

# Current Inflation Developments in Austria

Friedrich Fritzer,  
Ernest Gnan,  
Walpurga Köhler-  
Töglhofer,  
Fabio Rumler,  
Alfred Stiglbauer<sup>1</sup>

HICP inflation in Austria increased from below 2% in the first half of 2007 to 3.5% in December 2007, and stood at 3.1% in both January and February<sup>2</sup> 2008. As in other countries, this increase can be mostly attributed to the surge in international energy and agricultural commodity prices. Whereas the increase in the price of crude oil was passed on to fuels very quickly, electricity and gas prices exhibit a delayed reaction. The increase in global prices of agricultural commodities fed through to the prices of dairy products and oils and fats more strongly than it did to bread and cereal product prices. Rates of inflation exceeding 5% were also recorded for clothing and footwear from September to December 2007.

The inflation expectations of consumers and professional forecasters for 12 months ahead have risen in light of this; however, professional forecasters generally agree that inflation will decrease to around 2% again in 2009. For the first half of 2008, the Oesterreichische Nationalbank (OeNB) expects the rate of inflation to remain above 3%. Yet by the end of 2008, inflation should slow down significantly to 2.3% as a result of the expected dissipation of the food price shock and the base effect of past energy price increases. On the whole, the OeNB expects the rate of inflation to average 2.8% in 2008.

Against this backdrop, the social partners and public policy bear an especially high responsibility: The parties involved in negotiating wage settlements in the coming fall wage round must rise to the challenge of preventing second-round effects. An intensification of competition and the elimination of quantitative agricultural production limits can slow price increases by limiting companies' price-setting power and/or increasing the supply of agricultural commodities. Given high capacity utilization, stimulating demand through fiscal policy would be detrimental to the goal of reducing inflation. The OeNB estimates that annual inflation in 2008 would be reduced by around  $\frac{1}{4}$  percentage point if all public fees were frozen at their 2007 level.

JEL classification: E31

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## 1 Significant Increase in Inflation in Austria since the Fourth Quarter 2007

In December 2007, the rate of inflation in Austria as measured by the HICP<sup>3</sup> reached 3.5% – the highest monthly value since January 1993 – after having already climbed to values above 3% since November 2007. At

2.2%, annual inflation in 2007 was also markedly above the previous year's value of 1.7%. Rising energy and food prices, as well as the rising prices of nonenergy industrial goods – in particular clothing and footwear – were the key drivers of inflation (see the contribution of main components in chart 1). In contrast,

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<sup>2</sup> The rate of inflation for Austria in February was published on March 14, 2008. In March 2008, it rose again to 3.5%. Owing to the editorial deadline of March 6, 2008, the rest of the article refers only to the development of inflation through January 2008.

<sup>3</sup> All inflation values cited in this article are based on the HICP. The HICP (instead of the national CPI) is used here, because, on the one hand, it is the relevant indicator for monetary policy in the euro area, and on the other hand, it is particularly suitable for international comparison owing to the harmonization in the method of calculation.

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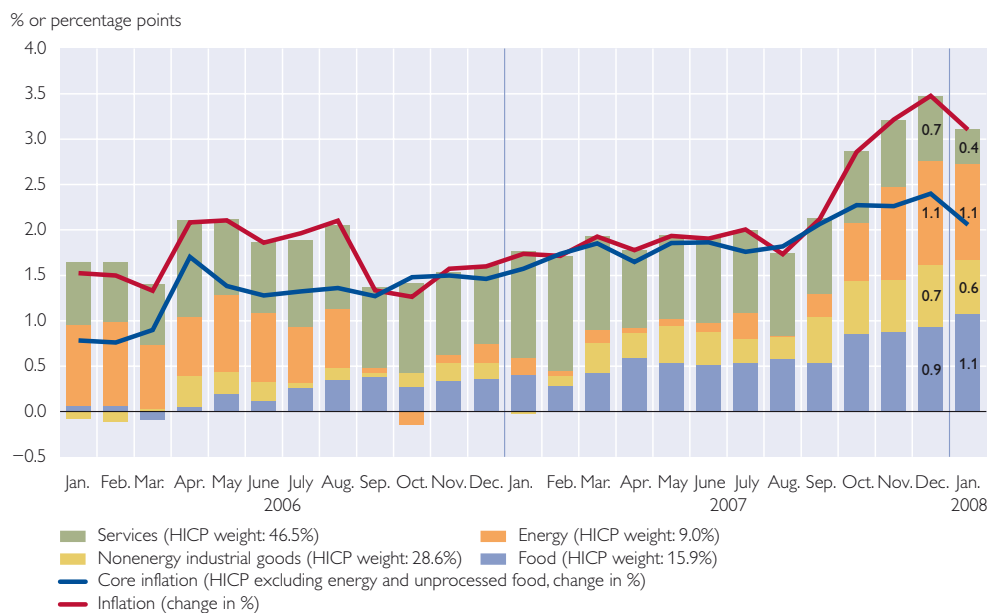
the rate of inflation in services decreased and was below average. In January 2008, the inflation dynamics once again slowed slightly. The rate of inflation fell to 3.1%; however, the inflation drivers of the preceding months – energy and food – continued to dominate (chart 1). The strong influence of energy and food on the rate of inflation in recent months is also evidenced by the fact that core inflation – the rate of inflation without energy and unprocessed food – rose considerably less than overall inflation after the third quarter 2007.

Nevertheless, not only were the dynamics of the increase in prices surprising, but also their extent. While the recent acceleration in inflation is a thoroughly international phenomenon, reflecting global price increases in energy (in particular

crude oil), commodities and food, the inflationary surge in Austria temporarily exceeded the average rate of inflation in the euro area (which was also accelerated), which is unusual for Austria.<sup>4</sup> After coming to 1.7% in August 2007 both at the Austrian and the euro area level, annual inflation started to accelerate in September 2007 both in Austria and in the euro area as a whole. The Austrian inflation rate exceeded that of the euro area from October to December 2007. In December 2007, this difference was particularly striking with 3.5% against 3.1% (chart 2). In particular, inflation accelerated at a faster pace in Austria than in Germany and Italy, Austria's most important trading partners. From September to December 2007, inflation was higher in Austria than in Italy; in October

Chart 1 Inflation Started to Accelerate in the Fourth Quarter of 2007

### HICP Inflation and Contributions by Main Components

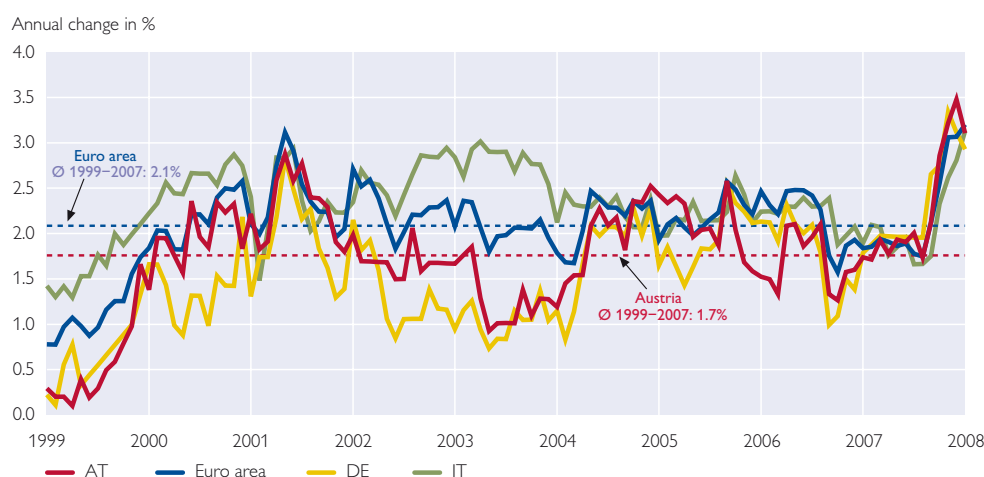


Source: Statistics Austria; discrepancies may arise from rounding.

<sup>4</sup> The average rate of inflation since the beginning of 1999 is 1.7% for Austria and 2.1% for the euro area.

Chart 2 Inflation Surged as from the Fourth Quarter of 2007 on a Global Scale

## Harmonised Index of Consumer Prices



Source: Statistics Austria, Eurostat.

and December 2007 as well as January 2008, it was also higher than in Germany.<sup>5</sup> In January 2008, Austria's international position in inflation statistics improved; the Austrian value of 3.1% was once again just below that of the euro area (3.2%), but remained above that of Germany (2.9%), while it was on par with Italy's.

The difference in inflation developments between Austria and the euro area in December 2007 can be mainly explained by a stronger rise in the price of food (6.0% compared to 4.3%) and energy (14.0% compared to 9.2%) in Austria. The rate of inflation in Austria in December 2007 also exceeded that of the euro area in other expenditure categories, such as clothing and footwear (5.2% compared to 1.0%) and leisure and culture (1.6% compared to 0.1%). Food and energy prices in Austria also increased above average in January 2008 compared to the euro area

(food: 7.0% compared to 3.7%; energy: 13.0% compared to 10.6%). At the same time, Austria recorded a noticeably lower rate of inflation compared to the euro area in December and January with respect to services (1.5% compared to 2.5% in December and 0.8% compared to 2.5% in January).

The dynamic and above-average price increase – both historically and compared to the euro area – in recent months has set off a lively discussion in politics and the media regarding its causes and the appropriate response by Austrian economic policymakers. Numerous questions were raised: What share of current inflation can be attributed to international price shocks, and how much has been caused domestically? What are the causes of a domestically-triggered rise in prices? How great is the risk that a temporary increase in inflation will set off a wage and price spiral via increased price expectations and wage

<sup>5</sup> In comparing the rate of inflation to Germany, one must consider that Germany increased its VAT rate from 16% to 19% effective January 1, 2007.

demands? And what measures can national economic policy implement to stem the rise in prices?

