

THE HAPPY DOLLAR

The euro's appreciation since February 2002 has already penalised European export industries. Furthermore, this trend is likely to extend into the medium term, due to the US current account deficit, which could rise above 5% of GDP in 2003 and 2004. Should international investors feel that such a ratio is not sustainable, then downward pressure on the dollar will increase. The euro's rise then risks being all the stronger as America's other trade partners may oppose any appreciation in their currencies. A strong rise in the euro will test the euro zone's cohesion: losses in competitiveness in the euro zone will be felt unequally, as exposure to the dollar varies across countries and sectors.

The euro has experienced much turbulence since its creation. Having gone through a continuous, 30% depreciation in 22 months¹, the euro/dollar exchange rate subsequently stabilised at 90 cents to the euro for 15 months. This was followed by a sharp appreciation, which saw the single currency return to its original level of \$1.18, at the end of May 2003. Since then, the euro has stabilised at around \$1.15 (the average for June-July 2003).

Looked at from a long term perspective and taking the ECU as the predecessor of the euro², the gyrations of the euro since 1999 are not particularly new: for the period running from 1978 to 2003 as a whole, the average ECU/euro rate to the dollar was \$1.1 (see Graph 1)³. The euro/dollar exchange rate of \$1.15 recorded on 28 July 2003 is therefore not far off this average.

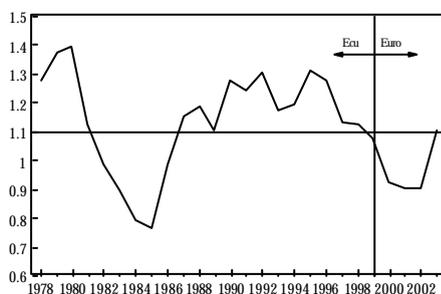
Clearly, such a long term comparison only makes sense if price and cost changes on both sides of the Atlantic are taken into account. Since the mid-1980s, inflation rates in Europe and the United States have largely converged. As a result, the real exchange followed the nominal appreciation of the ECU/euro between 1985 and 1995, its depreciation between 1996 and 2001, and its appreciation since then.

However, the scale of the US deficit raises fears that the euro may continue to appreciate over the medium term. This risks leading to losses of competitiveness for the euro zone, with contrasting consequences for countries and sectors within the area. As a result, it is important to examine likely trends in the dollar, and so the euro, which are needed to bring down US deficits.

■ The US Current Account

The US current account deficit rose to 4.8% of GDP in 2002, and forecasts by the IMF⁴ suggest that it will rise to over 5% of GDP in 2003 and 2004. The deficit is thus equivalent to about 1.5% of world GDP: each year a very significant share of world savings has therefore to flow to the United States to finance the deficit. Were investors to become aware of the unsustainable nature of the deficit, were they to lose confidence in the New Economy or were interest rates to fall to very low levels, then the savings flow could weaken and the dollar depreciate. Real

Graph 1 – The rate of the Ecu and Euro to the dollar



Source: IFS (FMI).

1. On 4 January 1999, the euro traded at \$1.181, compared to 0.827cents, 25 October 2000.

2. The euro replaced the ECU at a rate of 1 for 1, on 1 January 1999. Comparing the long run movements of the euro to the ECU ignores the influence which the pound sterling and the Danish Krona had on the exchange rate of the ECU.

3. The value of the ECU rose above \$1.4 in 1980, and then fell to 76 cents in 1985, equivalent to a 50% depreciation over 5 years. This was followed by a renewed appreciation, leading to an average rate of \$1.3 for 1995-1996.

4. World Economic Outlook, April 2003, available at <www.imf.org>.

equilibrium exchange rate theories⁵ are useful to identify medium term trends. The approach developed by Williamson provides an equilibrium exchange rate for the euro/dollar within a range of \$1.19 to \$1.45 per euro, for an American deficit of between 1% and 2% of GDP⁶. However, this type of calculation assumes that the exchange rates of trading partners adjust simultaneously, respecting the principle, for example, that by definition not all currencies can be undervalued. Thus, given its foreign surpluses (see Table 1), Japan should see its currency appreciate to reach a level of about ¥100 to the dollar (compared with ¥118 today and ¥130 in early 2002). The same holds for Canada (whose currency has appreciated by 13% against the dollar since the start of 2002) and for China (the yuan rate to the dollar being fixed by the authorities).

