EUROPEAN CENTRAL BANK
EUROSYSTEM

OCCASIONAL PAPER SERIES
NO 57 / MARCH 2007

UNDERSTANDING PRICE DEVELOPMENTS AND CONSUMER PRICE INDICES IN SOUTH-EASTERN EUROPE

by Sabine Herrmann
and Eva Katalin Polgar

EUROPEAN CENTRAL BANK

EUROSYSTEM

OCCASIONAL PAPER SERIES

NO 57 / MARCH 2007

UNDERSTANDING PRICE DEVELOPMENTS AND CONSUMER PRICE INDICES IN SOUTH-EASTERN EUROPE *

by Sabine Herrmann

and Eva Katalin Polgar

In 2007 all ECB publications feature a motif taken from the €20 banknote.

This paper can be downloaded without charge from http://www.ecb.int or from the Social Science Research Network electronic library at http://ssrn.com/abstract_id=923389.

* *The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the European Central Bank. The paper benefited from comments by A. Winkler, F. Moss, G. Pineau, F. Mazzaferro as well as by P. Backé, P. Del Rio, B. Égert, F. Schobert and Z. Walko from the informal network of Eurosystem economists working on economic issues in south-eastern Europe and from comments by the members of the ESCB International Relations Committee. Martin Eiglsperger and Mariagnese Branchi provided helpful comments and support in the form of CPI data and information about the concept of price administration in consumer price indices as well as its relevance in the HICPs of EU countries.*

Address
Kaiserstrasse 29
60311 Frankfurt am Main
Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main
Germany

Telephone
+49 69 1344 0

Website
http://www.ecb.int

Fax
+49 69 1344 6000

Telex
411 144 ecb d

ISSN 1607-1484 (print)
ISSN 1725-6534 (online)

CONTENTS

ABSTRACT

The primary goal of monetary policy in most economies of the world is to achieve and maintain price stability. This paper evaluates price developments and consumer price indices in south-eastern European countries, i.e. countries that have either recently joined the EU or are candidate or potential candidate countries. It is motivated by the fact that, in transition countries, inflation has generally been higher and more volatile than in advanced economies. The analysis reveals that the sub-index *housing/energy* appears to be the main driving force behind overall inflation in the region. In most of the countries under review, administered prices prove to be an important factor in consumer price developments, with their weights increasing over time. Inflation volatility in south-eastern Europe is significantly higher than in the euro area. While this is partly due to a higher level of inflation, it also reflects a more pronounced share for the most volatile sub-indices as well as the marked impact of administered prices on the overall price index, a phenomenon which has also been seen in the central and eastern European countries. While in most south-eastern European countries no HICP has been calculated yet, there is little evidence suggesting that the future use of the HICP will result in a systematic change in inflation patterns in the respective countries. However, as deviations have been observed in a few countries for certain periods, without further information on the structure of the respective national CPI and the HICP such differences cannot be fully excluded.

JEL classification: E 21, O 52, O 57, P 22

Keywords: South-eastern Europe, inflation developments, inflation volatility, consumer price indices, HICP, administered prices

EXECUTIVE SUMMARY

The primary goal of monetary policy in most economies of the world is to achieve and maintain price stability. This makes price developments the focus of economic analysis and of central banks. By taking an accounting-type exercise perspective, this paper evaluates price developments and consumer price indices in south-eastern Europe, i.e. in Bulgaria and Romania, which recently joined the European Union as well as in Albania, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey which are EU candidate and potential candidate countries.[1]

In south-eastern Europe, inflation developments have been rather diverse. While all countries started the transition process with prices growing very rapidly, some countries continued to record double-digit or higher inflation rates even in the second half of the 1990s. However, for most of them inflation rates have now returned to relatively modest levels. At the same time, recent inflation trends have been rather diverse, with some countries observing a steady process of disinflation from comparatively high levels, while inflation has been on a rising trend in three countries of the region, albeit from rather low starting points.

The sub-index housing/energy appears to be the main driving force behind inflation in south-eastern Europe, contributing to almost half of the price increases on average. This holds even though in all countries the *food* sub-index has the largest weight in the consumer baskets, accounting for almost 43% of the overall index on average, which is more than twice as high as in the euro area.

In most countries under review, administered prices also prove to be an important factor in the development of consumer prices, and their weights have even increased over time. However, there is no general tendency in the way administered prices affect overall inflation rates.

Inflation volatility in south-eastern Europe is significantly higher than in the euro area. This is partly due to a still higher level of inflation. Therefore progress in disinflation (e.g. in Turkey and Serbia) is expected to lead to lower inflation volatility. Other reasons for volatility exceeding the euro area level include the different weight structure, with more volatile sub-indices accounting for a larger share of the overall index.

In principle, as a result of the ongoing transformation process and a rising level of income, volatility may be expected to decline. This is because a convergence of the weight structures in south-eastern European consumer baskets towards those of the euro area should also lower the aggregate weight of the most volatile sub-indices. In addition, the liberalisation of administered prices should contribute positively to a reduction in inflation volatility. However, up to now there has been no clear-cut empirical evidence on the relationship between an increasing level of income and the measured inflation volatility, possibly reflecting the fact that the weight of administered prices has not declined; it has even increased in some of the countries.

There is little evidence suggesting that the future use of the HICP will result in a systematic change in inflation patterns in south-eastern Europe. This does not mean that differences between the behaviour of the HICP and CPI can be excluded a priori for certain countries. However, they would depend to a large extent on potential differences in weights and coverage, as well as methods for data collection and measurement, which are rather country-specific in the case of the national consumer price indices. Differences between the two indices are more likely to arise at a disaggregated level. However, different contributions of the sub-indices have not led to significant differences at the level of the overall indices for most countries in the region.

1 Bosnia and Herzegowina is excluded from the analysis due to severe data shortages.

I INTRODUCTION AND MOTIVATION

The primary goal of monetary policy in most economies of the world is to achieve and maintain price stability. This makes price developments the focus of economic analysis and of central banks. Consumer price indices aim to measure price changes of a representative consumer basket, based on consumption expenditure weights in a base year. Given the focus on dynamics, the indices should be comparable over time, while at the same time reflecting the most up-to-date structure of consumption expenditure. From the perspective of European integration, cross-country comparisons are also important; these call for a harmonisation of data collection, aggregation methods, timing, coverage and a few related issues. This need for comparability resulted in a harmonisation process in Europe, with the Harmonised Index of Consumer Prices (HICP) calculated for all EU countries for a period starting in 1995 to 1997. Due to measurement issues and statistical differences, the HICP can differ in some important aspects from the national consumer price index (CPI). (For a detailed description of these differences, see Box 1 below.)

This paper takes a regional approach to evaluating price developments and consumer price indices in south-eastern Europe. Thus, it includes two south-eastern European countries, namely Bulgaria and Romania, which joined the EU in 2007, Croatia, the former Yugoslav Republic of Macedonia and Turkey, which are EU candidate countries, as well as Albania, Montenegro and Serbia, which are potential candidate countries with an EU accession perspective.

For a well-founded economic analysis of price developments, it is crucial to understand what exactly price statistics are measuring and what their main statistical features are. Volatility characteristics are one of the more important issues for economic analysis, particularly in transition countries, where volatility is often higher than in more advanced economies. Moreover, in order to evaluate the inflation outlook for these countries, it is very useful to identify the categories of goods that are driving inflation developments. This also includes the category of goods with administered prices which, in general, play a greater role in transition economies than in more advanced market economies. The analysis of consumer price indices is all the more important for south-eastern Europe, since in most countries no HICP has been calculated yet. Thus, it is of interest to assess the possible impact on inflation and inflation developments of a switch to HICPs in the future.

This paper analyses consumer price indices in the south-eastern European (SEE) countries, with the central and eastern European (CEE) countries,[2] as well as the euro area serving as a benchmark for the sake of comparison. Thus, the paper does not aim to analyse the role of supply and demand factors, like unit labour costs, credit growth and domestic demand, or macroeconomic, structural and tax policies[3] in determining inflation developments in SEE countries. Rather, the paper takes an accounting-type exercise perspective, identifying the most important sub-indices in terms of weight and volatility.

Having this caveat in mind, the paper is structured as follows: In section 2, we briefly describe the data, while a more detailed discussion of data issues – including the limitations data availability imposes on the analysis – can be found in the Annex. In section 3 we turn to the analysis, starting with a descriptive overview of inflation developments in SEE.[4] The driving forces behind inflation are discussed in section 4, with section 5 being

2 For the purpose of this paper, the CEE countries are the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

3 In several countries, e.g. Serbia at the beginning of 2005 or in Bosnia and Herzegovina in early 2006, inflation developments were influenced by the introduction of VAT.

