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## The Dollar and the European Economy

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In order to consider what impact the strong dollar has had on the European economy, and what would be the consequences of a weak dollar, it is convenient to start with a brief discussion of some salient characteristics of the current Euroland economy. The headline figures are well known: the euro has depreciated, even after the rally of the spring of 2002, by roughly 15 percent against the dollar since the start of the European Monetary Union (EMU) at the turn of 1998/1999. The first impression one has on looking at the euro's nearly four years of life is certainly not that the strong dollar has had a large impact on Euroland's economy. Growth is flagging, and the current account balance has not greatly improved.

Can this be explained by simply stating that the dollar cannot have a strong impact on the European economy anyway, because the Euroland economy is a closed one? In the second section of this paper I show that, on the contrary, Euroland is a fairly open economy. Another explanation seems more promising, namely, that the dollar is not "the" exchange rate for Euroland. On a real effective exchange rate basis, the euro has actually depreciated little since 1998-99, as I show in the third section. In the fourth section I turn to macroeconomic models for further guidance. The value of the output from these models depends, of course, on the accuracy of

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the input. The essence of the results from these models seems to be that an exogenous appreciation of the dollar can provide a sizable but strictly temporary boost to Euroland's economy. Most discussions about the dollar focus exclusively on its level, and whether it is too high, sustainable, or appropriate. However, for Europe its stability also matters. In the final section of the paper I report on some research that suggests that a high variability of the dollar/euro rate or the euro's effective exchange rate is usually associated with higher unemployment in Euroland.

## European Stagflation

In contrast with the discussion of deflation in several of the papers in this conference, the hot topic in Europe is the status of inflation. Yet growth is low; many people believe it is below its potential, but perhaps its potential has decreased. At the same time, inflation remains stubborn.

For Euroland as a whole, core inflation has been running at 2.5 percent or so over recent months. That is not a very high rate, but it is above the target of 0 to 2 percent that the European Central Bank (ECB) has set itself. In fact, inflation has been running above this ceiling for almost three years now, which leads some to ask whether we should not start tightening. At least it suggests that there is likely to be resistance to all the demands for loosening that come from those who look at the weak state of the European economy. Last year the ECB actually loosened policy while headline inflation was still about 3 percent, though at that time you could point to core inflation, which was rather well behaved. But, in my view, it is becoming more and more difficult for the ECB to justify cutting rates now, when the one indicator that is more forward looking and therefore a bit more stable—namely, core inflation—is still running well above 2 percent. Most observers from both the private and official sectors had expected that, at least by early 2002, inflation would no longer be a problem and core inflation would fall rather quickly. Yet every month the inflation figures have surprised us, which makes it more difficult for the ECB to act to lower interest rates.

Europe seems to be stuck with a combination of relatively low growth and relatively high inflation. Why this combination? One explanation is that productivity growth in Euroland has collapsed. There has been a clear deterioration of the productivity performance of Europe vis-à-vis the United States; it has been going on for a long time, but 2001 was particularly dismal, with productivity growth of essentially zero. Of course productivity is a longer-term phenomenon, and the numbers fluctuate a good bit. That is because actual growth has fluctuated a good bit. We therefore did a simple regression analysis relating the year-to-year

**Table 10.1 Regression analysis of the rate of growth of GDP/employee on GDP growth**

Output per employee	Coefficient	Standard error	t-statistic	p value
Intercept	-0.12	0.28	-0.41	0.68
Lagged dependent	0.33	0.10	3.47	<0.001
GDP growth	0.62	0.09	6.63	<0.001

Note: Adjusted R<sup>2</sup>, 0.76; standard error, 0.77; observations, 39.

Source: Author's calculations.

**Table 10.2 Productivity performance and the business cycle**

	United States		European Union	
	Predicted	Forecast error	Predicted	Forecast error
1999	1.85	0.35	1.93	-0.93
2000	1.88	0.22	2.41	-1.01
2001	0.75	0.55	1.39	-1.19

Source: Author's calculations.

productivity numbers to the overall growth rate (table 10.1). The results confirm that productivity is strongly related to the business cycle, implying that labor is almost a fixed cost.