Table 1 – A few current account figures

	Current account in % of GDP (2002)	Share of trade partner in % of the US trade deficit (2001)	Share of trade partner in US goods trade (2001)	
			% of US exports	% of US imports
United States	-4.8	-	-	-
Euro area	1.1	10.2	17.0	14.3
Japan	2.8	15.1	8.2	10.9
Canada	1.5	19.6	20.6	20.2
Mexico	-2.2	-	14.0	12.3
China	1.9	16.5	3.7	8.9
Other Asia	7.0*	12.8**	11.6**	12.0**
Total		74.2	75.1	78.6

* Hong-Kong, Korea, Singapore, Taiwan.

** South Korea, Hong-Kong, Singapore, Taiwan, Indonesia, Malaysia, Philippines, Thailand.
Source: IMF and CEPII-CHELEM.

However, if there is no readjustment of certain currencies (the yen, the yuan), then the burden of adjustment will fall on other surplus areas – the euro area, Canada – as a more marked, bilateral exchange rate realignment is required to obtain the same change in the effective exchange rate (see Box). The scale of this transferred burden does not depend on the geographic distribution of America's trade deficit, but on the geographical breakdown of its trade flows, which may be very different (Table 1): 16.5% of the US deficit is with China, whereas only 3.7% of US exports flow there (and 8.9% of US imports come from China). It is these latter figures which are important in measuring the impact of a possible appreciation of the yuan. A 10% rise in the yuan would lead to a fall in the effective exchange rate of the dollar of 0.4%. Assuming the long term price elasticity of exports to be 0.7 (as used by the IMF⁷), such a

depreciation would stimulate American exports by 0.3%. As for imports, an appreciation of the yuan would lead to even more modest results, no matter what price fixing behaviour Chinese exporters adopt in the US market⁸.

Box

The US current account balance may be written as $B = B(Y, Y^*, Q)$, where Y and Y^* are the levels of output in the United States and the rest of the world, and Q represents the real effective exchange rate of the United States (Q rises when American products become less expensive). If n represents the number of trade partners for the US and α_i the weight of each partner in exports and imports, then (*):

$$Q = \prod_{i=1}^n Q_i^{\alpha_i} \text{ avec, } \sum_{i=1}^n \alpha_i = 1$$

It is assumed here that output levels Y and Y^* are exogenous, and for simplification it may be taken that $B = B(Q)$ with $B' > 0$

If B stands for the current account target balance, then the real effective exchange rate is: $\bar{Q} = B^{-1}(\bar{B})$ avec $B' > 0$

The bilateral real exchange rate for country $i = 1$ (for example, in the euro area) may be written as:

$$\bar{Q}_1 = \left(\frac{B^{-1}(\bar{B})}{\prod_{i=2}^n Q_i^{\alpha_i}} \right)^{1/\alpha_1}$$

The higher the target for the American foreign balance \bar{B} the stronger currency 1 must be with respect to the dollar (\bar{Q}_1 is high). \bar{Q}_1 is then all the stronger when other currencies do not adjust (i.e. Q_2, Q_3, \dots, Q_n do not appreciate, especially where they have high values for α_i). Lastly, the adjustment required of currency 1 is all the greater, the smaller the country's share of US trade.

It is to be noted that the necessary adjustment of currency 1 does not depend on the bilateral deficit between the United States and country 1, but only on the aggregate share of each country in US foreign trade.

(*) In the more detailed formulation used in Table 2, the distinction is made between the two weighting systems (exports/imports).

