. external debt stock rises, the U.S. risks losing access to the financing needed to sustain existing trade and current account deficits. Even gradual adjustment to reduce the trade deficit would not be pleasant, since cutting the deficit either requires a

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nominal terms and as a share of GDP. Cooper correctly argues a stable debt to GDP ratio is consistent with ongoing current account deficits, and suggests the U.S. debt to GDP ratio will peak at 46 % of U.S. GDP in 2018, when a $500 billion current account deficit will be 2.8% of GDP. His argument is actually is a reasonable approximation of the "fast adjustment" scenario. In that scenario, we estimate that the current account deficit will be around $500 billion in 2015 and the U.S. external debt to GDP ratio will have stabilized at 55% of GDP. However, we believe that getting there requires a sustained adjustment to reduce the trade deficit by about 0.5% of GDP every year between now and 2015, and thus a steady fall in the dollar if US growth continues. After all in 2015, the U.S. will be paying about 2% of GDP in interest (nearly $400 billion in 2015) in our fast adjustment scenario -- so moving from our 5.5% of GDP current account deficit in 2004 to our projected 2.4% of GDP current account deficit in 2015 requires entirely eliminating the 5% of GDP trade deficit. Cooper's analysis seems a bit dated, since the 2004 current account deficit is likely to be closer to $670 billion than $500 billion, and next year deficit -- barring a recession -- is likely to be above $750 billion, not $500 billion. Barring any adjustment, U.S. external debt is set to reach 46% of GDP in 2008, not 2018.

fall in income to reduce demand for U.S. imports or a fall in the dollar to increase the price of imports and make U.S. exports more attractive.[60] But as debt levels rise the risk of being forced to adjust suddenly increase, and sharp, sudden adjustment increase. Sharp adjustment – in concrete terms, a recession and a fall in the real dollar -- is never pleasant.

Any sharp adjustment poses particular problems for the United States. The U.S. economy is relatively closed, so the fall in the dollar needed to start to make significant improvements in the U.S. trade deficit could be quite large. A country like the U.S. that exports 10% of GDP and imports 15% of GDP is in a worse position than a country that exports 50% of GDP and imports 55% of GDP, even if both countries are running a 5% of GDP trade deficit (see Obstfeld and Rogoff (2000)). Moreover, the U.S. economy is large relative to the world economy, and the U.S. currently is contributing disproportionately to world demand growth. Any slowdown in the U.S. would tend to cool the global economy. Consequently, absent offsetting adjustments in other countries to support global demand, the process of adjustment in the U.S. will slow the economies of those countries most dependent on exports to the U.S., making the adjustment process more difficult.[61]

Finally, countries with large external debt become increasingly vulnerable to purely financial shocks, notably to a loss of market confidence that leads to a sharp increase the United States debt servicing burden. Former Treasury secretary Robert Rubin (in Peterson, 2004b) has warned that "the traditional immunity of advanced countries like America to third-world-style crises is not a birthrate." In a nightmare scenario, the United States would have to cut its current account deficit sharply to reduce the amount of new financing that it needs to attract from the rest of the world even as it is starting to lose the advantages of being a reserve currency. In such a scenario, the U.S. would have to offer foreigners much more attractive returns – either higher interest rates or forms of borrowing that transfer the risk of further depreciation from U.S. creditors to U.S. borrowers – to convince foreigners to continue to hold their savings in the United States. The U.S. could face higher interest rates on its existing stock of debt even as it has to curtail its new borrowing.

This risk is worth spelling out in more detail, particularly since such a shock would in many ways be the opposite of what the United States experienced between 2001 and 2003. Over the past few years, the United States has seen the cost of servicing its liabilities fall even as its external debt stock rose, because the average interest rate on the United States external debt fell. A severe financial shock would result in rising debt service cost even if the United States' stopped taking on as much new external debt (the

[60] See Razin and Milesi Ferretti (1998) for a study of current account reversals and currency crises. Recently, a whole literature on sudden stops has analyzed analytically and empirically the reversals of capital flows that triggers a painful current account adjustment. See Mendoza and Arellano (2002) for a survey.

[61] For example, Godley et al (2004) estimate that a 33% real depreciation in the dollar between 2002 and 2008 would lower world growth from 4.0% to 3.6% during the period of dollar adjustment.

current account deficit fell), as the average interest cost of U.S. external liabilities would rise.

There are three reasons why this risk is particularly acute for the United States.

- Foreigners hold lots of treasuries, and in particular lots of short-term treasuries as reserve assets. It will not take that long for higher interest rates on new issuance to work their way through the entire US external debt stock.
- Gross U.S. liabilities are much larger than net U.S. liabilities. At the end of 2004, we estimate the U.S. will have external liabilities of 11.12 trillion (a bit more than 95% of estimated GDP) and assets of 7.86 trillion, with a net debt (NIIP) of 3.26 trillion (28% of GDP). If the U.S. runs an annual trade deficit of 4.5% of GDP, we estimate that U.S. gross liabilities will increase to around 14.24 trillion (about 100% of GDP) in 2008 while U.S. assets will remain about 7.86 trillion (about 50% of GDP), barring large valuation gains on U.S. assets.[62] With liabilities of 100% of GDP and assets of 50% of GDP, any difference between what the U.S. earns on its external assets and what it pays on its external liabilities can magnify the impact of being a major net debtor. Suppose US interest rates increase from 4 to 6%, and the rate the US gets on its external assets is 5%. At 4%, net U.S. interest payments on its net debt of 50% are 4-5*100 + 4*50, or 1% of GDP. At 6%, net interest payments are 6-5*100 +6*50% or 4% of GDP. A 50% increase in interest rates produces a 400% increase in net interest payments.
- The nominal returns foreigners currently are earning on their existing loans and investments in the U.S. are very low relative to the risks of further dollar depreciation. Given the United States' ultimate need to generate trade surpluses to service the debt is likely to require further real depreciation, external creditors holding dollar claims are likely to demand higher interest rates to offset the risk of future depreciation.

The U.S., fortunately, is not vulnerable to one specific kind of financial shock. A real depreciation in the dollar will not lead to a sharp increase in the real value of U.S. external debt. The U.S. does not have the debt structure of a typical emerging economy; it borrows from abroad in its own currency, not someone else's currency. Consequently, the U.S. is passing the risk of future real depreciation onto its creditors. The U.S. NIIP tends to improve as the dollar depreciates, since dollar depreciation increases the value of U.S. external assets without increasing the value of the United States external debt.

