GLOBAL IMBALANCES

1. Introduction

The large and persistent current account deficits run by the United States from the second half of the 1990s have generated widespread concerns about the sustainability of current macroeconomic imbalances at the global level. To what extent is the US trade deficit sustainable? If not, what will global adjustment require? In particular, to what extent will the dollar depreciate? Will adjustment lead to global recession? What are the appropriate fiscal, monetary and financial policies to minimise the risks of disruption? Many observers (for example, Roubini and Setser 2004a,b, 2005a,b) fear that the correction of global imbalances could lead to a period of disorderly adjustment, characterised by turmoil in currency and asset markets, a slowdown in economic activity, and ultimately large welfare costs for the world economy as a whole.

Currently, large external deficits in the US are matched by large surpluses in Japan, Asian emerging markets, oil producing countries and a few European countries. However, the *euro area* as a whole is close to external balance. In light of this, the question is whether adjustment of global imbalances will affect Europe only marginally, since the heart of it will consist in rebalancing the position of the US vis-à-vis the surplus regions, especially Asia.

The goal of this chapter is to review the current debate on the causes and nature of global imbalances, assess policy options currently on the table, and more specifically discuss the implications of global adjustment for the European economy and European policy-making.[1] We argue below that despite the close-to-external-balance position of Europe a rebalancing of the US deficits will create major policy challenges to European policy-makers.

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[1] Recent theoretical, empirical and policy-related contributions to the debate on global imbalances can be found on the website 'Current Account Sustainability of Major Industrialized Countries' at the University of Wisconsin, Madison, http://currentaccount.lafollette.wisc.edu/.

2. Basic facts about global imbalances

We begin by considering three facts defining the nature of current global imbalances: the size and persistence of the US current account deficit; the rising share of official capital flows from emerging markets and Japan, and the increasing importance of "valuation effects" of exchange rate and asset prices movements in determining the real burden of a country's external debt. Throughout this chapter we will complement data from traditional sources (such as OECD and IMF) with the dataset on the "Wealth of Nations" computed by Lane and Milesi-Ferretti (2006). The distinctive feature of this data set is that (estimated) capital gains and losses on the external portfolios of financial assets and liabilities have been taken into account when calculating net foreign asset positions.

2.1 The size and persistence of the US current account deficit

The single most quoted fact characterising global imbalances is the size of the US current account deficits (relevant definitions are presented in Box 2.1). The US current account deficit grew from 1.6 percent of US GDP in 1997, to 4.2 percent in the year 2000. It kept increasing afterwards: at the time of writing, the 2005 deficit is estimated at above six percent of US output, around 800 billion dollars.

To get a sense of how large the US current account deficit is, consider that the US has about 110 million households: thus, an 800 billion dollar deficit means that, during 2005, the net external debt per household has increased by 7,200 dollars!

As a result of current account deficits, and changes in the values of US assets and liabilities, the estimated value of US net debt at the beginning of 2004 was around 23 percent of US GDP. If the US keeps borrowing at the current rate, the external net debt of the US could approach 100 percent of GDP in about a decade.

Figure 2.1a shows the evolution of the current account balance in percentage of *world* GDP

Box 2.1

External imbalances, the current account balance and the balance of payments

To understand global imbalances, it is useful to keep in mind that there are three ways of looking at the current account balance. *First*, the current account balance of a country is the sum of the trade balance (exports minus imports of goods and services), income from foreign assets held by residents (net of interest paid on the country's foreign liabilities), and net labour income from residents working abroad:

Current account balance = Trade balance (goods and services) + Income from net foreign assets + Net labour income

This accounting relation makes it clear that the accumulation of foreign wealth by a country is related to its capacity to generate positive net exports of goods and services, income from capital lent abroad and labour services supplied by domestic residents employed in a foreign country. Movements of the current account are usually dominated by the trade balance component, but not to the extent suggested by national accounts. The reason is that official statistics include income payments from net foreign assets, but do not account for capital gains and losses on such assets. At times, these may be substantial (throughout this chapter we use the dataset constructed by Philip Lane and Gian Maria Milesi-Ferretti, who reconsider current account balance and portfolio positions accounting for capital gains and losses on foreign assets and liabilities).
Second, the current account is also equal to the difference between national saving and investment:

Current account balance = Saving – Investment = Private saving + Public saving – Investment

This accounting relation makes it clear that external imbalances result from intertemporal choices by firms and households regarding how much to consume and invest in the current year as opposed to future years, as well as by government decisions about the size of the budget deficit (that is, the time profile of taxes and expenditure). Clearly, for the world economy as a whole, saving must equal investment, although the sum of current account balances rarely adds up to zero because of statistical errors.
Third, the balance-of-payments identity equates surpluses in the current account balance to the accumulation of net foreign assets, recorded in the capital account:

Current account balance = Increase in private net foreign assets + Increase in official *net* reserve holdings
(official reserve settlement balance)

This identity makes it clear that current account deficits must be financed by capital inflows and/or changes in the stock of reserves held by monetary authorities. So, a current account deficit by one country generates a demand for foreign capital, which must be matched by the portfolio decisions of foreign private agents and public institutions to acquire assets issued by that country.
The above are not three alternative views of the current account balance; they are three identities.
A country is solvent when, at the market interest rate, the present discounted value of future surpluses of the balance of trade in goods and services and net income from labour supplied abroad, is not smaller than the current net value of liabilities:

value of net foreign liabilities ≤ Present discounted value of surpluses in the current account excluding income from net
foreign assets

So, if a country is currently running current account deficits and is a net debtor, foreign lenders expect that country to generate positive net exports (in trade and services) and net labour income in the future, corresponding to a positive difference between net saving and investment. If this were not the case, some creditor country must be willing to finance the entire interest bill by the debtor country in the indefinite future. The debtor country would be playing a so-called Ponzi game: it would try to finance the interest bill on an ever-increasing stock of debt by further borrowing.
In the international financial markets, the supply of assets by a borrower must be matched by the world demand for them. Sustainability of a country's debt cannot be defined independently of the equilibrium structure of international portfolios. In particular, given demand and supply conditions, the equilibrium price at which a country's debt is traded determines the risk premium that a country must pay on its external liabilities. The main challenge in understanding sustainability of external debt thus consists in understanding the factors underlying the desired portfolio composition by international investors.
Recent episodes of financial and currency crises have arguably pointed to the possibility that frictions in financial markets may cause sudden changes in asset demands and the emergence of binding constraints limiting the extent to which a country can borrow. This could be the case, for instance, if co-ordination problems among international investors long in short term debt issued by a country lead to liquidity runs similar to bank runs. When markets co-ordinate on an equilibrium characterised by a run, the debtor country is forced to come up quickly with external resources to close any "financing gap" which may result. International runs (panics) can easily have potentially high costs in terms of consumption, output and overall welfare for international debtors.

between 1996 and 2004, for the US, the euro area, Japan, Switzerland and the Nordic countries, Asian emerging markets, and oil producing countries. In terms of world GDP, the US external deficit grew from less than half a percent before 1997 to 1.6 percent in 2004.

Figure 2.1a emphasises that all other regions shown have recently been in surplus. In 2004, the US deficit was as high as 668 billion dollars. The combined surplus of Asian emerging markets and oil producing countries (358 billion dollars) accounts for more than 50 percent of it. Japan's surplus (172 billion dollars) accounts for about 25 percent; the surplus by Norway, Sweden and Switzerland (141 billions) accounts for another 20 percent. The small positive current account surplus for the euro area accounts for the remaining five percent of US deficit.
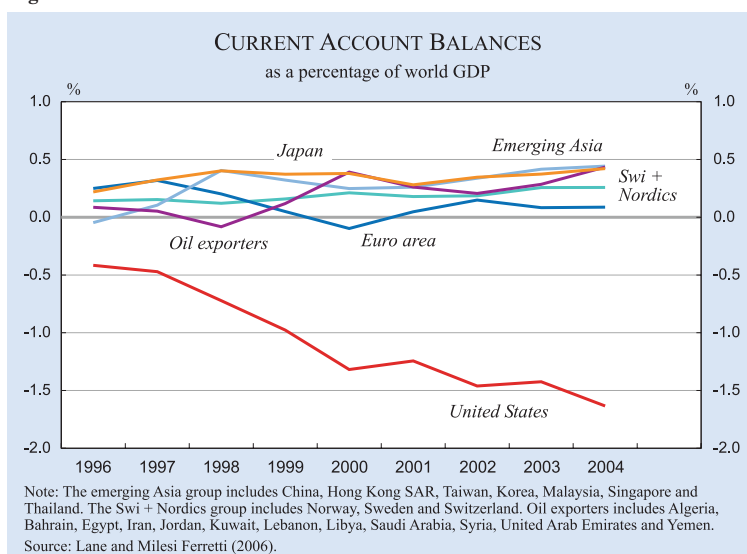
Figure 2.1a