Despite the scale of the imbalance in US-Chinese trade, greater exchange rate flexibility of the yuan would in itself have far less impact on America's current account deficit than a further appreciation of the Canadian dollar, or even an appreciation of the yen. Its main advantage would be to deprive other East Asian currencies of a reason for not letting their currencies appreciate (East Asia, excluding China and Japan, accounts for 11.6% of US exports). But given its stable (or even falling) domestic prices and rapidly rising imports following its WTO

5. These include John Williamson's fundamental equilibrium exchange rate (FEER), Jerome Stein's natural real exchange rate (Natrex) and Peter Clark & Ronald MacDonald's behavioural equilibrium exchange rate (BEER). The FEER is the rate which allows the current account to attain its "normal" value, with output running at full-employment levels. The Natrex uses the same idea, but avoids setting out a "normal" level for the current account while linking the exchange rate to structural parameters concerning agents' preferences. Lastly, the BEER is the least normative, as it is based on observed (rather than desired) trends of the exchange rate and its determinants over the long term.

6. See S. Wren-Lewis & R. Driver (1998), "Real exchange rates for the year 2000", *Policy Analyses in International Economics* 54, Washington DC: Institute for International Economics; and D. Borowski & C. Couharde (1999), "Quelle parité d'équilibre pour l'euro", *Economie Internationale* 77, 1st quarter.

7. T. Bayoumi & H. Faruqee (1998), "A calibrated model of the underlying current account", in P. Isared & H. Faruqee eds., *Exchange Rate Assessment*, IMF Occasional Paper 167, p. 32.

8. If they are price-makers, then the appreciation of the yuan will lead them to raise their prices in dollars: Americans would buy less Chinese products, but each imported unit would be more expensive. With a price elasticity for imports of 0.9 (the IMF estimate), the two effects counteract each other. If, as is more likely, Chinese exporters are price-takers, then they may reduce their mark ups and American imports in dollars will remain unchanged.

membership, China has little incentive to appreciate its currency. This raises the burden on the euro.

■ How Far Will the Appreciation of the Euro Go?

Table 2 provides various scenarios for the evolution of the euro, depending on 1) the required adjustment of the US current account deficit, and 2) the evolution of other currencies in the international monetary system. The price-elasticities used are those of the IMF, and no account is taken of the endogenous rise in income when a currency depreciates⁹. A fall in the US deficit to 3% of GDP (Scenario 1) would require a 24% depreciation of the dollar from its level in 2002. If all currencies adjust, then the implied appreciation would be spread uniformly across currencies, leading to a rise in the euro/dollar exchange rate from 0.94 cents (the level in 2002) to \$1.17. This figure falls within the range of existing estimates of the equilibrium exchange rate. However, if the yen and the yuan do not adjust, then the euro has to rise to \$1.40, while if other Asian currencies do not appreciate against the dollar, then the euro's level would rise to \$1.57. Table 2 suggests that the exchange rate would become completely untenable (at more than \$2!), if all the adjustment is borne by the single currency.

Table 2 – The adjustment required in the value of the euro to bring the US current account deficit down to 3% or 2% of GDP

	The situation in 2002: US deficit at 4.8% of GDP	The US deficit falls to 3% of GDP	The US deficit falls to 2% of GDP
All currencies adjust with respect to the dollar	0.944	1.171	1.303
All currencies adjust except the yuan and the yen	0.944	1.4	1.667
All currencies adjust except the yuan, the yen and other East Asian currencies	0.944	1.571	1.937
Only the euro and the Canadian dollar adjust	0.944	2.097	2.77
Only the euro adjusts	0.944	2.393	3.238

Source: B. Hoekman, Ng F., M. Olarreaga (2002), Eliminating Excessive Tariffs on Exports of Least Developed Countries, World Bank Economic Review, 16(1): 1-21.

By itself, the euro is therefore incapable of solving the problems of the US deficit. As a result, adjustments will have to be made in the US household savings rate and/or the federal budget if the exchange rate adjustment (especially the euro/dollar rate) is to be limited. In any case, the reduction of the US current account deficit will weigh on growth of America's partners. But the sharing out of this burden will

depend on the relative trends of their exchange rates: if few currencies adjust, then Europe's losses in price competitiveness risk being very important.

