

Price Developments in Austria after EU Accession and in Monetary Union

Austrians widely expected prices to fall on account of EU accession, participation in the Single Market and the resulting stepped-up competition. In hindsight, this assessment was partly correct. In the course of the decade from 1995 to 2004, the inflation rate dropped by half to 1.5% per annum from 2.7% (1987–1994). Initial price declines, e.g. in the food sector and later also in some service industries (such as the insurance industry), however, turned out to be mostly short-lived. By contrast, a number of technical industrial goods, such as computer equipment, saw sustained and in part huge price reductions. Liberalization entailed price effects in network industries, with prices in the telecommunications sector a case in point: they decreased over extended periods. Conversely, prices in many service industries have been continually uptrending. Overall inflation hardly changed following the street debut of euro banknotes and coins at the beginning of 2002; yet, prices of some items bought on a day-to-day basis have increased sharply since then. An analysis of the prices of individual items points to frequent price adjustments that coincided with the euro cash changeover in January 2002. Since upward and downward price adjustments roughly balanced each other out, no marked effect on the aggregate inflation rate was observed. To date, European integration has steadily caused price levels to converge, albeit at an altogether modest pace.

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1 Expected Implications of Joining the Single Market: Reduced Headline Inflation, Price Cuts in Some Sectors

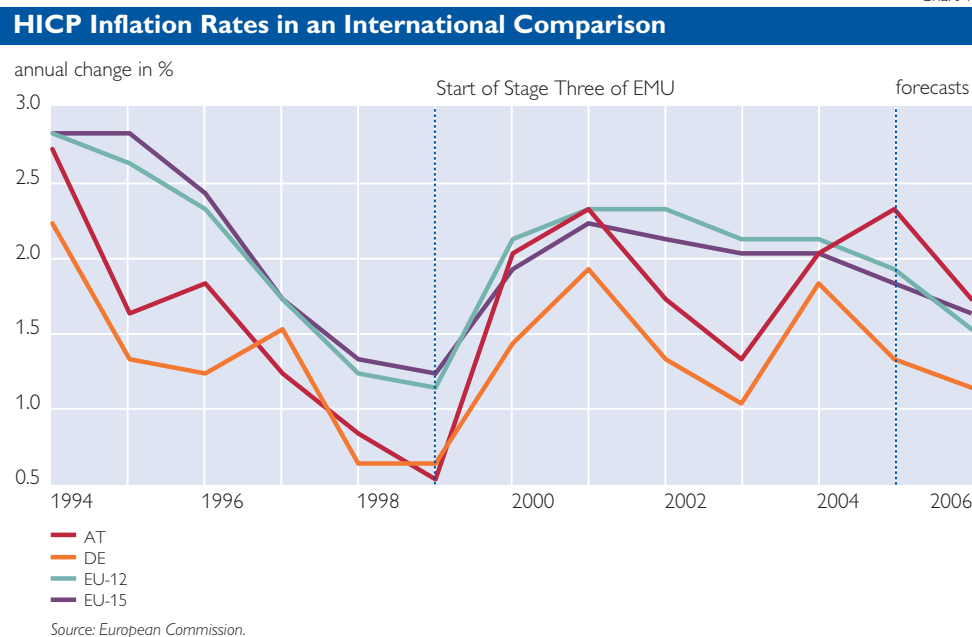
Since Austria's participation in the European Economic Area (EEA) as from 1994 had already resulted in first price effects on the back of stepped-up competition, the public expected EU accession and Single Market membership combined with the implementation of the four freedoms to dampen headline inflation. In individual sectors prices were anticipated to decline once markets had been opened up, albeit with different time lags (Breuss, 1995). Integration into the EU, in particular into the common agricultural policy (CAP) and the common trade policy, was seen as likely to impact on prices over the short term. The benefits from the four freedoms and the ensuing advantages for Austria as a business location as well as from intensifying competition were expected to be reaped over the medium and long term. Estimates released at the time (Breuss, 1995) projected the cumulated increase of consumer prices to come down (in comparison with a

baseline scenario without EU accession) almost 2% during the first two years of EU membership and more than 3% over a five-year horizon. In sectors which were already fully exposed to international competition via external trade (most industrial sectors), price developments would basically remain the same, but hitherto protected areas (agricultural and food sectors, service industries, such as banking and insurance) would have to brace themselves for significant change. Specific empirical estimates of the implications for price developments of the upcoming second integration milestone, namely Stage Three of Economic and Monetary Union (EMU), were far and few between. Baumgartner et al. (1997) arrived at the conclusion that the *threat to inflation following the start of Stage Three of EMU would be very limited: The independent European Central Bank (ECB) was to guard price stability*. Yet, monetary union was expected to exert substantially greater influence on (micro-economic) price structures: The common currency would shorten the distance between national markets, increase price transparency, spur com-

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¹ The authors would like to thank Ernest Gnan (OeNB) and Paul Haschka (Statistics Austria) for their valuable comments.

Chart 1



petition, and pricing would have to be overhauled – certainly upon the introduction of euro banknotes and coins. At the European level, both the Single Market and monetary union would accelerate price convergence.

The objective of this study is to examine for the decade spanning 1995 to 2004 to what extent the regime shift associated with EU accession influenced both overall and sectoral price developments.

2 Austria's Inflation Rate Fluctuates within a Narrow Band

2.1 Prices Increase an Average 1.5% from 1995 to 2004

In the decade since Austria's EU accession, average annual inflation² in Austria came to 1.5%, whereas it had amounted to 2.7% per annum between 1987 when the HICP first

became available and 1994. During the 120 observation months (from January 1995 to December 2004) the inflation rate moved within a band from slightly above 0% to close to 3%. It was lowest in April 1999 (+0.1%) and highest in May 2001 (+2.9%), which translates into a range of 2.8 percentage points.

In an international comparison, price stability in Austria was high over the entire observation period, with Austria taking third place within the EU-15 (table 1). Once we break the decade down into a phase ranging from 1995 to 1998 (EU accession and the first effects of integration) and a phase spanning 1999 to 2004 (participation in monetary union), the picture is somewhat different: Following EU accession, prices in Finland came under high pressure and remained moderate from 1995 to 1998, which is why Austria falls

² The Harmonised Index of Consumer Prices (HICP), the central inflation gauge for the monetary policy of the Eurosystem, served as the benchmark for all inflation data. The HICP was first published in 1997, but backdata for Austria are available as far back as 1987. The use of other inflation measures (such as the national CPI) is specifically stated.

Table 1

Average HICP Inflation Rate in the EU-15

Countries are sorted from left to right by the average inflation rate from 1995 to 2004
% per annum

	DE	FI	AT	UK	SE	FR	BE	DK	LU	NL	IT	PT	ES	IE	GR	EU-15	EU-12
1995 to 2004	1.27	1.44	1.51	1.59	1.62	1.64	1.66	1.97	2.06	2.34	2.74	2.98	3.00	3.10	4.56	1.94	1.93
1995 to 1998	1.15	1.01	1.35	2.15	1.58	1.45	1.37	1.84	1.17	1.61	3.30	2.75	2.94	2.09	6.67	2.04	1.82
1999 to 2004	1.35	1.72	1.62	1.22	1.64	1.77	1.86	2.06	2.50	2.82	2.38	3.13	3.05	3.78	3.18	1.88	2.00

Source: Eurostat, ECB.

back to rank 4.³ Among the euro area countries, Austria is second after Germany, but within the EU-15, the United Kingdom was the top performer in terms of price stability.⁴

Credit for Austria's overall favorable price performance is due to the continuation of its stability-oriented monetary policy and moderate wage policy.⁵ Labor costs increased at a modest pace. In light of the Single Market,

companies developed greater cost awareness and undertook investments aimed at rationalization. Unit labor costs decreased in the industrial sector and stagnated in the economy as a whole from 1995 to 2004. Thanks to considerable productivity gains, the manufacturing sector managed to substantially improve its price competitiveness vis-à-vis Austria's trading partners, including Germany (table 2).