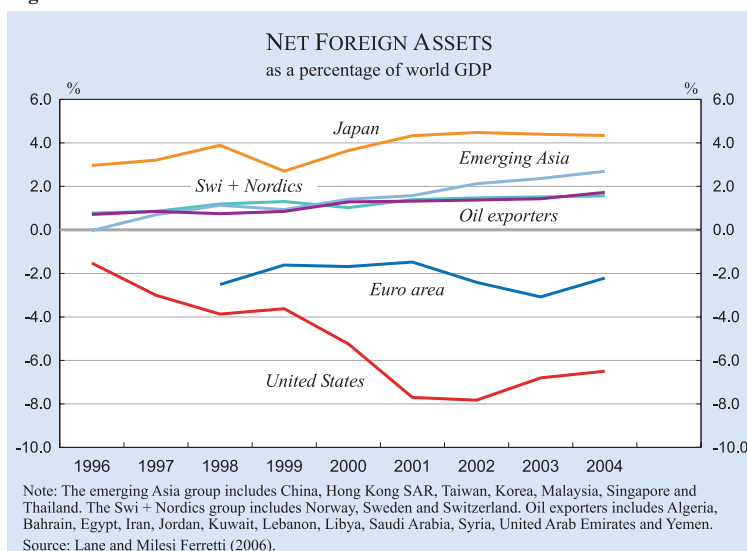CURRENT ACCOUNT BALANCES
as a percentage of world GDP

Note: The emerging Asia group includes China, Hong Kong SAR, Taiwan, Korea, Malaysia, Singapore and Thailand. The Swi + Nordics group includes Norway, Sweden and Switzerland. Oil exporters includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Saudi Arabia, Syria, United Arab Emirates and Yemen.
Source: Lane and Milesi Ferretti (2006).

Figure 2.1b

NET FOREIGN ASSETS
as a percentage of world GDP

Note: The emerging Asia group includes China, Hong Kong SAR, Taiwan, Korea, Malaysia, Singapore and Thailand. The Swi + Nordics group includes Norway, Sweden and Switzerland. Oil exporters includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Saudi Arabia, Syria, United Arab Emirates and Yemen.
Source: Lane and Milesi Ferretti (2006).

Table 2.1
Private and official financing of the US current account deficit
(in billion of dollars)

	1997–1999	2000–2002	2003–2004
Current account deficit	218	427	594
Total net capital inflows	176	462	573
Net private inflows	160	404	233
Of which:			
Direct investment	34	38	– 109
Portfolio investment	126	366	343
Net official inflows	15	59	340

Source: Own calculations based on Congressional Budget Office (2005).

From a global perspective, the US is borrowing resources from all the other five regions in the diagram, including regions at a relatively early stage of industrialisation.

However, the US is not the only industrial country to run a current account deficit. Persistent imbalances are also run by Australia and New Zealand (together they borrowed 45 billion dollars in 2004), and by a few countries in the euro area. The deficits by Greece, Portugal, Spain, and the United Kingdom altogether totalled 124 billion dollars in 2004. Italy's deficit has also been increasing steadily, reaching 15 billion dollars in 2004, and showing no sign of reduction in 2005. While deficits by some of these countries are not too distant from the US if, for instance, net borrowing is scaled by the size of the population of GDP, their sizes are typically small in absolute terms.

2.2 International reserves accumulation and the rising share of official financing after 2000

An important change in the composition of external financing of the US deficit occurred around 2000. From 1997 to 2001, that is, between the Asian crisis and the end of the period of asset market exuberance, private investors mostly financed the US deficits as they systematically rebalanced their portfolios in favour of US dollar-denominated assets, especially equities. The importance of private inflows has diminished substantially since 2001.

As shown in Table 2.1, in the period 1997–1999 average net capital inflows into the US were as high as 176 billion dollars per

Table 2.2
**Official reserves in per cent of total foreign liabilities
for developing countries**

1980–84	14.7
1985–89	13.5
1990–94	15.6
1995–99	18.6
2000–04	26.4

Source: Own calculations based on Congressional
Budget Office (2005).

year: private inflows accounted for 90 percent of the total. In 2003 and 2004, average net capital inflows into the US were as high as 573 billion dollars: the share of private capital dropped to 40 percent. In terms of net flows, the US external imbalance is now mainly financed through foreign official lending, in large part corresponding to the build-up of official reserves by five Asian economies: Japan, China, Hong Kong, Taiwan and South Korea.

The above observation stresses a second striking dimension of current global imbalances, that is, the high level of international reserves in the form of dollar assets. Official reserves held by the five Asian countries mentioned above (consisting to a large extent of dollar-denominated assets) grew from 1.16 trillion dollars in 2000 to 2.66 trillion dollars in 2004. China is reported to own reserves up to 800 billion dollars in the last months of 2005 (see Genberg et al. 2005 for a detailed analysis of reserves policies).

From a more general perspective, Table 2.2 and Figure 2.2 show the growth of total official reserves by developing countries in percent of their liabilities: official reserves have grown from 15 percent in the

1980s, to an average of 26 percent after the year 2000, up to 32 percent in 2004. Now, developing countries pay a high risk premium on their liabilities but earn a low interest rate on their official reserves. Since in 2004 foreign official reserves accounted for about one third of developing countries' foreign liabilities, one out of three dollars that relatively poor countries borrowed from rich countries at high interest rates was thus lent back to rich countries at relatively low interest rates. Rodrik (2006) estimates that the financial cost of holding reserves is now currently close to one percent of developing countries' GDP.

2.3 Financial globalisation and the increasing importance of capital gains and losses due to exchange rate movements

The emergence of external imbalances at the end of the last decade occurred in the context of a strong expansion of cross-border holdings of financial instruments. Indeed, in terms of world GDP, the total stock of foreign assets (= liabilities) in the world is currently above 120 percent, twice as much as at the beginning of the 1990s.

So, while the US current account deficit is large in terms of the US GDP, it is small relative to the stock of US foreign assets. This point is clearly shown by Figure 2.3, plotting the US current account between 1970 and 2004 together with the stock of US gross external assets and liabilities. In 2004, the US "owed" more than 100 percent of its GDP to foreigners, but also owned claims to foreign output equivalent to about 80 percent of its own output. The difference is the US net debt.

The large expansion of gross portfolio holdings is responsible for a third, important dimension of current global imbalances. The change in net external debt between two dates depends not only on the *flow* of net exports during the period but also on changes in the value of the country's foreign assets and liabilities, reflecting both asset price and exchange rates movements: the larger the *stock* of foreign assets and liabilities, the larger are these "valuation effects". Valuation effects in the asset markets were clearly much smaller in previous episodes of current account ad-
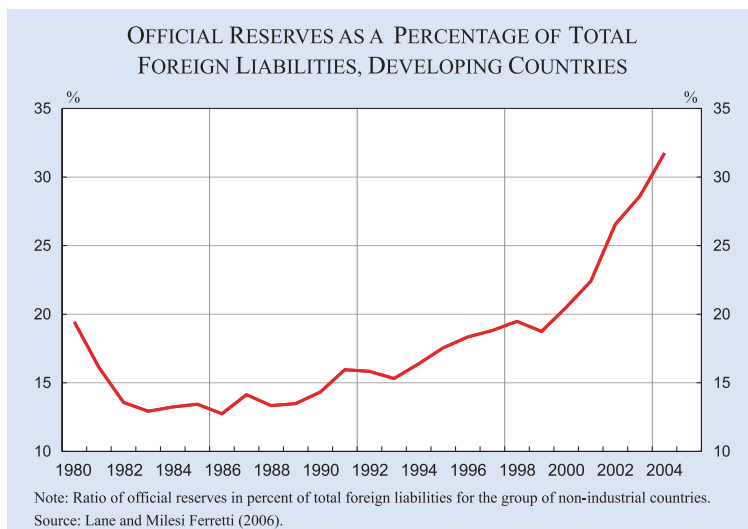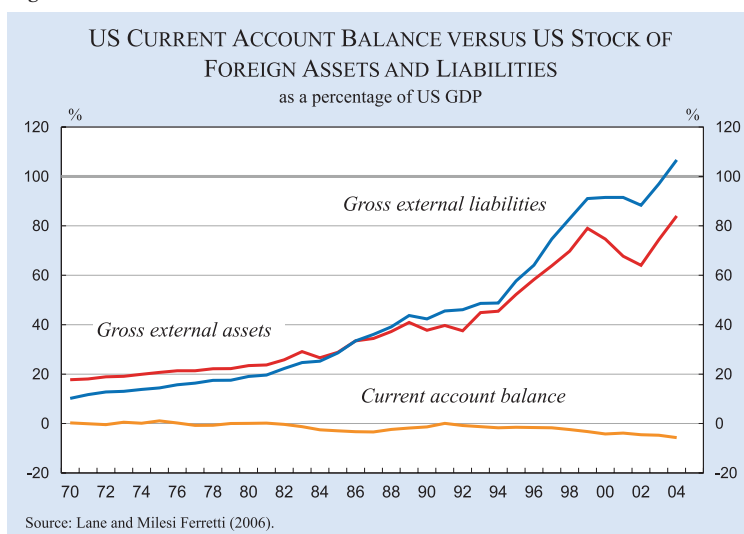
Figure 2.2