We then took the resulting equation and examined what it has predicted for recent years, and compared that with actual outcomes. The final column in table 10.2 shows consistently large, and negative, forecasting errors for Euroland. Over the last three years productivity growth in Euroland has been about one percentage point lower than would have been expected given the state of the business cycle and the relationship between productivity and the business cycle that has held up pretty well over the past thirty years. This confirms that although a trend had already been under way for some time, it seems to have gone from bad to worse in the recent past.

The big question is: Will it last? That is a difficult question to answer, because we don't really know what is causing the deterioration of European performance. Nevertheless, I see little reason to expect productivity growth to accelerate quickly. There is no sign of any policy action that might lead to that, such as labor market reforms. The only hope might come from the prospect of enlargement, meaning that the size of the market will increase, and perhaps the pressure for reforms in some existing member countries will become stronger. But my bet would be that, for the time being at least, we are stuck with a situation in which reforms are difficult to undertake, and it is therefore unlikely that productivity will increase quickly again.

**Table 10.3 Standard indicators of openness and size, 2000**

	<b>Euro zone</b>	<b>United States</b>	<b>Japan</b>	<b>Germany</b>
Exports as percent of GDP	15.3	7.8	9.7	29.3
Exports as percent of world total	14.3	12.2	7.3	8.7
Average of exports and imports as percent of GDP	15.1	10.1	8.4	27.8
Average of exports and imports as percent of world total	14.1	15.8	6.3	8.2

Note: Exports and imports of goods only.

Source: International Monetary Fund.

## How Open Is Euroland?

In Europe, in both official and public discussion of economic issues, the exchange rate plays a much more important role than it does in the United States. This is a natural consequence of the simple fact that Euroland is actually quite an open economy. Indeed, it may well be the only case of a large open economy that we have in economics.

To gain insight into the exposure of Euroland to external shocks, one needs a measure of the openness of the economic system. This openness can be measured in many ways. One standard measure looks at the share of trade to national income. The more important trade is in national income, the more open the economy is. In this regard, many have suggested that Euroland will be radically less open than the individual economies of Euroland. In fact, many of the Euroland economies are substantially open. Taken individually, the openness of the Eurozone countries, as measured by the share of exports of goods and services to domestic income, ranges from about 25 percent in Greece to over 90 percent in Luxembourg, and averages around 35 percent.

However, since a large percentage of trade within Euroland occurs among the 12 members, it is necessary to examine only external trade to gain a true picture of openness. Under this measure, which is net of internal exports of goods and services among the 12, the degree of openness for the EU-12 is only 19.7 percent.

This fact does not, by itself, mean that Euroland is a closed economy, however. To make this judgment, it is useful to compare the degree of openness of the G-3—the United States, the euro zone, and Japan. As shown in table 10.3, even when looking solely at trade with third countries, the euro zone is substantially more open than either the United States or Japan. In both of these economies, exports (of goods only) account for less than 10 percent of national income. The difference between Euroland and the United States narrows when both exports and imports are exam-

**Table 10.4 Different openness indicators in 1998, as a share of GDP**

Exports of:	Euro zone	United States	Japan	Germany
Goods only	15.3	7.8	9.7	29.3
Goods and services	19.7	10.8	11.1	33.8
All current account credits	23.9	14.5	15.6	39.8

*Source:* International Monetary Fund.

ined because of the current account deficit in the United States. For the United States, imports of goods and services are about 4 percentage points of GDP larger than exports, whereas Euroland has a small current account surplus.

These raw data thus suggest that Euroland is substantially more open than the United States. The difference between export-oriented Germany and Euroland is (proportionally) about as large as the difference between the United States and Euroland.

If openness is measured by including all current account transactions (trade in goods and services, plus capital income, plus unilateral transfers), the euro zone becomes even more open, with the measure rising to about 24 percent (2000). This figure is about 50 percent higher than the 14.5 percent share for the United States (and the 15.6 percent share for Japan—see table 10.4). Again the difference between Germany and Euroland is proportionally as important as the difference between the United States and Euroland.

In summary, the raw data suggest that while Euroland is in the aggregate less open than its constituent members, it is substantially more open than the United States. This fact alone suggests that the exchange rate should play a more important role for Euroland than for the United States.