Table 2

Indicators of Austria's Competitiveness

change in % per annum

Indicator	1995 to 1998	1999 to 2004	1995 to 2004
Productivity – whole economy	2.5	2.3	2.4
Gross earnings per employee	1.5	1.9	1.7
Negotiated standard wage rate index	2.5	2.3	2.4
Unit labor costs – whole economy	-0.4	0.8	0.3
Unit labor costs – manufacturing sector	-1.5	-2.1	-1.9
Price competitiveness ¹	-1.2	0.0	-0.5
Unit labor costs (manufacturing) relative to trading partners	-0.7	-2.1	-1.5
Germany	1.0	-1.3	-0.4

Source: WIFO.

¹ Up to end-1998 real effective exchange rate of the Austrian schilling, then of the euro based on Austria's foreign trade.

³ For country-specific details on price developments, see Pointner (in this issue) and Égert et al. (2004).

⁴ However, the comparison with the U.K. is not fully appropriate because the U.K.'s HICP assigns – owing to the lesser importance of rents and the stripped-out higher expenses for owner-occupied housing – much less weight to housing (2005: 10.3%) than e.g. Austria (14.5%) and Germany (21.8%).

⁵ For further details on the changes and effects of monetary and wage policy, see Gnan et al. and Stiglbauer in this issue.

Integration into the EU Dampens Inflation

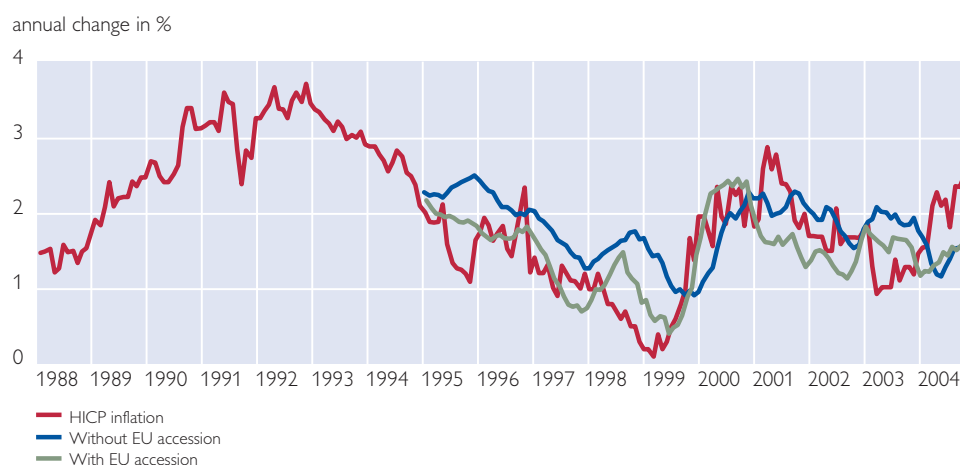
This box takes a closer look at the effects on consumer prices associated with Austria's integration into the EU. As from 1995, Austria's economic policymakers implemented a number of deregulation and liberalization measures induced more or less directly by the country's accession to the EU. As a consequence, especially the network industries and several service segments, such as the insurance industry, recorded lower price increases, at least temporarily. In addition, with a view to participation in Stage Three of EMU, monetary policy and subsequently the stability-oriented monetary policy of the Eurosystem contributed to the observed disinflation trend. On the other hand, fiscal policy measures geared toward compliance with the convergence criteria entailed repeated government tax and fee hikes, which partly offset the inflationary downtrend. Analyzing all these factors at greater length and quantifying their effects on consumer prices to calculate a net effect of EU integration on consumer prices is beyond the scope of this study.

Instead, we will use a simulation exercise of HICP forecasting models to present a simple calculation of the effect of EU integration on consumer prices. Specifically, we base our calculation on a vector autoregressive model (VAR) with a specification similar to that of the OeNB's inflation forecast.⁶ We first estimated the model in two different specifications and then calculated recursive 12-month forecasts for the period 1995 to 2004. In other words, in each step, we advanced the estimation period by one month and subsequently performed a simulation for the next 12 months until the last 12-month forecasting value reached the end of the sample. The two specifications of the model are intended to mirror the scenarios for inflationary developments with and without EU accession. Here, the model capturing the scenario without EU accession is optimized in its lag specification only until end-1994, while the other model is optimized for the entire period under investigation (1988–2004) and includes a dummy variable for EU accession as from 1995. For the former specification we thus try to simulate inflation as from 1995 based on the pre-EU path of inflation. In the other case, we simulate inflation for the past ten years, also taking account of the post-accession structure of the inflation process and explicitly modeling in addition a (linear) EU integration trend.

Chart 2 shows the time series of the stacked 12-month forecasting values for both scenarios as well as actual inflation developments from 1988 to 2004. It is evident that the EU accession-based model (green line) traced the actual inflation development of the past ten years rather well, while the model assuming

Chart 2

Inflation Rate and Forecast Simulations with and without EU Accession



Source: OeNB, Statistics Austria.

⁶ In addition to the HICP index, the VAR comprises the following endogenous variables: the short-term interest rate, credit developments, the monetary aggregate M3 and the average inflation rate for the EU-15 to control for the effects of the international disinflation trend of the 1990s.

no EU accession (blue line) clearly exceeded actual inflation at least during the first half of the past decade.⁷ Against the simple modeling background chosen here, we interpret the difference between the two scenarios as the effect of EU integration on HICP inflation. The bottom line is therefore that Austria's EU accession reduced the inflation rate by some 0.2 percentage point a year on average over the past ten years. Or put differently, at the end of 2004, the price level in Austria would have been 2.3% higher had Austria not joined the EU. The downward effect on inflation traceable to EU integration is thus somewhat lower than indicated in the above-mentioned forecasts by Breuss (1995), but it is nevertheless of a comparable magnitude overall.

2.2 Austrian Inflation Rate Hits

All-Time Low in 1999

With the inflation rate having mounted ½ percentage point in 1992 following hikes in the mineral oil and beverage taxes, it continually edged down until 1995. Participation in the EEA and anticipation effects of the upcoming EU accession promoted this development. Another increase in the mineral oil tax in 1995, however, prevented a better inflation performance. Given an upturn in oil prices and further fiscal measures (introduction of the energy tax and various tariff increases), the disinflation trend came to a halt in 1996, but resumed from 1997 to 1999 owing to Austria's huge efforts to meet the convergence criteria and to become eligible for participation in Stage Three of EMU. At 0.5%, the inflation rate posted in 1999 was the lowest since 1945. This record low was ascribable to stiffer competition (trade, insurance industry), subdued prices of industrial goods, first liberalization effects (telecommunications sector) and the absence of fiscal impulses.

The Europe-wide low level of inflation at the end of the 1990s triggered

concern over an impending spell of deflation (e.g. Chaloupek et al., 1999). As inflation in Austria again mounted to reach almost 3% by the beginning of 2001, such fears were quickly dispelled, though. In light of a string of temporary effects (including positive and negative crude oil price shocks⁸ and shocks related to food prices) as well as tax-induced changes, inflation proved rather volatile – albeit at a continued low level – during the first years of the new millennium and after the launch of euro banknotes and coins. In monetary union, average inflation in Austria came to 1.6% (euro area: 2.0%) from 1999 to 2004, thus clearly in line with price stability as defined by the Eurosystem. During the changeover to euro banknotes and coins (2002 and 2003), inflation receded in Austria, observably falling out of step with the EU-12 trend (chart 1). However, with oil prices taking off in 2004, energy prices augmented again in Austria, which coincided with mounting prices in the service sector (especially in housing); as a result, the inflation rate rose again to 2.0%. At the beginning of 2005, inflation remained relatively high, among other

⁷ The average absolute forecast error of the model with EU integration amounts to 0.36 percentage point, which contrasts with 0.53 percentage point for the model without EU integration.