OFFICIAL RESERVES AS A PERCENTAGE OF TOTAL
FOREIGN LIABILITIES, DEVELOPING COUNTRIES

Note: Ratio of official reserves in percent of total foreign liabilities for the group of non-industrial countries.
Source: Lane and Milesi Ferretti (2006).

Figure 2.3

US CURRENT ACCOUNT BALANCE VERSUS US STOCK OF
FOREIGN ASSETS AND LIABILITIES
as a percentage of US GDP

Source: Lane and Milesi Ferretti (2006).

justment, before capital liberalisation had led to large cross-border holdings of financial assets. Paradoxically, in a financially globalised economy, a country with a balanced current account may be subject to large swings in its net external position, because of price fluctuations in financial and currency markets.

Figure 2.1b shows the evolution of net foreign assets for the same regions as in Figure 2.1a. As mentioned above, the figures underlying this graph are from the dataset on the "Wealth of Nations" by Lane and Milesi Ferretti (2006), specifically built to account for capital gains and losses on the external portfolios. Figure 2.1b shows that, in the second half of the sample period, both the euro area and the US had negative net asset positions (they are net debtors), whereas the other macro regions had positive net asset positions (they are net creditors in the world economy).

Comparing Figures 2.1a and 2.1b, one can appreciate an apparent anomaly in the evolution of the net foreign asset position of the US and the euro area after the year 2002. After 2002, the current account of the US is negative and large, yet its foreign asset position was stable, even improving. The euro area has been running a surplus, yet its foreign asset position has worsened.

This observation provides a striking illustration of the effects of capital gains and losses from exchange rate movements on external imbalances. The US typically borrows from international markets by issuing dollar-denominated assets but lends abroad mostly by acquiring equities and foreign-currency denominated

bonds. About two-thirds of US foreign assets are denominated in foreign currency. Because of this particular currency composition of the US external portfolio, a falling dollar has an automatic stabilising effect on the real value of the US net foreign debt. Dollar depreciation leaves the dollar value of US foreign liabilities unaffected but raises the dollar value of US foreign assets: overall, the US owes less to the rest of the world in terms of real resources (see the discussion in Tille 2003).

To get a sense of the potential magnitude of these effects, recall that, at the end of 2004, US gross foreign assets were about 80 percent of US GDP. As two third of these were denominated in foreign assets, a 10 percent depreciation of the dollar would reduce US net debt by 0.1 ∗ 0.8 ∗ 2/3, equivalent to more than five percent of US GDP: approximately the size of the US external deficit![2] Note that these gains are increasing in the size of US gross assets, independently of US gross and net debt.

The above net gains are however calculated *ex post,* that is, for given stocks of assets and liabilities. The gains are clearly smaller if currency depreciation is anticipated by financial markets. If this is the case, *ex ante* US interest rates would rise relative to foreign ones. This would raise the growth rate of liabilities in terms of GDP, so that depreciation-related capital gains on US assets would be at least in part compensated by a higher stock of US gross debt. To complete our back-of-the-envelope calculations, suppose that, at the beginning of 2004, markets attached a 25 percent probability to a ten percent fall in the value of the dollar by the end of the year. Abstracting from any risk premium, one-year interest rates on US liabilities would have increased by 2.5 percentage points. Now, at the beginning of 2004 the stock of US gross liabilities was close to 95 percent of GDP (clearly higher than the stock of assets). Assuming for simplicity that all US liabilities had one-year

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[2] The mechanism benefiting the US is the same (but with an opposite sign) as the mechanism raising financial and macroeconomic risks in emerging markets: as these borrow by issuing debt denominated in foreign currency, domestic devaluation in response to negative shocks magnifies macroeconomic adjustment problems by raising the real burden of external debt (see Chapter 6 of the 2004 EEAG Report).

Box 2.2

Real return differentials in favour of the US

The US enjoys an important advantage in international capital markets. Historically, the rates of return earned by the US on its external assets are above the rates of return the US pays on its liabilities. For instance, taking five-year averages, the return differentials in favour of the US between 1995 and 2004 vary between one and approximately eight percentage points.

What explains these positive return differentials? Potential explanations include the following. First, a large share of US foreign assets consists of equities, while US liabilities consist mostly of debt instrument with a large short-term component: the US benefits from the fact that equities earn a premium over bonds. Second, since dollar-denominated bonds are traded in deep liquid markets, they earn a liquidity premium: the US can borrow at particularly low interest rates. Third, dollar monetary assets are an important component of international liquidity, providing the US with seigniorage revenue. Because of positive rate of return differentials, total income from net foreign assets earned by the US was still positive in 2005, even though the country is a large net debtor in the world economy. This may soon change as the stock of US liabilities keeps increasing.

The fact that the US has long earned a positive income from its net foreign assets has recently been used to suggest the following provocative thesis: because an international debtor should pay an interest income to its creditor; the fact that the US is actually receiving income from abroad means that it cannot be a net debtor. By way of example: in 2004, the US earned 300 billion dollars. Capitalised at 5 percent, this means that the US should actually have positive net foreign wealth of 600 billions (see Cline 2005 and Hausmann and Sturzenegger 2006).

But how can the US be a net foreign creditor after running large current account deficits for so many years? Hausmann and Sturzenegger call the difference between recorded US net debt and their estimate of positive US net wealth "dark matter". Dark matter is a colourful label pointing to under-reporting of US exports of knowledge (via foreign direct investment), liquidity (the US issues widely traded assets) and insurance (dollar assets are sought after as official reserves). The existence of "dark matter" implies that the value of US foreign assets and liabilities must be well above their market value (estimated by Lane and Milesi-Ferretti 2006). Does "dark matter" exist? If it does, there would be no need for global adjustments of the type discussed in the text. Unfortunately, the calculations underlying estimates of "dark matter" completely ignore the basic fact that different assets can pay different rates of return, depending on their risk and maturity. Why should one apply the same rate of capitalisation (5 percent) to all the assets and liabilities in the US external portfolio? Moreover, the debt figures presented in this chapter are all estimated taking into account market valuation in stocks and bonds markets, as well as exchange rates in the currency markets. Why should one distrust market prices completely, and put one's faith on a simple capitalisation exercise at an arbitrary rate of return?

maturity, higher interest rates would have raised the stock of US gross debt by an extra 2.4 percentage points, halving the net ex-post gains from dollar depreciation.[3]

Moreover, it is well known that US foreign assets have a large equity component. This component exposes the US to market risks, due to sizeable changes in asset prices that may accompany rebalancing. In fairly extreme scenarios of the adjustments (for example, a worldwide recession), it is likely that there would be significant declines in equity values. Then, for a given exchange rate, US assets abroad would fall in value relatively more than foreign investors' holding of US assets. This would seem to offset some of the advantages that the US has from exchange rate depreciation.

3. What has caused the current imbalances?

There are a number of views on the causes of current imbalances, with quite different implications for the need for corrective policy measures and different predictions about the costs of adjustment. In this section we briefly discuss a representative set of these theories, grouping them under four main headings depending on their focus: insufficient US savings, productivity growth differentials, excessive savings outside the US, and exchange rate policies pursued by Asian countries.