4 The review in section 3 takes account of the most recent inflation developments. By contrast, the analysis conducted in sections 4-7 is based on cross-country information for the period December 2002-July 2006 ("the review period").

specifically devoted to the role of administered prices. In section 6, volatility characteristics of the SEE price indices are analysed. Last but not least, section 7 looks at country-by-country differences between HICPs and CPIs in countries where both indicators are available (Romania, Turkey and the CEE countries), also trying to draw some general conclusions on the impact of using the HICP instead of the CPI. Section 8 summarises and concludes.

The main conclusions of the analysis are the following:

– The sub-index *housing/energy*[5] appears to be the main driving force behind overall inflation in south-eastern Europe, contributing to almost half of price movements on average.

– In most of the countries under review, administered prices prove to be an important factor in consumer price developments, with their weights increasing over time. However, there is no general tendency in the way administered prices affect overall inflation rates.

– Inflation volatility in south-eastern Europe is significantly higher than in the euro area. While this is partly due to a higher level of inflation, it also reflects a more pronounced share for the most volatile sub-indices as well as a marked impact of administered prices on the overall price index.

– There is no evidence suggesting that the future use of the HICP will result in a systematic change in inflation patterns in the respective countries. However, as deviations could be observed in a few countries for certain periods, without further information on the structure of the respective national CPI and the HICP, such differences cannot be fully excluded either.

5 According to the classification of individual consumption by purpose (COICOP), the sub-index *housing/energy* covers housing, water, electricity, gas and other fuels and thus includes actual rentals for housing, imputed rentals for housing (this is only included in some of the national CPIs, and so far not covered in the HICP; see also footnote 30), maintenance and repair of the dwelling, water supply and miscellaneous services relating to the dwelling. The energy component covers only energy used for housing (not for transport). However, as shown in more detail in the Annex, not all SEE countries refer to the standardised COICOP classification scheme for the calculation of their CPIs. Consequently, the compositions of e.g. the *housing/energy* sub-indices might differ on a disaggregated level. In addition, in some countries this sub-index might comprise goods and services with administered prices to some extent.

Box 1

COMPARING THE HARMONISED INDEX OF CONSUMER PRICES AND NATIONAL CONSUMER PRICE INDICES: MAIN CONCEPTUAL DIFFERENCES[1]

Consumer price indices (CPIs) constitute one of the key macroeconomic indicators. Besides the important role they play in monetary policy and economic analysis in general, they have a wide range of other uses, e.g. they serve as a yardstick for assessing changes in purchasing power, and are typically referred to in wage negotiations and often used for indexing prices in contracts. However, the underlying concepts and methods differ somewhat across countries, with the result that national CPIs are not sufficiently comparable for cross-country analyses. Methodological recommendations for the calculation of CPIs have been laid down in the international "Consumer Price Index Manual: Theory and Practice" and in the resolutions of the ILO,[2] but only the EU

1 This box has been prepared by Martin Eiglsperger.
2 ILO, IMF et al., "Consumer Price Index Manual: Theory and Practice", Geneva, 2004, and "Resolution concerning consumer price indices" adopted by the 17th International Conference of Labour Statisticians, Geneva, 2003.

countries have implemented mandatory regulations on compiling a Harmonised Index of Consumer Prices (HICP).[3]

Reliable and comparable measures of consumer price inflation are needed for the euro area as a whole and for each individual EU country for two main reasons. First, the ECB defines price stability in the euro area as a year-on-year increase in the HICP for the euro area of below, but close to, 2%.[4] Second, the rate of change in consumer prices is one of the convergence criteria used to assess whether or not a Member State is ready to join the euro area. Consequently, there is a need for a harmonised conceptual framework to produce comparable results. Harmonised CPIs have been developed by Eurostat, the Statistical Office of the European Communities,[5] as well as by the statistical institutes of the EU countries.[6] HICPs are available for all EU countries, for the European Economic Area countries Iceland and Norway, as well as for Turkey. The HICP for the euro area and the HICP for the EU are compiled by Eurostat by aggregating country information. Almost all the above-mentioned countries produce both a national CPI and an HICP.

Differences between national CPIs, as well as differences between a country's CPI and its HICP, are typically due to one or more of the following reasons:

– The most important factor affecting the international comparability between CPIs is the treatment of *owner-occupied housing*. While many national CPIs exclude changes in the price of owner-occupied housing (in 16 of the 27 current EU countries), others include rental payments imputed to owner-occupiers or, alternatively, mortgage-related costs. In the latter case, changes in expenditure on major repairs and alterations or, alternatively, in estimates of the depreciation of the dwelling, are typically also included. Changes in the price of owner-occupied housing are currently not included in the HICP, and it has not yet been decided whether and how owner-occupied housing should be covered. In a pilot study, Eurostat is currently investigating a net acquisition approach, i.e. the inclusion of changes in the price of purchasing a dwelling and in expenditure on major repairs, maintenance and alterations.

– The consumption expenditure covered by the national CPIs may differ across countries. CPIs applying the residence concept reflect price changes in all goods and services purchased by consumers living in the country concerned, including their purchases abroad. By contrast, the domestic concept covers all consumption expenditure in the country concerned, regardless of who (residents or non-residents) purchased the goods and services. HICPs apply the domestic concept.

– The consumption basket and the expenditure shares of the items covered in the national CPIs and the HICPs may be updated at different intervals. Updating the HICP basket and weights sufficiently regularly (e.g. once a year) has the advantage that the index then represents up-to-date consumption patterns. The HICP was designed as a chained Laspeyres

3 The regulations can be found on Eurostat's website: http://epp.eurostat.ec.europa.eu.
4 The role of the HICP in the ECB's monetary policy strategy is described in the article entitled "The Harmonised Index of Consumer Prices: concept, properties and experience to date" in the July 2005 issue of the ECB's Monthly Bulletin.
5 Eurostat provides HICP data and additional information on its website. Eurostat's "Harmonized Indices of Consumer Prices (HICPs) – A Short Guide for Users" (Luxembourg, 2004) describes the concepts and methods underlying the HICP and provides references to more detailed information.
6 The United States Bureau of Labor Statistics compiles an HICP for the United States on an experimental basis. It is designed to be a close approximation of the HICP concept, but does not necessarily follow the HICP regulations and guidelines in detail.

index that allows, but does not require, a full annual update of the expenditure shares. Furthermore, HICP weights must be reviewed each year to check that they remain representative, and the weights have to be updated if the continued use of older weights would affect reliability or comparability.

– Some national statistical institutes use different aggregation formulas in their national CPI and HICP for aggregation at the lowest levels of the index.

– The coverage of national CPIs differs considerably for health services, social protection and education services. For example, out-of-pocket payments by consumers for medical or education services are not always considered to be part of the national measure of consumer price inflation. The harmonised treatment of such expenditure was a major achievement of the HICP.

– There are various practices for the statistical treatment of quality changes, of new products, of sales and prices, of seasonal items, to mention only a few.

The work of Eurostat and the national statistical institutes has enhanced comparability between the HICPs, although more progress is still required in this field. Furthermore, as national statistical institutes have often introduced such harmonised practices for their HICP *and* their national CPI simultaneously, even the comparability between national CPIs has improved to some extent thanks to the work on the HICP.

2 DATA AVAILABILITY

National CPIs have been provided for Albania, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia and Turkey. Due to severe data shortages, Bosnia and Herzegovina is excluded from the analysis. With the exception of Serbia, Montenegro and Romania, indices are based on the COICOP classification scheme (Classification of Individual Consumption by Purpose), which includes twelve main groups at the two-digit level. Only three SEE countries (Bulgaria, Romania, Turkey) compile HICPs, with the national CPI and HICP series being identical in Bulgaria. Furthermore, data series of the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia as well as of the euro area are included in the analysis. In order to allow for cross-country comparisons to some extent, the analysis mostly refers to a common observation period (12/02-07/06) for which data are available for all countries considered. (See the Annex for a more detailed description of the data used in the paper.)

3 INFLATION DEVELOPMENTS IN SOUTH-EASTERN EUROPE

In south-eastern Europe, inflation developments have been rather diverse. While all countries started the transition process with prices growing very rapidly, some countries continued to record double-digit or higher inflation rates even in the second half of the 1990s. However, for most of them inflation rates have now returned to relatively modest levels. At the same time, recent inflation trends have been rather diverse, with some countries observing a steady process of disinflation from comparatively high levels, while inflation has been on a rising trend in three countries of the region, albeit from rather low starting points.