## **Is the Dollar “the” Exchange Rate for Euroland?**

Despite the relative importance of EU-US bilateral trade links, the dollar/euro rate is not necessarily the most important single exchange rate for Euroland. For the euro zone, trade with the United Kingdom is slightly more important than trade with the United States (see the appendix, table 10A.1, for the regional distribution of G-3 trade). Likewise, for the United States, trade with Canada alone is more important than trade with Euroland.

In general one would expect that it is not the “dollar” (the bilateral dollar/euro rate) that matters for Euroland, but the “euro” (the effective exchange rate of the euro). Do these two move together in reality? The answer is not straightforward; the “dollar” and the “euro” have a strong

**Table 10.5 Correlations of exchange rates**

Correlation coefficient of US and euro area effective exchange rates		
NEER	- 52.2	
REER	- 48.0	

  

Correlation coefficient of bilateral dollar/euro exchange rate with:		
	NEER	REER
Euro area	83.5	81.0
United States	- 84.9	- 81.5

REER = real effective exchange rate  
 NEER = nominal effective exchange rate

Notes: Correlations are computed as a correlation coefficient of differences of logarithms of the monthly exchange rate levels (1990-2001).

Source: Author's calculations.

**Table 10.6 Ordinary-least-squares regression of monthly percentage changes of the real effective exchange rate of the euro area**

Regression statistics			
Adjusted R <sup>2</sup>	0.65		
Standard error	0.01		
Observations	143		
	Coefficients	Standard error	t-statistics
Intercept	0.00	0.00	- 1.42
Dollar/euro exchange rate	0.45	0.03	16.40

Source: Author's calculations.

tendency to move in tandem, but they are not at all the same variable (table 10.5).

The correlation between the bilateral dollar/euro exchange rate and measures of the effective exchange rate of Euroland is rather high at over 80 percent (the precise value depends on the exact measure of the effective exchange rate chosen). This suggests that the two almost always move in a similar direction. But by how much? An ordinary-least-squares regression of the monthly percentage changes can give a tentative answer (table 10.6). It turns out that only about one-half of any change in the bilateral dollar/euro rate has in the past translated into a change of the effective exchange rate of the euro area (whether in nominal or real terms does not really matter in this context, as price levels move much more slowly than exchange rates).

A similar, but more complicated, story emerges if one looks at the changes in the dollar/euro rate over the past decade and compares them

with changes in the effective exchange rate of the euro (table 10.7). Over longer time periods price levels can move to offset changes in nominal exchange rates. Hence in this case one should look instead at the measures of the real (effective) exchange rate. As any cognoscente of this area knows, “the” real exchange rate does not exist. Table 10.7 thus reports a number of different measures of the real exchange rate of the euro area. The most recent numbers are reported in the final column, which shows that between the beginning of 1999 and July 2002 the real effective exchange of the euro (as measured by the ECB) declined less than 6 percent (less than one-half of the decline in the dollar price of the euro, which was approximately 15 percent).

In this sense one could say that the dollar is only half of the story as far as the euro is concerned.

## What Do the Models Tell Us?

The major macroeconomic models used by international organizations predict that changes in the dollar/euro rate can have strong effects on the economies on both sides of the Atlantic. However, when one turns to these models for an answer to the question of what impact the strong dollar might have had on Europe, one first receives a question in return, namely, “What was the reason for the strong dollar?”

A convincing answer to this more fundamental question has not yet been found. It is apparent that the strong dollar would have a quite different impact on the European economy depending on whether dollar strength was a by-product, for example, of higher US productivity or of a lax monetary policy in Euroland (see European Commission 2002).

For example, the International Monetary Fund (1998) reports that a 15 percent appreciation of the dollar, induced by a shift in portfolio preferences toward US (or, rather, dollar-denominated) securities, would lead to an increase in European GDP of close to one full percentage point and would have a negative impact on the United States of a similar size. Most of the impact on the level of demand would disappear after two years, so that the effect would become strongly negative in terms of growth rates starting in year two.