Indeed, some have even suggested that the rising dollar value of U.S. external assets from further dollar depreciation will erase much of the debt taken on to finance the United States current account deficit, and consequently, the U.S. is in better financial

[62] These calculations are meant to be rough approximations. Strong nominal GDP growth in both the U.S. and the rest of the world would tend to increase the value of both U.S. FDI abroad (and other equity claims) and foreign equity investments in the U.S.. Consequently, it is likely that the nominal value of both U.S. assets and liabilities would be a bit higher than in these estimates. Our focus is on estimating the future evolution in the net position, not the gross position.

shape that it appears. After all, the 13.2% real depreciation in the dollar from the end of 2001 to the end of 2003 translated into a $680 billion valuation gain, notably a $440 billion valuation gain in 2003.

It would be a mistake, however, to expect that continued valuation gains will allow the United States to avoid many of the costs associated with running large external deficits. Future dollar depreciation is likely to generate substantially smaller valuation gains than occurred between 2001 and 2003. A disproportionate share of U.S. external assets are denominated in European currencies, so the valuation gains from large moves against the Euro and other European currencies are much larger than the valuation gains from comparable moves against East Asian and other currencies. Since the dollar already has adjusted significantly against most European currencies but not against most Asian currencies, it is reasonably to expect that future adjustment will involve larger moves against Asian currencies and small moves against the major European currencies. We estimate that a 20% adjustment against major Asian currencies leads to valuation gains of $210 billion, while a 20% adjustment against all major European currencies leads to valuation gains of $575 billion (assuming that all other currencies adjust by 10% in both scenarios). Consequently, if the dollar were to fall by an additional 20% in real terms -- generating a 30% overall depreciation from the dollar's 2001 peak -- with Asian currencies falling much more than European currencies, [63] back of the envelope calculations suggest that the U.S. would experience a valuation gain of about $600 billion. However, even in this scenario, about half of the valuation gains coming from the dollar's 10% fall against the European currencies and the Canadian dollar, not the much large falls against the major Asian currencies.[64] $600 billion is nothing to sneeze at

[63] European currencies might fall an additional 10%, the Canadian dollar a bit more, the yen by an additional 20% and the renminbi by the full 30%.

[64] If the U.S. dollar were to fall in real terms by a much larger amount, roughly 50% from its 2002 peak (40% from its current levels) by 2012, with the adjustment from 2004 on biased toward currencies that did not adjust against the dollar between 2002 and 2004, the U.S. would experience a valuation gain of around $1.4 trillion, with about half the valuation gain stemming from the dollar's fall against Europe and Canada. To make the math simple, we assumed that the dollar would fall by an additional 30% against European currencies and the Canadian dollar, by 50% against Asian currencies and by 40% against other currencies – generating an overall 40% depreciation. The $1.4 trillion in estimated valuation gains is, by chance, almost exactly twice the number calculated by Helene Rey and Pierre-Oliver Gournichas (2004) for a 20% depreciation (they estimated a 20% depreciation would result in a one-off gain of 6.7% of U.S. GDP in 2003, or around $700 billion). In our fast adjustment scenario, we estimate that U.S. net external debt would rise to $9.2 trillion in 2012, or 53% of estimated 2012 GDP. If the 40% additional depreciation took U.S. external creditors entirely by surprise, the valuation gains from dollar adjustment could lower U.S. net external debt in 2012 to $7.8 trillion, or 45% of GDP. However, this scenario implicitly assumes that foreign investors would take losses of at least $4.44 trillion on their $11.1 trillion in claims on the U.S. (using 2004 numbers to estimate net US external liabilities), and perhaps more in the devaluation only occurred after U.S. debt levels rose to higher levels. The estimated 45% NIIP in 2012 thus should be considered an absolute lower bound on the eventual long-term external debt level of the United States, since it assumes that the US pockets large valuation gains on its external assets while foreigners are caught entirely by surprise and do not demand an interest premium to offset their large capital losses in the event of dollar depreciation. Indeed, merging our continuous adjustment scenario with our back of the envelope calculations of potential valuation gains is analytically dubious, since our fast adjustment scenario assumes a slow depreciation in the real dollar results in continuous improvement in the U.S. trade balance. Adding valuation gains to the net external debt forecast that arises from this scenario effective requires assuming that U.S. external creditors continuously fail to anticipate the dollar's steady depreciation. A more realistic

it, but it is smaller estimated 2004 U.S. current deficit. At the end of the day, one-off valuation gains simply cannot overcome the impact of persistent trade and current account deficits of 5% of GDP or more per year.

Moreover, the flip side of the valuation gains the U.S. experiences on its external assets from dollar depreciation are the capital losses experienced by foreign investors who purchased dollar-denominated U.S. assets (U.S. Treasury bonds, corporate bonds, real assets such as real estate, stocks, dollar denominated bank accounts). Since the stock of gross U.S. foreign liabilities is massive (about $10.5 trillion at the end of 2003, a bit under 95% of U.S. GDP), the potential capital losses foreigners could experience in the event of further expected U.S. dollar depreciation are massive. Some foreign investors may be willing to accept some unexpected capital losses as part of the price of holding onto "safer" U.S. assets.[65] But as the saying goes, "you can fool some of the people all of the time and all people some time, but you cannot fool all people all of the time." Foreign investors are likely to demand and get higher U.S. interest rates to compensate for the risk of capital losses on their dollar investments.

Some argue that the risks associated with rising external debt are limited because foreigners are stuck holding large amounts of US assets no matter what. Where could foreigners invest such a large amount of assets? No one should take comfort in this argument. By definition, foreign investors cannot reduce the amount of nominal claims they hold on the U.S.; someone abroad has to hold, in equilibrium, the net foreign debt of the U.S.. The relevant issue is the interest rate or rate of return that foreign investors will demand to hold such a large stock of U.S.? If foreign investors expect the dollar will continue to depreciate, they will demand higher interest rates on their new investments (and the value of their existing securities should fall, raising the yield on their current assets). At some point the ex-ante rate of return that foreigners will require to hold the existing stock of U.S. debt will sharply increase, leading to higher nominal and real U.S. interest rates and falling asset values.

Some also have suggested that reduced "home bias" will allow the U.S. to finance its large current account deficits for a long time at a relatively low cost. This argument is also likely to be proved wrong. In the standard case of reduced home bias, foreign demand for domestic assets increases as much as domestic demand for foreign assets, with no effects on the net international asset positions of either side. Foreign claims on

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scenario that incorporated valuation gains for the U.S. would also need to include higher interest rates on U.S. liabilities to compensate U.S. external creditors for their expected valuation losses. This highlights one paradox of the United States' current situation. Adjustment in the dollar should lower the long-term real interest rate on the United States' external debt, since it improves the United States external fundamentals (and depreciation today reduces the amount of expected depreciation tomorrow). However, currency adjustment would make explicit the risks foreigners are taking lending in dollars to the United States, risks that many foreigners may not be underestimating.