3.1 Low US saving

A widespread view attributes the persistent US current account imbalances to structural factors and policies lowering US national savings.

As is well known, private savings in the US have been trending downward for quite some time. Possible factors likely to have influenced this trend include population ageing; structural changes in financial markets, boosting the use of credit cards and consumer credit; and, in the framework of deregulated credit markets, the recent strong dynamics of housing prices.

Last, but not least, private spending in the US has long been sustained by easy monetary policy. While the US monetary stance has been progressively tightened in 2005 (see Section 1.2 and Figure 1.9 in Chapter 1 of this report), long-term interest rates have remained low. For this reason, and because of tax advantages benefiting mortgages, the US housing market remained overall strong through 2005, helping to offset the demand effect of the monetary contraction.[4]

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[3] When market expectations anticipate depreciation, the size of net gains also depends on the maturity structure of debt.

[4] Some sign of house price stabilisation has been detected throughout the year (see the Economist 2005). House prices have been high and rising through the last few years also in some of the other industrial countries that, like the US, have a persistent current account deficit. This applies to Australia, New Zealand, Spain and the UK. See also Chapter 5 of the 2005 EEAG Report.

Box 2.3

Useful exchange rate and international relative price definitions

The *nominal exchange rate* is the price of one currency (the dollar) in terms of another (the euro). In January 2006, one euro is worth approximately 1.20 dollars. An increase in this figure would correspond to a nominal appreciation of the euro (one euro buys more dollars), that is, a nominal depreciation of the dollar. The external value of a currency can be calculated with reference to many currencies. In this case one talks of a multilateral (as opposed to a bilateral) exchange rate. Multilateral effective exchange rates are calculated as weighted averages of bilateral exchange rates (the euro against the dollar, the yen, the sterling pound etc.), weighted by importance of foreign trade with different trade partners. Alternative weighting schemes can be based on GDP or financial portfolios.

The *real exchange rate* is the price of consumption in one country relative to the price of consumption in another country. A real depreciation (or a depreciation in real terms) indicates that the consumption basket in one country become less expensive relative to that in another country (or group of countries). According to its definition, the real exchange rate is calculated using consumer prices. As an indicator of competitiveness, it is sometimes calculated using producer prices or labour costs (usually per unit of product)..

The consumer price index includes the price of both goods that are traded internationally and goods that are not traded internationally (commonly refereed to as non-tradables or non-traded goods). A good is not traded internationally when, given technology and relative prices, its value is small relative to transportation and trade costs, so that its shipment abroad is not economically viable. Given the price of tradable goods, a fall in the price of non-tradables in a country (which lowers the domestic consumer price index) implies a real depreciation (that is a depreciation of the real exchange rate).

The *terms of trade* are the price of exports relative to the price of imports. The terms of trade worsen, or deteriorate, when the price of imports rises, or the price of exports falls.

cuts which the Bush administration has been struggling to make permanent. While current tax cuts mainly benefit current generations, future generations will have to service the interest bill on the higher domestic and external debt. The argument of efficient tax smoothing in the face of temporary spending hikes does not apply. Rather, what is at stake is re-distribution across income classes and across generations in a direction that amplifies long-run fiscal and macroeconomic concerns about population ageing (see Chapter 4 of the 2005 EEAG Report).

US private savings have, however, followed a rather stable pattern, compared to US public savings, which have deteriorated markedly since 2000 (see Chapter 1 of the report). The relaxed fiscal policy adopted by the Bush administration has been blamed for worsening the external position of the country, when other factors (essentially, exuberant expectations in the asset market) were no longer influencing domestic spending and international investment. Recent imbalances would thus validate the "twin deficits" hypothesis, that is, the idea that fiscal shocks raising the budget deficit also raise the current account deficit.

An important question is whether the recent US budget and current account deficits are efficient ways to finance the costs of the wars in Afghanistan and Iraq, as well as the costs of dealing with terrorist threats and unexpected events such as the Katrina hurricane in 2005. Through domestic and foreign borrowing, US residents can in fact smooth their consumption and investment in the case of government spending hikes, avoiding highly distortionary peaks in tax rates.

The argument of tax and consumption smoothing has strong theoretical foundations. Yet the implied benign view of the US external imbalance is not warranted. In particular, the argument disregards the basic fact that most of the US budget deficits result from tax

The view attributing external imbalances to low public savings in the US has been recently challenged by some researchers, who point out that fiscal shocks and autonomous changes in spending appear to have only limited quantitative effects on the current account. According to that argument, the impact of fiscal shocks on US investment and saving is so high that at the margin only 20 cents out of each deficit-financed dollar translates into excess demand for foreign imports (see Bussière et al. 2005, Chinn and Ito 2005, Erceg et al. 2004 and Ferguson 2005 among others). Some authors go as far as to question the validity of the "twin-deficit hypothesis" altogether (see Kim and Roubini 2003).

However, even if current fiscal changes that increase budget deficits had no sizeable contemporaneous effects on the current account, budget deficits would still have important effects on the sustainability of the US current account. As argued by Corsetti and Mueller (2005), the return to capital in an open economy generally responds to fluctuations in the real exchange rate: fiscal shocks leading to real appreciation lower the return to current investment and hence cause crowding-out effects. To the extent that fiscal deficits crowd out private investment, a lower stock of capital in the future would reduce the ability of the US economy to meet its external interest bill without reducing domestic consumption. In other words, consumption of goods or leisure would have to be cut in the future to service foreign debt.

Thus, whether or not a policy correction to the US fiscal stance has an immediate impact on the US external trade, greater fiscal discipline would surely help reduce imbalances in an intertemporal perspective.[5]

3.2 Expectations of sustained US productivity growth

A different argument emphasises expectations of sustained productivity growth differentials in favour of the US. Expectations of high productivity growth have arguably played an important role in generating strong US domestic demand in the second half of the 1990s, while making investment in the US relatively attractive to foreigners. The question is whether and to what extent this factor is still important.

We have seen in the previous section that private capital inflows into the US have fallen after 2000. As shown by Table 2.1, the average net inflow of foreign direct investment actually turned negative after 2003, while foreign demand for US equities levelled off, mostly because of a shift in the demand by Europeans (Congressional Budget Office 2005). Figure 2.4 shows that, on balance, the stock of US net equity and cumulated FDI positions decreased rapidly in the 1990s and became negative after 2000; since then, however, it has been increasing again. This evidence is inconsistent with the hypothesis that international investors are currently "chasing investment opportunities" in the US, motivated by superior productivity performance.
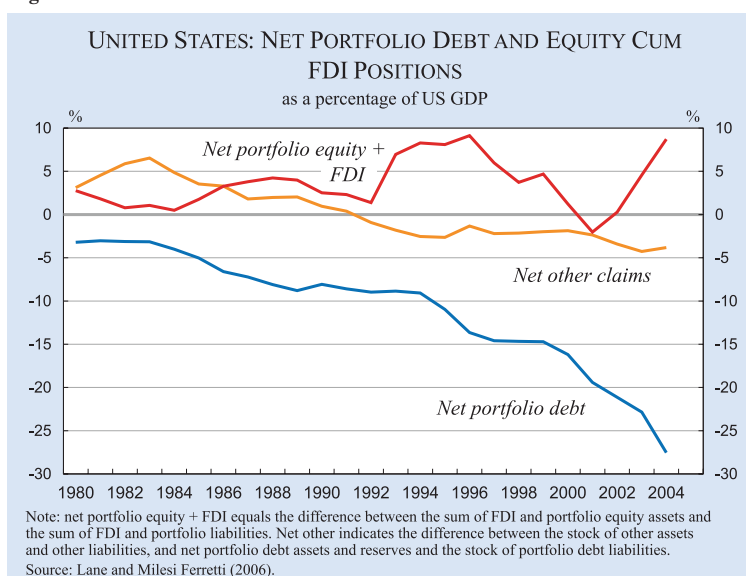
Nonetheless, expectations of high productivity and income gains in the future may be a factor underlying the low saving rates (discussed above), a point

stressed by Ferguson (2005). In the same vein, Engel and Rogers (2005) focus on the US share in output produced by advanced countries (including the G7 plus Switzerland, Sweden and Norway).[6] This share fluctuates between 38 and 40 percent before 1990; it then trends upward, reaching 44 percent in 2004. Most importantly, current forecasts imply a further increase along the same trend. According to the calculations by Engel and Rogers, the US is expected to account for 49 percent of developed countries output by 2017. In light of such forecasts, current account deficits up to five to seven percent of US GDP may be rationalised in terms of efficient consumption smoothing: US households are simply taking advantage of borrowing opportunities to consume part of their anticipated future income gains now.