This article is intended to support the formation of an opinion on the issue at hand through figures and facts, as well as through analyses of the causes of the increase in prices. First, the development of prices in those sectors most affected by rising prices will be examined in detail in section 2, elaborating on possible causes and transmission channels. If relevant, differences in the development of prices between Austria and the euro area, as well as the neighboring countries Germany and Italy, will be discussed. Section 3 examines to what extent second-round effects can already be observed or are to be expected. On the one hand, wage development will be observed; and on the other, an attempt will be made to obtain information regarding the development of inflation expectations

in Austria on the basis of two indicators previously rarely utilized in Austria. Building on the preceding sections, section 4 presents the OeNB's current inflation forecast. Section 5 summarizes and derives some conclusions.

## 2 Which Sectors Currently Exhibit the Strongest Inflation Dynamics?

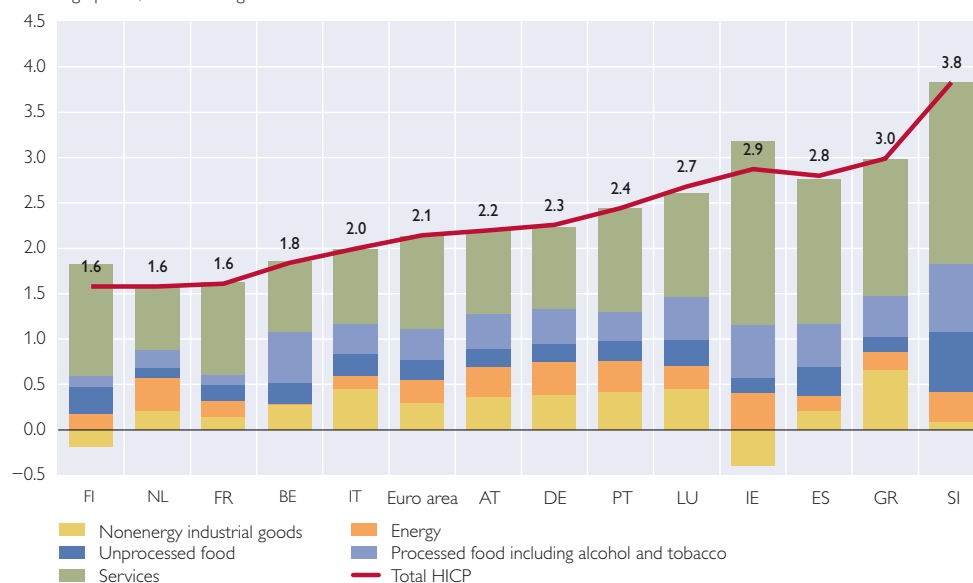
### 2.1 International Comparison of Inflation Developments: Energy and Food are the Main Price Drivers

The development of inflation in the individual euro area countries deviates considerably from the euro area average in some cases. The Netherlands, Finland and France were significantly below the average euro area annual rate of inflation of 2.1% in 2007. In contrast, Austria and Germany were slightly above it, while Spain, Greece and Slovenia were significantly above it (chart 3).

Chart 3 Energy and Food Prices Drove Up Inflation across the Euro Area

#### Contributions to HICP Inflation from Main Components by Country

Percentage points, annual average for 2007



Source: Eurostat.

A breakdown of annual inflation in 2007 into its main components<sup>6</sup> shows a surprisingly strong contribution from energy in Austria, Germany, Ireland and the Netherlands (chart 3). Despite the low weight of this component, it has a considerable effect on the respective HICP of nearly all countries in the euro area. In addition, Austria, Spain, Finland and Slovenia recorded a comparably high inflation contribution on the part of unprocessed food. The contribution of processed food was even more important for Austria's inflation dynamics than the contribution of unprocessed food, and was above the euro area average also in Belgium, Germany, Luxembourg, Ireland and Slovenia. Finally, the inflation contribution of nonenergy industrial goods also exceeded the euro area average in 2007 in the case of Austria, reflecting above all the comparably strong increase in clothing and footwear prices in the last four months of the year.

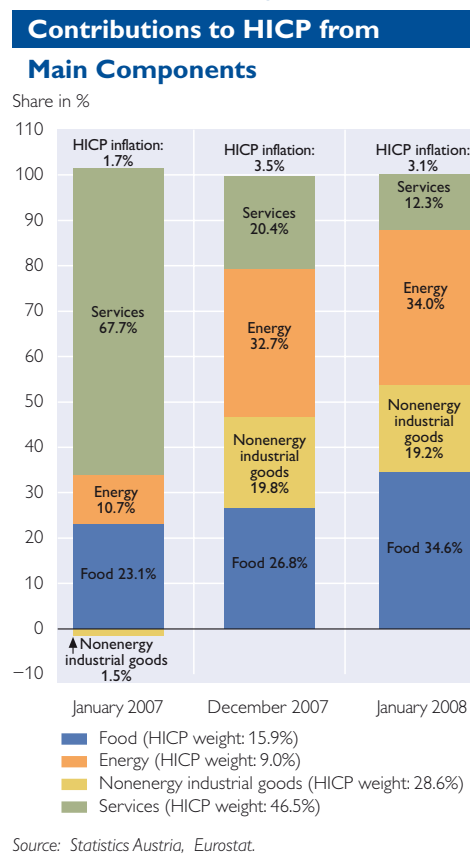
## 2.2 The Main Inflation Drivers Shifted in Austria in the Course of 2007

The inflation contributions of the main individual components varied significantly during the course of 2007. From January to September 2007, price changes in services (see inflation contribution in chart 4) contributed the most to previously moderate inflation. Price changes in this component strongly affected overall inflation given their weight of 47.4% in the HICP. The rate of inflation for services was relatively stable in recent years, averaging 2.2% since 1999. This can be explained above all by

moderate wage policies in Austria. Since services are labor-intensive, the development of labor costs is largely determined by the rate of inflation in services.

The inflation contribution of energy, which was still quite low in January 2007, increased significantly up to January 2008. In January 2007, no inflation pressures were forthcoming from nonenergy industrial goods, whereas those pressures were strong in January 2008. As previously mentioned, the above-average hike in clothing and footwear prices was responsible for this. The inflation contribution of food increased from

Chart 4 Main Drivers of Inflation Varied during 2007



<sup>6</sup> A definition of the five main components which this article repeatedly refers to (i.e. unprocessed food, processed food, nonenergy industrial goods, energy, and services) can be found in the annex.

23% in January 2007 to 35% in January 2008 and thus consistently drove inflation despite its rather small weight of 15.5%. In the past, price changes in food always had a strong effect on HICP inflation in the case of supply-side shocks – for instance, the BSE crisis or periods of drought. The most recent increases in this component have been driven not only by the supply side, but by the demand side as well (droughts in important cereal-exporting countries, rising global demand).

### 2.3 Energy Prices – A Primary Driving Force for Inflation Acceleration

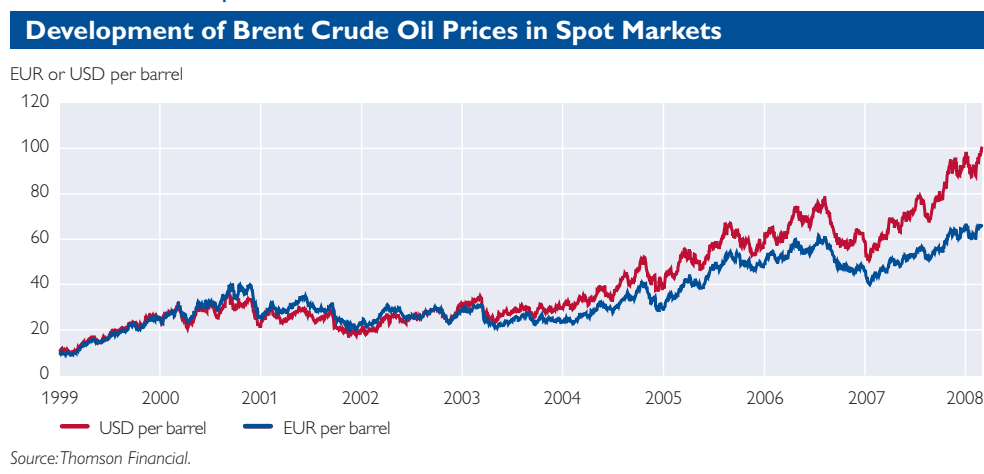
In 2007, the price of crude oil rose considerably – with a short interruption in the third quarter. The price of crude oil rose from just below 60 USD/barrel at the beginning of 2007 to more than 90 USD/barrel at the end of the year. This signifies an annual increase of nearly 60%.<sup>7</sup> When calculated in euro, this increase was, however, considerably lower owing to the appreciation of the euro.

As can be seen in chart 5, the price of crude oil (Brent, traded in Rotterdam) has been generally rising with increasing volatility since 2004. Rising crude oil prices have a strong influence on prices of the energy component (chart 6). Therefore, it is no surprise that the price of oil essentially determined the development of inflation in Austria between the second quarter of 2004 and the third quarter of 2006. The rate of inflation for energy was just over 16% year-on-year in September 2005. From September 2006 to the beginning of 2007, the price of oil generally fell. Thus, the inflation contribution of energy was relatively low and was even negative in October 2006. However, with the surge in crude oil prices since the beginning of 2007, the rate of energy price inflation accelerated in Austria once again to 14% by the end of the year.