In recent years, inflation has been low in Albania, Croatia, the former Yugoslav Republic

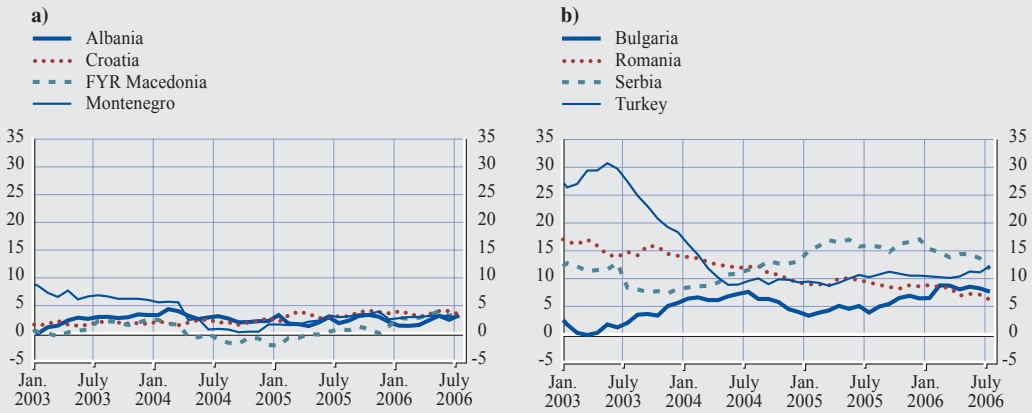
of Macedonia and Montenegro (see Chart 1a[6]). In Albania the year-on-year inflation rate remained rather stable – especially in the last two years – with an annual average of below 3% in the whole period under review. To a certain extent, this might reflect a fairly stable exchange rate against the euro since mid-2005 following a continuous nominal appreciation in the years before. In Croatia, inflation increased to 3.3% in 2005, up from 2.1% in 2004, reflecting mainly higher energy prices and adjustments in administered prices in the services sector. In the first months of 2006, monthly year-on-year inflation rates again increased somewhat, reaching 4% in the summer, before declining again to 2.1% in October 2006. Having been on average below 1% in the period 2002-2005, inflation in the former Yugoslav Republic of Macedonia accelerated at the beginning of 2006, reaching 4% in May, mainly reflecting higher food prices due to adverse weather conditions in the first months of the year, an increase in tobacco taxes and higher oil prices. Nevertheless, annual inflation in 2006 is expected to be close to 3% (the November 2006 year-on-year inflation rate was 3.7%). In Montenegro, where the euro has been adopted on a unilateral basis, inflation declined from a level of almost 10% in December 2002 to around 2.2%-2.7% in 2004-2005, increasing only modestly, to 3%, in July 2006. Inflation decreased again to 2.7% in September 2006.

In Bulgaria and Romania prices are still increasing more rapidly than in the euro area. While Romanian inflation declined rather steadily from elevated levels, inflation developments in Bulgaria have been more volatile (see Chart 1b). The currency board arrangement in Bulgaria has been successful in breaking the high inflation dynamics of the early transition period and in keeping price increases mostly in single digits. However, year-on-year inflation rates accelerated in the period under review, peaking at 8.8% in February 2006, largely as a result of the harmonisation of excise duties on alcohol and tobacco. A severe drought contributed to a first increase in early 2003, followed by a second one in early 2005 based on buoyant domestic demand, adjustments in administered prices and other exogenous factors like flooding and oil price increases. Since early 2006, however, inflation has been on a declining trend as the inflationary effect of the mid-2005 flooding on food prices receded. Since October, higher food and fuel prices have been pushing up inflation again, with the year-on-year increase of prices reaching 6.1% in November 2006. According to

6 Charts 1a and 1b cover the period 01/03-07/06.

Chart 1 CPI inflation

(year-on-year percentage changes)



Sources: National central banks, national statistical institutes and ECB calculations.

the IMF, annual average inflation should be 7.4% in 2006. In Romania, year-on-year inflation declined from 17% in January 2003 to 4.7% in November 2006, also supported by the adoption of the inflation targeting framework in August 2005.

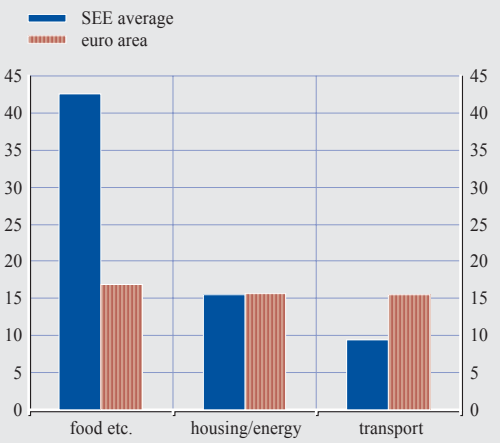
In Serbia and Turkey inflation has been at double-digit levels for most of the recent past (Chart 1b). In Serbia, after a change in the monetary policy strategy, inflation accelerated in 2004 when the average annual inflation rate amounted to 11%. Reflecting strong domestic demand and a depreciation of the dinar, the rate of growth of the CPI peaked in December 2005 at above 16%. Since then, the year-on-year inflation rate has again declined substantially, reaching 8.8% in November 2006, also supported by an appreciating nominal exchange rate and the introduction of a new monetary policy framework preparing for a formal adoption of inflation targeting in the medium term. Turkey recorded substantial progress in disinflation in 2004 and early 2005. However, monthly year-on-year inflation rates were already on an upward trend when in May/June 2006 the country was severely hit by turbulences in international financial markets. The resulting depreciation of the Turkish lira and high oil prices contributed to inflation peaking at over 12% year on year in July 2006. Since then, the inflation rate has dropped slightly, but has remained at double-digit levels.

4 CONSUMER BASKETS AND PRICE INDICES IN SOUTH-EASTERN EUROPE: WHAT IS DRIVING INFLATION DEVELOPMENTS?

In all south-eastern European countries, the sub-index food[7] *has the highest weight in the overall consumer basket, followed by the sub-indices housing/energy and transport in most countries under review.*[8] *On average, the share of the food sub-index is more than twice as high as in the euro area (see Chart 2).* The *food* sub-index has the highest share (amounting to almost 60% of the consumer basket) in Montenegro, whereas Turkey has the lowest

Chart 2 Average weight of sub-indices

(as a percentage)



Sources: National central banks, national statistical institutes and ECB calculations.

weight of 29%. On average, the *food* sub-category accounts for almost 43% of the overall index in SEE, while the corresponding figure is below 17% in the euro area. By contrast, the average weights of the sub-indices *housing/energy* (16%) and *transport* (10%) correspond more or less to the average shares in the euro area.

In all SEE countries, the share of food in the overall consumer basket has decreased in the period under review (Table 1).[9] This trend, which can also be observed in the euro area, might reflect Engel's Law stating that with a higher level of income relatively less money is spent on food. While in the euro area the current weight of *housing/energy* is also lower than at the beginning of the observation period, probably due to a more effective utilisation of energy, it has risen or been stable in most SEE

7 The sub-index *food* also includes non-alcoholic beverages.
8 Albania, Montenegro and Romania are exceptions to this, with *clothing* or *hotels etc.* taking the third-largest share instead of transport.
9 The observation period covers the time span between December 2002 and July 2006. In Albania, the weight structures in the CPI have been fixed for the whole period. The analysis of Turkish developments is based on the shorter CPI series, where weights are adjusted over time (see the Annex for details on available CPI series for Turkey).

Table 1 The sub-indices with the highest weight in the overall CPI, as well as their contribution to the overall inflation rate for all SEE countries and the euro area between December 2002 and July 2006

Country	Subindices with the highest weights in the overall CPI ...	average weight (in %)	direction of weight change over time	Subindices with the highest contributions to overall inflation ...	average contribution (in %)[6]
Albania[1]	food etc.	42.6		housing/energy	96.2
	housing/energy	24.4		hotels etc.	21.8
	hotels etc.	7.3		health	17.5
		74.3			135.5
Bulgaria	food etc.	42.90	-	housing/energy	114.90
	housing/energy	14.90	+	hotels etc.	32.30
	transport	7.40	-	transport	34.50
		65.20			181.70
Croatia	food etc.	33.8	-	housing/energy	35.8
	housing/energy	13.5	+	communication	17.3
	transport	11.5	-	food etc.	4.7
		58.8			57.8
FYR Macedonia	food etc.	44.4	-	alcohol/tobacco	18.8
	housing/energy	11.8	~	hotels etc.	15.2
	transport	8.3	-	clothing	11.4
		64.5			45.4
Montenegro[2]	food etc.	57.5	-	transport	38.4
	housing/energy	10.7	+	housing/energy	29.8
	clothing	8.2	+	education	14.7
		76.4			82.9
Romania[3]	food etc.	43.6	-	housing/energy	40.9
	housing/energy	15.8	+	food etc.	22
	clothing etc.	10.5	-	communication	12.4
		69.9			75.3
Serbiai[5]	food etc.	46.2	-	housing/energy	39.2
	housing/energy	18.2	+	transport/ communication	17.8
	transport/ communication	9.3	+	food etc.	15.6
		73.7			72.6
Turkey[5]	food etc.	29	-	housing/energy	17.8
	housing/energy	16.8	-	food etc.	16.6
	transport	10.4	~	alcohol/tobacco	14.2
		56.2			48.6
Euro area	food etc.	16.81	-	housing/energy	21.40
	housing/energy	15.60	-	transport	21.30
	transport	15.50	~	health	20.30
		47.91			63.00

Sources: National central banks, national statistical institutes and ECB calculations (weight change: + increase/- decrease/~ stable: change below 0.1 percentage point). The numbers refer to the review period 12/02-07/06 and are based on the 12 COICOP sub-indices. As Serbia, Romania and Montenegro have different classification schemes, the categories are not exactly comparable.
1) In Albania the weight structure of the CPI index has been fixed for the whole period.
2) Montenegro provides a COLI (cost of living) index with nine categories.
3) Romania uses a CPI index with 35 categories. In order to facilitate the analysis these items were aggregated to 12 COICOP groups as precisely as possible.
4) Serbia has a CPI index with six categories.
5) In Turkey, the shorter series based on the COICOP groups is used here instead of the longer one, which refers to a different classification.
6) The contributions are expressed as a percentage of the overall inflation rate in order to allow for comparisons across countries. Footnote 9 comments on the calculation of the contributions.

countries that have adjusted the weights of the sub-indices in the consumer basket. The share of the *transport* sub-index has increased in Montenegro and Serbia, but in most SEE economies it has remained constant – like in the euro area – or declined during the observation period. Therefore, there is no evidence of either a common trend in the direction of weight change of this sub-group across SEE, or convergence toward the slightly higher weight of the euro area.