[65] Foreign central banks hold about 15% of total foreign claims on the U.S. (and account for roughly 1/3 of the U.S. net debt position). They may view the future capital loss on their dollar assets as an acceptable price to pay for keeping their currencies at a level that makes their exports competitive in the U.S. markets. The expected capital loss is a *de facto* – though to the chagrin of U.S. manufacturers – not a *de jure* export subsidy.

the U.S. are relatively small as a share of their total wealth. But the U.S. also has relatively little of its wealth abroad. A global fall in home bias likely implies that financial inflows into the U.S. would be matched by financial outflows from the U.S.. Net financing from abroad of U.S. deficits requires the U.S. to retain its home bias while foreigners reduce their home bias, i.e. that foreigners increase their holdings of U.S. assets while the U.S. does not increase its holdings of foreign assets. That seems unlikely – particularly since foreigners would be diversifying into the currency of a country with substantial current account deficits and this taking on large risks in the event the dollar eventually falls.[66]

Richard Cooper's (2004) argument that US current account deficit (and its financing) is "not only sustainable, it is perfectly logical" rests on a similar argument: A $500 billion current account deficit requires that the rest of the world lend the U.S. less than 10% of its $6 trillion in annual savings. This is not so much in globalized economy, particularly if the U.S. need to import external savings will fall over time in relation to a growing global supply. Cooper argues that the U.S. offers "higher returns on real investment than Europe or Japan" and "more safety and security ... than do emerging markets." This argument is consistent with another variant on the reduced home bias, namely that capital account liberalization in China and India will generate substantial capital outflows from these economies. Large pools of domestic savings current trapped by capital controls in China and India will seek the security and greater returns of the United States.

There are three primary weaknesses in these arguments:

1. Right now the U.S. is not that attractive a destination for private foreign investment. The U.S. has a large deficit in net equity investment in 2002, 2003 and no doubt in 2004. European and Japanese investors are no longer investing in the U.S. equity markets, as U.S. equity returns have been trivial since 2000 in dollar terms, and negative in Euro terms. U.S. equity investors -- particularly U.S. firms -- are investing abroad in search of higher real returns far more than foreign equity investors are investing in the US. In the last four years, the U.S. has been attracting external financing (notably from the build up of official reserves) into its relatively low-yielding debt markets to finance its fiscal deficit, not private equity investment seeking high returns. Given the risks of future dollar depreciation, it is not obvious why this would change. The U.S. may become an attractive place for private investment after the dollar adjusts to reduce the current account deficit, but it is hard to see why it would be before the dollar adjusts.

2. To generate net private inflows after the major Asian economies liberalize their capital accounts, the U.S. has to be more attractive to Chinese and Indian investors than China and India are to U.S. investors. We rather doubt that will be true over the long run without some adjustment in U.S. interest rates. Afterall, Asian private investors would be lending to a country with a significant current account deficit whose currency would likely fall in real terms, while U.S. investors would be investing in countries with large potential for real appreciation. It is hard to see how the dollar offsets a better store of value for Indian and Chinese private savings than the currency of an economic zone with

[66] China scenario: no private dollar assets.

a more balanced trade account (say the euro) or investment at home. Current real dollar interest rates are unlikely to make up for likely future dollar depreciation.

3. China and India are not Russia. Domestic savings has consistently fled Russia, both before Russia's 1998 crisis and after Russia's economy recovered on the back of oil and a devalued ruble. The combination of Russia's underdeveloped banking system and the controversy that swirls around the legitimacy of the transfer of some major Russian oil and metals companies to the "oligarchs" in the 1990s makes it hard for Russia to retain its own savings, leading Russia to in effect finance the rest of the world. It is possible that lifting China's capital controls could produce a one off asset reallocation that leads some of China's more than $1.5 trillion of domestic bank deposits[67] to move abroad – though presumably foreign capital might also flood into China to seek a piece of the world's fastest growing economy. If a one time asset reallocation generated substantial net outflows for a brief period, China could sell some its quite substantial (likely to exceed $500 billion at the end of 2004) reserves to facilitate the reallocation of Chinese savings – reducing the need for China to finance this capital outflow with a larger current account surplus. But so long as private investment in China is more secure than it is in Russia, it is hard to see why capital account liberalization China would generate ongoing capital outflows from China equal to China's current annual $100 billion in reserve accumulation, let alone substantially large ongoing private outflows to finance ever larger U.S. deficits. Most high savings Asian economies with open capital accounts still keep most of their savings at home. Why would Chinese private citizens want to invest in asses denominated in the currency of a country that almost certainly will depreciate substantially over time against the renminbi at current U.S. interest rates?

Section 5. Are we back to a new Bretton Woods Two global system of fixed exchange rates and is this regime stable and sustainable?

Some authors – namely Dooley, Folkerts-Landau and Dooley (2003, 2004a, b) - have argued that the reemergence of a new Bretton Woods regime of fixed exchange rates (Bretton Woods Two) will allow the U.S. to finance large external imbalance at a low cost for a long time, and consequently, the United States growing new indebtedness poses few immediate concerns.[68] The argument goes as follows. After the Asian crisis, most Asian economies decided that a growth model based on financing investment via external capital (i.e. running current account deficits, as they had done in the early 1990s) was not desirable, given their vulnerability to a sudden reversal of capital flows. Immediately after the crisis, they needed to run current account surpluses to rebuild their reserves, but

[67] China's four large state banks all have large portfolios of bad loans. But this alone is insufficient to prompt Chinese savings to flee the state banking system. At some point, the Chinese government will have to recapitalize the banking system, and effectively replace bad loans with government debt on the state banks' balance sheet. That would restore the banking system's solvency. So long as there is a clear expectation that the state stands behind the state owned banks and the government of China itself is solvent, Chinese bank depositors should not run out of the large state banks because of concerns about the bank's solvency. Nonetheless, capital account liberalization would expand the range of possible investments available to a Chinese saver, and could well lead to some portfolio diversification.

[68] McKinnon has also argued in favor of a region of exchange rate stability in Asia and the emergence of a Dollar Standard; see McKinnon (2003) and McKinnon and Schnabl (2004).

they then maintained large current account surpluses and continued to rely on export-led growth. In a world of floating exchange rates large current account surpluses (and in China's case, large capital inflows, including large FDI inflows) would naturally tend to lead to currency appreciation. To avoid appreciation, many Asian economies, including those whose currencies are formally floating, started to intervene aggressively in the foreign exchange market. Some Asian currencies are formally pegged to the US dollar, mostly notably the Chinese renminbi (also the Hong Kong dollar and the Malaysian ringitt). But many other countries intervene heavily, and thus are to effectively pegged to the U.S. dollar, and more importantly, to the Chinese renminbi. (India, Korea, Taiwan, Thailand, Indonesia and even Japan). So long as China maintains its current peg and resists letting its currency appreciate, other Asian countries have to intervene to avoid an appreciation that would cause a loss of competitiveness relative to China in Asian and global markets. This aggressive intervention manifests itself in the massive accumulation of foreign exchange reserves by Asian central banks.