#### *Transmission of Crude Oil Price Shocks to Different Sources of Energy Varies*

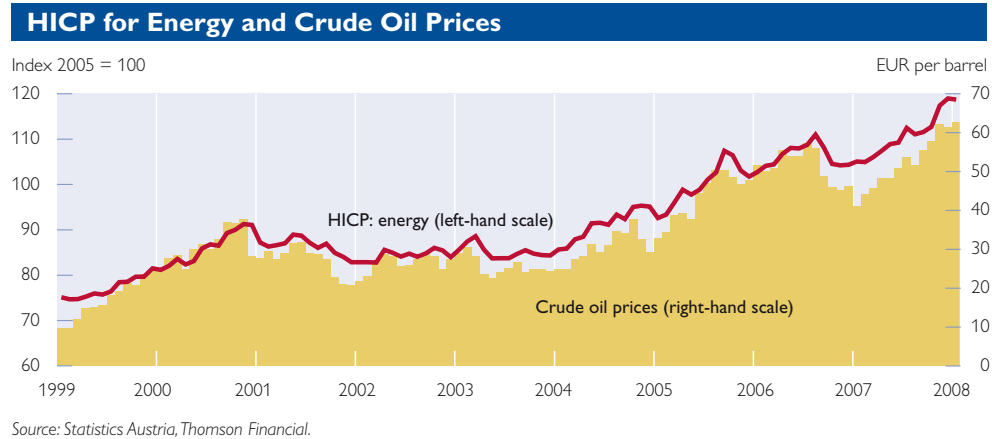
The transmission of changes in the price of crude oil to the individual

Chart 5 Crude Oil Prices Reached Record Highs, but EUR/USD Exchange Rate Dampened Price Shocks in the Euro Area

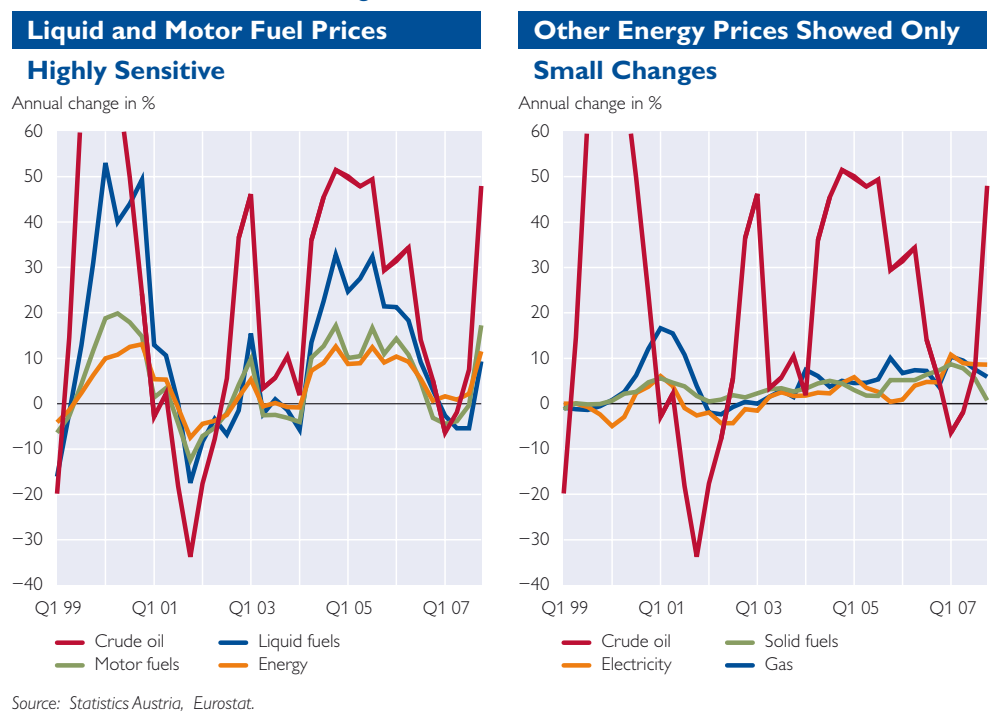


<sup>7</sup> The price of crude oil was around 100 USD/barrel at the end of February 2008.

**Chart 6** Consumer Price Index for Energy Highly Correlated with Developments in Crude Oil Prices



**Chart 7** Prices for Various Energy Sources Reacted Differently to Changes in Crude Oil Prices



sources of energy varies in terms of speed as well as intensity. Liquid fuel and motor fuel prices exhibit the strongest and quickest reaction to changes in crude oil prices (chart 7).

Crude oil price shocks produce the strongest price reaction in liquid fuels (heating oil) and motor fuels with a maximum time lag of one month.<sup>8</sup> The price dynamics of the expendi-

<sup>8</sup> The transmission speed of crude oil price shocks to the individual sources of energy was taken from Arpa et al. (2006).

ture category fuels for private passenger transportation were one of the reasons for the strong increase in the Austrian rate of inflation since November 2007. Fuel was 20% more expensive year-on-year at the end of 2007 and in January 2008. As a result of the lower domestic fuel prices at the end of 2006 and beginning of 2007, a base effect occurred which will also be apparent in the following months, so that high annual rates of inflation with regard to fuel prices can continue to be expected. The same applies to liquid fuels.

The strongest reaction with respect to gas and electricity is likely to occur with a delay of around one year or more (see footnote 7) and will be significantly weaker than is the case with liquid fuels and motor fuels. Accordingly, the high rates of annual inflation in 2007 with respect to electricity and gas (between 7.9% and 11.4% for electricity, and between 4.3% and 10.7% for gas) do not (yet) reflect the increase in the price of crude oil over the course of 2007. These high values can be explained above all by price increases on the part of most suppliers in the period from December 2006 to February 2007. In January 2008, the rate of inflation for electricity and gas declined significantly (despite the minor upward adjustment in prices for electricity and natural gas in some regions, according to data from E-Control). This was the result of the base effect of the strong price increases at the beginning of 2007.

#### *Energy Price Dynamics in Austria and the Euro Area Differ*

The difference between the rates of inflation with respect to energy in Austria (14.0%) and the euro area (9.2%) was 4.8 percentage points. The inflation gap also remained high in January 2008 at 2.4 percentage points (Austria: 13.0%; euro area: 10.6%). The development in energy inflation began to drift apart in October 2007, before which the rates of inflation were approximately equal. There was an inflation gap between Austria and the euro area above all with respect to motor fuels (January 2008: Austria, 23.6%; euro area, 15.0%). One explanation for this difference is, among other things, the increase in petroleum tax in Austria in July 2007, which raised the rate of inflation with respect to motor fuels by 6.2 percentage points after July 2007. Thus, the increase in the petroleum tax in Austria explains a large part of the motor fuel inflation gap vis-à-vis the euro area observed in December 2007 and January 2008.<sup>9</sup>

In 2007, the rates of inflation with respect to electricity and gas in Austria were also higher than in the euro area. Price increases by some Austrian energy providers at the beginning of 2007 (in Vienna, an increase of 6.5% in electricity prices and 5.3% in gas prices effective January 2007) contributed to this. The rate of inflation with respect to electricity in Austria was between 7.9% and 11.4% and thus was up to 6.1 percentage points above the euro

<sup>9</sup> The petroleum tax effect has been observable since July 2007. The difference in the rates of motor fuel inflation between Austria and the euro area was greater than 6.2 percentage points in January 2008 and December 2007 and less than 6.2 percentage points from July until November 2007. This means that motor fuel inflation in Austria, adjusted for the petroleum tax increase for diesel and gasoline, was greater than in the euro area in January 2008 and December 2007, and less than in the euro area from July 2007 until November 2007.



area average. Inflation with respect to gas fluctuated between 4.3% and 10.7% in Austria in 2007 and was thus up to 8.7 percentage points above the euro area average. At the beginning of 2008, the price increase of the preceding year caused a base effect and contributed to the fact that inflation with respect to these sources of energy in Austria (electricity: 1.0%; gas: -0.8%) was below the euro area average (electricity: 3.3%; gas: 2.4%).

#### *Indirect Effects of Energy Inflation on Other Sectors*

Since fossil energy sources are used in the production of many goods and services, as well as for the transportation of most goods, the increase in the price of crude oil also affected the prices of many other goods and services with a certain time lag. Simulations with the OeNB's inflation forecast model show that a 10% increase

in the crude oil price in U.S. dollars raises inflation up to 12 months after the shock by a total of 0.17 percentage points. The indirect effects on other HICP components begins to unfold around four months after the shock and amounts to between 20% and 30% of the overall effect.

An indirect effect of motor fuel inflation can be presumed in particular with respect to services associated with transportation, such as public passenger transport, air travel, and package tours. In fact, the rate of inflation in public rail transportation was a constant 1.5% after March 2007 and did not start to increase slightly until December 2007 (3.1%) and January 2008 (2.6%). Nonrail public transportation even recorded slightly decreasing rates of inflation from the third quarter 2007 onward (December 2007: 1.7%; January 2008: 0.8%). The rate of inflation for air travel even declined strongly in

Chart 8 Direct and Indirect Impact of Crude Oil Price Increase

#### Simulated Effects of a 10% Rise in Crude Oil Prices



recent months with values between –29.4% and –38.4%. This, however, would appear to reflect above all industry-specific alterations in price data collection and the current market situation. A moderate increase in the rate of inflation was observable with respect to package tours in the fourth quarter 2007 from around 0% to 3%, which may reflect increased transportation costs (however, in January 2008, inflation in this service fell again to 0.8%). Overall, no indirect effects of crude oil inflation can be observed in the price data for transportation services (with the exception of package tours).

In summary, the indirect effects of energy inflation on other HICP components which can be expected on the basis of simulations using the OeNB forecast model cannot (yet) be ascertained in either the data or on the basis of available information.

#### **2.4 High Food Price Inflation: International or Domestic Causes?**

During the course of 2007, the prices of some basic foodstuffs<sup>10</sup> – above all cereals and milk – rose sharply on world and EU markets. The world food price index of agricultural commodities (wheat, sugar, milk, etc.) has accelerated sharply since the fourth quarter 2006 (chart 9). The surge in prices was caused both by increased demand and drought-related shortages in supply. Without a doubt, global price increases in agricultural commodities also drove up

consumer prices via food production costs. The rate of inflation of the food component climbed from 3.5% in September to 7.0% by December 2007. In January 2008 – as in 2007 as a whole – food price inflation (including nonalcoholic beverages) in Austria accelerated further to 7.5% and thus exceeded the euro area average (January 2008: 5.4%). In this respect the question arises as to how much of the increase in food prices can be attributed to the development of world commodity prices and/or whether domestic production and competition factors supported the increase in prices or hindered a slow-down.