■ The Competitiveness of the Euro Area

The most obvious indicator to judge competitiveness is purchasing power parity (PPP), in other words the equalisation of prices on both sides of the Atlantic. According to Borowski and Couharde¹⁰, the euro/dollar exchange rate in 1998 should have stood at 1 for 1, on the basis of PPP. As prices have shifted in parallel in both areas since then, it may be assumed that this parity rate still holds and that as a result prices in the euro area are on average 15% higher than in the United States. However, this average state hides a number of strong disparities across the countries of the euro area. As Table 3 shows, an exchange rate of \$1.15 to the euro in 2001 would have equalised hourly unit labour costs in France and the United States, but would also have led to 50% higher labour costs in Germany. If hourly productivity is assumed to be fairly similar in Germany, France and the United States, then German competitiveness will be severely handicapped by the recent appreciation of the euro, while French exporters will feel the impact on competitiveness should the euro rise above \$1.10 to \$1.15. Such observations by country nevertheless hide marked inequalities across sectors.

Table 3 – Hourly cost of labour in various countries of the euro area relative to the United States

	1986	1990	1993	1996	1999	2001	2001*
USA	100	100	100	100	100	100	100
Germany	100	146	152	176	140	117	150
United Germany	-	-	145	168	134	113	145
France	78	104	101	108	90	78	100
Spain	47	76	70	76	63	54	69
Euro/dollar	0.98	1.27	1.17	1.27	1.07	0.9	1.15

*The hourly cost of labour (which includes employers' social security contributions) is calculated assuming that the euro/dollar exchange rate was \$1.15 in 2001.
Source: US Bureau of Labour and Statistics (Manufacturing Industry).

To begin with, sectors face very different levels of exposure to competition from the dollar zone, which is defined as a zone extending beyond the United States to include currencies that fluctuate more or less in line with the dollar¹¹. Europe's exposure to dollar competition occurs both in imports from foreign markets, in exports to the dollar zone and in third markets. An estimate made for the manufacturing sector (in 1996) suggests an average exposure rate of 12.4%, which

9. Taking this phenomenon into account would lead to even greater exchange rate adjustments. But the assumption made here may be justified by the fact that fiscal policy could compensate for the impact of exchange rate changes on aggregate demand for goods and services as well as variations in the exchange rate.
10. D. Borowski & C. Couharde (1999), "La compétitivité relative des Etats-Unis, du Japon et de la zone area", in CAE, Architecture Financière Internationale, Report No 18, annex B.

11. The dollar zone includes a large part of East Asia and Latin America. It contrasts with the euro area of which influence is assumed here to cover the EU15 as well as Eastern Europe, except Russia. More subtle assumptions, such as the non-integration of the United Kingdom in the euro's zone of influence, do not alter the results substantially.

means that 12.4% of the European Union's manufacturing output is in direct competition with the dollar. The average exposure of each sector varies from 33% for the IT sector as well as the leather and footwear sector, to 2% for tobacco, printing and wood products, with aeronautics and toys falling between the extremes, at 25%.

Secondly, competition from the dollar zone affects industries differently, depending on their degree of concentration, segmentation and product differentiation, all of which affect their sensitivity to price competition. Mechanical and electrical machinery, food products and wood products are the most sensitive.

The impact of the dollar's depreciation on different industries follows on from the combined effect of exposure to the dollar and the sensitivity of trade to prices (Table 4)¹². For machinery, for example, a 10% depreciation of the dollar raises the market share of the dollar zone in the euro area imports by 12.1%, the market share rising from 4.3% to 4.8%. For exports, the euro zone loses 10.7%, with its market share declining from 9.1% to 8.1%. Overall, equipment industries are the most sensitive to any fall in the dollar¹³.

Countries of the euro area are also exposed to different degrees to competition from the dollar, due to their varied specialisation and geographical trade composition. The indicator of exposure therefore varies from 20% for Ireland to 6.5% for Portugal. Generally speaking, northern countries (Ireland, Finland and the Netherlands) are more exposed than average, whereas southern countries (France, Spain, Greece and Portugal) along with Austria are less exposed. Germany and Italy exhibit average exposure.