The housing/energy sub-index was the major component driving overall inflation developments in SEE between December 2002 and July 2006. The *contribution of a sub-index to overall inflation* is defined as the weight of the sub-index times its price increase relative to the index value of the reference period, and in this paper it is expressed as a percentage of the overall inflation rate.[10] The contribution of the sub-index *housing/energy* to overall inflation has been on average close to 50%, which is significantly higher than the weight of the sub-index. Thus, the high contribution mainly reflects substantial price increases recorded for housing and energy items in the region. The average contribution ranges from 10% in the FYR of Macedonia to 96% in Albania and almost 115% in Bulgaria.[11] (For detailed information on the contributions of the individual CPI sub-indices to the overall inflation rates in all SEE countries under review, see Table 2 in the Annex.)

The food sub-index has contributed much less to overall price increases in SEE, even though its weight is the highest in the consumer baskets. In some countries (Serbia, Romania and Turkey), the contribution of food has been positive on average, while in others (Albania, Bulgaria and Montenegro) food prices actually have had a deflationary impact on overall inflation during the review period.

5 THE ROLE OF ADMINISTERED PRICES

In almost all countries of south-eastern Europe administered prices[12] *play a more important role in overall price developments than in the euro area, on account of their generally larger weights in the consumption indices.* Administered prices cover all goods and services with prices fully ("directly") set or mainly ("to a significant extent")[13] influenced by the government.[14] The HICP classes subject to administered prices belong mainly to services and to a smaller extent also to goods, but vary

10 The contribution of the annual growth rate of a sub-index to the annual growth rate of the total index is calculated as follows: annual percentage rate of a sub-index times the weight of this sub-index in a decimal format. This is the exact formula in the case of a fixed-base Laspeyres index and a good approximation in the case of a chain-linked Laspeyres index. This formula shows that the contribution can be split into a price component and a weight component. Here, in order to allow for cross-country comparisons, contributions have been rescaled to be represented as a percentage of overall inflation.

11 Numbers of 100% or above are achieved when there is deflation in some sub-indices of the CPI. This means that if prices had not declined in other sub-categories, overall inflation would have been higher than recorded. Obviously, contributions can also be zero or negative, thus, care should be taken when making comparisons. Housing/energy is not the major driving force in the FYR of Macedonia and Montenegro.

12 The concept of price administration referred to in this part of the text is an ESCB definition which is not followed by non-EU countries. Information on the exact definitions used in these countries is unfortunately not readily available. Their definitions of administered prices may follow methodologies which differ from the one used by the ESCB.

13 SEE countries do not provide a breakdown into fully and mainly administered prices. However, we know that in the CEE countries, except Hungary, fully administered prices account for a smaller part of the consumer basket than mainly administered prices (in the euro area, the share of fully administered prices equals only one-third of the weight of mainly administered prices). Assuming a similar relationship between the different degrees of administration for the SEE countries, it reduces the overall importance of administered prices, as mainly administered prices include a number of "borderline cases" and milder forms of price regulation. However, as there is no harmonised definition of these sub-groups across countries, applications to SEE should be interpreted cautiously.

14 Government includes local governments and national regulators. According to the conventions agreed on in the EU, this measure excludes indirect taxation and excise duties, safety or environmental standards, prices subject to the Common Agricultural Policy, index-linked prices and the effects of transitory restrictions. It should be kept in mind that there are overlaps between energy prices and administered prices as some energy prices are regulated. See the Annex for further information on administered prices.

considerably across countries.[15] Table 2 shows current weights in countries where information is available. Among the SEE economies (bearing in mind the limited comparability of the data), the former Yugoslav Republic of Macedonia seems to be an exception with a very low weight of administered prices in its CPI, which is at least partly due to the specific definition used.[16] For the remaining countries, administered prices are a more important factor for developments in consumer prices than in the CEE countries (with the exception of the Czech Republic and Slovakia).

In Bulgaria and Romania, the only SEE countries for which information on weights of administered prices is available over a longer period, the weight of these prices was increasing until 2004.[17] In Bulgaria the weight of administered prices increased from 15.6% in 1995 to 25% in 2004, before declining to 21.7%. In Romania, administered prices had a weight of about 9% in 1997, which rose to 23% in 2004 and declined to 20.6% in 2006. While in the euro area weights of administered prices have decreased over time, they have increased – with the exception of the Baltic States – in the CEE countries as well. Thus, assuming that similar trends will prevail in SEE, lower weights of administered prices cannot necessarily be expected in the coming years.

In Romania, administered prices had a significant and – until 2005 – mostly upward effect on inflation.[18] Since then, the impact has declined and has increasingly contributed to downward pressures in price developments. In the CEE countries, no general tendency in the way administered prices affect price developments can be observed. In the euro area, too, there is mixed empirical evidence on the

15 A more detailed classification of administered prices in groups that are defined by different price determination (e.g. food, industrial goods, market services, market energy, alcohol/tobacco, fuel and regulated goods/services) would be desirable. However, it is not available for the SEE countries.

16 According to the information provided by the national statistical institute and the central bank, in FYR of Macedonia the following prices are under administrative control: production and distribution of water; services related to wastewater; services for cleaning cities and settlements; funeral services; postal services, railway transportation and airport services. While prices of electricity, heating and oil derivatives are in the group of regulated prices, they are adjusted in accordance with developments on world markets or other cost of producers and, consequently, not included in the above measure. According to the ESCB definition this would not in itself exclude these prices from the index – the key criterion is whether the regulator's impact on the prices also has a significant impact on price setting.

17 Generally, any strong effect of price administration on households' consumption expenditure is not necessarily equivalent to a high weight of the items whose prices are administered, e.g. gas prices in Malta are kept at a very low level by the government, resulting in a very small weight of gas in the HICP.

18 Romania is the only SEE country where a time series of administered prices has been available.

Table 2 Weights of administered prices in the total CPI/HICP in 2006

(percentages)

	Fully administered prices	Mainly administered prices	Administered prices in total
Bulgaria 1)			21.7
Croatia 1)			24
FYR Macedonia 1)			2
Romania 1)			20.6
Czech Republic	0.0	23.6	23.6
Estonia	0.0	8.1	8.1
Hungary	15.2	5.7	20.9
Latvia	1.3	10.4	11.7
Lithuania	0.1	9.0	9.1
Poland	5.8	14.0	19.8
Slovakia	1.7	22.3	24.0
Slovenia	1.6	19.5	21.1

Sources: National central banks, national statistical institutes and ECB calculations.
1) The weight is based on information from the national central banks.

impact of administered prices on the overall inflation rate. At the beginning and at the end of the period under review administered prices exerted an upward pressure on the overall price index, while in 2004 the opposite was true.[19]

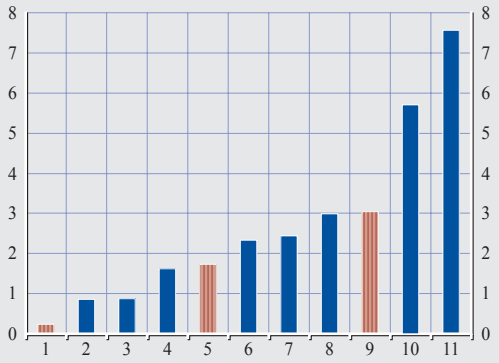
The greater role played by administered prices in the SEE economies compared with the euro area seems to have contributed to the higher level of volatility observed in overall price developments. In general, year-on-year inflation rates have been more volatile for administered prices than for the total price index in Romania, most CEE countries and the euro area. This is especially true for fully administered prices and might reflect the ongoing liberalisation process as well as continuous adjustments to world prices. While inflation volatility (as measured by the variation coefficient) of administered prices seems to have declined over time in the euro area, there has been no clear trend towards lower volatility of administered prices over time in Romania and most of the CEE countries. This suggests that the ongoing transition process does not automatically lead to a decline in the volatility of administered prices and, given the importance of this category of goods, overall inflation.