The expenditure categories most affected by the increase in world commodity prices are milk, cheese and eggs; bread and cereal products; as well as oils and fats (e.g. butter, margarine, vegetable oil). The consumer prices of these products are comprised of the agricultural production value (producer component) plus the margin (value added in the form of transportation, energy, storage, processing and capital costs). Thus, producer proceeds (the agricultural production value) amount to around 2.6%<sup>11</sup> of consumer expenditure for bread and cereal products, and the previously defined margin amounts to 97.4%. For example, if the price of cereal were to increase by 100% and was completely passed on to the consumer via the first stage of production, consumer prices for bread and cereal products would increase by

<sup>10</sup> *The rising prices of fruit and vegetables observable in recent months have also contributed considerably to the increase in the rate of inflation. The current price development of these expenditure categories is highly subject to seasonal fluctuations and cannot be attributed to global developments on the agricultural commodity markets. Owing to the high volatility of price developments in the seasonal agricultural products segment, the inflation rate for these expenditure categories is likely to decline again in the coming months.*

<sup>11</sup> See Sinabell (2005).

Chart 9 World Commodity Prices<sup>1</sup> Sole Drivers of the Food Price Boom in Austria?



Source: Bloomberg, Eurostat.

<sup>1</sup> Based on the world food price index of agricultural commodities, which reflects prices for internationally traded foodstuffs paid on benchmark commodity markets.

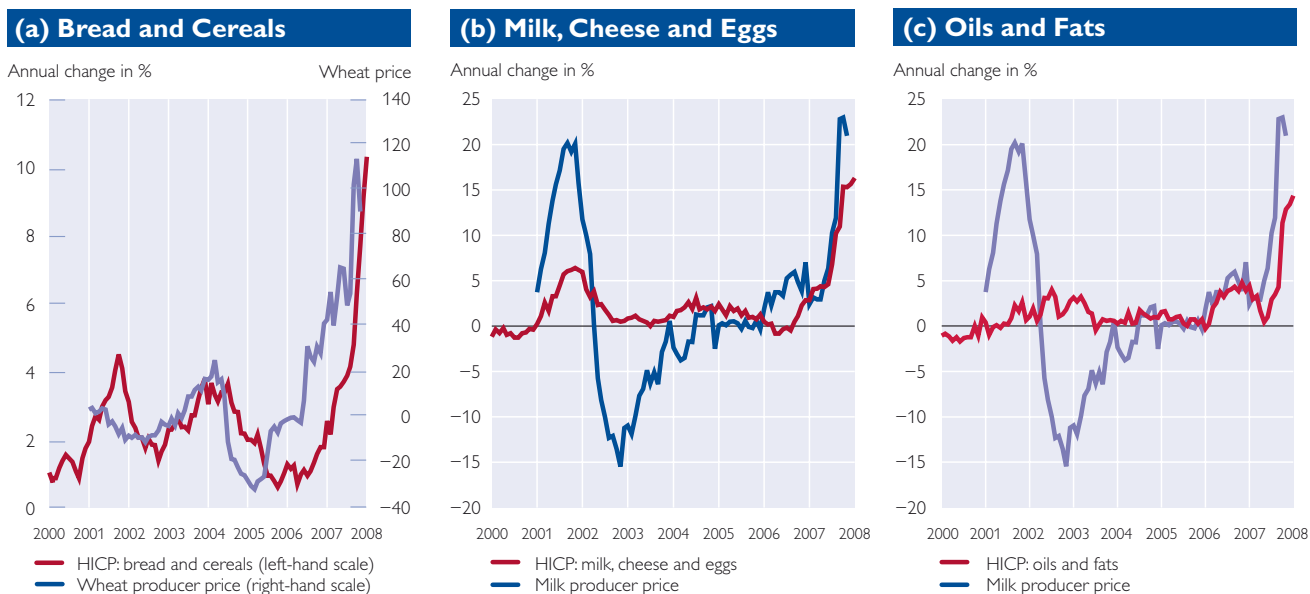
2.6% (assuming that the margin remains unchanged). A rise in consumer prices of more than 2.6% would, therefore, suggest an increase in the margin, whereas an increase of less than 2.6% would indicate an incomplete transfer of the input price increase to the consumer.

The producer price of wheat rose sharply in the second half of 2007 – much greater proportionally than the consumer prices of bread and cereal products (chart 9a). However, considering the low producer component of cereals, the sharp rise in consumer prices can only be partially explained by the strong increase in producer prices. A complete transfer of producer prices to the consumer would have meant an increase in consumer prices for bread and cereal products of slightly more than 2 percentage

points in 2007. In fact, consumer prices for this expenditure category increased by more than twice this amount. Thus, the margin must have gone up as well.

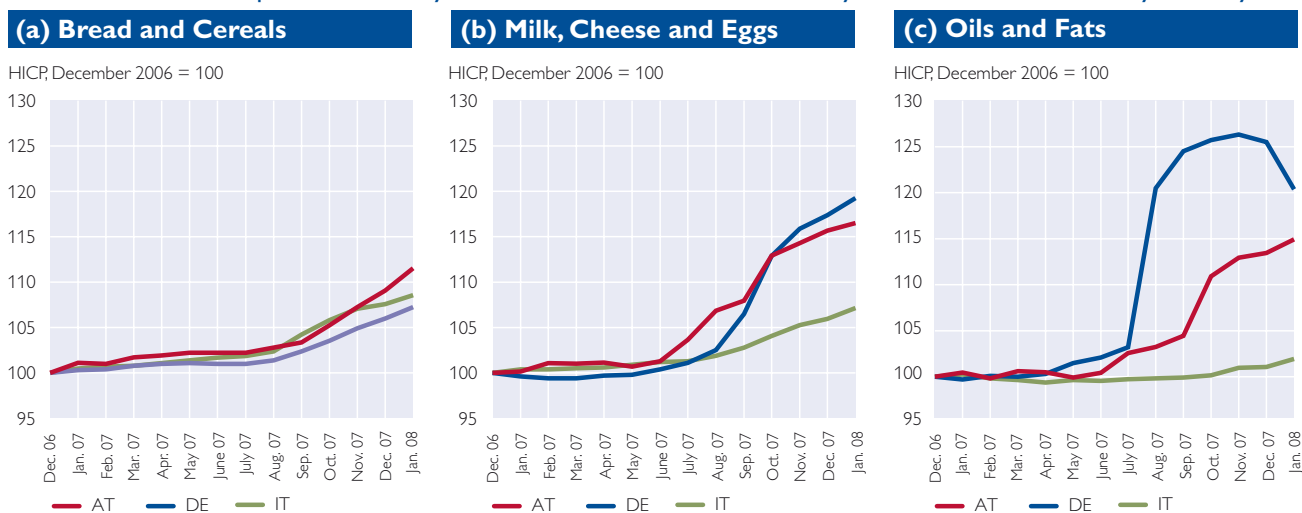
At around 44%, the producer component of milk, cheese and eggs as well as of oils and fats is significantly greater than the producer component of bread and cereal products. Therefore, changes in producer prices have a stronger effect on the associated consumer prices (charts 9b and 9c show the close correlation between producer and consumer prices in these expenditure categories). Presuming a producer component of around 44%, the increase in consumer prices observed in 2007 in the expenditure category milk, cheese and eggs cannot be entirely attributed to the increase in the producer price

Chart 9a to c Changes in Producer Prices and Consumer Prices for Important Foodstuffs



Source: Statistics Austria.

Chart 10a to c Expenditure on Key Processed Food Products – Price Dynamics in Austria, Germany and Italy<sup>1</sup>



Source: Eurostat.

<sup>1</sup> These index figures merely reflect price changes during the year but do not give any indication of price levels, as the index is based on the figure for December 2006 (= 100).

of milk.<sup>12</sup> In contrast, the increase in the consumer price of oils and fats is fully attributable to the producer price development.

The overall result is that the increase in the world food price index of agricultural commodities can entirely explain the price increase in the expenditure category oils and fats. In the case of bread and cereal products as well as in the case of milk, cheese and eggs, however, there seem to have been additional mark-ups in downstream production stages.

The analysis above regarding the development of the producer component and margins is subject to high uncertainty. Still, it cannot be ruled out that the increase in food prices in Austria is to some extent a domestically-created problem.

As mentioned at the beginning of section 2.3, food inflation in Austria even exceeded the euro area average. If price developments in Austria with regard to milk, cheese and eggs are compared with respective developments in Germany and Italy, it can be seen that the price increase in Austria and Germany was significantly stronger than in Italy (and most recently in Germany even greater than in Austria). The dynamics of bread and cereal products were nearly the same in all three countries. In contrast, the respective price changes for oils and fats are diverging considerably (charts 10a to c).