More recent simulations (see in’t Veld 2002 for more details) with other, similar models yield qualitatively similar results regarding demand, and usually find somewhat stronger effects because the more recent simulations are based on Euroland aggregates, whereas older simulations looked at the entire EU-15 (which is less open than Euroland alone). Taken at face value, the models thus suggest that the shift in portfolio preferences toward the dollar and away from the euro would considerably enhance growth in Euroland for two years and have a dampening impact on the United States.

**Table 10.7 Percentage rate of depreciation of the euro using alternative measures**

	NEER			REER		
	2001/1990	2001/1999	2001/1990	2001/1999	2001/1990	July 2002/ January 1999
<b>ECB data</b>						
Narrow group	n.a.	-13.1	n.a.	-10.6	n.a.	-5.3
Broad group	n.a.	-8.4	n.a.	-12.2	n.a.	-5.9
<b>IMF data</b>						
19 industrialized economies	-19.0	-13.0	-27.0	-17.1	-27.0	n.a.
<i>Memorandum: United States</i>	17.6	16.1	15.1	24.6	15.1	n.a.
<i>Memorandum: Bilateral exchange rate</i>	Nominal -27.3	Nominal -19.7	n.a.	n.a.	n.a.	Nominal -15.7

n.a. = not available

NEER = nominal effective exchange rate

REER = real effective exchange rate

Note: Deflator: Consumer Price Index for ECB and Unit Labor Costs for IMF.

Sources: International Monetary Fund and European Central Bank.

The perspective for the Euroland economy appears quite grim in the light of these simulation results. One could thus argue that a substantial part of the acceleration of growth in Euroland until 2001 was due to the weakness of the euro over the period 1998-2000. Furthermore, should the euro stabilize at the current, somewhat higher level, the impact on demand should become negative during 2002-03 under the joint influence of the slight dollar weakness in the spring of 2002 and the reversal of the previous expansionary effect predicted by the models.

A return of the dollar to the 1998-99 level could thus detract much more than one full percentage point from Euroland growth over the next two years, possibly aborting the tepid recovery that is still expected for 2003. This result depends of course on the *ceteris paribus* assumption for monetary policy in Euroland. An “enlightened” response by the ECB should reduce the loss in output considerably.

Unfortunately, the models are of no help in predicting what part of any dollar strength (or weakness) would translate into a change in the effective exchange rate of the euro. If one assumes a shock to the demand for euro assets, the model would show that the bilateral dollar/euro rate and the effective rate of the euro move in tandem. If, as usually assumed in the past, the shock is to dollar assets, then nondollar currencies would remain stable against the euro and the bilateral dollar/euro rate would move by much more than the effective rate. From the data presented above it appears that reality has been situated between these two extremes.

## Not Only the Level Counts

The most frequently asked question about the dollar is what impact its level has on other economies, such as Euroland. However, one should not forget that it is not only the level that counts, but also the variability.

Why should transatlantic exchange rate variability be important? The obvious answer has usually been that exchange rate variability discourages trade. Unfortunately, a large empirical literature on this issue has not been able to document a strong link between exchange rate variability and the volume of trade.<sup>1</sup> But a bit of reflection shows that the volume of trade is not an important variable in itself. It is other variables that policymakers should care about, such as (un)employment and investment.

Recently it has become fashionable to argue that exchange rate variability might not have any immediate impact (on anything) because of “pricing to market,” that is, the practice of keeping local prices fixed even in the face of large exchange rate changes.<sup>2</sup> This implies, for example, that

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1. See Belke and Gros (2002) for references.

2. See Obstfeld (2002) for a recent survey and criticism.

foreign sales should react little to exchange rates. Firms simply keep producing and export more or less the same amount, but their domestic currency earnings become variable, whereas their domestic costs remain stable. But a key consequence is that exchange rate variability can thus certainly influence the variability of profits, even if quantities react little. Firms might thus react to an increase in exchange rate (and hence profit) variability in the first instance by reducing investment in trade-related activities.

Exchange rate variability might thus have mainly a significant short-run impact on investment and on (un)employment because investment is an important component of demand. Moreover, in most continental European countries, hiring workers also represents an investment in the sense that there are high costs to reversing this decision. This is an additional reason (independent of the demand effect) why exchange rate variability should affect (un)employment. Moreover, if labor is *de facto* a semifixed factor of production, the short-run marginal costs of changing the volume of production must be very high. Firms will typically be reluctant to engage new labor (which involves a heavy sunk cost in most European countries) if the variability of the exchange rate is so high that the probability that this labor will not be used after all is also high. However, this does not apply to the United States, and so one would expect the link between exchange rate variability and US labor market performance to be less strong.