⁸ The effects of oil price changes are not subject of this study. Such effects are in part caused by exogenous factors and are thus not related to the integration process. Furthermore, studies in recent issues of *Monetary Policy & the Economy* focused on the interrelationship between oil and inflation (see Schneider, 2004, or Égert et al., 2004). Also, the analyses on the economic outlook for Austria released in issues Q2 and Q4 of *Monetary Policy & the Economy* every year tend to touch on this topic. For a description of the long-term influence of oil on inflation in the euro area, see e.g. the ECB's Annual Report 2004.

things owing to the measures agreed upon during the 2005–2008 fiscal sharing negotiations, e.g. an increase in the tobacco tax and reduced reimbursement of dental services by health insurance funds. According to OeNB projections (see Fenz et al. in this issue), inflation will, however, subside in 2006 and 2007, continuing the long-term trend of price stability.

3 Tradable Goods See Moderate Inflation, Service Prices Increase More Sharply

3.1 EU Accession Dampens Food Prices, Yet Pronounced Uptrend as from 2002

With the adoption of the CAP, market regulation was transferred to the EU, and the system of price support was reorganized. Austrian farmers had to adjust their prices and incomes to the

lower EU level. As a consequence, agricultural prices at the producer level fell by almost 25% (Breuss, 1999), but the bulk of price reductions did not pass through to consumers so that prices decreased significantly less at the consumer level (1995: a mere –3%). However, price pressures in the food sector remained subdued in the years up to 2000, which resulted in a downward impact on inflation. This changed in 2000 and 2001, when Europe was hit by severe supply shocks. Weather-related crop failures in southern Europe pushed up fruit prices considerably (see the rise of unprocessed food in chart 3.1). Given the small weight of this item, this induced only a relatively limited inflation impulse, but in 2001, the breakout among cattle of the disease BSE and of the foot-and-mouth epidemic across large parts of Europe let the prices of

Chart 3.1

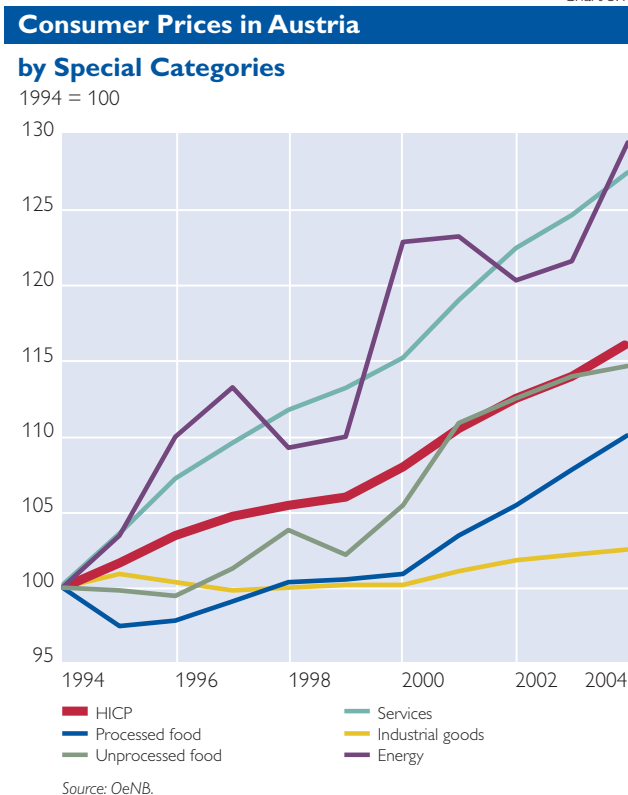
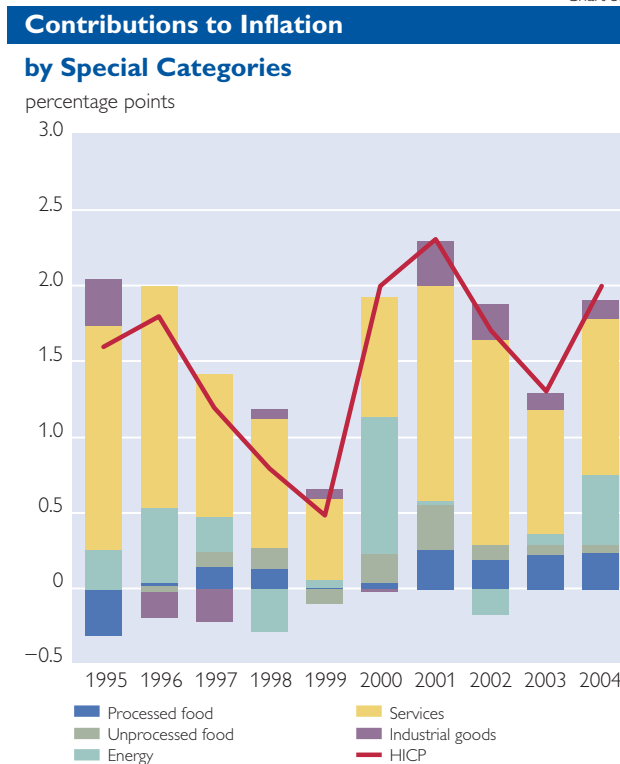


Chart 3.2



meat products and other animal products skyrocket. In the euro area as a whole, food prices jumped by almost 5%, thus rising three times as much year on year as in 2000. In Austria, with only isolated cases of these diseases and with domestic production accounting for a large share of consumption, the inflationary effect of around 0.2 percentage point in the year 2001 was

comparably modest. Since then the price level has, however, been clearly uptrending: From 2002 to 2004, food prices increased by the same amount (+5%) as in the period from 1995 to 2002 (chart 3.1). In the decade since EU accession, the increase in food prices (+10%) trailed overall price growth (+15%), though.⁹

Sector-Specific Prices in Austria and Germany Continue to Move More or Less in Sync after EU Accession

The close trade relationship between Austria and Germany has for decades been clearly reflected by the synchronized inflation developments in these two countries. This remained unchanged even once Austria had joined the EU (chart 1 and table 3). Moreover, in terms of price stability, both countries rank among the top performers in the EU and in the euro area. A comparison with Germany (as a benchmark representative of an existing EU Member State) helps to infer further integration effects that may have impacted on consumer prices immediately after EU accession.

Table 3

Price Developments in Austria and Germany from 1995 to 2004

change in % per annum

Subgroup	Austria		Germany	
	1995 to 2004	1999 to 2004	1995 to 2004	1999 to 2004
Selected goods, services				
Processed food	1.0	1.5	1.4	1.6
Food	1.3	1.4	0.7	0.5
Alcoholic beverages and tobacco	2.0	2.5	2.8	3.4
Beer	0.8	0.6	0.9	1.1
Tobacco products	3.2	3.6	4.5	5.6
Coffee, tea, cocoa	-2.2	-4.1	-1.6	-3.3
Unprocessed food	1.4	1.7	0.8	0.5
Nonenergy industrial goods	0.3	0.4	0.4	0.2
Clothing and footwear	-0.4	-0.1	0.2	0.1
Energy	2.7	2.9	3.1	5.3
Electricity	0.9	0.1	1.3	2.7
Gas	3.4	3.5	3.9	5.5
Services	2.5	2.2	1.7	1.4
Housing rents	3.3	2.7	1.5	1.1
Communication services	-1.1	-1.9	-3.1	-4.2
Insurance services	1.4	2.4	1.2	3.1
Financial services	2.5	2.3	2.8	4.3
HICP, total	1.5	1.6	1.3	1.4

Source: Eurostat, ECB.

It becomes evident that food prices in Austria advanced at a faster pace than in Germany in the past decade, the opening up of the agricultural market, structural change and dynamic competition in the food and beverage sector notwithstanding (Böheim, 2002). With the exception of coffee, tea and cocoa, whose prices declined perceptibly in both countries (albeit more sharply in Austria), this applies also to all essential

⁹ The data in chart 3.1 are based on 1994 = 100 to already capture the pronounced price movements of the first year of EU membership.

small-ticket goods purchased almost on a daily basis (table 3). By contrast, prices of alcoholic beverages and tobacco went up less in Austria than in Germany; yet with respect to tobacco, the effect of various tax hikes plays a role.

The price increases of products under a large seasonal influence, such as fruit and vegetables (unprocessed food), were higher in Austria than in Germany. The generally rather stable prices of tradable non-energy industrial goods largely moved in sync in both countries. Here, the decline in prices for clothing and footwear in Austria is, however, conspicuous, as it was not mirrored in Germany. In the energy sector, where prices generally accelerated strongly, Austrian consumers were faced with considerably lower price hikes. Having mounted by more than 6% per annum since 1999, Germany's fuel prices increased at almost double the Austrian rate.