### **2.5 Are Administered Prices and Indirect Taxes Driving Prices?**

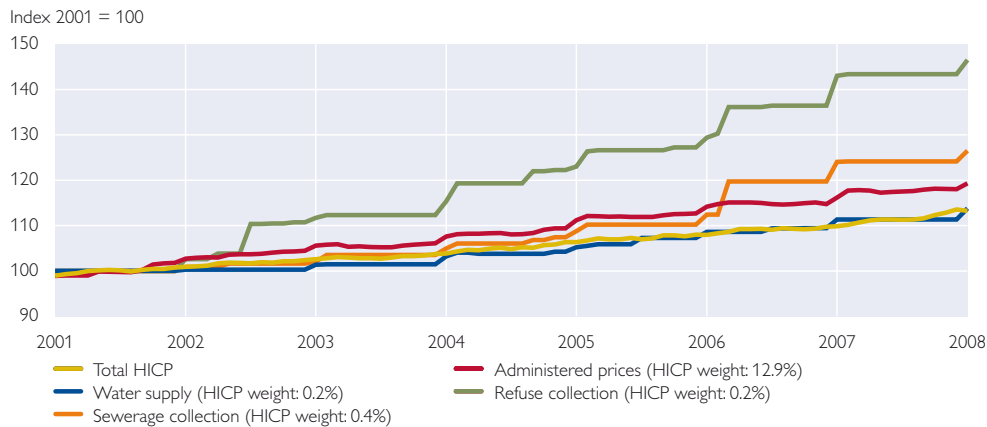
Administered prices are prices that are either directly or indirectly influenced by regional authorities (federal,

regional or local governments). This includes all public fees established by regional authorities (for instance, passport fee, parking fee, trash pickup fee), but also public services such as health, transportation, postal and public leisure services (such as theaters and museums). The goods and services affected by administered prices have a total HICP weight of 12.9%. Chart 11 shows the price development of some selected administered prices since 2001. Some administered prices, such as the fees for refuse and sewerage collection, have evidently increased more than average, yet the overall dynamics of administered prices do not significantly exceed the HICP increase. The rate of inflation of the subindex of administered prices and fees amounted to 2.4% overall for 2007 (i.e. slightly above average compared to overall inflation of 2.2%) and 2.7% in January 2008 (i.e. below average compared to January's overall rate of inflation of 3.1%). The rate of inflation for refuse collection amounted to 6%, while it was 4.7% for sewerage collection in 2007. The contribution of administered prices to overall inflation fluctuated between 0.49 percentage points (2002) and 0.28 percentage points (2006) since the beginning of this time series in 2001. In 2007, administered prices provided an inflation contribution of 0.31 percentage points to headline inflation, and 0.34 percentage points in January 2008. The increase in the petroleum tax as of July 2007 added around 0.1 percentage points to the annual inflation rate for 2007.

<sup>12</sup> *Despite relatively high world commodity prices, Austrian farmers expanded milk production just slightly in 2007. For example, the increase in the production of milk in the first eight months of 2007 in Germany was 2.0%, while it was only 0.1% in Austria (European Commission, 2007). Without the milk quota, Austrian milk producers would have been able to supply 17% more milk at the prices given in the first half of 2007 (Federal Ministry of Agriculture, Forestry, Environment and Water Management, 2007).*

Chart 11 Administered Prices as Inflation Drivers?

## Changes in Prices for Selected Administered Prices



Since the rate of inflation for administered prices in 2007 was around the same level as overall inflation, administered prices can be regarded neither as driving inflation, nor as slowing it – at least in 2007.

In the public debate, freezing all public fees has been suggested as a way to fight inflation.<sup>13</sup> If all public fees were frozen at their 2007 level in 2008, this would slow the rate of annual inflation in 2008 by between 0.2 percentage points (using the OeNB's weight and assuming that fees would increase in sync with headline inflation) and 0.3 percentage points (using the weight of Statistics Austria weight and assuming that fees would rise faster than headline inflation).

## 2.6 Above-Average Inflation for Clothing and Footwear

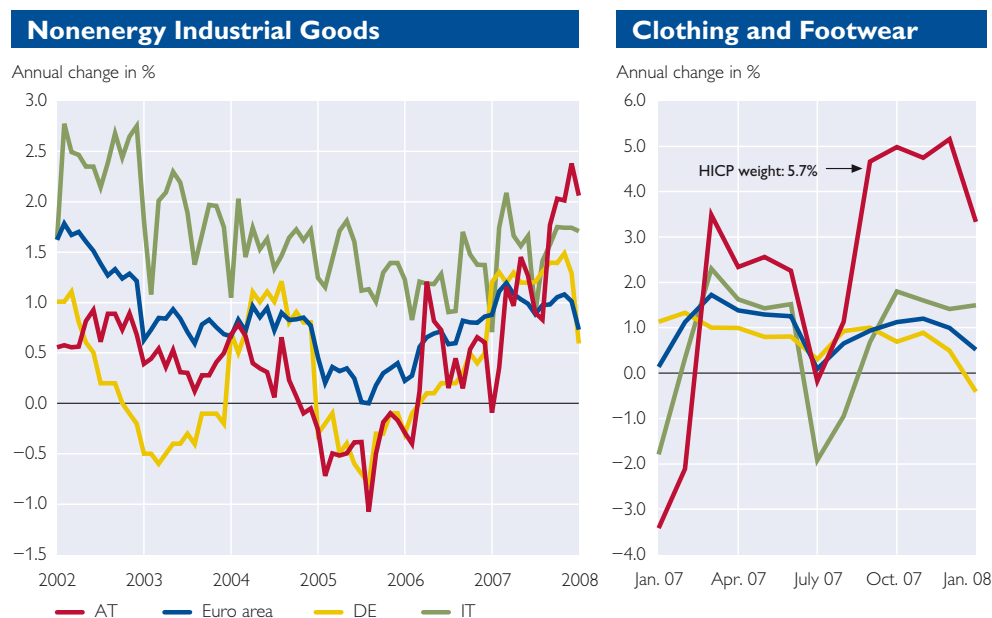
The development of inflation for clothing and footwear has deviated

significantly from that of the euro area since September 2007 (chart 12). Since then, clothing and footwear inflation increased to 5.2% in December in Austria, which is a historical peak since the beginning of the HICP time series in 1988 and based on a rate of 4.9% for clothing and 6.8% for footwear. In January 2008, the combined rate of inflation for clothing and footwear in Austria fell to 3.3%, but it is still significantly above the value of 0.5% for the entire euro area.

So far, there is no sufficient explanation for this increase. According to the clothing industry association, there is no upward pressure being exerted on consumer prices by either the clothing industry, the leather-working industry, or from imports in recent months. This is also confirmed by the comparison of the development of the HICP subindex for clothing

<sup>13</sup> As mentioned, public fees only represent a portion of administered prices. Statistics Austria uses a weight of 9.1% for fees in its HICP product mix. In contrast, the OeNB arrived at a weight of 7.1% when limiting fees to the subgroup of all administered prices that are directly set by government bodies, i.e. prices that are fully administered. In order to calculate the effect of a freeze in fees, an assumption must also be made regarding the price development of fees in 2008. According to Statistics Austria, the rate of inflation of fees in 2007 was 2.6% and thus somewhat above average. At 2.5%, the rate of inflation of fully-administered prices (OeNB delimitation) was slightly above average as well. Therefore, it can be assumed that fees will continue to rise slightly above average in 2008, namely by 2.8%.

Chart 12 Comparatively Sharp Increase in Nonenergy Industrial Goods Prices in Austria



Source: Eurostat.

and the subcomponent textiles and clothing of the producer price index.

According to the clothing industry association, import prices have generally fallen since the expiration of import quotas from China at the end of 2007. According to Statistics Austria, even a shift in seasonality (for instance, when clearance sale periods begin or end earlier or later as a result of demand considerations) cannot be the reason for the upward development in recent months, since it has continued unabated since September 2007. According to Statistics Austria, since the methods for collecting clothing prices have not been adjusted in recent months, statistical or survey-related reasons for the observed development can be eliminated. Even an occasionally presumed transfer of increased transportation costs as a result of rising fuel prices cannot be the primary reason for the increase, since such an effect would have to affect all euro area countries similarly.

### 3 Are Second-Round Effects to be Expected?

#### 3.1 The Role of Inflation Expectations in Price and Wage Setting

International price effects are transferred to domestic consumer prices in multiple stages. As analyzed in section 2, world commodity prices have a *direct* influence on consumer price inflation. This direct effect on Austrian inflation depends above all on the share of commodities in the overall HICP. Rising commodity prices, however, also raise the production costs of goods for which these raw materials are input factors. The *indirect* effects caused by this transmission channel may be fully or partially passed on to the consumer, or not at all – depending on the degree of competition on the product markets. Direct and indirect effects collectively form the *first-round effects*.

In contrast, additional upward pressures on consumer prices, in-

duced by higher wage agreements and increasing inflation expectations<sup>14</sup> on the part of market participants are known as *second-round effects*. Wage negotiations and inflation expectations can interact in such a way that they set a wage-price spiral in motion. That is, increased past and/or expected inflation results in higher nominal wage settlements. This, in turn, increases production costs. In order to hold the profit margin constant, businesses raise prices, etc.

However, independent of actual wage increases, retail price increases can also be induced by mere expectations of future wage and/or price increases. For example, expected wage increases reduce the expected profit margin and suggest anticipatory price increases in order to maintain the profit margin, if the competitive environment permits such a move. This can be an expression of increased risk regarding future profit margin development in an environment of increased inflation and regarded as a “risk premium.” In particular in the case of weak competition, however, it is conceivable that businesses deliberately try to increase their profit margins, if only temporarily, by taking

advantage of the fact that increased inflation blurs the signal function of relative prices.

### 3.2 Second-Round Effects with Regard to Wage Agreements in Austria?

As will be shown below, wage growth accelerated significantly at the beginning of 2008. But is this an indication of second-round effects? The question regarding the existence of such effects in relation to wage developments cannot be thoroughly discussed and answered at this time. This article, for example, cannot answer whether these recent wage increases have already had repercussions on consumer prices.<sup>15</sup> However, an attempt is made to determine whether the higher wage growth is a reaction to the higher rates of inflation in recent months (and therefore to increased price expectations).

With a view to assessing recent wage developments, let us look at the annual changes in the index of agreed minimum wages (“Tariflohnindex”). This index is published monthly with comparatively little delay and thus represents the most recent information regarding current wage developments.<sup>16</sup>

<sup>14</sup> From the point of view of economic theory, such a connection is postulated in the New-Keynesian Phillips curve. The majority of empirical estimates of these relationships shows a significant and rising effect of expected inflation for euro area countries including Austria in recent years (see e.g. Rumler, 2007). The results, however, vary according to the estimation method. Generally, the lower the rate of inflation – and thus the inflation persistence – the larger the role played by expected inflation for those countries and periods.