At least along the U.S. –East Asia axis, the heavy intervention of the "periphery" to prevent appreciation of their currencies against the core (the U.S.) effectively has created a new Bretton Woods system of fixed exchange rates. The Bretton Woods gold-dollar fixed exchange rate regime has been replaced by a new dollar-renminbi fixed exchange rate regime. This new regime is based on structural current account deficits in the U.S. and structural current account surpluses in Asia, with the Asian current account surpluses financing reserve accumulation by Asian central banks. These reserves are lent back to the U.S., the U.S. with cheap external financing. The U.S. gets to consume more than it produces and finance budget deficits cheaply, while East Asia can maintain strong export growth and rapid industrialization. Rapid industrialization, in turn, helps to absorb the labor surplus created by China's underemployed rural population.

Large-scale intervention is not costless. Weak currencies mean that the terms of trade of these countries are worse than they could be. More importantly, the currency intervention needed to appreciation also has its costs. To prevent reserve accumulation from leading to an increase in the domestic money supply, East Asian central banks must issue local currency debt, sterilizing their intervention in the foreign exchange market. The difference between the interest rate Asian central banks pay on their local currency debt and the interest rate they receive on their reserve assets creates an ongoing fiscal cost. Sterilizing the current pace of reserve accumulation poses many technical difficulties, particularly in countries like China with a limited supply of local currency assets. Consequently, difficulties with sterilization are leading to potentially inflationary growth in monetary aggregates. Finally, Asian central banks which are financing their enormous stocks of low yielding foreign reserves (primarily U.S. T-bills and other government debt) with the issuance of high-yielding local currency debt are exposing themselves to enormous potential losses should Asian currencies ever appreciate relative to the US dollar. The local currency value of their dollar denominated reserve assets would fall sharply, while the value of their local currency debt would stay constant.

To proponents of the Bretton Woods Two hypothesis, these costs are trumped by the benefits of export led growth and a weak currency. A depreciated exchange rate thus

supports an economic model based on export-led growth financed largely by domestic savings: expensive imports are part of the reason why domestic consumption in China and other Asian economies is low and national savings are high. The capital loss that countries with large dollar reserves would experience the day their currencies appreciate against the dollar is a worthwhile price to pay for the benefits of high economic growth today. Particularly in China, the explosive growth of the export sector is supporting the massive transfer of millions of underemployed labor from rural areas and loss-making state-owned enterprises. Consequently, it is in the interest of China and all the other exporting countries in Asia to continue to resist currency appreciate, to accumulate large reserves and to lend these reserves back to the U.S. at a low rate (rather than say invest their reserves in assets that offer protection against dollar depreciation, such as euros).

Proponents of the Bretton Woods hypothesis also argue that this system is in the short-run interest of the U.S.. Cheap financing from Asian central banks keeps U.S. interest rates from spiking upwards, and low interest rates keep U.S. asset values high and supports a consumption-led expansion. The squeeze that the trade deficit puts on the tradable and import-competing manufacturing sector in the U.S. is a necessary price to pay to keep U.S. interest rates low.

So far, this new Bretton Woods Two regime is not global. Europe allows its currency to float relative to the U.S. dollar and some emerging market economies, unlike those in Asia, are still capital-importing (i.e. running current account deficits) rather than capital-exporting (i.e. running current account surpluses).[69] But soon enough, Europe and Latin America may be forced to join the pegged regime bandwagon. Many Latin American economies, especially countries that experienced a recent a recent crisis and thus have undervalued currencies, are either running current account surpluses or are close to balance (Argentina, Venezuela, Brazil). Fixed exchange rates in Asia transfer the pressure for dollar depreciation to Europe. Additional euro appreciation would lead to a loss of European competitiveness and the increase in import penetration of Asian goods in Europe would sap European growth (until recently, driven largely by exports) and lead to severe protectionist pressures in Europe. Europe would either respond by slapping major protectionist tariffs on Asian exporters or, more likely, the ECB would start to intervene aggressively to prevent further Euro appreciation.

In the view of its supporters, the Bretton Woods II regime is stable and will last at least a generation (about 20 years or so), until China's agricultural labor surplus is transferred to the tradable sector. The pressures created by the current, partial system of fixed exchanges are more likely to be solved by expanding the current Asian dollar peg fixed exchange rate regime to include Europe and Latin America than by the collapse of the Bretton Woods system. No doubt, at some point the accumulation of U.S. external debt

[69] The image of Latin America as a major capital importing region is now somewhat dated: its two largest economies in South America – Argentina and Brazil – are currently running current account surpluses and thus exporting capital. Latin America is increasingly a low savings region that can no longer afford to import capital because of its high existing external debt load. The remaining Latin capital importing economies are Mexico, Colombia, Chile, Peru, Bolivia, and some smaller countries in the region. . Mexico's growing concerns about competition with China suggest that it has an incentive to resist peso appreciation against the dollar.

implied by the new Bretton Woods dollar-renminbi exchange rate system will prove to be unsustainable. But in the view of Bretton Woods II apologists, the accumulation of U.S. external debt can be maintained as long as it is in the interest of Chinese and Asian authorities, since the official sector, not private markets, is providing most of the financing needed to sustain the system.[70] [71]

How strong are the arguments that a new system of fixed rates has emerged, and that this new regime is stable and sustainable over time?

The first part of the argument – that a new system of fixed exchange rates has emerged – is the strongest, but even this argument needs to be qualified in two ways. First, a managed float is not quite the same thing as a pegged exchange rate, and far more Asian economies have managed floats than pure pegs. Second, the new Bretton Woods system of managed floats is providing far larger financial flows than the initial Bretton Woods system of fixed exchange rates.

Japan, of course, is the most important example of a country that intervenes in currency markets to manage a float, rather than to maintain a pegged exchange rate. No one doubts that Japan intervenes aggressively in market: aggressive intervention during calendar 2003 and Q1 2004 led the Bank of Japan to accumulate $347 billion in reserves. While this intervention no doubt has kept the yen from appreciating further, the Yen still moved from 132-134 yen to the dollar in early 2002 to around 109 to the dollar now -- a 20% nominal and real depreciation. Aggressive intervention when the Yen gets close to 100 is very different from a peg. The same argument holds for many other Asian currencies: Korea, Thailand and Indonesia have allowed some appreciation of their currencies relative to the US dollar (around 10% in Korea, Thailand and Indonesia relative to the beginning of 2001-2002 level) even as they intervene to avoid too much appreciation. Other Asian economies (Taiwan, India, and to a degree Singapore) have been more aggressive in preventing – via massive intervention- major changes of their currency values relative to the US dollar.