The view that US external deficits are essentially driven by expectations of high future growth in income has two important policy implications. First, it is not appropriate to talk about "imbalances", as trade flows are in fact balanced in an intertemporal perspective. Running a deficit today, US residents are increasing current expenditure by borrowing resources from foreign residents, in exchange for future resources capitalised at the market interest rate. Second, little or no dollar depreciation in real terms may be required for some time. In the Engel and Rogers' version of conventional open macro analysis, the dollar is strong (in real terms) during the phase of high external deficits, and will weaken once the US share in the advanced countries' GDP stabilises. As stressed by these authors, such stabilisation will happen quite a few years from now. Moreover, when it comes, there would be nothing dramatic in the real dollar depreciation that will accompany the US current account reversal.[7] But, as mentioned above, it is unclear why the optimistic forecasts of future growth driving

Figure 2.4

UNITED STATES: NET PORTFOLIO DEBT AND EQUITY CUM FDI POSITIONS
as a percentage of US GDP

Note: net portfolio equity + FDI equals the difference between the sum of FDI and portfolio equity assets and the sum of FDI and portfolio equity liabilities. Net other indicates the difference between the stock of other assets and other liabilities, and net portfolio debt assets and reserves and the stock of portfolio debt liabilities.
Source: Lane and Milesi Ferretti (2006).

[5] An interesting analysis discussing US fiscal policy in relation to the possible asset market bubble in the 1990s is Kraay and Ventura (2005).
[6] Engel and Rogers (2005) carry out their analysis in terms of net GDP. This is derived by subtracting investment and government final consumption of goods and services from output. In intertemporal models of the current account, net GDP measures the flow of resources that households can devote in each period either to current consumption or to the acquisition of foreign assets to finance future consumption.
[7] Such a portfolio perspective on dollar adjustment dynamics is discussed by Blanchard et. al (2005).

US consumption would not also cause foreign direct investment into the US and/or acquisition of US equities by foreigners.

Most importantly, current expectations about US differential growth may be too optimistic (after all, expectations systematically underestimated prospective US growth rates in the early 1990s). If and when expectations are revised downwards, restoring US external balance (in an intertemporal perspective) would require a sharp correction of spending plans, possibly implying large movements in exchange rates and relative prices (as discussed later on in this chapter). Note that the above view completely downplays the role of US government budget deficits in generating the current account deficits.

3.3 Excess saving outside the US: the "saving glut" or "investment drought" view

Another view, which also downplays the idea of insufficient US savings, interprets the US current account imbalance as the mirror image of excess supply of saving in the rest of the world: according to Bernanke (2005), the US current account deficit is the counterpart of a global saving glut. This corresponds to an increase in saving in excess of investment in emerging markets after the series of currency and financial crises throughout the 1990s. The glut is magnified by rising surpluses in oil-producing countries that benefit from high oil prices.

The saving glut is essentially caused by "self-insurance" policies pursued by many emerging-market economies to minimise the risks of future crises and liquidity runs. In practice, many countries have pursued macroeconomic policies that turned external deficits into surpluses, while building extremely large stocks of international reserves.

One may object that excess saving in emerging-market economies could be matched by relatively small deficits in all industrial countries, rather than by a large deficit in one country only. To address this objection, the saving glut view points to differences in the macroeconomic, legal and institutional environment in which national financial markets operate: because of these differences, international investors perceive US assets to have higher "quality" than the assets of other countries. For instance, asset quality depends on the extent to which investors' rights are protected: since the US offers a high level of such protection, US assets are preferred by world savers looking for opportunities of portfolio investment and diversification. According to this view, the US deficits mainly depend on the fact that excess world savings are channelled preferentially to the US.

An obvious problem with this view is that while it can rationalise the increasing role of monetary institutions in providing financing to the US as a consequence of self-insurance policies pursued by many governments in emerging markets, it cannot explain the increasing disaffection of *private* investors towards US equities (see Table 2.1 and Figure 2.4). While the saving glut idea may have had some merit before 2000, it needs to be refined to fit recent global portfolio patterns.[8]

Moreover, some observers (notably Roubini and Setser 2004a,b and 2005a,b) emphasise that the saving-investment imbalance outside the US is to a large extent due to abnormally low investment rates: thus, it should be labelled an "investment drought" rather than a "saving glut" (see also the evidence in Chinn and Ito 2005). With the exception of China and a few other countries, investment rates have fallen markedly across emerging markets.[9] In South-East Asian economies, the drops have been as high as 10 percentage points of GDP from the peak in the first half of the 1990s. One may argue, however, that the rate of investment corresponding to those peaks was not sustainable (see Corsetti, Pesenti and Roubini 1999). Investment rates have also fallen in Japan and most noticeably in the euro area.[10] Low capital accumulation may be due to the need by many corporations to clean up their balance sheets after the financial turmoil around 2000 (International Monetary Fund 2005) or simply to "animal spirits" of entrepreneurs.

In either case, the "investment drought" view offers a potential explanation of the observed low levels of real interest rates. The standard textbook model predicts that an exogenous drop in investment demand indeed reduces the equilibrium rate of interest (by

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[8] Caballero et al. (2006) reconsider this issue in a model with three regions: a fast-growing US-type region, a slow-growing Europe-type region, and an industrialising region with exceptional growth opportunities, modelled to reflect Asian emerging markets. Notably, in the latter region, financial markets cannot supply quality assets because there are frictions generating constraints on asset supply. For this reason, in this region investment is mainly financed by firms' managers/owners, without the participation of savers. The model can do reasonably well in accounting for recent patterns of global financial flows. According to this analysis, both a slowdown in the Europe-type region and a crash in the asset market in the emerging-market region can cause an external deficit in the US-like region. Either shock produces a prolonged period of low real interest rates.
[9] See Chapter 2 of International Monetary Fund (2005) for a detailed analysis.
[10] Some of the investment fall can, however, be attributed to a secular decline in the relative price of investment goods.

how much depends on the interest elasticity of savings). As an implication, one may expect interest rates to rise as soon as investment picks up again.

3.4 Chinese economic policy and Asian currency pegs

The view that Asian emerging markets have substantially contributed to generating current global imbalances emphasises both a trade channel (related to the size of the Asian external surplus) and a financial channel (related to the increasing weight of official lending by Asian countries in international net capital flows).

The main focus is, however, on China's exchange rate policy and its strong influence on the policies pursued by the other emerging markets in Asia. Formally, China abandoned its inflexible peg against the US dollar in July 2005, when it switched to a managed float, allowing the renminbi to fluctuate inside a small band around the dollar parity (see Box 1.2 of Chapter 1 of this report). Despite such reform, the Chinese renminbi hardly appreciated through the second half of 2005. Reserve accumulation has kept outpacing the trade and FDI surpluses by a large amount.[11]

The dollar peg regime is an important element in China's strategy to achieve rapid industrialisation, which also includes strict capital controls de-linking the domestic financial and banking sector from the rest of the world, thus allowing Chinese authorities to pursue country-specific credit policies and retain some control over domestic monetary policy.[12]

Standard growth models predict that a financially closed economy (such as China), converging to the higher income level of industrial countries should generate high investment and saving rates (see, for example, Cuñat and Maffezzoli 2004). Indeed, Chinese investment and saving rates are high by international standards: official sources reported gross investment to be 43 percent of GDP in 2003 (recent GDP revisions, however, may lower this percentage significantly). Obviously, to generate external surpluses, China has engineered even higher saving rates.

As the Chinese economy has been growing at a sustained rate of around 9 percent per year, households can reasonably be expected to have a strong incentive to borrow against higher future income. How can extraordinarily high growth rates be reconciled with low consumption and excess saving? Traditional explanations point to credit policies pursued by Chinese banks, firmly directed towards the growth objectives of the government in terms of industrialisation and export. Recent views also stress that with the recent transformation of the business sector, Chinese employees face the need to finance their retirement, the education of their children, and health services, as state-owned companies no longer provide support in these areas (Chamon and Prasad 2006; Blanchard and Giavazzi 2005). With an increase in lifetime income uncertainty, high savings may correspond to an inefficiently high level of self-insurance. Finally, by worsening the country's terms of trade, undervaluation of the exchange rate reduces the purchasing power, and therefore the wealth of domestic households. Overall, a strategy of export-led rapid industrialisation appears to be accompanied by policies discouraging domestic (consumption) demand.