<sup>15</sup> More thorough studies would be necessary for this, such as company surveys or detailed industry studies.

<sup>16</sup> One could raise the objection that collective wage settlements (= developments of industry-specific minimum wages) are hardly relevant for the evolution of actual labor costs, because many employees receive wages and salaries which exceed the collectively negotiated minimum wages. However, the growth of standard wages is, indeed, a good indicator for the growth of labor costs. Some industries also negotiate “actual wage” increases, which in fact broadly reflect the rise in minimum wages. At the same time, the growth of collectively negotiated wages is highly correlated with the growth of actual labor costs, according to national accounts data (compensation per employee); i.e. the “wage drift” is generally low in Austria. An additional objection would be that it would make more sense to discuss changes in nominal unit wage costs rather than changes in nominal wages, since the former are more relevant for the inflation pressure induced by wages. However, current productivity ratios are necessary for the calculation of unit wage costs. These were only available until the third quarter 2007 at the time of editorial close.



Until the end of 2007, the aggregate data reflected hardly any increases in wage growth. This is related to the time pattern that characterizes the collective negotiation of wage agreements: In Austria, collective agreements are typically concluded for one year in line with a staggered schedule – agreements expire or new ones take effect virtually every month. At the same time, the effective date of most collective agreements is highly concentrated on three months: More than 15% of all collective agreement wage changes (above all in the metal industry and other export-

oriented industries, whose wages are renegotiated in the “fall wage rounds”) take effect in November, 50% in January (e.g. trade, civil service, and many small sectors), and 15% in May (above all construction and restaurants). The remaining collective agreement changes occur in other months.<sup>17</sup>

Table 1 shows selected collective agreements concluded in November 2007 or January or February 2008. It can be seen that the current wage increases tend to be noticeably higher than those concluded in the previous year.

Table 1

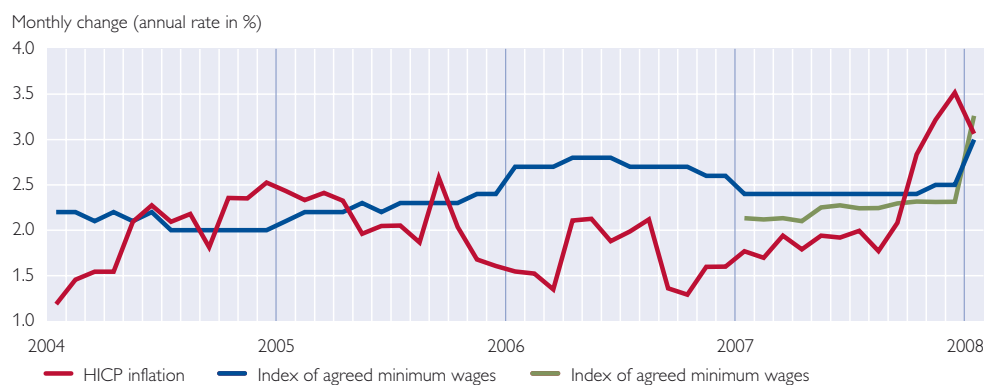
### Selected Collective Wage Agreements Implemented or Adopted since November 2007

%	Collective wage agreement effective since	Agreed wage increase	Previous-year increase	
	Metal industry	November 2007	+3.6	+2.6
	Stone and ceramics industry	November 2007	+3.0	+3.0
	Wholesale/retail trade	January 2008	+3.1	+2.35
	Public sector employees	January 2008	+3.3	+2.35
	Telekom Austria	January 2008	+3.1	+2.2
	Freight industry (blue-collar workers)	January 2008	+3.3	+3.0
	Refined petroleum industry	February 2008	+3.9	+2.6

Source: Austrian Trade Union Federation.

### Chart 13 Second-Round Effects in Wage Settlements?

#### Collectively Agreed Wages and Inflation in Austria



Source: OeNB.

<sup>17</sup> See Knell and Stiglbauer (2008).

These higher wage settlements are reflected in the erratic increase in annual minimum wage growth rates to values of around 3% or slightly higher in January 2008 (chart 13).<sup>18</sup> In contrast, further significant acceleration of wage growth is not expected until fall 2008, since approximately two-thirds of the aggregated wage changes in the current wage round (from November 2007 until October 2008) were locked in in January.

Are these higher wage increases a reaction to the higher inflation rates observable since fall 2007? There are many reasons to the contrary: On the one hand, it was not yet foreseeable at the beginning of the latest wage round, in October 2007, that the rate of inflation would increase so much.<sup>19</sup> Since the metal sector tends to set the tone for subsequent pay deals (“wage leadership”), the estimates from fall 2007 are more likely to have influenced current agreements than the most recent inflation figures.<sup>20</sup> If it was not inflation, what is the reason for higher wage growth? The consensus opinion of economic researchers is that the extremely dynamic economic and employment growth in 2007, as well as efforts not to let the wage share of GDP fall any further have been the key drivers. In the first case, businesses are already exhibiting higher profit margins, and in the second case, they are forgoing price increases in order to hold their profit margins constant following the wage

agreements. From this perspective, there is thus no significant evidence for the existence of second-round effects in the wage negotiations.

In international comparison, the risk that the increase in inflation forecast for 2008 will lead to permanently higher wage growth is comparatively smaller than in other countries given the dynamics of the Austrian wage negotiation system. In contrast to some other countries, wage increases are not (automatically) indexed to inflation in Austria. Furthermore, the one-year duration of the agreements is relatively short. The high coordination of wage agreements through the system of wage leadership offers a good basis for avoiding wage-price spirals. Hence, the social partners have great responsibility in the coming wage round.

### 3.3 Consumers More Pessimistic about Inflation Outlook than Professional Forecasters

As illustrated, second-round effects can be induced by an increase in inflation expectations, among other things. Owing to a lack of data regarding long-term inflation expectations in Austria,<sup>21</sup> indicators for short-term inflation expectations with a time horizon of one year, or for the next calendar year will be observed below. On the one hand, we use monthly Consensus Economics data to construct a series reflecting professional forecasters’ inflation expect-

<sup>18</sup> The annual growth rate of the index of agreed minimum wages 1986 increased in January 2008 compared to December 2007 from 2.5% to 3.0%. With respect to the new index of agreed minimum wages 2006, there was even an increase from 2.3% to 3.3%.

<sup>19</sup> Thus, for example, the inflation forecast of WIFO for 2008, which is particularly important for the collective agreement negotiations, was not revised upward (from 2.0% to 2.6%) until December 2007.

<sup>20</sup> There is also empirical evidence for the wage leadership of the metal sector (Knell and Stiglbauer, 2008).

<sup>21</sup> In contrast to the euro area, there are no data on long-term inflation expectations (time horizon of five or ten years), as can be calculated for instance from inflation-indexed bonds or collected in the euro area’s Survey of Professional Forecasters.

tations for the 12 months ahead and for the next calendar year.<sup>22</sup> On the other hand, we use the Consumer Confidence Barometer, which is also collected monthly, to derive the inflation rates expected by Austrian consumers in the 12 months ahead.

The Consensus Forecasts can be used to derive monthly annualized inflation forecasts for the current year and the following year. In the following, we therefore calculate 12-month-ahead inflation expectations in order to generate a data series that is comparable with the inflation expectations reflected in the Consumer Confidence Barometer.<sup>23</sup> In the entire period examined since 1999, these short-term inflation expectations are relatively smooth over time, a pattern that is fairly typical for expert forecasts (chart 14). Increases in the actual rate of inflation were accompanied by moderate parallel adjustments in short-term expectations of future inflation developments. The sharp increase to 2.8% in professional forecasters' most recent inflation expectations in the 12 months ahead (based on Consensus data for February 2008) is striking – it lies around three-quarters of a percentage point above the highest expert expectations since 1999.

Changes in these very short-term inflation expectations of professional

forecasters can, of course, partly be attributed to the fact that inflation shocks continue to have a direct effect on the rate of inflation for a period of 12 months, as the rate of inflation is by definition calculated as the year-on-year change in the price level. In order to be able to estimate whether inflation has temporarily or permanently increased in the expectations of professional forecasters, it appears advisable to also observe the annual rate of inflation for the coming calendar year.<sup>24</sup> This series shows that so far professional forecasters regard the current increase in inflation as predominantly temporary, because with 2.1% in February 2008, their inflation expectations for 2009 were only slightly above the average since 1999.

The survey for the Consumer Confidence Barometer, which is conducted monthly for the European Commission in all EU member states, contains questions regarding the perceived rate of inflation as well as the rate of inflation expected in 12 months. Based on the answers, it is possible to calculate an “expected inflation” series that is comparable with the traditional concept of inflation rates – under a number of assumptions.<sup>25</sup>

The inflation expected 12 months ahead collected in this manner has generally increased since 1999. More-

<sup>22</sup> An explanation of the collection method of Consensus Economics can be found at [www.consensuseconomics.com/what\\_are\\_consensus\\_forecasts.htm](http://www.consensuseconomics.com/what_are_consensus_forecasts.htm)

<sup>23</sup> A proxy variable is constructed which reflects a weighted average of annual forecast values for the current and following year. The weight of the forecast for the current year is the number of months from the forecast month until the end of the year divided by 12; the weight of the following year for the forecast is one minus the weight of the current year.

<sup>24</sup> Depending on the timing of the Consensus survey, the annual inflation rate for the next calendar year covers a more or less distant time horizon. In January of any given year, the expected rate of inflation for the coming calendar year is 11 months further away than in December of the same year. This – analytically unsatisfactory – characteristic of such a series as “Consensus forecasts for the next calendar year” is, however, acceptable in order to at least obtain an approximate estimate of the professional forecasters' inflation expectations beyond the 12-month horizon.