6 INFLATION VOLATILITY IN SOUTH-EASTERN EUROPE

In all south-eastern European countries, the volatility of inflation has been higher than in central and eastern Europe and substantially higher than in the euro area. This is the result of an analysis based on two different volatility measures: the standard deviation and the variation coefficient of the year-on-year inflation rates. While the standard deviation measures how spread out inflation has been over time from its mean, the variation coefficient, dividing the standard deviation by the mean of the time series, controls for the absolute level of inflation. Thus, the variation coefficient allows a comparison of volatility of inflation across countries that over the given period have recorded different averages of inflation.[20]

Chart 3 Standard deviation of inflation

(as a percentage)



1 Euro area
2 Albania
3 Croatia
4 FYR Macedonia
5 CEE
6 Bulgaria
7 Montenegro
8 Serbia
9 SEE
10 Romania
11 Turkey

Sources: National central banks, national statistical institutes and ECB calculations.

Standard deviations of inflation are significantly more pronounced in south-eastern Europe than in central and eastern Europe and the euro area (see Chart 3). On average, in south-eastern Europe the standard deviation (2.1%) is approximately 1.7 times higher than in the CEE countries – mainly due to developments in Romania and Turkey –, and about ten times higher than the respective euro area figure.

All countries under review also show a higher variation coefficient than the euro area (see Chart 4), but on average, the variation coefficient is almost identical to that in the CEE

19 There is some evidence (see Egert, B. et al. (2005), Equilibrium Exchange Rates in Transition Economies: Taking Stock of the Issues, Working Paper, No 106, Oesterreichische Nationalbank, Vienna) that in transition economies the real exchange rate of non-market services is the most undervalued in absolute PPP terms compared with market-based services or tradables. Thus, administered prices might behave differently in transition economies than in developed countries. Furthermore, there is theoretical as well as empirical support for the proposition that political cycles influence the development of regulated prices, which might result in a political price cycle in the economy (see Paiva, C. and Moita, R. (2006), Political Price Cycles in Regulated Industries: Theory and Evidence, IMF Working Paper, No 06/260, Washington).

20 The variation coefficient theoretically requires strictly positive values. Its use in this paper can be justified by the fact that all mean rates of inflation taken into consideration are positive, although some rates are negative.

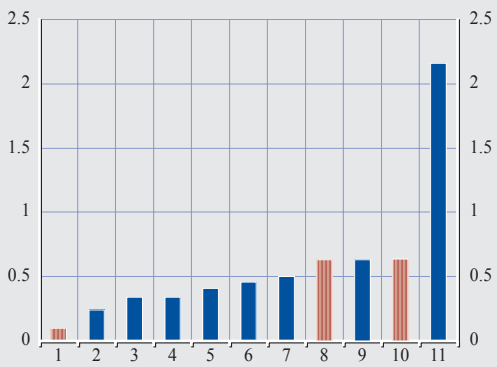
countries. This suggests that other factors than higher average inflation rates have been responsible for the marked inflation volatility in these countries.[21] The former Yugoslav Republic of Macedonia has by far the highest variation coefficient in south-eastern Europe, with a standard deviation twice as high as the mean of the overall inflation rate. In Montenegro and Turkey, the standard deviations account for approximately half of the average price increase.

In south-eastern Europe, the volatility of consumer price indices has been caused by the high volatility of the sub-indices with substantial weights in the overall basket (see Table 3). In all countries, the aggregated standard deviation of the four most volatile sub-components of the CPI is significantly higher than in the euro area. The respective figure is actually at least more than three times higher than in the euro area, with the exception of Croatia. In Albania, this is compensated by a relatively low weight in the consumer basket of the most volatile sub-groups, leading to a moderate overall volatility. However, in Bulgaria, Romania and Serbia the aggregated weight of the four most volatile sub-indices is approximately twice as high as in the euro area, where *health, alcohol/tobacco*,[22] *transport* and *housing/energy* account for approximately 38% of the overall index.

In Romania, Serbia and Turkey, inflation volatility is driven more by the comparatively high average inflation rate observed in the observation period than in the other countries under review. Thus, their relative position compared with the other countries in the region improves when measuring volatility by the variation coefficient rather than by the standard deviation.

In recent years, inflation volatility has been on a declining trend in several south-eastern European countries. Volatility has been declining in Bulgaria and Romania since 1997/98 (suggesting that these countries are at a more advanced stage in the reform process), in Croatia, Serbia and Turkey since 2002, and in Montenegro since 2004. By contrast, in Albania (since 2000) and the FYR of Macedonia no clear trend has emerged.[23]

Chart 4 Variation coefficient of inflation



Sources: National central banks, national statistical institutes and ECB calculations.

21 This also applies to the CEE countries, where – on average – the variation coefficient is more than six times higher than the respective euro area figure. As average inflation in the CEE countries has been much closer to the euro area average than in SEE countries, the marked volatility in central and eastern Europe has to be attributed primarily to factors other than a high level of inflation.

22 The inclusion of tobacco might explain to some extent the high volatility of the sub-index, as the harmonisation of excise duties has been the main underlying factor, e.g. in Bulgaria.

23 For the sake of comparison: in the euro area a downward trend in the variation coefficient can be observed since the start of monetary union in 1999. By contrast, there is no such evidence for the CEE countries under consideration, as inflation volatility has been rather stable.

Table 3 The four most volatile sub-indices, their standard deviations as well as their weights

Country	Subindices	Standard Deviation	CPI weight
Albania	communication	20.41	1.3
	recreation	17.9	2.6
	education	11.76	1
	hotels etc.	9.91	7.3
		31.20	12.2
Bulgaria	alcohol/tobacco	19.22	4.37
	transport	5.53	7.37
	food etc.	4.75	42.93
	health	4.17	4.27
		20.97	58.94
Croatia	education	7.34	0.88
	health	4.21	2.24
	alcohol/tobacco	4.01	5.51
	housing/energy	2.45	13.51
		9.68	22.14
FYR Macedonia	alcohol/tobacco	7.89	4.67
	hotels etc.	6.74	2.22
	education	6.07	0.59
	health	6.03	1.04
		13.45	8.52
Montenegro[1)]	transport	13.78	6.46
	education	10.23	4.4
	energy	8.76	6.65
		19.27	17.51
Romania[2)]	recreation	6.51	43.59
	communication	6.27	4.01
	miscellaneous goods	6.26	4.77
	alcohol/tobacco	5.49	15.83
		12.29	68.2
Serbia[3)]	housing/energy	10.17	18.21
	food etc.	7.87	46.24
		12.86	64.45
Turkey[4)]	alcohol/tobacco	10.45	4.91
	education	5.64	2.22
	transport	4.65	10.44
	miscellaneous goods	4.51	4.88
		13.53	22.45
Euro area	health	2.72	2.57
	alcohol/tobacco	1.91	4.11
	transport	1.47	15.51
	housing/energy	1.35	15.60
		3.88	37.79

Sources: National central banks, national statistical institutes and ECB calculations. The numbers refer to the review period 12/02-07/06 and are based on the 12 COICOP groups. As Serbia, Romania and Montenegro have different classification schemes, the categories are not exactly comparable.
1) Montenegro provides a COLI index with nine categories, therefore the three most volatile components are shown in order to evaluate one-third of the most volatile components.
2) Romania uses a CPI index with 35 categories. In order to facilitate the analysis, these items were aggregated to 12 COICOP groups as precisely as possible.
3) Serbia has a CPI index with six categories, therefore the two most volatile components are shown in order to evaluate one-third of the most volatile components.
4) In Turkey, the shorter CIP index with the COICOP groups has been used.

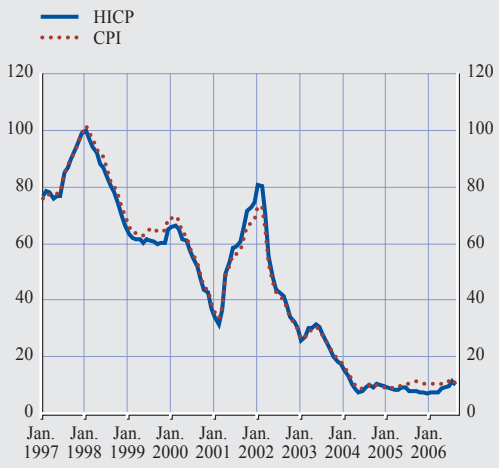
7 HICP VERSUS CPI DEVELOPMENTS IN SOUTH-EASTERN EUROPE[24]

At the aggregate level, HICP inflation rates do not deviate noticeably from CPI inflation in south-eastern European countries with available data.[25] *Moreover, if deviations exist, no general statement can be made about their direction.* In south-eastern Europe, both HICP and CPI series are available only in Bulgaria, Romania and Turkey.[26] In general, year-on-year inflation developments have been pretty much the same for the two indices in Romania, whereas differences are more significant for certain periods in the case of Turkey (see Chart 5). In 1998-2000 and in 2005-2006, CPI inflation rates have exceeded the ones based on the HICP, whereas from mid-2001 to mid-2002 the opposite was the case. This might be explained by developments in global oil prices, as the weight of the *housing/energy* sub-index is significantly higher in Turkey's national CPI than in the HICP. Therefore, energy price increases are to a larger extent reflected in developments in the CPI.[27] In the CEE countries, where both national CPI and HICP series are available, differences in inflation developments can only be observed in the Czech Republic and Lithuania for certain periods.[28]

In general, shifting from CPI to HICP is not expected to have any significant effect on inflation developments or inflation volatility characteristics in south-eastern Europe.[29] However, divergence in the two indices might occur at a disaggregated level. For example, in countries with substantial differences in weights or coverage (for example, because of the different treatment of owner-occupied housing or other items) deviations in inflation rates might be observed. The direction of these

Chart 5 HICP versus CPI inflation in Turkey

(year-on-year percentage changes)



Sources: National central banks, national statistical institutes; ECB calculations.