These considerations help address a rather puzzling feature of the Chinese dollar peg, that is, the extent to which Chinese authorities have managed to avoid overheating and relative price correction for so many years. Despite the high GDP growth rates, there has so far been little evidence of inflationary pressure and overheating leading to revaluation in real terms: in 2004 overall CPI inflation rose significantly (reaching a peak as high as 5 percent in the third quarter of the year), but it subsequently fell below 2 percent in 2005. According to available statistics, wages and non-traded goods prices do not show appreciable changes. As often argued, an important reason has been an extremely elastic supply of labour (see, for example, Dooley et al. 2005). But in light of the arguments above, structural factors and policies containing domestic demand have also played a role.

Overheating and inflation risk, however, is only one possible undesired effect of the Chinese exchange rate and export promotion policies. Price competitiveness as well as tax and credit incentives for exporting firms have arguably distorted the allocation of capital and employment. In this respect, some studies report that Chinese total factor productivity has fallen between the first and the second half of the 1990s. Blanchard and Giavazzi (2005) attribute such a fall mostly to misallocation, that is excessive investment in the

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[11] Dooley et al. (2003 and 2004) interpret the current international monetary and exchange rate regime with dollar pegs and large dollar reserve accumulation as a revised Bretton Woods regime. See Roubini and Setser (2005a) for a critical view.
[12] A weak currency feeds a strong external demand for Chinese products, encouraging investment, but it also raises prices of imported intermediate and capital goods. However, the bulk of infrastructure building is based on local and non-traded goods, and FDI flows have remained substantial.

export sector. The financial side of real distortions is excessive exposure of Chinese banks and financial institutions to low-return firms, whose profitability would be completely compromised were the exchange rate to appreciate. Many observers argue that the stock of non-performing loans by the state-owned Chinese banking system is already large: the persistence of distorted relative prices may bring it to quite dangerous levels. Rising financial risks imply a rising fiscal risk for the Chinese government.

The policy pursued by China and other Asian countries has global implications for world demand and international prices. High rates of Chinese growth have raised world demand for some capital goods as well as for commodities, especially energy, which are necessary to sustain the expansion of infrastructure and productive capacity. On the other hand, excessive saving (relative to investment) has limited the Chinese contribution to the world demand for consumption goods at large, possibly reducing the relative price of consumption in terms of investment goods. This has had a selective impact on the profitability of investment in industrial countries (countries specialised in light manufacturing and consumer goods have obviously suffered the most).

It is important to distinguish between long-run effects of the ongoing integration of China and other emerging markets into the world economy and the short- and medium-run effects of the exchange rate and macroeconomic policies described above. As regards the long run, classical trade theory offers precise predictions about the economic repercussions of integrating large regions with abundant labour and a small capital stock: as the global supply of labour (and especially of low-skilled labour) rises faster than global capital, the world economy will experience a fall in the relative price of (unskilled) labour relative to capital and a fall in the relative price of labour-intensive goods. The integration process could make unskilled workers in industrial countries worse off while making capital owners better off than would otherwise be the case (the policy issues implied by these movements were addressed in Chapters 2 and 3 of the 2005 EEAG report).

In the short and medium-run, most estimates of the equilibrium exchange rates between China and the rest of the world point to *undervaluation* of the renminbi in real terms: estimates vary between 20 and 40 percent. Undervaluation creates a cost advantage to Chinese exporters on top and above what is implied

by their comparative advantages but also keeps Chinese terms of trade abnormally low and distorts the internal relative price between traded and non-traded goods. A 20-40 percent real exchange rate appreciation would not wipe out export growth of China nor eliminate the need for adjustment in the production structure of industrial countries. Such a correction would nonetheless rebalance the Chinese macroeconomy in a decisive way.

There are several reasons to expect revaluation of the Chinese currency in the coming months. First, after a period of extraordinary expansion of China's manufacturing base, the benefit of further expansion may be low relative to the costs of allocation distortions (including environmental costs). Second, revaluation could prevent the build-up of protectionist pressures in the US, sheltering the Chinese government from charges of currency manipulation. While improving the US trade deficit, however, a renminbi revaluation may also be associated with a substantial slowdown in the rate of reserve accumulation, that is, it may reduce the contribution of official inflows to finance current US imbalances.

It is unclear at what speed, if any, China will undertake some steps towards liberalisation of capital flows. Concerns about the health of its financial institutions may induce caution in exposing Chinese financial markets to the risks of volatile capital flows.[13] At this stage, an asymmetric relaxation of controls on capital inflows is a relatively low-risk option because of widespread revaluation expectations. In general, capital controls are notoriously difficult to implement: they may become less and less stringent over time, or even force Chinese authorities to accelerate the pace of liberalisation of capital movements.

4. What does global adjustment require?

Concerns about US current account imbalances are often played down by stressing that, thanks to financial globalisation, markets can finance increasingly large imbalances, and let "adjustment" proceed smoothly and gradually (an influential view voiced by Greenspan 2004). According to this argument, rela-

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[13] By reducing profitability of firms now exporting thanks to subsidies and a low exchange rate, a revaluation may generate bankruptcies and costs for financial institutions. To the extent that the banking system is public, these costs will deteriorate the fiscal balance of China. In addition, a revaluation will create capital losses on the vast reserve holdings by the Chinese central bank (now around 40 percent of GDP).

tive to the pre-globalisation world, market depth and efficiency reduce the need of domestic governments to implement policy corrections.

As discussed above, financial globalisation has led to unprecedented cross-border holdings of foreign assets and liabilities, whose value fluctuates with the exchange rate. The importance of capital gains and losses in determining the real burden of a country's debt has led many observers to talk about a new "valuation channel" in the adjustment process, which complements adjustment via net exports. In the case of the US, the valuation channel functions as a shock absorber, providing an additional reason to expect a smooth resolution to the problem of stabilising the US external debt, as was discussed in Section 2.3.

However, financial globalisation raises the possibility of large reversals in capital flows, because international investors (perhaps led by hedge funds and other large active players in international markets) may all at the same time attempt to shift out of US short- and medium-term bonds. In the presence of sudden capital flow reversals, current account and trade adjustment become central. If the US needs to increase its net exports over a short period of time, reducing imports and boosting exports will require a downturn in economic activity and/or a sharp downward movement of the US dollar. In this section we reconsider this debate and its implications for the external value of the dollar in detail.[14]

4.1 Real dollar depreciation: the goods market and the domestic demand channel

What is the size of dollar real depreciation consistent with correcting US imbalances? In a series of papers, Obstfeld and Rogoff (2001, 2004, 2005) have addressed this question by focusing on the equilibrium relative price adjustment required to eliminate the US current account deficit (say, because a sudden reversal of capital-flows prevents the US from rolling over its debt). The relative prices of interest include the terms of trade, that is the price of exports in terms of the price of imports, and the price of non-traded goods in terms of the overall CPI, or in terms of the price of internationally traded goods entering the US CPI. Relevant definitions of these prices are provided in Box 2.3 of this chapter.

To focus sharply on movements in these relative prices, Obstfeld and Rogoff propose a stylised model calibrated to the US economy in which employment and capital in the traded goods and in the non-traded goods sectors, and therefore also the outputs produced in the two sectors, are kept constant. The authors study the changes in the consumption level, consumption composition (between the two types of goods) and relative income (the value of US output relative to the rest of the world) necessary to eliminate the current account deficit.

The adjustment mechanism is as follows. To fill its external financing gap, the US needs to raise its net exports, that is, export more of the tradables produced and import less foreign tradables. This means that the demand for tradables by US firms and households must fall and that the demand for US tradables by the rest of the world must increase.

Selling more US output abroad requires a drop in the relative price of US tradable goods in the world market. By definition this is a deterioration of the US terms of trade. As traded output in the US and abroad is held constant in the calculation, the size of price adjustment will depend on the price elasticity of the world demand for US tradables.