<sup>25</sup> Please refer to Berk (1999) for more information on the calculation of perceived inflation. The estimation of inflation expectations follows the same method. Naturally, all limitations arising from the potential influence of the order and design of questions on response behavior also apply to both of these derived inflation values.

over, with the introduction of euro cash at the beginning of 2002, the development of expected inflation, which until then had been closely correlated with the perception of current inflation, became less predictable. Expected inflation did not follow the significant increase in current inflation perceptions in 2002. Whereas the consumers questioned at the time perceived the current inflation to be high (higher than evidenced by the official statistics),<sup>26</sup> their expectations of future inflation remained mostly stable and low in the short term. Not until 2004 and 2005 did consumers' inflation expectations of consumers rise above 2% more frequently. After a phase of calm in 2006 and in the first months of 2007, the consumers' inflation expectations surged to more than 5% in the latter half of the year. In February 2008, however, the value had once again fallen significantly to 3.3%.

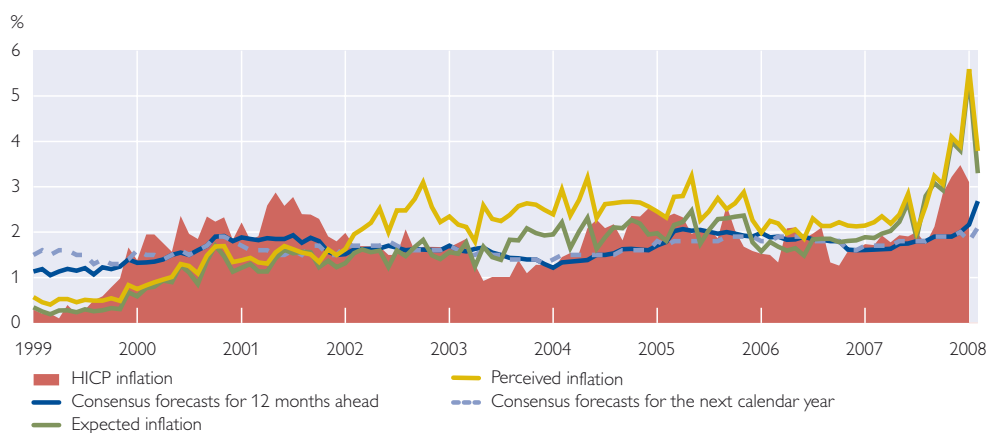
It is interesting to note that the gap between current perceived inflation and inflation expected in 12 months,

ranging between ½ percentage point and 1 percentage point for more than five years since 2002, narrowed to zero in the second half of 2007. In other words, the erratic increase in perceived inflation fed through one-to-one to inflation expectations. That is, the consumers no longer presume that inflation will be lower in one year than they currently perceive it to be. In February 2008, the difference between the calculated perceived and expected inflation increased once again to around ½ percentage point.

The development of expected and perceived inflation must be interpreted cautiously, however. It *could* mean that consumers changed the way they form their inflation expectations in the second half of 2007 such that current inflation is carried more strongly forward in building their future inflation expectations – based, however, on the perceived rather than the actual rate of inflation. The numerical values may not be taken at their face value, since they reflect an estimate derived from a

Chart 14 Consumers More Pessimistic about Inflation Outlook than Professional Forecasters

#### Inflation, Expected Inflation and Perceived Inflation



Source: Statistics Austria, Consensus Economics, OeNB.

<sup>26</sup> For an explanation and discussion of the primarily psychological reasons for this deviation, please refer to Fluch and Stix (2005) and Stix (2005), among others.

survey under various assumptions. For these reasons, the inflation outlook of the professional forecasters can be considered to anticipate the future development of inflation more accurately.

Thus, the increase in Austrian inflation in recent months affected the very short-term inflation expectations of both professional forecasters and consumers. The outlook of the professional forecasters is, however, less pessimistic, particularly for 2009, by which time the forecasters evidently expect the inflationary effects of the current price shocks to have largely dissipated.

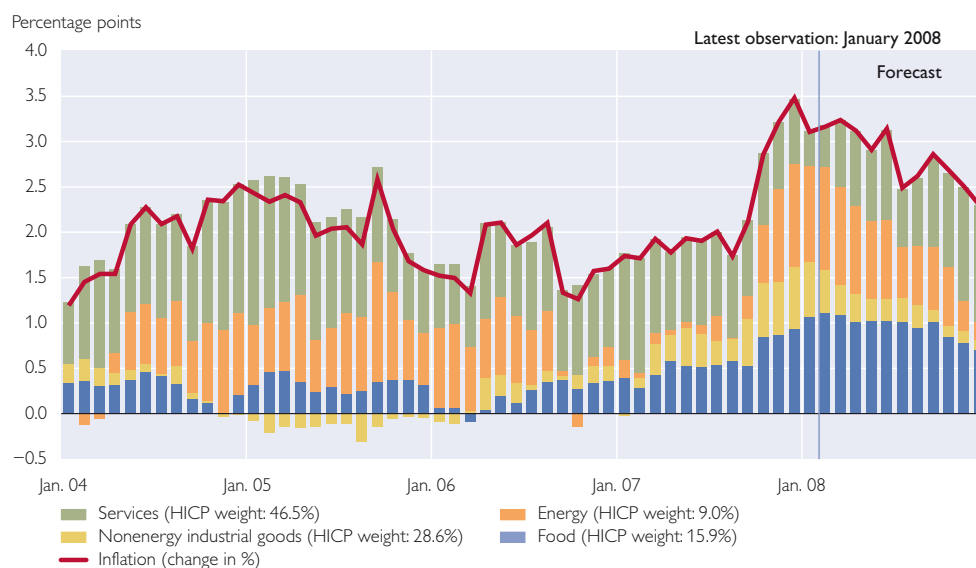
#### 4 OeNB Forecast: Decrease in HICP Inflation to 2.3% by the End of 2008; Annual Inflation 2008: 2.8%

According to the OeNB's inflation forecast from March 2008, the annual rate of inflation in Austria in 2008 will be 2.8% (revised upward by 0.4 percentage points compared

to December 2007). Core inflation (HICP, excluding energy and unprocessed food) should be around 2.2% in 2008 (revised upward by 0.2 percentage points).

Those figures (chart 15) mask a sharp drop in inflation over the course of the year from 3.1% (January 2008) to 2.3% (December 2008). The increase in prices of nonenergy industrial goods will slow as soon as the current price shock of clothing and footwear dissipates in the next few months. In contrast, service inflation will climb above 2%, consistent with its medium-term trend. The European world football championship will temporarily drive up hotel and restaurant prices in the four cities hosting the event. The effect on the overall rate of inflation will reach a maximum of 0.4 percentage points in June 2008, after which it will once again decline. The increase in public television fees of 9.4% in June 2008 will contribute 0.07 percentage points to service inflation and 0.03 percent-

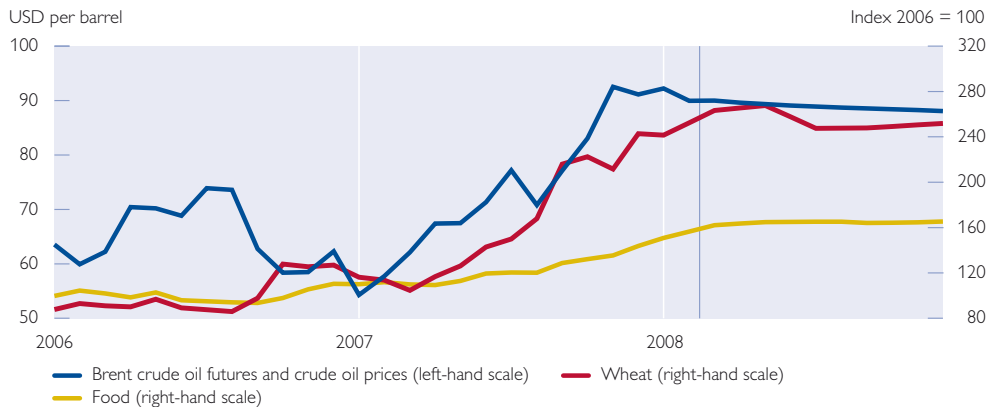
Chart 15 Latest OeNB Forecast Expects Inflation to Drop to 2.3% by the End of 2008  
HICP Inflation and Contributions by Main Components



Source: OeNB, Statistics Austria.

Chart 16 Futures Prices Signal Relaxation of Earlier Tensions in Commodity Markets

## Commodity Prices



Source: Bloomberg.

Note: Futures prices as on February 15, 2008.

age points to headline inflation beginning in June 2008.

The significant weakening of inflation forecast over the course of the year is based foremost on the assumption that there will be no further crude oil and food price shocks over the forecast horizon. This assumption was derived from the price development for futures of food commodities and crude oil (chart 16). Thus, the effects of past shocks should disappear from the annual rate of inflation after the base effect dissipates one year after the shock occurred. This should be the case after September 2008 for the crude oil price shock and after October 2008 for the food price shock.

In addition, the forecast assumes that inflation expectations will continue to be solidly anchored and that there will be no second-round effects – therefore, it is presumed that the increase in both measures for inflation expectations explained in section 3 will only be temporary. As a forecast based on a time series model, the OeNB forecast also necessarily presumes that no structural changes

in the inflation process have occurred recently. Thus, the structural relations of the macroeconomic variables of the past continue to prevail.

Finally, both the producer price index and the wholesale price index can be assumed to have a leading indicator function for the HICP. The wholesale price index reflects prices which are of interest for the purchasing side of the retail industry. While the change in the wholesale price index was just over 3% until August 2007, it accelerated to around 6.5% in September 2007 and 8.3% in January 2008 (chart 17). This sharp increase raises the expectation that the rate of inflation will also remain high in the next few months or decline only slowly. However, the wholesale price index, which includes 387 items, is much more volatile than the HICP, which is why it was not possible to observe a strong correlation between both series in the past. The most recently available value for the producer price index is for October 2007; its growth was not exceptionally high until then (chart 17).