The overall picture is mixed: Asian currencies do not float freely but they have not returned to totally fixed exchange rates. Most countries allow some exchange rate flexibility but intervene aggressively to prevent appreciation they judge to be excessive. In some sense, though, U.S. sustainability – at least in its current form – hinges on the scale of the intervention, not whether the intervention comes in the context of a peg or a heavily managed float. There is little doubt that proponents of a new Bretton Woods

[70] Jen (2004) of Morgan Stanley makes a variant of this argument when he claims that the U.S. trade deficit is smaller than it seems, since most of the deficit is with the East Asian dollar zone, are making a variant of this argument. Jen argues that all imbalances within the dollar zone will be financed by Asian central banks, and consequently, the dollar's external value should be determined not by the overall trade deficit, but rather by the trade deficit with countries outside the dollar zone.

[71] In a recent variant of the BWII hypothesis (see Dooley, Folkerts-Landau and Dooley (2004 c)), its authors interpret the accumulation of foreign reserves by Asian central banks as a collateral for the risk of expropriation of foreign FDI in the Asian economies. For a critique of this variant, see: http://www.roubiniglobal.com/archives/2004/10/are_we_back_to.html.

system are right on one point: the build-up of foreign exchange reserves in Asia has provided steady, and cheap, financing of the U.S. twin deficits since 2002.[72]

However, this only underscores a second difference between difference between Bretton Woods One and Bretton Woods Two. As Barry Eichengreen (2004) has emphasized, Bretton Woods one never financed large US current account deficits. The U.S. actually ran trade and current account surpluses throughout the1960s.[73] On one level, the postulated new Bretton Woods system is based on a weaker commitment to exchange rate stability than the initial Bretton Woods system. On another level, the financial flows required to sustain the new Bretton Woods system are far larger than those associated with the initial Bretton Woods system.

This inconsistency, in our view, is the Achilles heel of the new Bretton Woods. The scale of the financial flows required to sustain the new "Bretton Woods Two" parities between the dollar and major East Asian currencies are likely to exceed the financial flows that arise naturally from East Asia's limited commitment to exchange rate stability.

In our view, there are five reasons why this new regime will not prove to be stable.

1. *Internal dislocations in the United States*. Bretton Woods two keeps U.S. interest rates below what they otherwise would be (particularly given large U.S. fiscal deficits), helping interest-sensitive sectors of the U.S. economy. However, the financing comes at the expense of import-competing sectors of U.S. economy, since Asian current account surpluses are needed to generate the cheap reserve financing the U.S. needs. If Bretton Woods two is sustained, those sectors in the U.S. that compete with Asian exports would be increasingly crowded out. The associated job losses and related economic dislocation would add to the protectionist pressures already being generated by the jobless recovery and weakness of employment in the U.S. manufacturing sector. The U.S. politically cannot allow its manufacturing base to decline as sharply as a sustained Bretton Woods Two system would imply.[74] Nor is it entirely clear that it is in the long-run economic interest of the U.S. for its tradeables sector to

[72] Non-Japan Asia historically has not run large current account surpluses, as Jonathan Anderson (2004) has emphasized. Non-Japan Asia only started to run large current account surpluses in 1998, after the Asian financial crisis. Initially, these surpluses financed the repayment of emerging Asia's external debt (capital outflows) as well as some reserve accumulation. The pace of reserve accumulation accelerated significantly in 2002 and really took off in 2003, after Southeast Asia had more or less finished paying off its pre-crisis external debt and China started attracting significant private capital inflows. However, rather than using capital inflows to finance reduced current account surpluses, emerging Asia – led by China -- has opted to "bank" these inflows, increasing the pace of its reserve accumulation dramatically. See Higgins and Klitgaard (2004). This process coincided – and in some sense facilitated – the rapid expansion of the U.S. budget deficit.

[73] The size of the imbalance that led to the collapse of Bretton Woods one now seems rather quaint, because it is so small in nominal terms. U.S. gold reserves fell from around $20 billion to around $10 billion during the course of the 1960s, and offsetting official dollar reserves (claims on the U.S. gold) moved in the opposite direction during the 1960s, surpassing U.S. gold reserves in 1965. See Eichengreen (2004).

[74] As Goldstein (2004) notes, a number of bills have been introduced in Congress that would impose a broad import levy on Chinese imports if China does not revalue its exchange rate.

contract, since in the long-run, the U.S. needs its tradeables sector to grow to pay for its current borrowing.

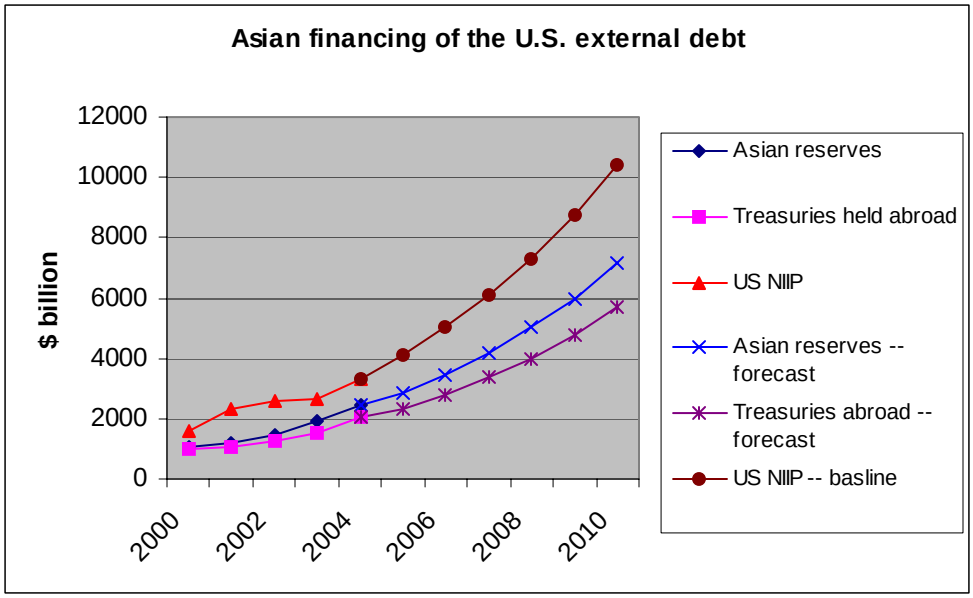
2. *The strains placed on Europe.* If the Asians keep on pegging their currencies, most of the downward pressure on the US dollar will be channeled towards the Euro. This is politically unsustainable: Europe cannot allow its tradable sector (both export and import competing) to be crowed out by Asian competition. Proponents of the Bretton Woods Two hypotheses argue Europe will respond by intervening to limit the Euro's appreciation vis-a-vis the dollar: the ECB would join Bank of Japan and the Bank of China in providing large-scale financing to the United States. But it more likely that a surge in protectionist pressure will lead Europe to joint with the United States to put political pressure on the Asian economies to allow their currencies to appreciate.
3. *The strains placed on China's domestic financial system*. Particularly in China, the sterilization of the foreign exchange intervention required to prevent upward appreciation against the dollar is becoming increasingly partial and difficult.[75] The stock of domestic financial assets is not large enough to allow the easily sterilization of an annual reserve buildup of $100 billion a year (roughly 10% of China's GDP). If sterilization is incomplete, the ensuing monetary growth will lead to higher inflation, even if distortionary steps like internal price controls partially succeed.[76] Moreover, the growing monetary supply inside China is helping to feed a credit boom, and that credit boom in turn risks feeding an risk asset bubble (in housing, commercial real estate and even in new manufacturing plants). The rest of Asia learned in 1997 that credit booms can turn into credit bust even in high savings, high growth economies.[77]

