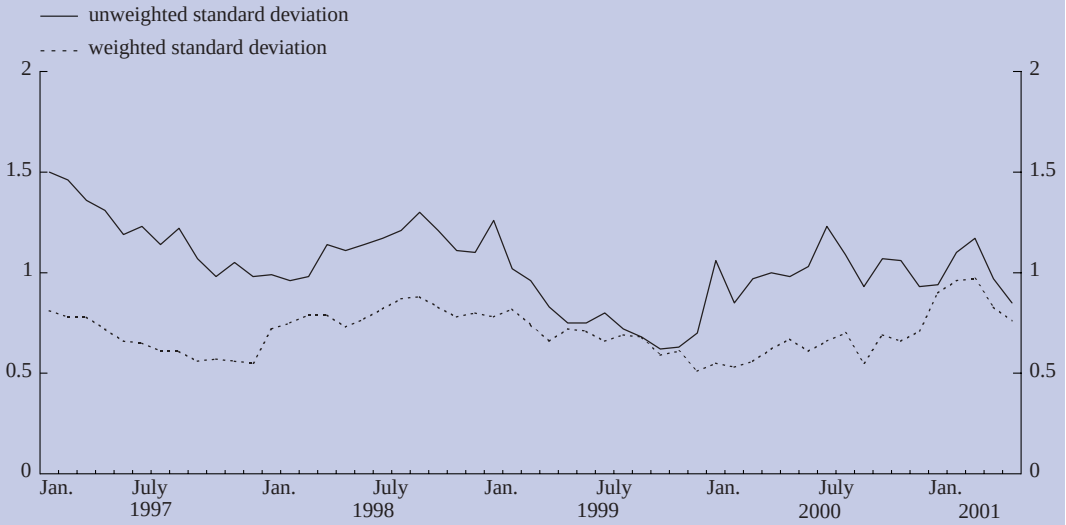
Box 3

Rising HICP inflation since early 1999 has been accompanied by moderate changes in inflation dispersion across euro area countries

During most of the past decade, euro area countries have experienced a significant decline in HICP inflation, accompanied by a considerable degree of inflation rate convergence. While the annual rate of change of the *overall HICP* has increased since the beginning of 1999, various statistical measures[1] show that the dispersion of overall HICP inflation rates across euro area countries rose only moderately, if at all, over the same period. In fact, all these measures show that the dispersion of overall HICP inflation rates remained broadly contained within the narrow margins that have been observed since 1997. However, the broad stability in overall HICP inflation dispersion in the past few years masks sometimes significant (temporary) changes in the cross-country dispersion among its main components and sub-components.[2]

Dispersion of HICP inflation across euro area countries

(dispersion of annual rates of change in percentage points)



Energy prices have contributed most to the rise in overall HICP inflation since spring 1999, reflecting oil price and euro exchange rate movements. While energy prices have risen in all euro area countries, the degree of increase differed across euro area countries, reflecting different energy trade structures, energy consumption patterns, progress in deregulating energy markets and also different national policy responses to the oil price shock. Nevertheless, the dispersion of annual rates of change in energy prices seems to have peaked in early 2000. Considering the sub-components of energy (such as petrol, gas and electricity), the development of the dispersion of price changes seems to reflect the cross-country differences in the transmission of oil price increases to the consumer. Thus, the dispersion of inflation rates of liquid fuel and petrol had increased since mid-1999 to peak in early 2000. However, the dispersion of inflation rates for gas, heating energy and solid fuel rose only during the course of 2000 before falling in early 2001. The dispersion of price changes for electricity rose somewhat during 1999, increased more substantially in 2000, and has recently fallen significantly.

Food price increases have contributed to the rise in overall HICP inflation in particular since the beginning of 2001. *Unprocessed food prices* in some euro area countries have been affected by health concerns in the context of BSE and the consequences of foot-and-mouth disease. The dispersion of annual rates of change in

1 *Dispersion measures used here include the weighted and unweighted standard deviation, the maximum-minimum spread and the spread between the three countries with the highest and the three countries with the lowest HICP inflation rates. For an overview of these measures, see the box entitled "Inflation differentials within the euro area" in the December 2000 issue of the ECB Monthly Bulletin.*

2 *For an analysis of the developments in the main components of the overall HICP for the euro area as a whole since early 1999, see Box 7 in the June 2001 issue of the Monthly Bulletin.*

unprocessed food prices, and in particular those for fish and meat, have risen substantially since the beginning of this year, reflecting the country-specific impact of these animal diseases. By contrast, the dispersion of inflation rates for fruit was very low in early 2001. The change in the dispersion of inflation rates for *processed food* appears recently to have been dominated by national policy measures. Dispersion measures of processed food inflation jumped in December 1999 mainly due to an increase in the tobacco excise duty in one euro area country, before returning to a low level in December 2000. Altogether, the dispersion of inflation rates for food has remained relatively contained as the recent increase in the dispersion of price changes for unprocessed food has broadly been offset by a lower dispersion in inflation rates of processed food and, in particular, tobacco.