The liberalization of important network industries tells divergent tales: Compared with Germany, electricity prices developed at a more modest pace in Austria from 1999 to 2004, the period during which the electricity markets were being opened up. Gas prices, which rose sharply in both countries, likewise mounted more strongly in Germany than in Austria. Conversely, the price reductions in the telecommunications sector were pronounced in both countries, with Germany posting the stronger decline.

Inflation in the service sector was perceptibly higher in Austria, which was largely due to the sharper rise in rents. In the insurance and the financial service sector, by contrast, Germany saw greater price increases, especially as from the introduction of the euro. In the service sector, differing competitive conditions as well as differing degrees of public influence, different charges and different indirect taxes came to bear on price developments. At any rate, during the entire observation period, the highest inflationary pressure emanated from the service sector (excluding the volatile energy component).

In other industries price effects sparked by EU accession were not or hardly perceivable. Service prices, which were exposed to competition only to a limited extent over longer periods and in many areas, largely remained well below the HICP average

and partly produced significant outliers (table 3). Energy prices, which were driven by developments in international (crude oil) markets, showed a similar development against the backdrop of greater volatility. Nonenergy industrial goods, shaped most by com-

Table 4

Major Price Reductions/Increases of Goods and Services from 2000 to 2004

CPI change in %

Goods

Price reductions (> 25%)	
personal computer	-66.3
digital camera	-62.5
PC printer	-44.8
DVD player	-43.1
feature telephone set	-34.0
mobile phone	-31.1
Price increases (> 25%)	
natural honey	60.5
PC/CD-ROM game	49.3
hard coke	41.1
oranges	38.2
therapeutic appliances and equipment	31.8
varnish	30.9
pencil	29.0
beef	28.1
hard coal	26.7
iodized salt	25.5

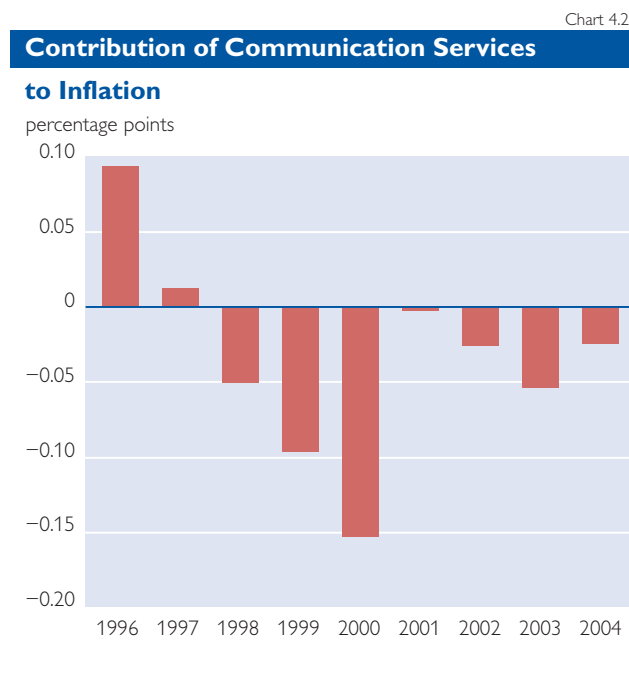
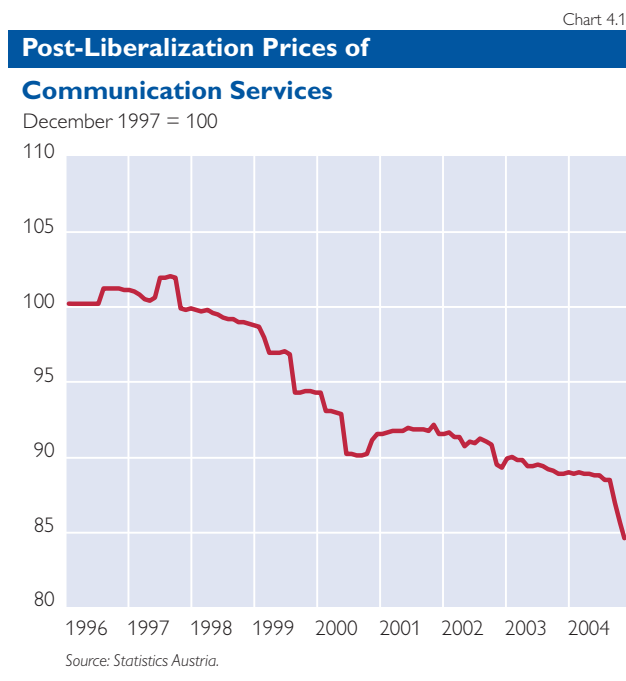
Services

Price reductions (> 10%)	
fixed telephony, call charge	-12.9
Price increases (> 25%)	
university tuition	1.577.2
gas, base service charge	124.9
electricity, base service charge	91.4
toll road fee	81.6
pay phone	37.8
exhibitions, museum admission	33.9
hospital costs	33.6
hairdressing course	31.9
homecare assistance	28.2
private physician	27.8
prescription fee	26.0
passport	25.2
refuse collection	25.0

Source: Austrian Federal Economic Chamber, Statistics Austria, OeNB.

petitive pressures, by and large posted relatively steady price developments. However, technological innovation inexorably drove down the prices of many electronic and recreational goods

as well as selected household appliances, which, however, contrasted with substantial price hikes in the very same product categories (table 4).¹⁰



3.2 Liberalization of Network Industries Entails Some Price Reductions

In line with the EU's regulatory reform program to complete the establishment of the Single Market, Austria fully liberalized the telecommunications market as early as 1998. Subsequently, the electricity and gas markets were gradually opened up and became completely deregulated in 2001 and 2002, respectively. Austria thus ranks among the seven EU Member States that have totally liberalized the energy markets (the EU-15 deadline is 2007) and proved a pioneer in both cases.

This change in the network industry landscape with substantial implica-

tions for competition and prices has since been analyzed in several studies (e.g. ECB, 2001; Monthly Bulletin of the ECB, December 2004; European Commission, 2003). Also, Janger provides in-depth insights into this topic (in this issue). These analyses shed light on, among other things, the scope, role, functioning and economic significance of network industries and also provide an overview of the state of play of the liberalization process (including the legal framework) at the European level. Most importantly, liberalization broke the natural monopolies of network industries and went hand in hand with reforms of the regulatory framework and privatization to allow the

¹⁰ A period of four years was chosen in table 4 because the items listed here all belong to the same-generation basket of goods and services (CPI based on 2000 = 100), which ensures maximum comparability.

market mechanisms to take full effect and thus provide for new levels of consumer welfare. In Austria, the newly established regulatory authorities, e.g. the Austrian Regulatory Authority for Telecommunications and Broadcasting (RTR GmbH) and E-Control Ltd., which caters to the electricity and gas markets, keep the public informed about the effects of liberalization. The following analysis of price effects¹¹ puts the spotlight on these three markets.¹²

3.2.1 Communication services:

2004 prices down by 14% on 1997

Over the past few years the telecommunications sector saw enormous innovations, which met with high demand, and stepped-up competition, which led to a better quality of service and price cuts.

Retail prices started to decline immediately following liberalization, in two waves to be precise (chart 4.1). The first wave entailed price reductions for telecommunications services of some 10% by the end of 2000. After the prices of both postal services (in January 2001) and telephone sets (improved mobile phone generation) had increased, the second wave starting from mid-2002 brought about fur-

ther price cuts of around 5% until the end of 2004. In December 2004, the price level was thus some 14% lower than in December 1997,¹³ and this trend continued at the beginning of 2005. In December 2004, telephone sets (including mobile phones) only cost one-third of the price some eight years previously according to the (again quality-adjusted) HICP. Mobile phone prices were cut by more than 30% from 2000. At any rate, liberalization put a marked damper on inflation in this sector (chart 4.2).