24 This paper makes use of the official CPI and HICP data that are publicly available and cannot refer to internal calculations of the central banks.

25 Despite the general similarities in overall inflation developments, contributions by certain sub-indices differ in terms of size as well as – in some cases – in direction significantly between the HICP and the CPI. In the CEE countries, the *housing/energy* sub-index influences overall inflation in the HICP less than in the CPI, except for the Czech Republic, Estonia and Slovakia. At least partly, this could reflect the different treatment of owner-occupied housing, which is excluded in the HICP, but included in the CPIs of the Czech Republic, Hungary and Slovakia. The contribution of the *food* sub-index to overall inflation is larger in the harmonised index than in the CPI in all countries with the exception of Latvia and Slovenia. For *transport* – often the third most important sub-index in terms of weights – differences in the contributions to inflation are also significant in most cases. However, in Romania, the Czech Republic, Hungary, Slovakia and Slovenia it contributes in a more pronounced way to overall inflation in the HICP, whereas in the other countries its impact is stronger in the CPI.

26 In Bulgaria, the national CPI series are currently identical to the HICP series, which is not yet fully harmonised with the HICPs of the EU countries.

27 Conceptually, the difference between the two indices is minor in the case of Turkey. However, it is worth noting that for the CPI (longer series) weights have been fixed as opposed to the annual updating of weights in the HICP.

28 No clear evidence can be found on volatility differences between the HICP and the CPI. While in Turkey, the Czech Republic, Estonia and Hungary the variation coefficient of the HICP is always higher than that of the CPI, the opposite is true for Lithuania and Poland. The other countries provide examples for both cases, as there are periods with a higher volatility of the HICP or the CPI, respectively. When using the standard deviation rather than the variation coefficient, no general conclusions can be drawn either. On average, the standard deviation of the HICP is higher in Romania, Turkey, Hungary, Lithuania and Slovenia. However, in the Czech Republic, Estonia, Latvia, Poland and Slovakia the CPI shows higher volatility when measured by the standard deviation.

29 It should be noted, however, that the analysis is based on a relatively short observation period and a limited number of countries. Thus, it cannot be excluded that in some countries there might be periods in which significant deviations between the two indices exist.

deviations would then depend on the nature of the difference. Furthermore, different price developments of items – due to the fact that the measurement or the timing of updates differ – can result in different contributions to overall inflation. However, in our sample, differences in contributions tend to cancel each other out and up to now have not resulted in significant deviations at the aggregate level.[30]

8 SUMMARY AND CONCLUSIONS

In south-eastern Europe, inflation developments have been rather diverse. While all countries started the transition process with prices growing very rapidly, some countries continued to record double-digit or higher inflation rates even in the second half of the 1990s. However, for most of them inflation rates have now returned to relatively modest levels. At the same time, recent inflation trends have been rather diverse, with some countries observing a steady process of disinflation from comparatively high levels, while inflation has been on a rising trend in three countries of the region, albeit from rather low starting points.

The sub-index housing/energy appears to be the main driving force behind inflation in south-eastern Europe, contributing to almost half of the price increases on average. This holds even though in all countries the food sub-index has the largest weight in the consumer baskets, accounting for almost 45% of the overall index on average, which is more than twice as high as in the euro area.

In most countries under review, administered prices also prove to be an important factor in the development of consumer prices, and their weights have even increased over time. However, there is no general tendency in the way administered prices affect overall inflation rates.

Inflation volatility in south-eastern Europe is significantly higher than in the euro area. This is partly due to a still higher level of inflation. Therefore progress in disinflation (e.g. in Turkey and Serbia) is expected to lead to lower inflation volatility. Other reasons for volatility exceeding the euro area level include the different weight structure, with more volatile sub-indices accounting for a larger share of the overall index.

In principle, as a result of the ongoing transformation process and a rising level of income, volatility may be expected to decline. This is because a convergence of the weight structures in south-eastern European consumer baskets towards those of the euro area should also lower the aggregate weight of the most volatile sub-indices. In addition, the liberalisation of administered prices should contribute positively to a reduction in inflation volatility. However, up to now there has been no clear-cut empirical evidence on the relationship between an increasing level of income and the measured inflation volatility, possibly reflecting the fact that the weight of administered prices has not declined; it has even increased in some of the countries.

There is little evidence suggesting that the future use of the HICP will result in a systematic change in inflation patterns in south-eastern Europe. This does not mean that differences between the behaviour of the HICP and CPI can be excluded a priori for certain countries. However, they would depend to a large extent on potential differences in weights and coverage, as well as methods for data collection and measurement, which are rather country-specific in the case of the national consumer price indices. Differences between the two indices are more likely to arise at a disaggregated level. However, different contributions of the sub-indices have not led to significant differences at the level of the overall indices for most countries in the region.

30 However, while the pattern of inflation developments might be similar, the level of inflation might be different, and the differences might be time-variant.

ANNEX: DATA AVAILABILITY

The analysis is based on national CPI and HICP data on the level of the sub-indices as available for the south-eastern European countries involved (Albania, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia and Turkey).[31] National CPIs are available for eight out of nine south-eastern European countries. In Bosnia and Herzegovina, data are available on the entity level only, with country-level indices only being produced with long lags. Furthermore, price statistics are considered to be weak in general and do not conform to international standards. It is also difficult to find comparable price information on different sub-categories of goods and services at country level. For these reasons, Bosnia and Herzegovina has been excluded from the analysis.

While for the other SEE countries CPI series are available, the time period, base year, weighting schemes used (e.g. fixed or annually updated) and the main sub-categories differ across countries (see Table 1a for detailed information on the price series and Table 1b for detailed information on the weights used). The classification system applied corresponds to COICOP (Classification of Individual Consumption by Purpose) in most countries, using the same twelve main groups at the two-digit level as used for the HICPs. In Serbia, Montenegro and Romania, a different classification scheme or fewer groups are used. For Turkey, two sets of series are available. Series starting in 2003 only are based on the COICOP classification. The longer series, based on different sub-indices, were produced for the period 1994-2004 only, but have been calculated for the remaining period by the Turkish national statistical institute for the purpose of this paper. Therefore, with respect to Turkey, the internal consistency of the data is not fully satisfactory. Unless otherwise noted, the longer series are used in the underlying analysis. For the countries of south-eastern Europe, HICP series are only available for Bulgaria (but not yet fully harmonised and being equal to the national CPI), Romania and Turkey.

In order to have a broader basis for comparing CPIs and HICPs, we take note of the available data series for the central and eastern European countries Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. For these countries, comparability is much better, as all of them produce data at the level of the twelve COICOP groups for the national CPIs as well. Nevertheless, the base period, the lengths of the series and the weightings differ. Furthermore, the euro area HICP series are used in the analysis.

Based on the agreed definitions and conventions, the ECB compiles administered price series for all EU countries and for the euro area as a whole to ensure a standardised approach. Administered price series and a breakdown into fully and mainly administered prices are available from 2001 onwards. Since the available breakdown of the HICP is not detailed enough to enable a full categorisation of administered and market prices, the provisional estimate is based on the 50% rule: sub-indices are included in the administered price aggregate when they are composed of regulated prices for products whose expenditure weight is more than 50% of the sub-index.

The above-mentioned shortcomings in terms of harmonisation of the available country information obviously limit the comparability and reliability of the results. This is particularly true for the sub-indices used, and especially applies for the SEE countries, which are the main focus of this paper. In most parts of the analysis we used a common period from 12/02 until 7/06; data are available for this period for all countries concerned.

31 Whereas HICP data are from the ECB's price database, data on national CPIs have been provided by the national statistical institutes or in some cases by central banks. Martin Eiglsperger and Mariagnese Branchi (both DG-S) provided valuable assistance in compiling the dataset.

