

Price Level Convergence Before and After the Advent of EMU

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This article explores the convergence in consumer prices for groups of countries within the European Economic and Monetary Union (EMU) and for selected non-EU countries, using detailed product-level data for 35 goods and services. It also analyzes the price gap between Austria and its major trading partners Germany and Italy.

Within the euro area (the 11 founder members), price level convergence has been found to have occurred primarily in the run-up to the launch of euro banknotes and coins. Only in the case of consumer goods, such as personal transport equipment, clothing and footwear, and audio-visual, photographic and information processing equipment, did price levels continue to converge across the euro area countries also after the cash changeover. Compared with the other groups of countries reviewed here, food and services price levels converged to a much lesser extent or not at all in the euro area. However, during the whole period considered the variation in consumer prices was lowest in the euro area.

Price level comparisons carried out between Austria and Germany/Italy revealed convergence in the case of both consumer goods and services, except for food prices. The latter is likely to have been due primarily to structural changes in retail trade: while in many sectors the trend decline in labor costs and profit margins and moderate deregulation may have contributed to price convergence between Austria and its trading partners, the Austrian food sector has displayed a trend toward rising labor costs. Another driver of food price differences is the VAT applied to food products, which is higher in Austria than in Germany or Italy.

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The European Single Market was designed to promote four fundamental freedoms: free movement of goods, free movement of persons, freedom to provide services and free movement of capital and payments. The resulting integration of the participating national markets and the implementation of a monetary union have allowed goods and factor prices to become efficient drivers of economic decision-making. One intended outcome of the “European integration project” was trend convergence of prices for identical or similar products even when traded on geographically separate markets. Otherwise, price differences in tradable goods could be used to realize profits (price arbitrage). However, the Balassa-Samuelson effect indirectly brings about a convergence in price levels also for nontradable goods. The crucial

driver here is labor mobility between the tradable and nontradable goods sectors (e.g. Rogers, 2001). Nevertheless, exploiting price differences in identical goods has cost implications (e.g. transportation costs, fees, taxes, “nontariff trade barriers” such as a lack of price transparency) which can restrict or even eliminate price arbitrage. But for the most part price differences for the same or similar products are indicators of market frictions, which ultimately result in deadweight loss.

Against this backdrop, this article investigates whether the advent of EMU gave rise to increased price convergence in the euro area and/or EU countries. Price level differences are not only indicators of untapped growth potential (due to the above-mentioned market frictions), but can also make the conduct of monetary policy within the

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common currency area more difficult inasmuch as varying price levels give rise to inflation differentials. In that case, the Eurosystem's common monetary policy can be too restrictive for some countries, and too accommodat- ing for others.

Previous studies (e.g. Crespo Cuaresma et al., 2007; Sturm et al., 2009; ECB, 2011) indicate that increased price convergence was observed in the euro area in the run-up to the estab- lishment of the monetary union, but that progress on this front stalled there- after. In section 1, we examine this issue with reference to 35 goods and services aggregates for the euro area and groups of EU countries as well as for selected non-EU countries. This detailed analysis leads to slightly more optimistic conclusions than those of previous studies. Section 2 considers price differences between Austria and its major trading partners Italy and Germany, and works through some potential causes for these differences. This is a direction which has not previ- ously been pursued in the literature. Section 3 sums up the content of the article and draws a few conclusions.

1 Price Level Convergence in the Euro Area and Other Groups of Countries

The underlying data for the price level convergence analysis are drawn from the comparative price level indices

developed jointly by Eurostat and the OECD together with national central statistical offices within the context of the European Comparison Programme. These indices are based on purchasing power parities (PPPs) converted into a currency.² Price level convergence is measured using the standard deviation and variation coefficient³ calculated for all groups of countries. The EU Mem- ber States are grouped into three clus- ters for this purpose:

1. The euro area in a "fixed composi- tion": Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Por- tugal and Spain.
2. EU1 countries – EU countries out- side the "fixed composition" euro area which have a current rating of at least "investment grade"⁴: the Czech Republic, Denmark, Estonia, Malta, Poland, Slovakia, Slovenia and the United Kingdom.
3. EU2 countries – all other EU coun- tries not covered by either of the above: Bulgaria, Cyprus, Greece, Hungary, Latvia, Lithuania, Roma- nia and Sweden.

On top of this, the convergence indica- tors are also calculated for the euro area in a "flexible composition"⁵ and for the following selection of non-EU countries, which have been incorpo- rated into the comparison as a bench- mark:

² The PPPs are calculated using only products and services which can be compared across countries. For this reason, the consumption basket used for the PPP/comparative price level calculation differs from the HICP basket.