3.2.2 Price effects on the liberalized energy markets offset by new regulations¹⁴

Following the uptick after the introduction of the energy tax in June 1996, electricity prices remained stable until the first liberalization stage in September 1999. In the ensuing period up to May 2000, electricity prices fell by almost 5%. However, the hike in the electricity tax rate of June 2000 canceled out these liberalization effects. In a second wave, electricity prices continued to decrease up until mid-2002, which dampened overall inflation. They edged up again by close to 10% until end-2004 (chart 5.1),¹⁵

¹¹ The pricing system of networking industries is, as a rule, highly complex, consisting of base service charges (e.g. for metering), unit/commodity or demand charges and the grid charges. The charges are usually tiered according to the quantity consumed, and special taxes and duties apply. As a case in point, the 2004 retail gas price comprised the components grid, energy, VAT, duty on natural gas, local tax. Only the energy price is exposed to competition, while the grid charges are set by the regulatory authorities (see the annual reports of the Austrian regulatory commissions).

¹² There is nothing particularly distinctive about the price developments in the likewise (partly) deregulated markets (postal services, passenger transportation by railway), which is why they are not covered here. In the liberalized air transport sector, prices have been rather volatile since 1999 given seasonal and oil price-induced determining factors.

¹³ It is noteworthy that the innovations in the mobile phone sector were factored into the national HICP and CPI very early. The Austrian CPI and HICP were among the first in Europe to include mobile phones in the basket of goods and services, namely already in 1997. However, it remained a highly complex task to account for the heterogeneous pricing schemes of the various providers.

¹⁴ This analysis focuses on retail-side developments (including all regulatory and tax changes).

¹⁵ To compare: E-Control reports the following retail price developments between 2001 and 2004 in its 2004 annual report: energy +16.3%, grid charges -9.1%.

as surcharges were levied to promote small hydro power, renewable energy resources and cogeneration and as energy prices were hiked worldwide,

even though the grid charges had been cut by almost 10% (E-Control, 2004) since 2001.¹⁶

Chart 5.1



Chart 5.2

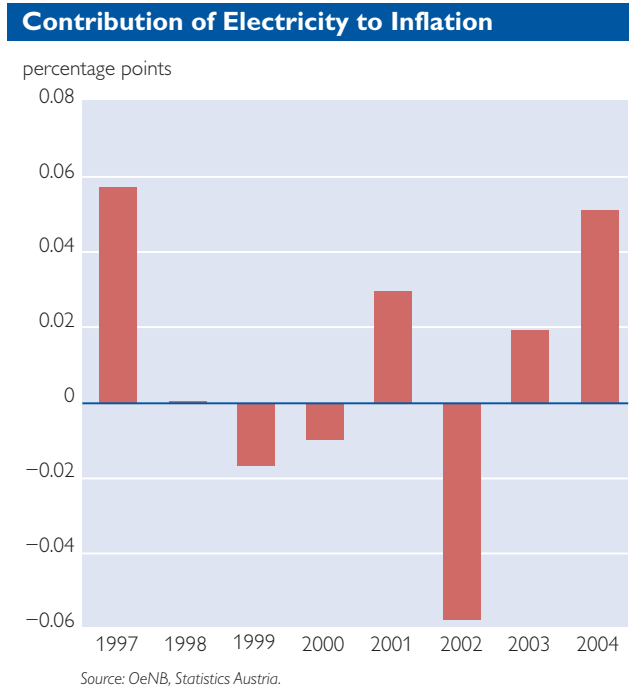


Chart 5.3

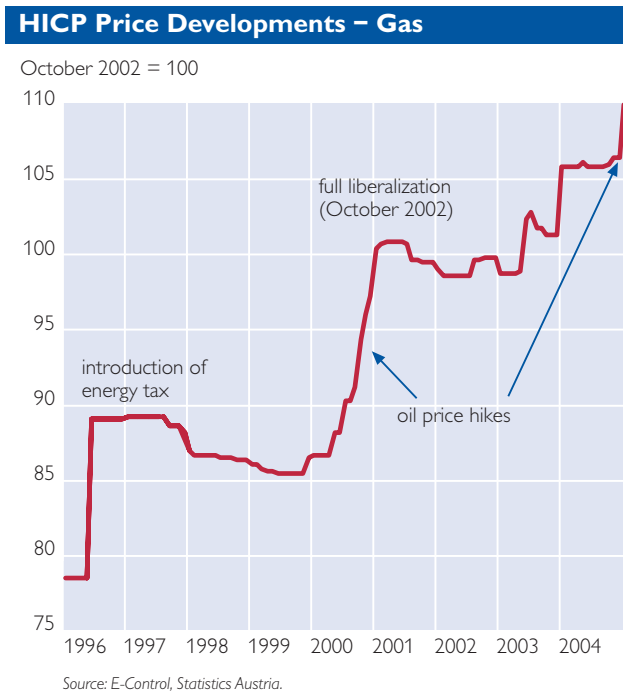
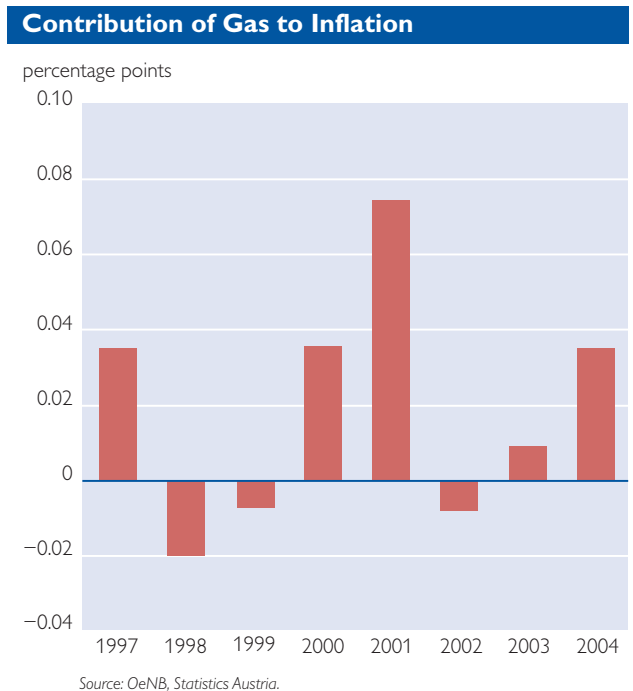


Chart 5.4



¹⁶ The generally unsatisfactory post-liberalization price development on the electricity market triggered a debate in Austria about “remonopolization.”

An international comparison of retail¹⁷ electricity prices (before taxes) by Eurostat puts Austria close to the EU-15 average. Germany's price level is almost 30% (2004) higher than that of Austria. Since the grid charges are relatively high in Austria by international standards and the energy providers are considered to be in good financial health, E-Control decided to cut the grid charges in regional clusters in 2005. For this reason, electricity prices are expected to stabilize in the immediate future.¹⁸

With respect to gas prices, only modest liberalization effects are observable in the short period since the full opening up of the market. In 2002, gas price reductions likewise put a brake on inflation in Austria. Gas prices, however, mirror oil price developments, which – especially in 2001 and toward the end of the observation period (2004) – entailed marked hikes (chart 5.3) and overshadowed the liberalization effects.

In a scenario comparison for Austria, Kratena (2004) identified pronounced price effects ascribable to liberalization. From 1999 to 2003, wholesale customers' electricity bills dropped by up to about 40% and gas bills by around 14%, compared with the scenario without liberalization. Retail customers benefited as well, albeit to a lesser extent, with electricity and gas prices sinking by 18% and 4%, respectively. According to these calculations, the overall price index was some 2% lower than that in the scenario without liberalization.

Hence, both markets were observably subject to downward pressures on inflation during the liberalization process (charts 5.2 and 5.4), but these effects have in the meantime been set off by regulatory changes and exogenous factors. In addition, the base service charges for both electricity and gas have seen massive hikes at the retail level in recent years, which – though assigned only a minor weight – have contributed to this countereffect (table 4). Lastly, it is difficult to exactly pinpoint the liberalization effects and to quantify their impact on the inflation rate in light of the complex tariff system for large- and small-scale customers.