[75] See Goldstein (2004) for a more detailed examination of the domestic costs of the renminbi's peg. Goldstein notes that China's reserves increased by 11% of GDP in 2003, and China only sterilized about half that reserve increase. Consequently, the reserve accumulation associated with the peg contributed to an increase in the money supply and a lending boom. Goldstein concludes: "the significantly undervalued RMB is now working against efforts to rein-in excessive growth in bank lending. It is handicapping efforts to bring an end to overheating of the economy and to keep inflation from rising to much. And it could interrupt the good market access that China now enjoys for its exports … a revaluation of the RMB would actually improve China's prospects for healthy, sustainable, non-inflationary growth." Higgins and Klitgaard (2004) provide data on the extent to which East Asian economies have sterilized recent reserve accumulation. Specifically, while Taiwan fully sterilizes its intervention, China did so only partially; but it has recently increased its rate of sterilization of forex interventions as a way to limit the growth of its monetary based.

[76] Inflation in the context of a pegged exchange rate will eventually lead to a real appreciation of the renminbi, though the process is likely to be slow. However, any real appreciation against the dollar could be wiped out if the dollar depreciates against other major currencies, reducing the renminbi's real value as well. The process of inflationary adjustment is likely to be quite slow in any case. In 2004, the IMF expects China to retain a substantial current account surplus, as surging exports to the US will offset China's surging bill for imported raw materials. It is rather surprising that China's domestic investment boom and an adverse shock to its terms of trade are not reducing China's global current account surplus significantly.

[77] Chinese banking sector that is already burdened with a massive stock of non-performing loans (NPL). Indeed, the risk of a banking and financial crisis in China in the next few years cannot underestimated as the official figure on the size of the NPL problem put it already at about 40% of GDP while unofficial estimates by some are as large as 60 to 70% of GDP.

4. *The financial risks associated with continuing to provide low-cost dollar denominated financing to the United States*. Asian central banks are already taking an enormous financial risk by holding most of their reserves in dollar denominated assets, given that the United States' large current account deficit and growing external suggests the need for future dollar depreciation. Sustaining the current system requires that Asian central banks do more than continue to keep their existing stock of reserves in dollars (and not, for example, diversity into Euro). Ongoing U.S. current account deficits likely can be financed at current low interest rates only if Asian central banks continue to buy new dollar assets, and Asia's holdings of U.S. dollar denominated assets rises substantially over time. Asian central banks are financing a much large share of the 2003 and 2004 U.S. current account deficit than they did of the 2000 or 2001 current account deficit, and as the U.S. current account continues to expand, the absolute amount of financing the U.S. needs will also increase (as will the risk of further dollar depreciation). As the attached chart shows, Asian forex reserves may have to increase from about $2.45 trillion at the end of 2004 to over $7 trillion by 2010. Foreign holdings of Treasuries would rise from around $2 trillion to $6 trillion. (The chart assumes that the current ratio between the U.S. NIIP, Asian reserves and Treasuries stays constant as the US NIIP rises). The forecast embedded in this chart could well underestimate the amount of financing needed to sustain the current system. Private financial flows might fall off in the face of such large imbalances, so maintaining the current parities in the face of growing U.S. deficits may require relying more Asian central banks for financing over time.



5. *Incentives to free ride and opt out of the cheap dollar financing cartel.* The incentive for individual central banks – in Asia and elsewhere -- to diversify out of US dollar reserves into Euro reserves will increases over time, as the United States growing stock of external debt increases the risk of a major

> depreciation. Of course, an individual central bank can only protect itself if it either shifts out of dollars and into euros ahead of the others, or buys a euro/dollar hedge before everyone else. Yet if too many central banks try to protect themselves from dollar depreciation by diversifying their holdings of reserves, the pressure on the Euro/dollar would cause the overall system to collapse. This gives rise to a classic problem of collective action: all central banks may be better off if no bank tries to diversify its reserve holdings, but as the risks of dollar depreciation grows, each central bank has an incentive to defect and to try to protect itself from large losses. The Bretton Woods system can only be sustained if the Asian central banks act as a cartel and both keep their existing reserves in dollars and continue to use ongoing current account surpluses to buy dollar assets. Yet, as Barry Eichengreen (2004) has emphasized, Asia lacks the institutions that helped the first Bretton Woods system survive when it faced an analogous problem in the 1960s.[78]

In summary, Asia's desire to avoid dollar appreciation has created the kernel of a new system of fixed exchange rates, albeit one that differs in important ways from the original Bretton Woods system. But this regime is highly unstable, fragile and unsustainable and more likely to break apart than to expand and consolidate. The scale of the flow and stock imbalances associated with Bretton Woods Two – along with difficulties sustaining a cooperative equilibrium in a game with strong incentives for free riding -- make it likely that the Asian dollar-renminbi standard will crash in years, not decades.[79]

Section 6. Conclusion: Cooperating to end the balance of financial terror

The sharp rise in U.S. net external debt since 2001 has financed a fund a boom in government borrowing, a boom in consumption and a boom in residential construction -- not a boom in investment, let alone investment in the export sector. The U.S. has become

[78] European central banks held more dollar reserves than could be converted into gold at the dollar/ gold exchange rate the U.S. was committed to maintain as part of the initial Bretton Woods system. To support the gold/ dollar fixed exchange rate, European central banks had to refrain from converting their dollar reserves into gold, though each central bank would gain if it held more gold and fewer dollars when the system collapsed. Eichengreen (2004) highlights three major differences between Bretton Woods in the 1960s and the current dollar-renminbi Bretton woods two system: (1) the euro is a more attractive alternative reserve currency than the pound; (2) Informal mechanisms for institutional consultation and cooperation between Europe and the United States in the 1960s (through the OECD and the G-10) are far more developed than institutions for U.S.-East Asian cooperation (the U.S. and Western Europe were also bound together in a military alliance, the U.S. and China are not) and (3) European central banks cooperated to support the gold dollar standard through institutional arrangements such as the 1961 gold pool (which shifted some of the costs of maintaining a $35 gold price in London to European central banks) and the 1968 "Gentleman's agreement" (European central banks promised not to convert their inherited dollar balances into gold) while Asian central banks have yet to develop comparable mechanisms for cooperation.

