

### **Box 3**

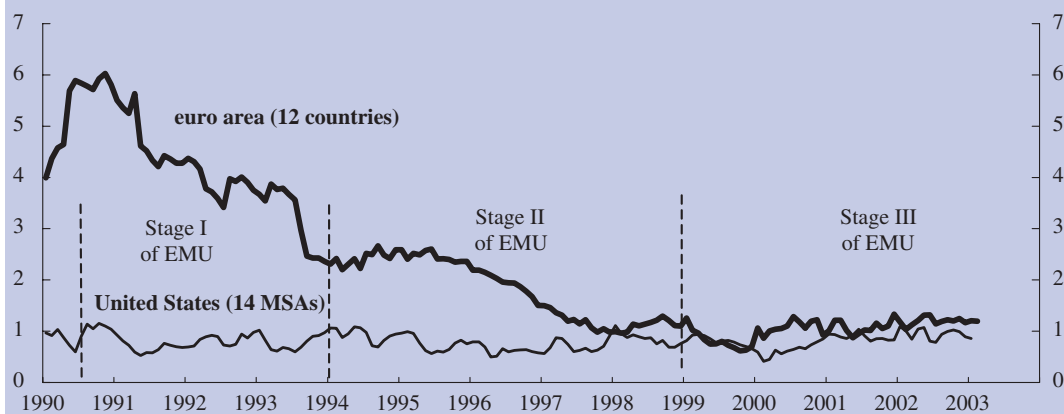
#### **The dispersion of inflation across the euro area countries and the US metropolitan areas**

There are many reasons why inflation rates may differ across the countries or regions of a monetary union: cyclical differences, the asymmetric effects of cost push factors (for example, oil price increases), different levels of flexibility in product and labour markets, policy-induced price changes (for example, changes to indirect taxes), catching-up effects, country-specific differences in consumption patterns, etc.

The ECB's monetary policy must focus on the euro area as a whole and is therefore not in a position to address national inflation divergences. When national inflation rates markedly affect competitiveness, real disposable

## The dispersion of annual inflation across euro area countries and 14 US Metropolitan Statistical Areas (MSAs)

(unweighted standard deviation in percentage points)



Sources: Eurostat and US Bureau of Labor Statistics.

Note: Data up to February 2003 for the euro area and to January 2003 for the US MSAs.

income or real profits in a euro area country, only national governments can respond by setting appropriate policies. It is particularly important for the euro area countries to ensure that their labour and product markets are sufficiently flexible to absorb shocks, and to avoid policy measures which have a negative impact on their inflation performance.

Inflation dispersion can be measured in a number of ways. The simplest measure is the spread between the highest and lowest inflation rate. Another conventional measure is the standard deviation of inflation rates across countries. The weighted standard deviation takes account of the size of the countries, whereas the unweighted measure gives equal importance to all the countries. Other measures of inflation dispersion include the spread between the three countries with the highest and the lowest rates or the coefficient of variation. In this box the unweighted standard deviation is used. Though not analysed in this box, the implications of a given degree of dispersion may depend on the general level of inflation.

To judge whether the dispersion of inflation across the euro area countries is at an exceptional level, it is useful to compare it with the degree of dispersion in a long-standing monetary union, such as the United States. The chart above shows developments since 1990 of the inflation dispersion in the euro area and the United States metropolitan areas using monthly data (the term “euro area” refers to the 12 EU Member States which have formed the euro area since 1 January 2001). The chart shows that the degree of annual inflation dispersion across euro area countries (in terms of the HICP) has continually decreased since the start of EMU, coinciding with a decline in actual inflation. This decrease in inflation dispersion was particularly marked in Stage I of EMU. Dispersion reached its lowest level around the second half of 1999, i.e. at the start of Stage III of EMU. It picked up modestly in 2000 and, since early 2001, has remained broadly stable.

As far as the United States is concerned, CPI data for the US Metropolitan Statistical Areas (MSAs) are published regularly by the US Bureau of Labor Statistics. These data cover 26 MSAs, representing around 51% of total consumer spending in the United States. However, 12 MSAs publish semi-annual CPI data, 11 publish bimonthly data and only three provide information on a monthly basis. In order to show dispersion measures with the highest possible frequency, this box focuses on the 14 MSAs which provide such information,

i.e. on a monthly and bimonthly (interpolated to monthly) basis. These 14 US MSAs represent just over 40% of total consumer spending.<sup>1</sup>

Interestingly, the chart shows that since 1997 inflation dispersion within the euro area has been fluctuating very close to the level computed across the 14 US MSAs. This has especially been the case since the start of Stage III of EMU. Thus, the degree of inflation dispersion in the euro area over recent years appears to be broadly in line with that seen in the United States. In short, the chart shows that the degree of dispersion of overall inflation in the euro area in the recent past has been neither high in historic terms nor notably different from that seen in the United States. Indeed, the degree of inflation dispersion in the euro area has changed little since January 1999.

*1 Dispersion measures may also be computed at a semi-annual and annual frequency for the 26 MSAs, but the outcome shown below, on the basis of monthly and bimonthly data, would not be materially altered. Moreover, it may be noted that the evolution of the weighted average inflation rate for these 14 selected US MSAs is largely in line with the nationwide monthly CPI inflation rate in the United States.*