³ For the variation coefficient, the standard deviation is divided by the mean of the variable, thus calculating the standard deviation in prices across the countries within a group. The countries are not weighted, as price conver- gence questions require the measurement of actual price differences, and not differences distorted by weightings.

⁴ "Investment grade" is judged to be less risky than "speculative grade" by market participants. Standard & Poor's defines BBB– as the lowest "investment grade" rating, and BB+ as the highest "speculative grade" rating. Countries are grouped on the basis of their Standard & Poor's rating as at September 2011.

⁵ Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain (from 1995), Greece (from 2001), Slovenia (from 2007), Cyprus and Malta (from 2008) and Slovakia (from 2009). The analysis covers the period from 1995 to 2010. Estonia joined the euro area in 2011 and is therefore included in the "EU1 countries" group.

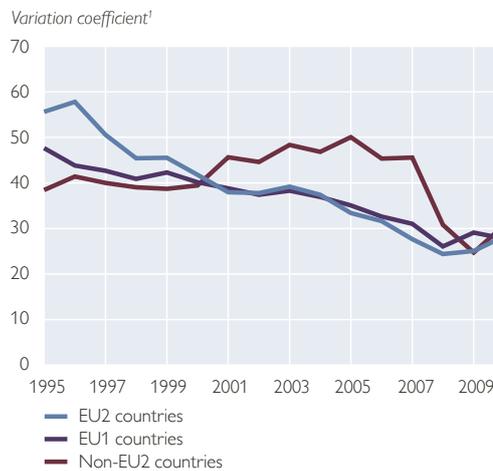
Chart 1

General Consumer Price Level: Change in Variation Coefficient

Euro area versus non-EU countries



EU countries versus non-EU countries



Source: Eurostat (price level indices from the European Comparison Programme), author's calculations.

¹ Standard deviation as a percentage of the mean. When the variation coefficient of the price level falls (rises), the national price levels are converging (diverging).

Note: Euro area (fixed composition): founding members of monetary union; euro area (flexible composition): all euro area members as of date of accession; EU1 countries (EU2 countries): EU countries with an "investment grade" ("speculative grade") rating; non-EU1 countries (non-EU2 countries): selected non-EU countries with an "investment grade" ("speculative grade") rating.

4. NEU1 countries – non-EU countries with a current rating of at least "investment grade": Japan, Norway, Switzerland and the U.S.A.
5. NEU2 countries – non-EU countries with a lower rating than those in the NEU1 group: Albania, Bosnia and Herzegovina, Croatia, Iceland, Macedonia, Montenegro, Serbia and Turkey.

The countries were clustered based on their "sovereign credit ratings," which have the benefit of reflecting, among other things, key determinants of developments in the price level: for example, structural factors such as labor market flexibility and the competitive environment in the corporate sector, or growth prospects, which ultimately also play a key role in determining the price level in an economy (on this point,

see also the discussion on price level determinants at the end of this section). Of course, there are other classification criteria such as geographical distance or differences in income levels that might have been used to define country clusters, yet they have the drawback of taking account only of some of the factors relevant to price trends. The findings of this study are, incidentally, the same when the EU1 and EU2 countries form a single cluster.

Chart 1 provides an overview of the changes in the variation coefficient for the aggregate consumer price level (household consumption expenditure) over time.

The variation coefficient⁶ data in chart 1 show that price variation has been considerably lower in the euro area countries since 1995 than in the

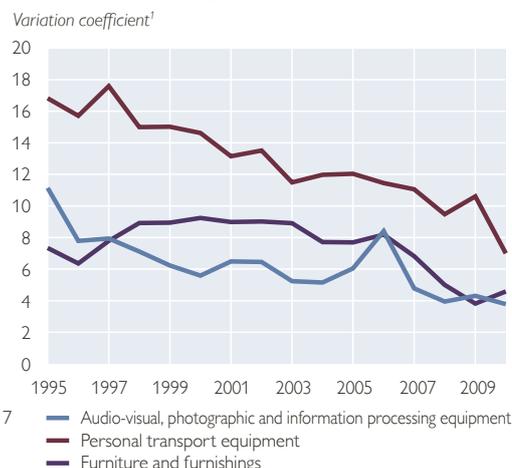
⁶ The qualitative conclusions remain unchanged when the standard deviation is used as the measure of convergence. In assessing the level of price convergence, this article therefore refers only to the variation coefficient.

Consumer Goods and Services: Change in Variation Coefficient

Consumer goods and services



Selected consumer goods in the euro area (EA-11)



Source: Eurostat (price level indices from the European Comparison Programme), author's calculations.