However, note that a fall in the price of US tradables *per se* would raise, instead of reduce, the demand for them by US firms and households. This is the reason why adjustment also requires an even larger fall in the price of US non-tradables, redirecting US demand towards these goods. As a result, real depreciation "switches" US consumption demand away from both US and foreign tradables, in favour of US non-tradables. This consumption "expenditure-switching" effect corresponds to a change in the composition of consumption.

Moreover (and this is perhaps the most important point), once the dollar has fallen in real terms US households are poorer: the value of US non-tradable output falls in terms of foreign goods, as does the value of US tradables (the value of the latter falls with the deterioration of the terms of trade). As US income falls relative to the rest of the world, US consumption also falls. In this model, a real depreciation thus causes a US income and demand slow-down.

According to Obstfeld and Rogoff, most of the required adjustment in the US real exchange rate is attributed to the need for a fall in the relative price of

US non-tradables. In extensive quantitative experimentation, these two authors calculate the overall depreciation of the dollar in real trade-weighted terms required to improve the US trade balance by about five percentage points of GDP. The required real rate of depreciation ranges between 15 and 34 percent, depending on the elasticity of substitution between tradables and non-tradables as well as between domestic and foreign tradables. Conversely, adjustment in the terms of trade is quite contained, ranging between four and seven percent. In other words, at most one third of the adjustment can be attributed to adjustment in the international prices of US tradable goods.

The size of adjustment estimated by Obstfeld and Rogoff is quite large, but not unusual as compared to the swings that major currencies have experienced over the last decades. Between its peak in 2002 and the end of 2005, the dollar depreciated in real effective terms by 24 percent (based on IMF data). The corresponding nominal depreciation was as high as 31 percent. A revaluation by China and other Asian countries will also contribute significantly to correcting the external value of the dollar in real effective terms.[15]

The time horizon for the correction makes a difference. In the above model, import demand from the US falls with a large real depreciation of the dollar, because a real depreciation (at constant output and employment) implies a contraction in US income relative to the rest of the world. But in the short run, adjustment in US external demand may well be driven by a slowdown in output and employment (see Edwards 2005). A contraction in the production of non-traded goods would reduce, at the margin, the pressure on the exchange rate: with less non-tradables produced, their relative price will have to fall by less to match the increased demand by US households. However, if the slowdown spills over to the traded good sector (despite the favourable relative price movements), this will add to depreciation pressures. This is because with less tradables to exports, US imports must fall by more, creating the need for sharper depreciation in equilibrium.

In the medium run, employment and capital allocation are bound to change (with consumption). First, part of the adjustment may take the form of an increase in hours worked and labour participation,

instead of a drop in consumption (after all, a deterioration in the US terms of trade means that households are poorer relative to other countries: labour supply may increase in response to this negative income shock). Second, production will be re-allocated across sectors, in response to the increase in the relative price of tradables, raising the overall supply of US exports.

As regards the dynamics of net exports and terms of trade, an important issue is the extent to which external adjustment will occur via an increase in the quantity of goods already exported, as opposed to an increase in the range of exports (that is, the extent to which adjustment will be at the "intensive" as opposed to the "extensive" margin). The main point here is that any exogenous shock to the ability of the US to borrow ultimately leads to a larger external demand for US goods. This can stimulate the supply of US goods and goods varieties that were not previously exported. In equilibrium, the terms of trade are likely to move less when new goods are exported than when adjustment only takes place at the intensive margin (exporting more of a given set of goods). In other words, adjustment at the extensive margins can further reduce or prevent altogether a fall in the terms of trade, reducing the required equilibrium real depreciation (Corsetti, Martin and Pesenti 2005, 2006).

Unfortunately, empirical studies on the US point to worrisome regularities regarding the response of US imports to exchange rate and income movements. Recent studies confirm the asymmetry between the US and other countries first noted by Houthakker and Magee (1969): the income elasticity of US imports well exceeds the income elasticity of other advanced countries' imports from the US. Thus, a given fall in the imports-to-GDP ratio requires a much stronger income slow down in the US than abroad. By the same token, US import price elasticities are quite low.[16] Chinn (2005) finds that one sixth of US imports are apparently insensitive to exchange rate variations (although another finding is that non-oil, non-computer imports are much more sensitive to exchange rate changes than aggregate imports).

An important lesson from these considerations is that adjustment will require a protracted period of real dollar weakness, but the magnitude of further dollar depreciation (that is whether and by how much the dollar should further depreciate) is quite uncertain.

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[15] The share of Asia in US imports was in fact as high as around 28 percent in 2004, up from 25 percent in 2000 (the share of US exports to Asia is much lower and quite variable).

[16] See Hooper et al. 1998 and the quantitative analysis by Corsetti et al. 2004.

The analysis by Obstfeld and Rogoff points to the need for further real depreciation, but their approach focuses on price elasticities between traded and non-traded goods, whose estimates in the literature vary markedly. Other complementary studies look into other adjustment margins: consumption, the level of employment, sectoral allocation of production, as well as the composition of exports (intensive versus extensive margins). The implications for equilibrium movements in the dollar real exchange rate are quite disparate.

Second, the main reason for expecting sharp dollar depreciation, laid out in detail above, is that a sharp dollar fall is required to drive down the price of US non-tradables. So, while adjustment may well require large depreciations of the dollar in real trade-weighted terms, movements in the relative price of US exports may actually remain quite small. What needs to be sizeable is the correction in US net external demand, but not necessarily the correction in US export prices.

4.2 Dollar depreciation: portfolio valuation effects

We have already observed that, because of the particular currency composition of US foreign asset and liabilities, dollar depreciation automatically reduces the real net debt burden of the US.[17] The larger the valuation effects from depreciation, the larger the fall in the real value of US net liabilities. Note that a fall in the dollar helps the US external position through two channels. The first is the traditional channel, through which dollar depreciation encourages US net exports, improving the competitiveness of US exporters, while discouraging US imports. The second channel consists of valuation effects, which raises the dollar value of US foreign assets, improving the net external position of this country. For this reason, valuation effects tend to reduce the magnitude of dollar depreciation required to achieve external adjustment, relative to the case in which only the first channel is active. For instance, in the model by Obstfeld and Rogoff described above, valuation effects from dollar depreciation could reduce the required rate of real effective dollar depreciation by about five percentage points. These effects may help address current imbalances but clearly are no substitute for net export correction (see Obstfeld 2004).

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[17] See Section 2.3 above.

Interestingly, as argued by Cavallo and Tille (2005), valuation effects may do more than reducing the overall magnitude of adjustment in trade: they can actually play a substantial role in smoothing the dollar decline along the path of adjustment. In the experiments by these two authors, the US is assumed to stabilise its stock of net external debt relative to GDP. In the long run, the required rate of real dollar depreciation is 27 percent (in their baseline estimate). In the short run, sizeable capital gains on gross external liabilities allow US households and firms to sustain current imports, reducing pressures on the exchange rates. Hence dollar depreciation is below 10 percent, and around 15 percent in the first two years of external adjustment. An important difference between short- and long-run effects is that, over time, depreciation expectations driving interest rates raise the cost of debt, and therefore tend to reduce the overall magnitude of valuation effects (see Section 2.3 of this chapter).

Nonetheless, some authors claim that advantages of valuation effects are a stable long-run feature of US borrowing, allowing the US to pay effectively negative returns on its net liabilities, a point forcefully stressed by Gourinchas and Rey (2005a,b). In some respects, this position is consistent with the evidence on rate of return differentials in favour of the US, which imply that this country can borrow on better terms (discussed in Box 2.2 of this chapter). But the fundamental issue is the extent to which a debtor can count on valuation effects to depreciate systematically the real value of its liabilities. While asset pricing may have played a large role in adjustment historically, it is unlikely that a permanent net-debt devaluation strategy is sustainable. Sooner or later, international investors will price the risk of valuation effects, leading to higher interest rates on the US debt.

So far, however, US long-term interest rates have not moved significantly away from comparable euro area rates. In the same spirit as a previous exercise by Krugman in the 1980s, Obstfeld (2005) looks at the return on inflation-indexed bonds issued in dollars and in euros: in 2005 the return differentials between the US and French 30-year debt instruments are just a few basis points. In other words, markets do not seem to attach any significant probability to the event of a sizeable real depreciation of the dollar. The dollar even appreciated during 2005 and earlier forecasts

of sharp redirections of portfolio flows away from the US have so far been proven wrong.[18]

This is clearly a puzzle for those observers who believe that further dollar depreciation and international portfolio rebalancing is needed. If, as many believe, markets are indeed mispricing adjustment risks (it would not be the first time), the macroeconomic consequences of market 'inattention' can be quite far-reaching. To the extent that asset prices suggest to policymakers that no correction is urgent or necessary, imbalances may keep growing, making adjustment much harsher and deeper in the future.