Table 1a Availability of CPI and HICP time series

Summary information	HICP	National CPI	Breakdowns	Time period	Base period
Albania	no	yes	12 COICOP	Jan. 1995-Aug. 2006	Dec. 2001
Bosnia and Herzegovina	no	no [1]	–	–	–
Bulgaria	yes	same	12 COICOP	Jan. 1997-Aug. 2006	2005 average
Croatia	no	yes	12 COICOP + aggregates [2]	Jan. 1998-July 2006	2001 average
FYR Macedonia	no	no	12 COICOP	Jan. 2002-Aug. 2006	Dec. 2001
Montenegro	no	yes (COLI)	9 groups + aggregates	Jan. 2001-July 2006	Dec. 2000
Romania	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			35 groups + 3aggregates	Jan. 1996-July 2006	Dec. 1995
Serbia	no	yes	7 COICOP	Jan. 1999-July 2006 [3]	2005 average
Turkey	yes	yes	12 COICOP	Jan. 1996-Aug. 2006	2005 average
			10 groups	Jan. 1994-Aug. 2006 [4]	1994 average
			12 COICOP + details	Jan. 2003-Aug. 2006	2003 average
Czech Republic	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Dec. 2000-Aug. 2006	Dec. 1999
Estonia	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Jan. 1998-Aug. 2006	1997 average
Hungary	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Jan. 1995-Aug. 2006	Dec. 1994
Latvia	yes	yes	12 COICOP	Jan. 1996-Aug. 2006	2005 average
			12 COICOP	Jan. 1996-Aug. 2006	2000 average
Lithuania	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Jan. 1996-Aug. 2006	2000 average
Poland	yes	yes	12 COICOP	Jan. 1996-Aug. 2006	2005 average
			12 COICOP	Jan. 1999-Aug. 2006	Dec. 1998
Slovakia	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Jan. 1990-Aug. 2006	Jan. 1989
Slovenia	yes	yes	12 COICOP	Jan. 1995-Aug. 2006	2005 average
			12 COICOP	Jan. 2000-Aug. 2006	2005 average
Euro area	yes	no	12 COICOP	Jan. 1995-Aug. 2006	2005 average

Source: ECB, and CPI data provided by the national statistical institutes. ECB compilation.
1) Retail price index (more representative according to the IMF) and cost-of-living index are calculated. Data collection is done at entity level, so it is difficult to get information for the country, especially for detailed breakdowns.
2) No weights for the aggregates are given.
3) Comparable series start in 2000 or 2001.
4) The series starting from 1994 actually extend to 2004. For the period thereafter, it has been linked for us by the national statistical institute.

Table 1b Information on weights for the available CPI and HICP time series

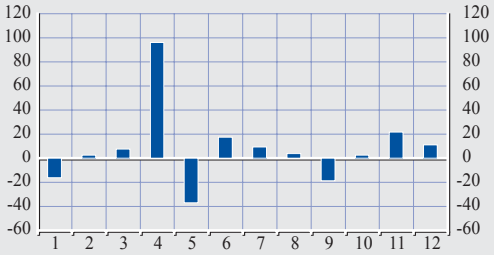
Information on weighting	HICP	National CPI	Time period of the series	Time period of the weights [1]	Features of weights
Albania	no	yes	Jan. 1995-Aug. 2006	1995-2006	fixed
Bosnia and Herzegovina	no	no	–	–	–
Bulgaria	yes	same	Jan. 1997-Aug. 2006	1995-2006	95-96 fixed, then annual
Croatia	no	yes	Jan. 1998-July 2006	1998-2006	annual
FYR Macedonia	no	no	Jan. 2002-Aug. 2006	2003-2006	03-04 fixed, then annual
Montenegro	no	no (COLI)	Jan. 2001-July 2006	2001-2006	01-02, 04-05 fixed, annual
Romania	yes	yes	Jan. 1995-Aug. 2006	1996-2006	annual
			Jan. 1996-July 2006	1996-2006	97-98 fixed, annual
Serbia	no	yes	Jan. 1999-July 2006	2000-2006	00-02 fixed, then annual
Turkey	yes	yes	Jan. 1996-Aug. 2006	1996-2006	annual
			Jan. 1994-Aug. 2006	1994-2006	fixed
			Jan. 2003-Aug. 2006	2003-2006	03-05 fixed, then annual
Czech Republic	yes	yes	Jan. 1995-Aug. 2006	1995-2006	annual
			Dec. 2000-Aug. 2006	1999-2006	fixed
Estonia	yes	yes	Jan. 1995-Aug. 2006	1995-2006	annual
			Jan. 1998-Aug. 2006	1998-2006	98-00 fixed, then annual
Hungary	yes	yes	Jan. 1995-Aug. 2006	1995-2006	annual
			Jan. 1995-Aug. 2006	1995-2006	annual
Latvia	yes	yes	Jan. 1996-Aug. 2006	1996-2006	annual
			Jan. 1996-Aug. 2006	1996-2006	annual
Lithuania	yes	yes	Jan. 1995-Aug. 2006	1995-2006	annual
			Jan. 1996-Aug. 2006	1996-2006	97-98 fixed, annual
Poland	yes	yes	Jan. 1996-Aug. 2006	1996-2006	annual
			Jan. 1999-Aug. 2006	1999-2006	annual
Slovakia	yes	yes	Jan. 1995-Aug. 2006	1996-2006	annual
			Jan. 1990-Aug. 2006	1990-2006	95-00, 01-04 ≈fixed; annual
Slovenia	yes	yes	Jan. 1995-Aug. 2006	1995-2006	annual
			Jan. 2000-Aug. 2006	2000-2006	annual
Euro area	yes	no	Jan. 1995-Aug. 2006	1995-2006	annual

Source: ECB, and CPI data provided by the national statistical institutes. ECB compilation.
1) Unfortunately, in some countries the available time span of the series and the weights differ to some extent.

Chart 2 Average contributions of the individual sub-indices to the overall inflation rates in all SEE countries under review between December 2002 and July 2006

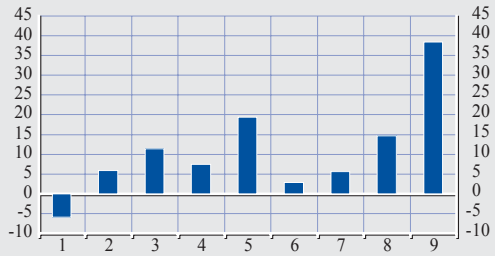
(as a percentage)

Albania



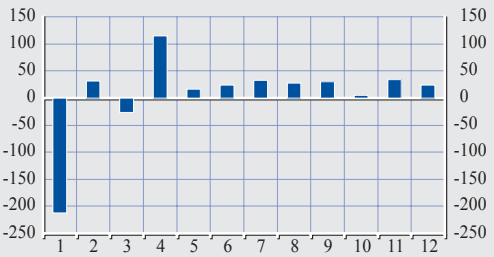
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Montenegro



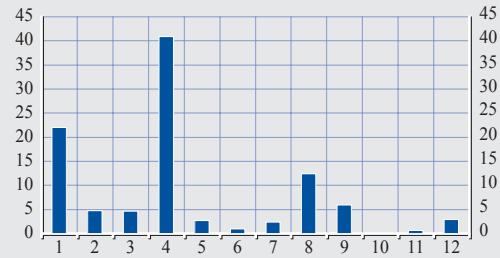
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing
5 energy
6 household items
7 personal care items
8 education & culture
9 transport & communication

Bulgaria



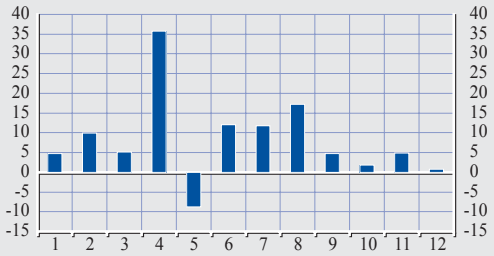
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Romania



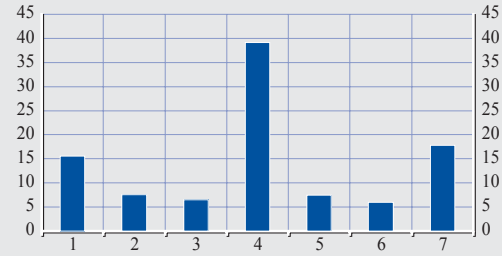
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Croatia



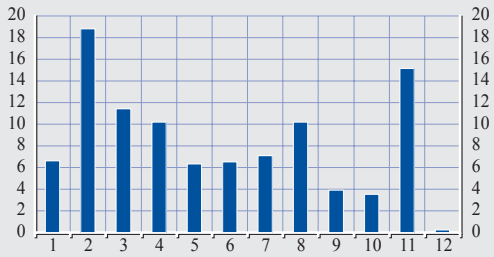
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Serbia



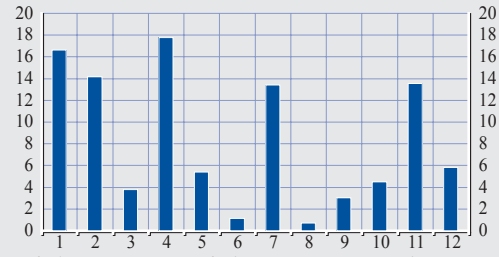
1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 health
6 education & recreation
7 transport & communication

FYR Macedonia



1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Turkey



1 food etc.
2 alcohol & tobacco
3 clothing etc.
4 housing & energy
5 furniture etc.
6 health
7 transport
8 communication
9 recreation etc.
10 education
11 hotels etc.
12 miscellaneous goods

Source: ECB, and CPI data provided by the national statistical institutes. ECB compilation.