¹ Standard deviation as a percentage of the mean. When the variation coefficient of the price level falls (rises), the national price levels are converging (diverging).

Note: Euro area (fixed composition) – EA-11: founding members of monetary union; euro area (flexible composition) – EA-17: all euro area members as of date of accession; EU1 countries: EU countries with an “investment grade” rating.

two clusters of non-euro area EU countries.⁷ In 2010, price level variation in the “fixed composition” euro area group, i.e. in the 11 founding members of the euro area, stood at slightly less than 10% of the mean price level, while in the other groups of countries it reached up to three times the “fixed composition” euro area level. In addition, we find a moderate improvement in price level convergence for the “fixed composition” euro area from 2002 onward as opposed to a significant deterioration in price level convergence within the “flexible composition” euro area. This can be attributed to the accession of a number of countries with a relatively low price level during this period – Greece (2001), Slovenia (2007), Cyprus and Malta (2008) and Slovakia (2009).

In the groups of countries which belong to the EU but not the euro area (EU1 and EU2), while a trend improvement in price convergence can be detected over the period from 1995 to the present as a whole, the variation coefficient for the EU countries in 2010 (around 28%) is significantly higher than that of the “fixed composition” euro area cluster (around 9%) and the “flexible composition” cluster (around 15%). The non-EU countries also recorded far higher variations in the price level than the euro area countries over the period as a whole, whereby the variation within the group of higher-rated non-EU countries⁸ (NEU1: Japan, Norway, Switzerland and the U.S.A.) was considerably lower than that in the NEU2 group (Albania, Bosnia and Herzegovina, Croatia, Iceland, Macedonia, Montenegro, Serbia and Turkey).

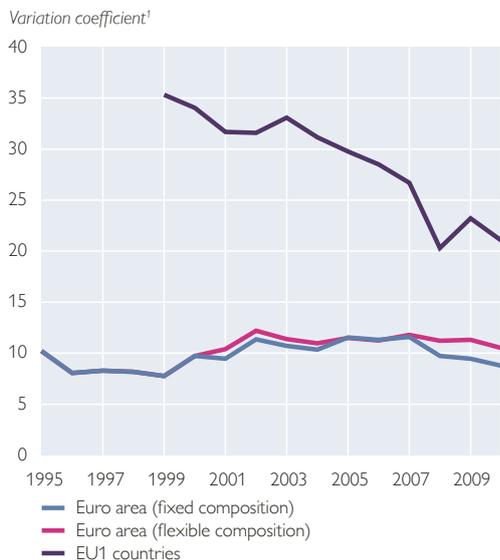
⁷ For price convergence calculations covering the period 1995–98, the euro area is defined as the 11 founder member countries.

⁸ The surge in price variability in the NEU1 group between 1998 and 2001 is ascribable first and foremost to price rises in Japan and the U.S.A. during this period.

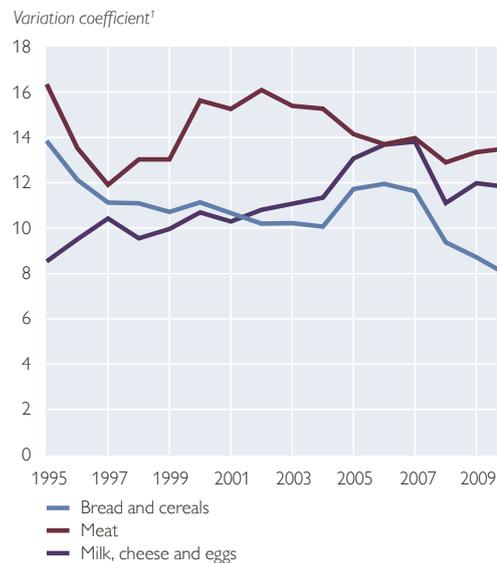
Chart 3

Price Level Convergence for Food Products in Different Country Groups

Food and nonalcoholic beverages



Selected food products in the euro area (fixed composition)



Source: Eurostat (price level indices from the European Comparison Programme), author's calculations.

¹ Standard deviation as a percentage of the mean. When the variation coefficient of the price level falls (rises), the national price levels are converging (diverging).

Note: Euro area (fixed composition): founding members of monetary union; euro area (flexible composition): all euro area members as of date of accession; EU1 countries: EU countries with an "investment grade" rating.

A closer look at the consumer price level reveals that, from 2002 onward, price levels among euro area countries have converged for consumer goods in particular, but not for consumer services (chart 2). Consumer service prices diverged even markedly in the "flexible composition" euro area cluster in 2001 and 2007–09 (when Greece, Slovenia, Malta, Cyprus and Slovakia joined the euro area), a pattern that has started to reverse somewhat only recently (not shown in chart 2).