[79] Posen (2004) proposes that the U.S., Europe and Japan would agree to a "dual-key" intervention regime that would not allow one of the three players to intervene unilaterally to prevent its currency from moving relative to the other two. Operationally, this would only constraint the Japanese intervention (and possibly in the future European intervention). It would not affect the forex interventions by China and other Asian economies. Posen suggests that, over time, this dual-key system may lead China (and, by default, the rest of Asia) to modify its intervention policy; but such outcome is not obvious.

increasingly dependent on foreign purchases of fixed income debt securities – and in particular purchases of U.S. treasuries by Asian central banks – to finance huge U.S. current account deficits, deficits that are absorbing an enormous fraction of all cross-border capital flows.[80]

Our analysis suggests that without any policy changes, the US current account deficit will rise above 7% of GDP in 2006, and above 8% of GDP in 2008, in part because of rising interest payments to non-residents. If most of the financing for the deficit continues to come from Asia, Asian central bank reserves would need to double between the end of 2004 and the end of 2008, rising from $2.4-2.5 trillion to $5.2 trillion. Foreign holdings of U.S. Treasuries would rise in parallel, going from $2 trillion (end 2004 estimate) to $4.2 trillion. We doubt that Asian investors, even Asian central banks, will be willing to take on the financial risk implied by holding such a large stock of dollar claims on a country whose external credit fundamentals are deteriorating at anything like the U.S. current low nominal (let alone real) interest rates.

It is true that East Asia cannot dump its existing holdings of U.S. treasury bills without paying a financial price. If East Asia sought to diversify its reserve – holding more euros and fewer dollars as a hedge against dollar depreciation – it would trigger a downward adjustment in the dollar's value. Indeed, East Asian central banks have to continue to buy additional U.S. treasuries to provide the ongoing new financing the U.S. needs to keep the dollar from falling.

But the U.S. should not take comfort in the fact that East Asian economies cannot painlessly extricate themselves from their enormous – and growing -- financial bet on the U.S. dollar. The U.S. cannot extricate itself its dependence on the cheap financing provided by Asian reserve accumulation any more easily. The U.S. economy can only expand at its current pace on the back of the implicit subsidy provided by Asian central banks. The boom in housing created by low interest rates and, for that matter, the surge in value of all financial assets linked to low interest rates – would come to an abrupt end without access to Asian financing.

But make no mistake, this cheap financing is coming directly at the expense of the U.S. manufacturing sector. The continued transfer of resources out of tradables production bodes ills for the long-run health of the U.S. economy. It is not in the long-run interest of the U.S. economy to try to support an ever-increasing external debt load on the back of a shrinking tradables sector. At some point, the external side of U.S. economy has to expand to pay for the United States' imports, or the amount that the U.S. can import will have to fall.

[80] As Peter Peterson has wisely noted: "Never before has the global economic system allowed nations with floating currencies to trade such a large share of their production and savings across borders. Perhaps system is too strong a word, since it has become perversely warped, like a billiard ball on a featherbed, around US demands for plentiful credit and foreign demands for plentiful exports. Incredibly, the U.S. current account deficit now absorbs, directly or indirectly, two-third of the total reported current account surpluses run by every other nation on the planet" (Peterson (2004a), page 95). One may also note that one cost of the U.S. absorbing large amounts of global current account surpluses is that there is less left for investment in poor, low savings economies – something that it may likely to lower long-run global growth.

It bears emphasizing that the large U.S. current account deficit reflects government policy choices as much as it reflects market forces. If the U.S. maintains the unsustainable combination of large fiscal deficits and low private savings, one of the two following scenarios is likely to develop:

1. *Asian central banks will continue to finance the U.S. fiscal deficit allowing the U.S. to continue to spend more than it earns for bit longer.* This implies that Asian currencies will remain weak. But this path is not sustainable for at least three reasons. First, the continued shrinkage of the US manufacturing sector risks generating a severe protectionist backlash. Second, the U.S. will become even more hostage to the political decision of foreign central banks to continue to finance this deficit (and rollover their existing holdings of U.S. debt) rather than shift into other assets. Third, it leads to an accumulation of the U.S. public and foreign debt at rates that will not be acceptable to existing U.S. creditors.
2. *Asian central banks stop intervening on the scale needed to finance the U.S. deficit and the U.S. will have to adjust.* This adjustment would take two forms. First, the dollar would depreciate sharply without the support provided by Asian central banks. Second, U.S. interest rates would have to rise sharply to attract the financing the U.S. government needs to run large fiscal deficits. There is not a pool of private capital willing to make up the gap at current low U.S. interest rates if Asian central banks stopped financing the U.S. fiscal (and current account) deficit.[81] U.S. consumption would have to fall to generate the higher private savings needed to finance the fiscal deficit (public sector dissavings) in the absence of subsidized financing from Asian central banks.[82] The US current account would improve over time but the adjustment would occur in the worst way for the US, via a sharp recession and a fall in private investment. [83]

The United States – and indeed the world economy – faces a troubling dilemma. Immediate adjustment to end U.S. external deficits would be extremely costly. A sharp adjustment to correct the U.S. current account imbalance and the associated moves in asset prices would cause severe damage to the global economy, not just the US economy. The stability of the world economy hinges on the willingness of all parties to what Larry

[81] The precise impact of the loss of demand from Asian central banks on US long rates is a matter of dispute, as it depends on how much private foreign demand for US Treasuries is substitutable for official demand for US Treasuries. If private and public demand were perfectly substitutable, the effect on US rates would be small. But if Asian central banks are purchasing large amounts of US assets exactly because their private sector is not willing to purchase such assets at current US interest rates, US rate will have to go up by a significant amount to make up for the diminished public demand for such assets. It is not unrealistic, in our view, to think that US interest rates might increase by between 100-150 bps.

[82] The implicit subsidy is the capital loss Asian central banks will sustain should the dollar eventually depreciate against their currencies. Current U.S. interest rates clearly fail to compensate Asian central banks for this risk.