3.3 Sustained Price Effects Following Integration of Services as yet Hardly Observable

Services account for around 46% of the Austrian basket of goods and services (as at 2004) and thus are a significant determining factor of overall price performance. Price developments, indeed, reflect the considerable restrictions still prevailing on the internal services market. Over the past decade, more than half of the inflation rate was attributable to price increases of private and public services (chart 2). Even the financial market, where integration boosted competition, has failed to produce sustained price effects for households. If at all observable, such effects are somewhat evident in the insurance sector: In the run-up to the millennium change, this market saw competition intensify, and premia

¹⁷ Annual consumption per household: 3,500 kWh, of which 1,300 kWh at night (standard apartment of 90m², before taxes).

¹⁸ In February 2005, the grid charges were reduced in Salzburg, Carinthia and Burgenland, which according to E-Control should result in retail price decreases of between 9% and 20% (press release of E-Control dated January 12, 2005). All other provinces are scheduled to follow suit by end-June 2005. The HICP data for January through April 2005 show a slightly sinking trend.

declined markedly in 1998 and 1999; thereafter, prices ticked up again. By contrast, the prices of financial services (essentially service charges on bank accounts) accelerated at a disproportionate clip of almost 25% since 1998. In the same vein, the largely protected markets, such as motor vehicles services and hairdressers, continue to be characterized by continual price increases. Inflationary pressures are especially strong on markets that are immune to international competition, permanently tight and partly subject to administered prices. The most obvious example is the housing sector: Rents as well as fees for mostly public

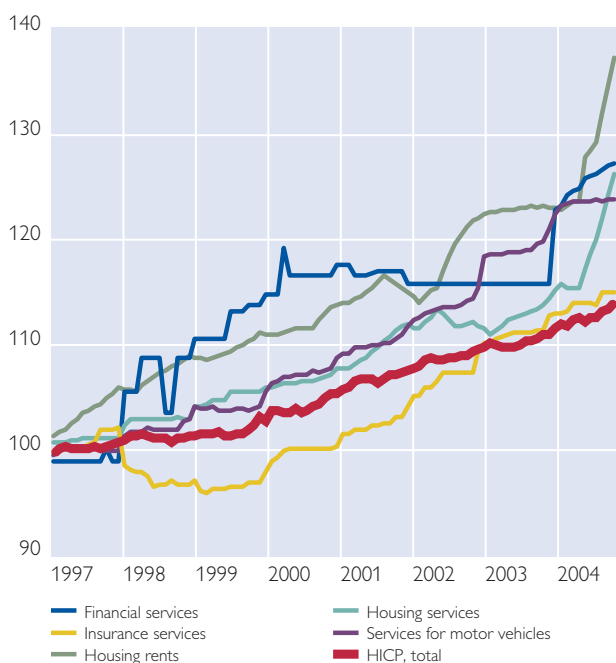
services, such as water supply, refuse and wastewater collection, mounted twice as fast as HICP inflation from 1995. Particularly rents charged on apartments in old buildings, which since 1994 have been governed by a system under which the government prescribes a standardized rent per square meter (Richtwertsystem),¹⁹ impact on the inflation rate, which, in turn, influences inflation-indexed rents and thus feeds into a “rent-inflation spiral.” Rents soared especially in 2003 and 2004, which may, among other things, be traceable to changes in the compilation method applied to rents (Haschka, 2005).

Chart 6.1

HICP Price Developments for Selected

Services in Austria

1996 = 100



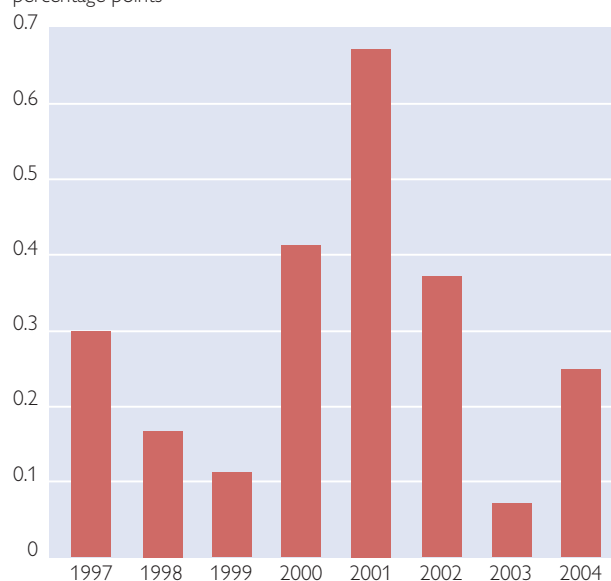
Source: OeNB, Statistics Austria.

Chart 6.2

Contribution of Public Services, Fees and Indirect

Taxes to Inflation in Austria

percentage points



Source: Statistics Austria.

¹⁹ These standard rates per square meter are statutory and differ across Austria’s provinces; they basically correspond to basic inflation-adjusted rents. Depending on the equipment and location of the apartment, owners may either add supplementary charges or must subtract discounts. For more details, see a study published at the Vienna University of Technology (Blaas and Wieser, 2004) commissioned by the Vienna Chamber of Labor.

Price adjustments in public services and changes in indirect taxes, which for years weighed heavily on inflation (chart 6.2), have remained largely unaffected by European integration. Indirect taxes, duties and public services²⁰ contributed up to 0.6 percentage point to overall inflation from 2000 to 2002, given the exceptionally high rise in administered prices. By 2004 their contribution to inflation had halved to around 0.3 percentage point.

Efforts at the EU level (draft directive by the European Commission) to provide for a general legal framework with a view to reducing the barriers to the freedom of establishment for service providers and to unfettered intra-EU service provision should, in the long run, result in a greater opening up and should stimulate competition.²¹ This initiative is targeted at all commercial services, but not services of general economic interest. Liberalization has diminished the role of administered prices, which, however, nevertheless continue to impact inflation. As mentioned earlier, some 75 items (around 8% of the basket of goods and services) of a total of approximately 800 items determining Austria's HICP are still subject to adminis-

tered prices. In light of the highly dynamic price developments observable for many public services, a further opening up of these sectors, including transport and health care, could lead to price reductions. Yet Égert et al. (2004) conclude that the public sector frequently reins in the free interplay of market forces for strategic and political reasons, which more or less precludes perfect competition.

4 Euro Cash Changeover without Significant Repercussions for Overall Inflation

Introducing the euro (as a noncash currency in 1999 and in cash form in 2002) represented a major challenge for all agents of the economy. On the one hand, the changeover to the euro spawned considerable costs that differed from sector to sector (Pollan, 1998; Dirschmid et al., 2001); on the other, it also reduced or eliminated costs (e.g. elimination of transaction costs for money exchange and abolition of intra euro-area currency risks). Overall, these costs (exacerbated by the year-2000 change) were, as a rule, not – as initially feared – passed through to consumer prices.

Key Changes Prior to and in Monetary Union to Improve

Price Analysis and Measurement

To provide monetary policymakers with reliable information on price developments, the quality of statistical data necessary for price analysis was continually improved already in the run-up to the third stage of EMU and, later, specifically on the initiative of the Eurosystem as well. Since the convergence criterion “inflation rate” was accorded great importance for participation in monetary union, the methods used for measuring inflation were largely harmonized as early as 1997, and a new price index (Harmonised

²⁰ Including refuse collection, water supply, sewage collection, health care as well as training and education. The prices of 75 items (of some 800 items in the basket of goods and services) underlying charts 6.1 and 6.2 are wholly or partly of an administrative nature.

²¹ The Presidency Conclusions of the Brussels European Council of March 22–23, 2005, clearly state that the internal market for services has to be fully operational while preserving the European social model. However, the current draft directive does not fully meet these requirements and must therefore undergo a thorough review.