4.3 Demand policies (fiscal correction in the US)

Even if revaluation of Asian currencies realign international relative prices in a way that is consistent with a reduction in the current global imbalances, it is doubtful that substantial correction will take place without appropriate demand policies.

Conventional wisdom suggests that "expenditure switching policies" (essentially, exchange rate revaluation by Asian countries and benign neglect by the US vis-à-vis a weak dollar) should be complemented by "expenditure changing policies". In China, for instance, a renminbi revaluation should be accompanied by measures to sustain domestic demand (or at least to remove current distortions that generate very high savings). A reduction of Chinese national saving would contribute to world demand, lowering this country's surplus more than implied by the loss of "competitiveness" due to revaluation. It could also help contain the strain on the Chinese economy due to relative price changes.

The most important contribution to adjustment should, however, come from a reduction in the US fiscal deficits, which requires a revision of tax policy. Without any fiscal rebalancing in the US, a reduction in Asian saving, possibly associated with a slowdown or reversal in reserve accumulation, increases the risks of financial strain in the global currency and asset markets, due to disorderly adjustment charac-

terised by a loss of confidence in the dollar and financial turmoil.

In principle, a pick-up in European demand could also provide a valuable contribution to global rebalancing. There is, however, considerable scepticism about such a possibility. In many European countries, private consumption growth has been persistently low (see Chapter 1), for reasons that are not entirely understood. As argued in Chapter 1, high debt levels in the euro area in combination with future demographic strains imply that there is little or no room for fiscal stimulus in Europe.

5. A European perspective

This chapter has analysed various adjustment scenarios and policy options for reducing the macroeconomic risks associated with increasing global imbalances. Reducing the size of the US current account deficit does require an increase in US saving (both public and private) relative to the rest of the world, and/or an increase in spending in the rest of the world relative to the US. Depending on its intensity, adjustment may produce a slowdown in US growth and/or a prolonged period of dollar weakness in real terms. Both factors will contribute to a drop in US net imports. As is well known, the response of the trade balance to real exchange rate changes usually takes time: in the case of the US the lag is traditionally quite long (see Krugman 1991) for an analysis of the so-called J-curve effect in the US).

While there is considerable uncertainty as to the timing and intensity of adjustment, most of the scenarios reviewed above have potentially negative consequences for the European macroeconomy. Europe is likely to face a further weakening of external demand for its products, as well as increasing competitive pressure from the US (although the overall consequences of adjustment for Europe will also depend on the intensity of policy correction in Asian countries: higher demand in these countries would obviously have some positive effect on European net exports). In addition, portfolio rebalancing, redirection of capital flows and the associated swings in asset prices and exchange rates may have important effects on the value of European assets and liabilities, raising the likelihood of financial turmoil involving European firms and banks. We consider these arguments in detail below.

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[18] In his blog (http://www.rgemonitor.com/blog), Roubini lists a series of contingent factors which may explain the strengthening of the dollar in 2005. The list includes: widening of short-term interest rate differentials between, on the one hand, the US and, on the other, the euro area and Japan; growth differentials in favour of the US; the effect of temporary measures, such as the Homeland Investment Act, providing a tax incentive for profit repatriation; political factors related to the constitutional referendum failures in Europe; and increasing reservations about the pace and depth of the European integration process.

To begin with, even though the overall European current account imbalance with the US is small relative to other macro regions, the external performance of individual European countries is quite diverse. The new EU members (as expected) run external deficits.[19] Some old EU members (notably Germany) enjoy a strong export performance, while some others (notably Italy) have experienced a deterioration of their competitiveness. In this context, the real and financial dimensions of global adjustment are likely to have asymmetric effects on the European economy.

Adjustment of global imbalances may or may not require further dollar depreciation vis-à-vis the euro. However, even if adjustment takes place with no further fall in the dollar and/or with limited movements in international prices, correcting the US current account deficit does require an improvement in US net exports. It follows that Europe is likely to experience a drop in external demand even if the associated exchange rate movements are not as large as many fear. In addition, an important question is whether the US will decide to reverse its attitude towards free trade, generating a new wave of protectionism. If this is the case, we may witness some reduction in trade among macro regions, with uncertain effects on the cohesion of the European economy.

Through valuation effects, further dollar depreciation will make Europe poorer relative to the US. It is true that Europe has a small net foreign asset position, but the magnitude of valuation effects depends on the size of the stocks of gross assets and liabilities. With financial globalisation, these gross stocks are several times larger than the net asset position. These effects may also create asymmetric effects across Europe, depending on the size of a country's total foreign assets and liabilities, as well as on the currency and maturity structure of these portfolios.

The last few years have been characterised by very low long-term interest rates in real terms, lower than predicted by standard economic models (and conventional wisdom). This may change with the start of an adjustment process leading to a reduction of the US current account. The reversal of capital flows and portfolio allocation may lead to the emergence of larger risk premia (also within the euro area) and upward pressure on interest rates. The risks associated with high prices in the housing markets of many countries have been frequently discussed (see Chapter 5 of the 2005 EEAG Report). Increases in long-term interest rates could clearly cause substantial falls in housing prices.

Further depreciation of the dollar in real effective terms, associated with rising interest rates and the emergence of interest rate differentials also among European countries, could clearly exacerbate business cycle and inflation differentials in Europe. Past experience and common sense suggest that consumer prices and growth may respond more intensely to euro exchange rate movements in smaller and more open European economies than in the large economies.

The resolution of current imbalances may well proceed rather smoothly. But it is also possible that the current build-up of imbalances will lead to 'hard landing' scenarios. What risks do European policymakers face?

Consider first the possibility of a disorderly adjustment, if and when international financial markets become unwilling to roll over their credit to the US. This means a US current account reversal associated with strong relative price and exchange rate movements, creating financial turmoil across markets: risk premia will rise markedly, housing markets may collapse, US demand could falter, and the dollar may fall dramatically.

In this scenario, it is highly plausible that European financial and non-financial firms would suffer from strong deterioration of their balance sheet and liquidity shortages. This scenario would call for European monetary and supervisory authorities to stress-test their institutional framework. The 2003 EEAG report analysed the regulatory and supervisory framework for European financial markets (see Chapter 4 of that report), assessing its effectiveness in intervening in defence of the European payment and financial system, and in reducing the liquidity costs for firms of financial turmoil. The report pointed out concerns related to the decentralised structure and complexity of the framework.

Technically, interventions providing emergency liquidity to firms and financial markets do not need to compromise the ability of the ECB to retain control over aggregate liquidity in the euro area. Injections in one region could be compensated with opposite interventions somewhere else. On the other hand, if the magnitude of financial crisis is large enough to generate substantial uncertainty about default rates by

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[19] See Chapter 5 of the 2004 EEAG report.

firms and banks, monetary authorities may face difficult trade-offs between financial stability and price stability, as monetary interventions may not be effective in preventing widespread default. Governments may then have to shoulder large fiscal costs to avoid a chain of destabilising bankruptcies. This raises important issues about the distribution of possible fiscal costs across countries. The deteriorating public finances in many European countries, which were discussed at length in Section 3.3 in Chapter 1 of this report, are an aggravating factor in this context. Weak public finances may create undue constraints on emergency financing in the case of a crisis associated with a "hard" unwinding of global imbalances. This provides yet another argument for fiscal discipline now as a precaution against future financial crisis.

In the event of a sharp correction of the dollar and a deep US recession, monetary authorities in Europe (the ECB and the national central banks in the countries outside the eurozone) must react to deflationary pressure (coming from likely falls in export prices and export volumes) by loosening the monetary stance. The timing of intervention will be an issue, as proactive pre-emptive interest rate cuts may be warranted in such a situation.

Overall, however, even if European monetary authorities are successful in fighting financial contagion and other undesired effects of liquidity shortages due to large price swings in asset markets, Europe would still face a severe aggregate demand problem well beyond the reach of monetary policy and, as argued in our previous reports, also of fiscal policy. Perhaps the most important risk for Europe associated with global imbalances is that of facing a severe crisis without effective policy instruments to stabilise the European economy.

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