[83] If the Asian central bank were to stop intervening and let their currencies to strengthen, the result would be, over time, higher production and employment in our export and tradeables sector. But since the traded manufactured goods sector is small relative to the sectors that would be hurt by higher interest rates, the negative impact of higher interest rates on the entire economy could well more than offset expanding employment in the production of tradable goods and services in the short-run.

Summers accurately called the balance of financial terror to double down their existing bets.[84]

On the other hand, the longer adjustment is delayed, the more costly it will be. So long as large U.S. external deficits continue, the global economy will rest on an unstable foundation. If large trade deficits continue for much longer, sharp adjustment will be impossible to avoid. The pace at which the U.S. will have to adjust already is no longer solely in the hands of U.S. policy makers, as Pete Peterson (2004b, 98) has noted: "What happens to the dollar and global economy will depend as much on what foreign political leaders do with accounts (their holdings of U.S. assets, particularly treasuries) as on any policy we can pursue alone."

The necessary adjustment cannot happen smoothly without a degree of tacit coordination between the U.S. and the major Asian economies, especially China and Japan.[85] The U.S. needs to take steps to reduce government's own borrowing need (and increase net savings) to reduce the United States overall dependence on cheap foreign financing. But Asia also needs to take steps to reduce its dependence on export-led growth.

It is far better for the U.S. (and the rest of the world) if the adjustment needed to reduce the U.S. trade deficit comes from rising U.S. exports, not falling U.S. imports. To sustain U.S. growth even as U.S. consumers take their foot off the gas pedal, net exports need to grow. Europe could do more, but it is not poised for a dramatic boom in consumption that will sustain export-led growth in both Asia and the United States.[86] The necessary condition for a smooth adjustment in the U.S. is willingness on the part of Asian countries – and others – to see their consumption grow faster than their income, and no longer look to net exports to drive their own growth.

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[84] The nature of this balance of financial terror has been clearly noticed also by Peterson (2004a): "the skeptics tell us not to worry because governments around the world will never allow a crisis to happen. They would intervene massively to support the dollar by buying dollars. Well, they might try. But foreign governments might well lose their nerve before investing vast sums of their taxpayers' money into declining dollar denominated assets. And once the mood of global investors changes decisively, there is not much that governments can do even if they had nerves of steel …. The skeptics are right about one thing: most governments have no great desire to correct the current imbalance of global trade and finance. Foreign leaders are as eager to stimulate their economies with a bustling export sector as US political leaders are to keep running budget deficits at low interest rates. It's an ugly but politically convenient arrangement." (page 94).

[85] The role that Europe and Japan could play in the global rebalancing is not clear as potential growth is relatively low in this region because of demographic and structural factors. Also, as argued by Obstfeld and Rogoff (2004), faster growth outside of the U.S. helps the U.S. current account adjustment only if it is concentrated in the non-trade sector; faster productivity growth in the traded good sector exacerbates the U.S. external adjustment problem as it leads initially to a larger U.S. current account deficit.

[86] Magnus (2004) estimates that between 1992 and the end of 2004, U.S. domestic demand increased by more than 50%, while domestic demand in U.S. trading partners increased by less than 25%. Growing US demand consequently supported both the US economy, and, through a rising trade deficit/ negative net exports, also the world economy. This process needs to reverse itself: US domestic demand needs to grow more slowly than global domestic demand, something that would be best achieved through an increase in domestic demand in U.S. trading partners.

The policy mess created by large U.S. fiscal deficits, meager private savings and resulting dependence on cheap external financing – and Asia's equally ingrained dependence on the U.S. to help drive its own growth -- cannot be solved overnight. The scale of the needed adjustment is just too big. The good news of our analysis is that it is possible to conceive of a scenario where the U.S. begins to adjust before it is forced to adjust, and Asian economies gradually reduce their dependence on export led growth. Even in this scenario, the U.S. still will see its external debt to GDP ratio rise significantly, to about 50% of GDP and the U.S. debt to exports ratio also rise to levels that would be alarming for any country that is not able to borrow from abroad in its own currency. But that is why the adjustment process needs to start now: the quicker the adjustment process begins, the higher the odds that the adjustment process will take place gradually. It is far better for the U.S. debt to GDP ratio to gradually rise to 50% of GDP and stabilize than for the U.S. debt to GDP ratio to surge to 50% before triggering a crisis.

The policy mess also cannot be solved without fiscal retrenchment in the U.S.. If the dollar depreciates, *expenditure switching* channels will kick in and work to improve the trade balance. But the impact of expenditure switching alone would not be overstated: the dollar has depreciated significantly from its peak in 2002, but this has not led so far to an improvement of the U.S. current account deficit – in no small part because of the expanding U.S. fiscal deficit.[87] Eventually addressing the U.S. current account will require some *expenditure reduction* in the U.S. That could happen entirely through a fall in private consumption and investment. A falling dollar will eventually lead to expectations of further falls in the dollar and higher real interest rates, and higher real interest rates in turn will crimp the expansion of the U.S. economy: think less consumer credit, higher rates on mortgages, negative home equity, falling assets prices and a hard landing for a U.S. economy now expanding on the back of cheap credit. It would be far better is some of the needed "expenditure reduction" came about from fiscal adjustment. The relatively smooth adjustment in the U.S. current account deficit in the second half of the 1980s came about not just because the dollar fell in real terms, but also because the Reagan II administration reversed some of the tax cuts of the Reagan I administration and introduced meaningful controls on government spending.

Policymakers in U.S. and Asia need to recognize that letting the current imbalanced disequilibrium continue poses unacceptable political and economic strains. The United States special position in the global financial position means that it can attract financing on exceptionally favorable terms. It also increases the risk that other countries will not exert the necessary discipline before it is too late, particularly since the economies of many of our creditors would suffer in the near term from adjustments that are needed to improve the United States' long-term creditworthiness. However, in the long-term, the needed adjustments are also in the interest of the United States major creditors – including Japan, China and the other Asian economies. It does not make sense to

[87] This does not mean dollar depreciation has had no impact. Had the Euro remained at 0.85, the trade deficit would no doubt be large now – dollar depreciation from the 2002 highs was needed to undo some of the dollar's 2001 appreciation and to prevent the deficit from expanding even faster than it did. Moreover, as a result of J-curve effects, the full impact of the dollar's depreciation at the end of 2003 against the Euro and other currencies has yet to show up in the trade balance.

produce only to export, and to build up external assets that are never spent. A rebalancing of Asian demand with greater reliance on domestic demand (consumption) and less reliance on foreign demand (exports) is consistent with an increase in Asians real income and welfare, just as a rebalancing of U.S. growth so that it based more on net exports and less on consumption growth is necessary for the long-run health of the U.S. economy.

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