Box 10

INDICATORS OF EURO AREA COST AND PRICE COMPETITIVENESS: SIMILARITIES AND DIFFERENCES

Effective exchange rates (EERs) in real terms are commonly used measures of international cost and price competitiveness. Euro real EERs are obtained by deflating the nominal EER with various cost and price measures and using different sets of partner countries, thereby providing a broad range of real EER indicators.[1] As all the available real EER indices have conceptual merits and drawbacks – and could even diverge over time, thus giving rise to conflicting interpretations – this box analyses the developments in euro EER indices based on a broad set of indicators and examines potential similarities and discrepancies among them. A general note of caution applies, nonetheless, with regard to the interpretation of EER indicators as measures of competitiveness. Such indicators only encompass movements in relative prices and disregard changes in the non-price characteristics of goods, thereby ignoring important parameters relevant for international competition. The reference periods chosen for this box – the first quarter of 1999 and the average over the period 1995-2004 – are arbitrary and should not be seen as indicative of the "appropriate" level of the euro. All the relevant EER indices are available for the period from the first quarter of 1995 to the fourth quarter of 2004.

1 The ECB computes nominal and CPI-based real EERs against three groups of trading partners, consisting of 12, 23 and 42 trading partners, and real EERs based on producer price indices, GDP deflators, unit labour costs in manufacturing and unit labour costs in the total economy against 12 and 23 trading partners. See the box entitled "Update of the overall trade weights for the effective exchange rates of the euro and computation of a new set of euro indicators" in the September 2004 issue of the ECB's Monthly Bulletin. For a comprehensive discussion of the merits and drawbacks of the concepts, see the article entitled "Developments in the euro area's international cost and price competitiveness" in the August 2003 issue of the ECB's Monthly Bulletin.

Table Deviation of the nominal and real euro EERs from average

(percentages)

Against the currencies of …	Nominal EER	Real EER based on …					Memo item: Real CPI-based EER compared with 25-year average
		Consumer price indices (CPI)	Producer price indices (PPI)	Unit labour costs in manufacturing (ULCM)	Unit labour costs in the total economy (ULCT)	GDP deflator (GDP)	
Fourth quarter of 2004 compared with the average over the period 1995-2004							
12 trading partners (EER-12)	9.1	12.2	10.3	9.2	9.5	13.1	9.3
23 trading partners (EER-23)	8.5	9.3	8.2	6.5	5.4	9.9	
42 trading partners (EER-42)	17.4	9.7					
Fourth quarter of 2004 compared with the first quarter of 1999							
12 trading partners (EER-12)	6.5	11.2	9.1	7.4	9.3	11.5	
23 trading partners (EER-23)	5.7	7.8	6.8	4.2	4.2	7.7	
42 trading partners (EER-42)	13.0	7.1					

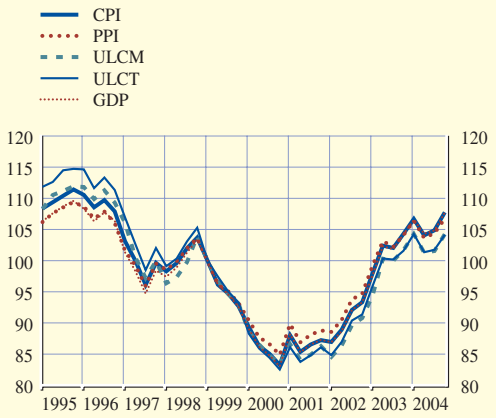
Note: The EER-12 covers Australia, Canada, Denmark, Hong Kong, Japan, Norway, Singapore, South Korea, Sweden, Switzerland, the United Kingdom and the United States. In addition to this group, the EER-23 covers the ten new EU Member States and China. The EER-42 adds other transition economies and emerging markets to this list.

Following its launch, the euro's evolution in nominal and real effective terms was initially characterised by a strong decline in the period 1999-2000. The rebound of the euro as from 2002, which continued at a more moderate pace over the following two years, more than offset this initial decline. In more detail, a comparison of indicators in *nominal* effective terms suggests that, if measured against the broad group of 42 trading partners (EER-42), the euro in the fourth quarter of 2004 had increased more compared with the first quarter of 1999 and stood further above its ten-year average level than vis-à-vis other groups of trading partners (EER-12 and EER-23 – see Table). This discrepancy, however, merely reflects on average higher inflation rates in the partner countries included in the broader index.