The other components of the HICP, i.e. non-energy industrial goods and services prices, have experienced some increases in their year-on-year rates of change since early 1999, and in particular during the past few months. Cross-country inflation divergence with respect to *non-energy industrial goods* remained almost unchanged at a very low level, despite varying degrees of national exposure to import and oil prices. This seems to reflect the effect of fierce competition in the tradable goods sector. While some sub-components of the non-energy industrial goods price index, such as furniture and shoes, experienced higher dispersion of inflation rates recently, dispersion of inflation rates of other sub-components, such as garment and motor car prices, fell significantly. Altogether, the opposing developments in the dispersion of inflation rates of the various sub-components over time contained the dispersion of overall non-energy industrial goods inflation rates across euro area countries.

The dispersion of *services* inflation rates has also remained rather low since the beginning of 1999. For some sub-components of the services index, the changes in dispersion seems to have been affected mainly by changes in administered prices and fees (e.g. for cultural services or refuse collection) or by differences in progress with deregulation (e.g. in postal services and telephone and telefax services). The dispersion of price changes in sub-components such as package holidays increased somewhat in 2000 before declining again during the first few months of this year, to some extent reflecting the different shares of transportation (and thus energy) costs in overall package holiday prices. By contrast, the dispersion of the annual rise in housing rents has increased steadily since the beginning of 2000, and may not decline swiftly over the near future.

Dispersion of HICP inflation and its main components across euro area countries

(various statistical measures of dispersion of annual rates of change in percentage points)

	Weights [1]	Average	1999	2000	2000				2001		2001				
	(%)	1997-2000			Q1	Q2	Q3	Q4	Q1	Q2	Jan.	Feb.	Mar.	Apr.	May
HICP inflation	100.0														
Maximum value minus minimum value		3.7	2.5	3.6	3.6	3.6	3.7	3.5	3.4	3.1	3.2	3.4	3.7	3.3	2.9
Average of the three highest minus the average of the three lowest values		2.2	2.0	2.3	2.2	2.3	2.5	2.4	2.6	2.2	2.3	2.7	2.9	2.3	2.1
Weighted standard deviation		0.7	0.7	0.6	0.5	0.6	0.6	0.7	0.9	0.8	0.9	1.0	1.0	0.8	0.8
Unweighted standard deviation		1.0	0.8	1.0	1.0	1.0	1.1	1.0	1.1	0.9	0.9	1.1	1.2	1.0	0.9
of which:															
Energy	9.5	2.9	2.8	4.0	4.8	3.7	3.8	3.9	4.0	4.1	3.8	4.0	4.2	4.5	3.7
Unprocessed food	8.0	2.0	2.1	1.8	2.0	1.8	1.6	1.8	2.6	2.9	1.8	2.7	3.2	3.4	2.5
Processed food	12.3	1.5	1.3	1.9	2.0	2.0	1.9	1.6	1.2	1.2	1.1	1.2	1.2	1.3	1.1
Non-energy industrial goods	32.1	1.2	1.0	0.9	1.0	0.7	1.0	0.8	0.9	0.9	0.8	0.9	1.0	0.9	0.9
Services	38.1	1.5	1.1	1.4	1.2	1.4	1.5	1.4	1.4	1.3	1.3	1.4	1.5	1.4	1.3

Sources: Eurostat and ECB calculations.

1) 2001 weights. Since 1999 the coverage of the HICP has been extended and the weights have been updated twice.

Again, the opposing developments seen in the dispersion of inflation rates of the various sub-components over time contained the dispersion of overall services inflation rates.

Overall, the increase in HICP inflation in the euro area since the beginning of 1999 has been accompanied by only moderate changes in inflation dispersion across euro area countries, despite differences in cyclical positions. A number of temporary factors, namely the oil price shock, animal diseases and specific national government measures, have caused significant increases in inflation dispersion in some sub-components of the HICP during the period. However, the declining dispersion in other sub-components, probably partly reflecting the structural impact of competitive forces, contained the dispersion of overall HICP inflation within narrow bands and at a relatively low level.