Chart 17 Sharp Increase in Wholesale Prices May Dampen Decline in Inflation

## Selected Inflation Indicators



Source: Statistics Austria.

## 5 Summary and Conclusions

### *Mostly International, but also Domestic Causes of Inflation*

This study shows that, starting in October 2007, the HICP rate of inflation in Austria climbed to its highest value since the creation of the euro area in recent months. Inflation even temporarily exceeded the euro area average, which is unusual for Austria. The difference can be explained mainly by the fact that food and energy prices rose more sharply in Austria than in the euro area. But the rate of inflation in Austria has lately been above that of the euro area also with respect to clothing and footwear and leisure and culture.

The increase in global prices for agricultural commodities feed through more strongly to the prices of dairy products and oils and fats than to bread and cereal product prices.

In the energy sector, basically half of the difference can be explained by the increase in the petroleum tax effective July 1, 2007, and the other half by increases in electricity and gas prices of some local suppliers at the beginning of 2007. In addition to the known direct effects on motor fuels

and heating oil, the price increase of crude oil should also indirectly affect other components of the HICP. However, such an effect should be minor and cannot (yet) be determined based on the available information.

With respect to clothing and footwear, consumer prices have been observed to have decoupled from price developments at the upstream producer and import price levels. Since Statistics Austria has made no statistical adjustments which would explain the observed developments, the increase in consumer prices must be a trade phenomenon.

In 2007, administered prices contributed 0.31 percentage points to overall HICP inflation (December 2007: 0.37 percentage points). The increase in the petroleum tax on diesel and gasoline effective July 2007 contributed 0.1 percentage points to annual inflation in 2007.

### *Consumers More Pessimistic about Inflation Outlook than Professional Forecasters; Higher Nominal Wage Increases in 2008*

The most recent increase in Austrian inflation is reflected in the very short-term inflation expectations of both

professional forecasters and consumers. Professional forecasters are less pessimistic in their inflation outlook, especially for 2009, evidently expecting the inflationary effects of the current price shocks to have mostly dissipated by then.

In 2008, the collective agreements concluded in 2007 will noticeably drive up wage growth. However, since most collective agreements of the current wage round have already been concluded, wage developments are fairly unlikely to increase inflationary pressures in the next few months beyond the levels currently forecast.

*OeNB Raises its Inflation Forecast for 2008 to 2.8%; However, a Significant Decrease to 2.3% is Expected by December 2008*

The current OeNB inflation forecast already takes these wage developments into account and presumes that annual HICP inflation in 2008 will be 2.8%. However, the monthly inflation rate should decrease to 2.3% year on year over the course of the year by December 2008. This forecast is based on the one hand on the assumption that international crude oil and commodities prices will not increase further. On the other hand, it is important for this scenario that inflation expectations remain stable and anchored at a low level.

*Inflation-Cooling Measures from Stability-Oriented Monetary Policy of the Eurosystem Need to Be Complemented by ...*

Finally, how can monetary and economic policy best address this situation?

The monetary policy of the Eurosystem is clearly and credibly committed to its primary goal of safe-

guarding price stability in the medium term. Monetary policy cannot prevent short-term external price shocks (crude oil booms, global food price increases). However, it can focus on ensuring that the increase in inflation remains temporary. It is important that inflation expectations remain anchored at low levels. So far, the Eurosystem has been successful in its endeavors. Already in 2001, the temporary increase in inflation above 3% did not affect inflation expectations. And current long-term inflation expectations continue to show high trust in the Eurosystem's stability-oriented policy.

*... National Economic Policies*

Monetary policy cannot precisely control inflation in every single member state of the euro area. Additional measures at the national level are necessary. These can use three levers.

*– Wage Policies*

In the coming fall wage round, the parties negotiating wage settlements will need to rise to the challenge of preventing second-round effects. The social partnership framework and the established system of wage leadership offer a good basis for this, since this setup allows the persistence of wage inflation to be broken more easily than less coordinated wage negotiation systems. An international commodity and crude oil price shock means that the relative prices of energy and other commodities increase compared to goods produced in Austria. In other words, Austria receives fewer foreign in exchange for domestically produced goods. Wealth thus shifts from crude oil and raw materials importers, such as Austria, to the exporters.



– *Structural Policies*

Maintaining price stability is not tantamount to preventing the prices of individual product groups that become scarce – e.g. currently energy and food – from increasing. In contrast, it is important that prices should rise provided such an increase signals scarcity. Rising prices make it worthwhile for businesses to expand their production capacities and thus stimulate the supply.<sup>27</sup> At the same time, price hikes slow demand, since the real income of households falls and, presumably, less of the now more expensive good is consumed. That means that both substitution and income effects can be observed on the demand side. Thus, the high energy prices should result in the more economical consumption of energy and/or in a shift to alternative forms of energy.

Structural policy measures can support the process of adjusting to the commodities price shock and slow the price increase. Measures to intensify competition and eliminate quantitative production limitations, for instance, as they still exist in the form of milk quotas on the basis of EU's Common Agricultural Policy, dampen upward price pressures by limiting the price-setting power of companies and/or increasing the supply of agri-

cultural commodities. In the long term, measures to conserve energy or utilize alternative domestic energy sources signify an adequate response to increased relative prices of fossil energy sources and other imported commodities. Such measures also make Austria less sensitive in the future to possible further international energy price shocks.

– *Fiscal Policies and Administered Prices*

Fiscal policies can help slow inflation via two channels: the influence on aggregate demand and changes in taxes, fees and tariffs. Concerning the first channel, the Austrian economy has grown robustly for the last two years, and capacities are being fully utilized. Given high real growth and strong utilization of capacities, stimulating aggregate demand by incurring higher budget deficits would run counter to reducing the rate of inflation. The deficit should be lowered quickly under such economic conditions. Concerning the second channel, the public sector would be well advised to avoid stirring inflation by increasing taxes, fees and tariffs. If all public fees were frozen at their level in 2007, Austria's 2 annual inflation rate would be reduced by around ¼ percentage point in 2008 according to OeNB estimates.

<sup>27</sup> *The production capacity of crude oil is – for technical reasons or as a result of intentional shortages on the part of crude oil producers – relatively inelastic at least for the short term. However, the energy supply can also react to the increased price level, in particular by expanding alternative energy sources in the medium and long term.*

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## Annex: Breakdown of HICP – Main Components

### Processed food including alcoholic beverages and tobacco – HICP weight in 2007: 10.162%

Bread and cereals  
 Milk, cheese and eggs  
 Oils and fats  
 Sugar, jam, honey, chocolate and confectionery  
 Food products n.e.c.  
 Coffee, tea and cacao  
 Mineral water, soft drinks, fruit and vegetable juices  
 Spirits  
 Wine  
 Beer  
 Tobacco

### Unprocessed food – HICP weight in 2007: 5.315%

Meat  
 Fish  
 Fruit  
 Vegetables

**Energy – HICP weight in 2007: 8.143%**

Electricity  
 Gas  
 Liquid fuels  
 Solid fuels  
 Heat energy  
 Fuels and lubricants for personal transport equipment

**Nonenergy industrial goods – HICP weight in 2007: 28.946%**

Clothing materials  
 Garments  
 Other articles of clothing and clothing accessories  
 Shoes and other footwear including repair and hire of footwear  
 Materials for the maintenance and repair of the dwelling  
 Water supply  
 Furniture and furnishings  
 Carpets and other floor coverings  
 Household textiles  
 Major household appliances, small electric household appliances  
 Glassware, tableware and household utensils  
 Major tools and equipment, small tools and miscellaneous accessories  
 Nondurable household goods  
 Pharmaceutical products  
 Other medical products, therapeutic appliances and equipment  
 Motor cars  
 Motor cycles, bicycles and animal-drawn vehicles  
 Spare parts and accessories for personal transport equipment  
 Equipment for reception, recording and reproduction of sound and pictures  
 Photographic and cinematographic equipment and optical instruments  
 Information processing equipment  
 Recording media  
 Major durables for in/outdoor recreation including musical instruments  
 Games, toys and hobbies  
 Equipment for sport, camping and open-air recreation  
 Gardens, plants and flowers  
 Pets and related products including veterinary and other services for pets  
 Books  
 Newspapers and periodicals  
 Miscellaneous printer matter, stationery and drawing materials  
 Electric appliances and other appliances etc. for personal care  
 Jewellery, clocks and watches  
 Other personal effects

**Services (all items excluding goods) – HICP weight in 2007: 47.434%**

Cleaning, repair and hire of clothing  
 Actual rentals for housing  
 Services for the maintenance and repair of the dwelling  
 Refuse collection

Sewerage collection  
Other services relating to the dwelling n.e.c.  
Repair of furniture, furnishings and floor coverings  
Repair of household appliances  
Domestic services and household services  
Medical and paramedical services  
Dental services  
Hospital services  
Maintenance and repair of personal transport equipment  
Other services in respect of personal transport equipment  
Passenger transport by railway  
Passenger transport by road  
Passenger transport by air  
Passenger transport by sea and inland waterway  
Combined passenger transport  
Other purchased transportation services  
Postal services  
Telephone and telefax equipment, telephone and telefax services  
Repair of audio-visual, photographic and information processing equipment  
Maintenance and repair of other major durables for recreation and culture  
Recreational and sporting services  
Cultural services  
Package holidays  
Pre-primary, primary, secondary, etc. education and education  
not defined by level  
Restaurants, cafés and the like  
Canteens  
Accommodation services  
Hairdressing saloons and personal grooming establishments  
Social protection  
Insurance connected with the dwelling  
Insurance connected with health  
Insurance connected with transport  
Other insurance  
Other financial services n.e.c.  
Other services n.e.c.