Index of Consumer Prices) was created to facilitate international comparisons. In the intervening years, the HICP has evolved into the central and broadly accepted indicator of the Eurosystem's monetary policy (e.g. Camba-Mendez et al., 2002). Credit for this pioneering work is due to the collective efforts of Eurostat, the national statistical authorities, the ECB and the national central banks (NCBs). To capture the highly dynamic market, ongoing innovations and quality improvements in the price index in a swift and adequate manner proves particularly daunting. To this effect, all EU Member States completely revise their baskets of goods and services at least at five-year intervals (some even on an annual basis) with the help of suitable consumer surveys; in the interim, they implement new products if and when the need arises. The above-mentioned stakeholders in the statistical data also succeeded in defining – in addition to the 12 consumption-relevant categories of goods and services – 5 special categories²² which are of particular interest to monetary policymakers. In addition, timely availability of data was improved. A flash estimate for the euro area, i.e. a preliminary inflation rate based on the results of a few representative countries (Germany, Italy, Spain), is already available immediately after the end of the respective reporting month. Moreover, medium-term HICP projections for the euro area are compiled on a quarterly basis, which reflect the estimates made by the NCB experts (among them those of the OeNB).

In March 2002, the 76-year-long era of the schilling came to a close, when the euro, following a two-month dual circulation period, became sole legal tender in Austria. The smooth changeover and the public's speedy acceptance of the new banknotes and coins notwithstanding, familiarization with the new euro prices took time. A broad range of supporting mechanisms and instruments was utilized to facilitate this adjustment, but after all,

the changeover had gone hand in hand with far-reaching changes in price structures (with psychological pricing a case in point). Even though there was comparatively little immediate evidence of repercussions in the official headline inflation rate (Pollan, 2002; Annual Reports of the ECB of 2001 and 2002), the observable impact was limited to a few sectors and relative prices did not change markedly either,²³ the general public's percep-

Table 5

Inflation Rate in Austria before and after the Euro Cash Changeover

Main HICP categories	1999 to 2001	2002 to 2004	Difference in inflation rate
	% per annum		percentage points
Food and nonalcoholic beverages	1.30	1.50	0.19
Alcoholic beverages and tobacco products	1.98	2.93	0.94
Clothing and footwear	-0.17	-0.10	0.07
Housing, water, energy	2.56	2.09	-0.47
Furnishings, household equipment and routine household maintenance	0.89	0.93	0.04
Health	3.57	1.80	-1.77
Transport	2.86	1.76	-1.10
Communication	-2.63	-1.26	1.37
Recreation and culture	0.59	0.74	0.15
Education	5.11	8.69	3.58
Restaurants and hotels	2.01	2.68	0.67
Miscellaneous goods and services	1.46	2.54	1.09
HICP, total	1.58	1.66	0.08

Source: OeNB, Statistics Austria.

²² Unprocessed food, processed food, nonenergy industrial goods, energy and services.

²³ Account was taken of the price movements of about 15 commonly used goods and services.

Table 6

Headline Inflation and Price Growth of Selected Baskets of Goods and Services

change in %	Consumer price index	Mini basket (16% of CPI) ¹	Micro basket (5% of CPI) ²
2000 to 2004 per annum	2.1	3.0	3.4
2000 to 2004 cumulated	8.1	10.4	13.9

Source: Statistics Austria.

¹ Goods and services purchased on a weekly basis.

² Goods and services purchased on a daily basis.

tion of price increases diverged from the official statistics. At around the time of the euro cash changeover, this led to a gap between people's perception of inflation and actually registered price hikes, which has narrowed in the meantime, but has yet to disappear altogether. Incidentally, a similar divergence was evident when Austria joined the EU in 1995, but perceived inflation then actually trailed official figures considerably.

An analysis of the categories of goods and services, based on data compiled by Statistics Austria, reveals that inflation hardly differed at the aggregate level three years before and after the euro cash changeover. When we break down the individual categories, however, we see heterogeneous developments. The tobacco tax raises left their mark, as did the price increases of several services discussed above. In the field of education, the introduction of university tuition fees in October 2001 did not go unnoticed; in the healthcare sector, the abolition of copayments for outpatient hospital visits was palpable from 2002 to 2004. The huge price reductions in the telecommunications sector evident at the turn of the millennium eased off somewhat after the introduction of euro

banknotes and coins. The growth of prices for restaurant and café services, by contrast, heated up after the cash changeover. Prices mounted evenly, though, and not abruptly during the first two months of 2002, as was clearly registered by the Federal Statistical Office in the case of Germany.

Yet the prices of convenience goods deviated substantially from the overall trend. The prices of the goods and services covered by the so-called mini and micro baskets²⁴ advanced at a much faster clip, which is also more in line with the higher publicly perceived inflation (people apparently focus on the price increases of goods they consume on a daily basis).

5 Price Changes During Euro Cash Changeover More Frequent, but No Evidence of Predominantly Upward Adjustments

How did individual prices develop in Austria over the past eight years, and did the euro cash changeover entail changes in consumer price adjustments? Here, we draw on the results of a study conducted at the OeNB,²⁵ which analyzed price rigidities in Austria by means of different measures,

²⁴ These baskets cover goods and services that tend to be purchased on a weekly (mini basket) and daily basis (micro basket). For a detailed composition of these two baskets, see Haschka (2004).

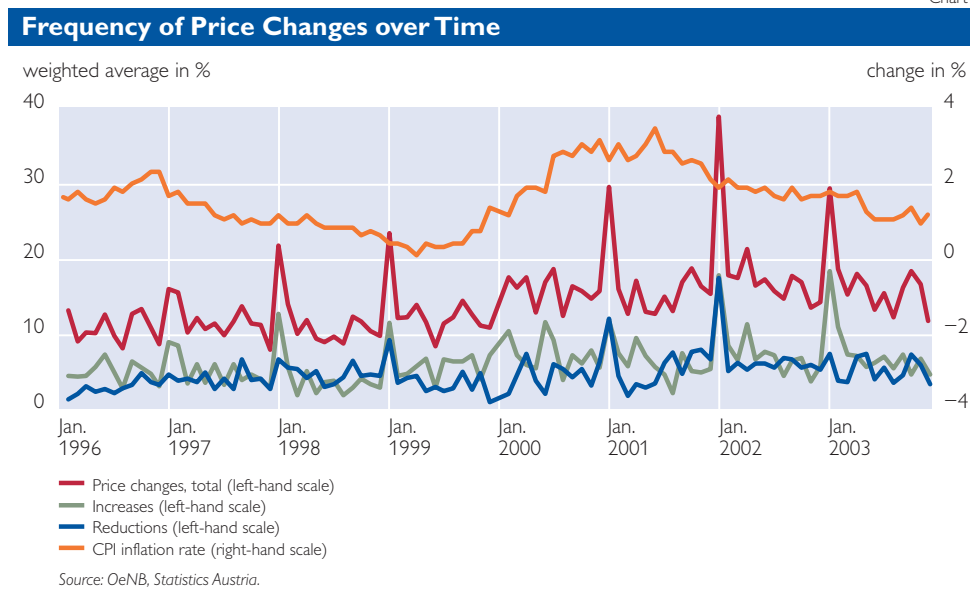
²⁵ Baumgartner et al. (2005).

such as the average frequency of price changes,²⁶ in the period from 1996 to 2003. The study centers on the analysis of a data set which comprises a total of around 3.6 million monthly price observations of all items covered by the basket of goods and services underlying the Austrian CPI.

Chart 7 shows the frequency of price changes, which may also be calculated for each month, from the beginning of 1996 to end-2003. A distinct seasonal pattern is observable with peaks in January, which reflects the common business practice of adjusting prices around the turn of the year.

Moreover, chart 7 illustrates that price changes became more frequent in 2000 and thereafter and that this trend – at least graphically – coincided with the rise in the aggregate inflation rate in 2000. This points to a positive relationship between the frequency of price changes and the aggregate inflation rate, as suggested in other studies on this topic. In addition, the two lower lines in chart 7 attest to the absence of distinctive differing seasonal patterns and of various trend developments between the frequency of price increases and price reductions.