This is confirmed by the data. As shown in Belke and Gros (2002), the variability of the euro seems to have a statistically significant and economically small, but nonnegligible, impact on labor markets in Euro-land. Unemployment tends to increase and employment growth tends to fall whenever the effective exchange rate of the euro or the bilateral dollar/euro exchange rate becomes more variable. In the United States a similar effect, though statistically weaker, seems to be operating, especially concerning employment growth, which seems largely insulated from exchange rate variability. These results fit the general observations that US labor markets are more flexible and that the euro zone is considerably more open than the United States.

The potential effects of lower (or higher) exchange rate variability on Euro-land's labor markets, as estimated by Belke and Gros (2002), could be significant. A doubling of the variability (standard deviation) of the dollar rate of the euro could increase unemployment by over one full percentage point in Euro-land.

## Concluding Remarks

Just by looking at the data for openness, one would expect the exchange rate to be more important for Euro-land than for the United States. But what exchange rate? Almost four years since the start of EMU the euro

is still 15 percent lower against the dollar, but on an effective real exchange rate basis, the depreciation has been much less, only around 5 to 6 percent. It is thus not surprising that the weakness of the euro has not had a strong impact on the Euroland economy, whether in terms of growth or of the current account.

Euroland tends to benefit from lower exchange rate variability because of its greater openness and its less flexible labor markets. The worst combination would thus be for Europe to face a weaker and at the same time less stable dollar. A weaker dollar is a big worry for Europe only if it translates into a stronger euro, in the sense that movements in the bilateral dollar/euro rate translate into movements in the effective exchange rate of the euro. Historically this has not always been the case. Hence Euroland should not suffer too much from renewed dollar weakness.

## Appendix 10.1

**Table 10A.1 Indicators of openness** (exports and imports of goods only, billions of US dollars and as a share of GDP, 1996)

	Exports	Share of GDP (percent)	Imports	Share of GDP (percent)
<b>US total</b>	623.0	8.2	817.8	10.7
To Canada	132.6	1.7	159.7	2.1
To Mexico	56.8	0.7	74.1	1.0
<b>Outside NAFTA</b>	433.6	5.7	583.9	7.6
<i>Memorandum item:</i>				
To European Union	127.5	1.7	147.5	1.9
<b>Euro zone total</b>	818.0	11.9	749	10.9
To non-euro zone	209.0	3.0	177.8	2.6
To European Free Trade Association and Switzerland	64.9	0.9	67	1.0
<b>Outside European Economic Area</b>	544.1	7.9	504.2	7.3
<i>Memorandum item:</i>				
To United States	104.0	1.5	109.9	1.6
<i>Memorandum items:</i>				
<b>EU-15</b>	792.6	9.2	770.7	10.1
To non-euro zone	209.0	2.4	177.8	2.3
To European Free Trade Association and Switzerland	90.4	1.0	93.9	1.2
<b>Outside European Economic Area</b>	493.2	5.7	499.0	6.5
To United States	144.9	1.7	152.2	2.0

*Source:* International Monetary Fund, Direction of Trade Statistics.

## References

- Belke, Ansgar, and Daniel Gros. 2002. Designing EU-US Transatlantic Monetary Relations. *World Economy* 25, no. 6: 789-813.
- European Commission, ECOFIN. 2002. Economic Implications of the Depreciation in the Euro Exchange Rate. Photocopy, Brussels.
- International Monetary Fund. 1998 *World Economic Outlook*. Washington, May.
- in't Veld, Jan. 2002. Exchange Rate Changes and Monetary Policy: Simulations with the QUEST Model. *European Economy* 71: *The EU Economy: 2000 Review*, 56-66.
- Obstfeld, Maurice. 2002. Exchange Rates and Adjustment: Perspectives from the New Open Economics Macroeconomics. NBER Working Paper No. 9118. Cambridge, MA: National Bureau of Economic Research.