Table 4 – The sensitivity of market shares of the euro area and dollar zone to a 10% depreciation of the dollar

	Price elasticities		Market shares		Variations in market shares	
	Imports	Exports	Dollar zone over euro sphere	Euro sphere over dollar zone	Dollar zone over euro sphere	Euro sphere over dollar zone
Food	-1.01	0.24	2.4	1.1	0.24	-0.03
Textiles and clothing	-0.46	-0.29	10.5	2.2	0.48	0.06
Leather and footwear	-0.08	-0.5	21.8	10.7	0.18	0.54
Wood and furniture	-0.42	0	2.3	0.7	0.1	0
Paper and printing	-1.05	0.4	1.9	1.2	0.2	-0.05
Refined oil	-4.37	3.86	1.7	0.8	0.74	-0.31
Chemicals	-0.79	0.55	4.3	4.1	0.34	-0.23
Rubber and plastics	-0.85	0.47	5	2.8	0.42	-0.13
Non-metal mineral products	-0.85	0.77	1.2	2.4	0.1	-0.18
Metals	-0.55	0.35	2.8	3.2	0.16	-0.11
Mechanical machinery	-1.21	1.07	4.3	9.1	0.52	-0.97
Electrical machinery	-1.03	0.34	14.1	4.4	1.45	-0.15
Transport equipment	-0.68	2.45	4.8	4.1	0.33	-1.01

Source: B. Hoekman, Ng F., M. Olarreaga (2002), Eliminating Excessive Tariffs on Exports of Least Developed Countries, World Bank Economic Review, 16(1): 1-21.

The depreciation of the dollar needed to reduce the US current account deficit will therefore have very diverse consequences across countries. The appreciation of the euro will not only burden European growth, but also affect the euro area's cohesion. This will be all the more so if America's other trade partners continue to peg their currencies to the dollar. The only positive side to the dollar's depreciation is that it may cause protectionist sentiment in the United States to weaken, on the eve of the Cancun summit.

Agnès Bénassy-Quéré, Lionel Fontagné & Michel Fouquin
a.benassy@cepii.fr

12. The data presented in this paragraph and the definitions of indicators used are taken from: "Sector Sensitivity to Exchange Rate Fluctuations", M. Fouquin & K. Sekkat *et al.* CEPII Working Paper, No 2001-11.

13. Paradoxically, the textile industry would benefit from a fall in the dollar. The rise in market share (in value) of the euro's sphere of influence stems from the fact that international competition in this sector is regulated by a system of quotas until 2005, quotas which eliminate volume effects. Asian exporters, who are limited quantitatively, have no interest in cutting prices, though they can raise their margins.

LA LETTRE DU CEPII

© CEPII, PARIS, 2003
EDITORIAL OFFICES

Centre d'études prospectives
et d'informations internationales,
9, rue Georges-Pitard
75015 Paris.
Tél. : 33 (0)1 53 68 55 14
Fax : 33 (0)1 53 68 55 03

PUBLISHER:
Lionel Fontagné
Director of the CEPII

CHIEF EDITORS:
Agnès Chevallier
Bronka Rzepkowski

TRANSLATION:
Nicholas Sowels

DTP:
Laure Boivin

DISTRIBUTION:
La Documentation française.

SUBSCRIPTION only to the
original, French version.
(11 issues per year)
France 46 € VAT
Europe 47.50 € VAT
DOM-TOM (NET, econ. air mail)
47 € NET
Other countries (NET, econ. air mail)
47.50 € NET
Please send your orders to:
La Documentation française,
124, rue Henri Barbusse
93308 Aubervilliers Cedex
Tél. : 33 (0)1 48 39 56 00.

WEB site: www.cepii.fr
ISSN 0243-1947

CCP n° 1462 AD
4^e Quarter 2003
July-August 2003

Imp. ROBERT-PARIS
Imprimé en France

*The CEPII is entirely responsible for
the Lettre du CEPII and its on-line,
English translation. The opinions
expressed therein are those of the
the authors.*