Chart 7



Based on chart 7, we can also investigate whether the euro cash change-over of January 2002 entailed more frequent price adjustments and thus influenced inflation. As to the frequency, January 2002 saw a jump to close to 40%, which was more pronounced than during the first months of any of the other years. The evidence thus bears testimony to the fact that the

introduction of euro cash resulted in more frequent price adjustments than in the previous years. 40% of the prices in our data set were changed during the euro cash changeover, which, however, also implies that some 60% of the prices remained unchanged, having been converted to euro exactly at the prescribed rate. When we look at the price increases and reductions sepa-

²⁶ This measure is calculated on the basis of micro price observations, i.e. all observed price changes of a given product are divided by all valid price observations of this product.

rately, we find that each category accounted for almost exactly half of the price changes from December 2001 to January 2002; in other words, the impact of price increases and decreases on the inflation rate balanced each other out. The chart therefore provides no evidence of an effect of the euro cash changeover on inflation – at least in January 2002; at that time, more prices were adjusted than usual, but as many upward as downward. However, it is not possible to infer from chart 7 whether the upward price adjustments were more pronounced in magnitude than the price cuts in January 2004 compared with other months and whether this might have produced an inflationary effect.

6 European Prices Slowly Converge

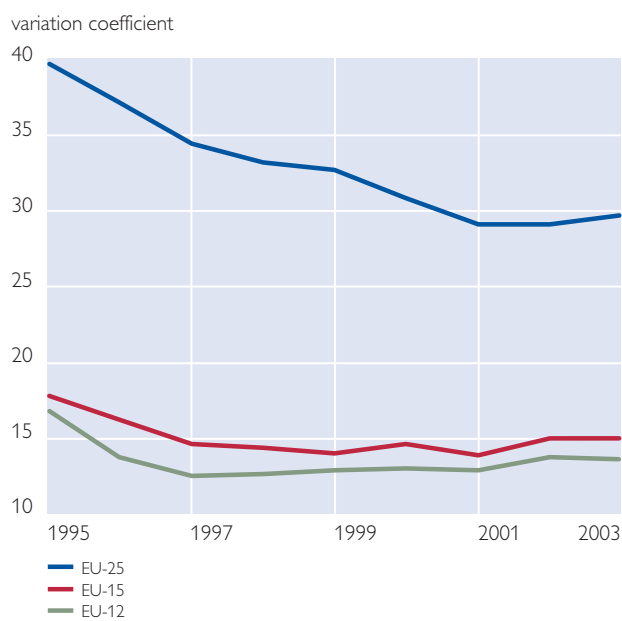
The Single Market with perfect competition supports the convergence of price levels and is set to reduce any such differences across countries to a

minimum. The introduction of the euro was meant to foster this development and to improve the framework conditions. However, as confirmed by a study (ECB, 2002), obstacles to trade and competition as well as considerable differences in the price level are still in place. The reasons for this are manifold: differing national income levels, diverging macro policies and business cycles, different tax rates, heterogeneous markets and market conditions (from, say, information costs to diverse pricing policies) and fluctuating nominal exchange rates.

Nevertheless, a recent analysis (Eisenrauch and Sergeev, 2004) of GDP-based comparative price level indices points to very slow, but steady convergence. In 2003, the variation coefficient (commonly used measure for dispersion and price convergence) came to 15 for the EU-15 and 14 for the euro area, which compares with 18 and 17, respectively, in 1995. The EU-25 aggregate records the most sig-

Chart 8.1

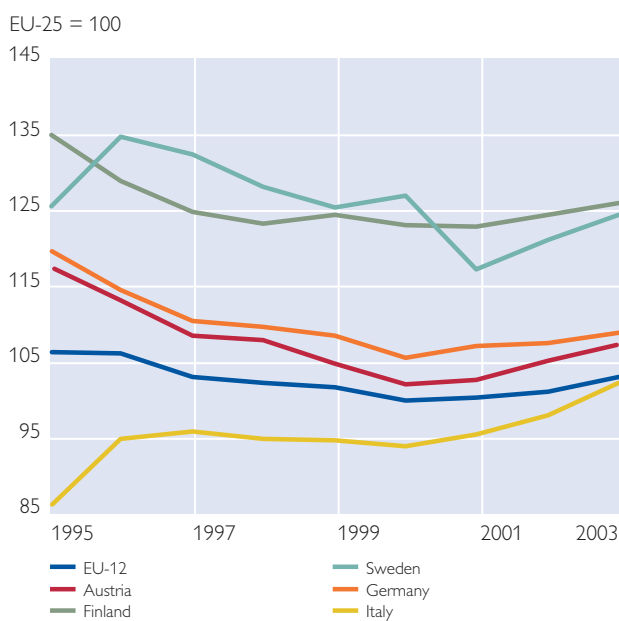
Price Convergence of the EU Member States



Source: Eurostat.

Chart 8.2

Price Levels of Selected Countries



Source: Eurostat.

nificant progress in price level convergence since 1995, driven especially by the converging price levels of the EU-15 and the catching-up process of the new members. Interestingly, the trend toward price convergence that had begun in 1995 came to a halt in 2001 and inverted to a slight divergence. However, the most recent data are largely preliminary.

The price levels of the individual countries signal another trend (chart 8.2). Economies with a high price level have seen it decline perceptibly since 1995 vis-à-vis the EU average, and countries with an initially low level experienced an uptrend. Much as in Germany, Austria's overall price level went down relative to the EU average. The same was true of Finland and Sweden, two countries known for their high prices. By contrast, Italy's prices advanced steadily and, in 2003, already topped the average EU level. Over the past few years this has partially changed again, with price levels deviating marginally from the EU average. Evidence on the euro area continues to paint a mixed picture, with Portugal (78% of the EU average) and Luxembourg (116%) representing the two extremes in 2003. Yet, the gap between these two countries has been narrowing since the start of monetary union, contracting from 42 percentage points in 1998 to 38 percentage points in 2003. All in all, this confirms an admittedly slow price level convergence in Europe.

7 Summary and Conclusions

In short, Austria's accession to the EU impacted price developments as follows:

- Austria's inflation rate moved within a rather narrow corridor from slightly over 0% to almost 3% over the past ten years. Headline inflation decreased nearly by half on average to 1.5% per annum between 1995 and 2004 (1987 to 1994: 2.7% per annum). Austria thus ranked among the top performers in the EU and, as from 1999, in the euro area in terms of price stability.
- This favorable price performance benefited from a stability-oriented monetary policy (up to 1998 not least owing to the peg to the Deutsche mark), a moderate wage policy, the efforts to qualify for participation in Stage Three of EMU, cost efficiency, rationalization investments, remarkable price competitiveness and the opening up of several markets.
- Especially the deregulation of the network industries partially resulted in significant price effects, even though most of them were only temporary – except in the telecommunications sector – and were superseded either by new regulatory measures or by special effects in the case of market prices.
- The actual results mostly fell short of the expectation that the Single Market would bring about sustained sectoral price reductions. The food sector, granted, saw marked price cuts, but they were either merely of a temporary nature or superseded by supply shocks with in part considerable price increases. By contrast, in the tradable goods segment, which is exposed to keen competition, price growth remained subdued over the entire decade following EU accession.
- In the face of persisting obstacles and restrictions, the service sector did not profit from price effects. In fact, prices of private and public

- services continued to rise at a disproportionately fast clip. The EU's efforts to eliminate the obstacles in cross-border service provision over the medium term are expected to result in greater competition and thus to trigger price effects.
- A model simulation, which is based on an inflation forecasting model that simulates inflation developments of the past decade for two scenarios (Austria did or did not join the EU), reveals a dampening effect on inflation of EU integration, which seems to be largely traceable to the first five years following accession. According to the outcome of these simulations, Austrian consumers benefited from, on average, 0.2 percentage point lower inflation per annum than in the no-entry scenario.
 - The introduction of the euro at the beginning of Stage Three of EMU did not result in a pass-through of costs to consumer prices. Moreover, measured headline inflation remained virtually unchanged even after the euro cash changeover. Yet, disproportionate price increases of goods consumed on a daily basis explain why inflation was perceived by the public to be higher than was actually the case. At any rate, around the time of the euro cash changeover, prices were increased and reduced in equal measure, which is why no effect on aggregate inflation was observable.
 - EU integration and the greater price transparency brought about by EMU have spurred a slow convergence of prices all across the EU. In Austria, the comparatively higher price level has little by little come closer to the EU average over the past few years.

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