Turning to *real* EER indicators, Chart A illustrates that the different indicators have been highly correlated over the past ten years. A closer look suggests, however, that the deviation of these indicators in the fourth quarter of 2004 from their ten-year averages ranges from 5.4%, if the real EER vis-à-vis 23 trading partners and based on developments in unit labour costs (ULC) for the total economy is used, to 13.1%, if the real EER against 12 trading partners and based on developments in relative GDP deflators is used (see Table). Likewise, the rate of change for the same indicators since the first quarter of

Chart A Real euro EER-23 indices based on various cost and price deflators

(indices: 1999 Q1 = 100; quarterly data, against 23 trading partners)



Source: ECB.
Note: The last observation is for the fourth quarter of 2004.

1999 ranges from 4.2% to 11.5%. These similarities and differences across indicators are examined below in terms of the time horizon underlying the analysis, the coverage of trading partners and the use of different deflators.

As regards the *time horizon*, the real EER based on CPI indices, for which longer time series are available, was in the fourth quarter of 2004 somewhat higher with respect to its 10-year average (+12.2%) than to its 25-year average (+9.3%), mainly reflecting the fact that the longer period includes the episode of US dollar strength in the mid-1980s.

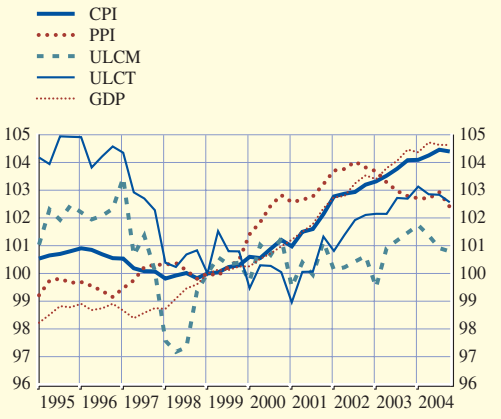
In terms of coverage of *trading partners*, the real EER indicators against 23 trading partners (EER-23) are closer to their ten-year averages and have increased less since the first quarter of 1999 than those vis-à-vis 12 trading partners (EER-12). This mainly reflects the fact that the EER-23 includes – in addition to the countries included in the EER-12 – the Member States which joined the EU on 1 May 2004 and China. Several of the new Member States in central and eastern Europe, in particular, have experienced a strong real appreciation of their currencies in recent years partly associated with the convergence and catching-up of their economies in the transition process. Accordingly, for longer-term comparisons it would seem more appropriate to consider the narrow EER-12 index, which includes only countries where such effects are likely to be small.

With regard to the use of *different deflators*, most of the real EER indices based on relative ULC have risen somewhat less since the first quarter of 1999 than the indices based on price indices (particularly consumer prices and GDP deflators). Chart B shows the evolution of relative costs and prices against 12 trading partners, thereby eliminating the impact of the nominal exchange rate – which dominates the fluctuations of the real indicators shown in Chart A – from the real EER. While the development of these indicators does not permit an assessment of individual relative cost and price indicators over time – particularly if there are significant differences in inflation between the euro area and its trading partners – it does allow a comparison of the evolution across indicators. The chart shows that relative ULC indicators (total economy and manufacturing) have been fluctuating without following a specific trend over the past ten years. The relative ULC-based indicators seem to have temporarily fallen in the second half of the 1990s, but this was not reflected by corresponding movements in prices. Thereafter, all indicators tended to rise again, albeit more moderately in the case of those based on relative ULC developments.

This difference in the evolution of relative cost and price indices may be due to several factors. One element could be that wage increases have been more moderate and in line with productivity developments in the euro area economy (relative to major trading partners) in recent years, particularly in the

Chart B Developments in euro area costs and prices relative to euro area trading partners

(index: 1999 Q1=100; quarterly data, against 12 trading partners)



Source: ECB.
Note: The last observation is for the fourth quarter of 2004.

manufacturing sector. However, the discrepancy may also reflect the different properties of the available cost and price measures. More specifically, indicators based on ULC are less comparable across countries – particularly for countries outside the EU – and, more importantly, represent only a fraction of the total costs of a firm. As well as omitting, for example, R&D expenditure, capital costs and distribution costs, these indicators do not take into account the costs of imported inputs in production. Accordingly, the strong rise since the late-1990s in commodity prices, which constitute a significant share of companies' input costs, is not directly reflected in the evolution of these indicators. Moreover, the deviation in the evolution of the relative producer prices from that of the other price measures suggests that developments in the services sector may have had an effect.

Overall, measured against both their ten-year average levels and the levels prevailing in the first quarter of 1999, all real EER indicators were higher in the fourth quarter of 2004, suggesting that euro area price competitiveness has declined. However, indicators based on unit labour costs display a more moderate gap than most indicators based on price deflators. This discrepancy may be partly associated with more moderate wage increases in the euro area compared with major trading partners in recent years, but it may also reflect the different statistical properties of the available cost and price measures.