EUROPEAN CENTRAL BANK
OCCASIONAL PAPER SERIES

1 "The impact of the euro on money and bond markets" by J. Santillán, M. Bayle and C. Thygesen, July 2000.

2 "The effective exchange rates of the euro" by L. Buldorini, S. Makrydakis and C. Thimann, February 2002.

3 "Estimating the trend of M3 income velocity underlying the reference value for monetary growth" by C. Brand, D. Gerdesmeier and B. Roffia, May 2002.

4 "Labour force developments in the euro area since the 1980s" by V. Genre and R. Gómez-Salvador, July 2002.

5 "The evolution of clearing and central counterparty services for exchange-traded derivatives in the United States and Europe: a comparison" by D. Russo, T. L. Hart and A. Schönenberger, September 2002.

6 "Banking integration in the euro area" by I. Cabral, F. Dierick and J. Vesala, December 2002.

7 "Economic relations with regions neighbouring the euro area in the 'Euro Time Zone'" by F. Mazzaferro, A. Mehl, M. Sturm, C. Thimann and A. Winkler, December 2002.

8 "An introduction to the ECB's survey of professional forecasters" by J. A. Garcia, September 2003.

9 "Fiscal adjustment in 1991-2002: stylised facts and policy implications" by M. G. Briotti, February 2004.

10 "The acceding countries' strategies towards ERM II and the adoption of the euro: an analytical review" by a staff team led by P. Backé and C. Thimann and including O. Arratibel, O. Calvo-Gonzalez, A. Mehl and C. Nerlich, February 2004.

11 "Official dollarisation/euroisation: motives, features and policy implications of current cases" by A. Winkler, F. Mazzaferro, C. Nerlich and C. Thimann, February 2004.

12 "Understanding the impact of the external dimension on the euro area: trade, capital flows and other international macroeconomic linkages" by R. Anderton, F. di Mauro and F. Moneta, March 2004.

13 "Fair value accounting and financial stability" by a staff team led by A. Enria and including L. Cappiello, F. Dierick, S. Grittini, A. Maddaloni, P. Molitor, F. Pires and P. Poloni, April 2004.

14 "Measuring financial integration in the euro area" by L. Baele, A. Ferrando, P. Hördahl, E. Krylova, C. Monnet, April 2004.

15 "Quality adjustment of European price statistics and the role for hedonics" by H. Ahnert and G. Kenny, May 2004.

16 "Market dynamics associated with credit ratings: a literature review" by F. Gonzalez, F. Haas, R. Johannes, M. Persson, L. Toledo, R. Violi, M. Wieland and C. Zins, June 2004.

17 "Corporate 'excesses' and financial market dynamics" by A. Maddaloni and D. Pain, July 2004.

18 "The international role of the euro: evidence from bonds issued by non-euro area residents" by A. Geis, A. Mehl and S. Wredenborg, July 2004.

19 "Sectoral specialisation in the EU: a macroeconomic perspective" by MPC task force of the ESCB, July 2004.

20 "The supervision of mixed financial services groups in Europe" by F. Dierick, August 2004.

21 "Governance of securities clearing and settlement systems" by D. Russo, T. Hart, M. C. Malaguti and C. Papathanassiou, October 2004.

22 "Assessing potential output growth in the euro area: a growth accounting perspective" by A. Musso and T. Westermann, January 2005.

23 "The bank lending survey for the euro area" by J. Berg, A. van Rixtel, A. Ferrando, G. de Bondt and S. Scopel, February 2005.

24 "Wage diversity in the euro area: an overview of labour cost differentials across industries" by V. Genre, D. Momferatou and G. Mourre, February 2005.

25 "Government debt management in the euro area: recent theoretical developments and changes in practices" by G. Wolswijk and J. de Haan, March 2005.

26 "The analysis of banking sector health using macro-prudential indicators" by L. Mörttinen, P. Poloni, P. Sandars and J. Vesala, March 2005.

27 "The EU budget – how much scope for institutional reform?" by H. Enderlein, J. Lindner, O. Calvo-Gonzalez, R. Ritter, April 2005.

28 "Reforms in selected EU network industries" by R. Martin, M. Roma, I. Vansteenkiste, April 2005.

29 "Wealth and asset price effects on economic activity", by F. Altissimo, E. Georgiou, T. Sastre, M. T. Valderrama, G. Sterne, M. Stocker, M. Weth, K. Whelan, A. Willman, June 2005.

30 “Competitiveness and the export performance of the euro area”, by a Task Force of the Monetary Policy Committee of the European System of Central Banks, June 2005.

31 “Regional monetary integration in the member states of the Gulf Cooperation Council (GCC)” by M. Sturm and N. Siegfried, June 2005.

32 “Managing financial crises in emerging market economies: experience with the involvement of private sector creditors” by an International Relations Committee task force, July 2005.

33 “Integration of securities market infrastructures in the euro area” by H. Schmiedel, A. Schönenberger, July 2005.

34 “Hedge funds and their implications for financial stability” by T. Garbaravicius and F. Dierick, August 2005.

35 “The institutional framework for financial market policy in the USA seen from an EU perspective” by R. Petschnigg, September 2005.

36 “Economic and monetary integration of the new Member States: helping to chart the route” by J. Angeloni, M. Flad and F. P. Mongelli, September 2005.

37 “Financing conditions in the euro area” by L. Bê Duc, G. de Bondt, A. Calza, D. Marqués Ibáñez, A. van Rixtel and S. Scopel, September 2005.

38 “Economic reactions to public finance consolidation: a survey of the literature” by M. G. Briotti, October 2005.

39 “Labour productivity in the Nordic EU countries: a comparative overview and explanatory factors – 1998-2004” by A. Annenkov and C. Madaschi, October 2005.

40 “What does European institutional integration tell us about trade integration?” by F. P. Mongelli, E. Dorrucci and I. Agur, December 2005.

41 “Trends and patterns in working time across euro area countries 1970-2004: causes and consequences” by N. Leiner-Killinger, C. Madaschi and M. Ward-Warmedinger, December 2005.

42 “The New Basel Capital Framework and its implementation in the European Union” by F. Dierick, F. Pires, M. Scheicher and K. G. Spitzer, December 2005.

43 “The accumulation of foreign reserves” by an International Relations Committee Task Force, February 2006.

44 “Competition, productivity and prices in the euro area services sector” by a Task Force of the Monetary Policy Committee of the European System of Central banks, April 2006.

45 “Output growth differentials across the euro area countries: Some stylised facts” by N. Benalal, J. L. Diaz del Hoyo, B. Pierluigi and N. Vidalis, May 2006.

46 "Inflation persistence and price-setting behaviour in the euro area – a summary of the IPN evidence", by F. Altissimo, M. Ehrmann and F. Smets, June 2006.

47 "The reform and implementation of the stability and growth pact" by R. Morris, H. Ongena and L. Schuknecht, June 2006.

48 "Macroeconomic and financial stability challenges for acceding and candidate countries" by the International Relations Committee Task Force on Enlargement, July 2006.

49 "Credit risk mitigation in central bank operations and its effects on financial markets: the case of the Eurosystem" by U. Bindseil and F. Papadia, August 2006.

50 "Implications for liquidity from innovation and transparency in the European corporate bond market" by M. Laganá, M. Peřina, I. von Köppen-Mertes and A. Persaud, August 2006.

51 "Macroeconomic implications of demographic developments in the euro area" by A. Maddaloni, A. Musso, P. Rother, M. Ward-Warmedinger and T. Westermann, August 2006.

52 "Cross-border labour mobility within an enlarged EU" by F. F. Heinz and M. Ward-Warmedinger, October 2006.

53 "Labour productivity developments in the euro area" by R. Gomez-Salvador, A. Musso, M. Stocker and J. Turunen, October 2006.

54 "Quantitative quality indicators for statistics – an application to euro area balance of payment statistics" by V. Damia and C. Picón Aguilar, November 2006

55 "Globalisation and euro area trade: Interactions and challenges" by U. Baumann and F. di Mauro, February 2007.

56 "Assessing fiscal soundness: Theory and practice" by N. Giammarioli, C. Nickel, P. Rother, J.-P. Vidal, March 2007.

57 "Understanding price developments and consumer price indices in south-eastern Europe" by S. Herrmann and E. K. Polgar, March 2007.

ISSN 1607148-4