Within the consumer goods sector, price convergence in the euro area countries increased in particular in the case of durable goods such as audio-visual equipment, computers, cars and furniture, while for nondurable goods (e.g. food products) it was conspicu-

ously weaker, or even stagnant (chart 3).

In contrast to durable consumer goods, there was some divergence in food prices across the euro area countries – especially during the commodity price shock of 2007 and 2008⁹ (bread and cereals, dairy products, oils and fats), and after the first BSE cases came to light in Europe in the fall of 2000 (meat products). These instances of price level divergence can thus be partly attributed to external influences. Despite the decline in price convergence, the food price gap is also smaller in the euro area countries than in the other country groups studied.

Price convergence has also been observed, in particular, in sectors that have been deregulated, for example

⁹ In late 2010 and 2011, commodity price growth once again started to accelerate strongly. The latest published price level data are for 2010, and thus cover only the initial period of the latest commodity price shock.

Table 1

Variation Coefficients for Consumer Prices in Selected Country Groups

	Euro area 11		Euro area 17		EU1 countries	
	1995 to 2001	2002 to 2010	1995 to 2001	2002 to 2010	1995/99 to 2001 ¹	2002 to 2010
1 Household final consumption expenditure	0.11	0.10	0.11	0.13	0.40	0.33
2 Consumer goods	0.08	0.08	0.08	0.08	0.30	0.22
3 Nondurable goods	0.10	0.10	0.11	0.11	0.36	0.26
4 Semidurable goods	0.08	0.06	0.08	0.06	0.19	0.11
5 Durable goods	0.08	0.06	0.08	0.07	0.20	0.18
6 Food and nonalcoholic beverages	0.09	0.11	0.09	0.11	0.34	0.27
7 Food	0.09	0.10	0.09	0.11	0.34	0.27
8 Bread and cereals	0.12	0.10	0.12	0.12	0.42	0.34
9 Meat	0.14	0.14	0.14	0.17	0.40	0.36
10 Fish	0.13	0.13	0.13	0.13	0.24	0.22
11 Milk, cheese and eggs	0.10	0.12	0.10	0.13	0.29	0.19
12 Oils and fats	0.10	0.12	0.10	0.12	0.22	0.16
13 Other food	0.11	0.10	0.11	0.10	0.31	0.26
14 Nonalcoholic beverages	0.13	0.16	0.13	0.15	0.30	0.30
15 Alcoholic beverages, tobacco and narcotics	0.29	0.27	0.29	0.26	0.50	0.38
16 Alcoholic beverages	0.35	0.30	0.35	0.28	0.36	0.22
17 Tobacco	0.26	0.30	0.26	0.31	0.70	0.58
18 Clothing and footwear	0.10	0.08	0.10	0.08	0.18	0.10
19 Clothing	0.10	0.08	0.10	0.08	0.18	0.10
20 Footwear	0.14	0.09	0.14	0.09	0.18	0.11
21 Housing, water, electricity, gas	0.18	0.18	0.18	0.22	0.60	0.52
22 Electricity, gas and other fuels	0.11	0.11	0.11	0.15	0.55	0.37
23 Household furnishings, equipment	0.08	0.07	0.08	0.07	0.29	0.20
24 Furniture and furnishings, carpets	0.08	0.07	0.08	0.08	0.29	0.21
25 Household appliances	0.08	0.07	0.08	0.08	0.07	0.13
26 Health	0.15	0.14	0.16	0.18	0.65	0.52
27 Transport	0.10	0.09	0.11	0.11	0.36	0.28
28 Personal transport equipment	0.15	0.11	0.15	0.11	0.28	0.27
29 Transport services	0.18	0.16	0.19	0.20	0.56	0.41
30 Communication	0.24	0.11	0.24	0.13	0.30	0.13
31 Recreation and culture	0.10	0.08	0.10	0.10	0.37	0.32
32 Audio-visual, photographic and information processing equipment	0.07	0.05	0.07	0.06	0.10	0.10
33 Education	0.26	0.29	0.26	0.31	0.74	0.67
34 Restaurants and hotels	0.15	0.14	0.15	0.15	0.40	0.38
35 Miscellaneous goods and services	0.13	0.12	0.13	0.14	0.49	0.41
Test statistic	1.49		0.17		5.74	
(Null hypothesis: mean of the variation coefficients from 1995 to 2001 is identical to that from 2002 to 2010).	Not significantly different		Not significantly different		Significantly different	

Source: Author's calculations.

¹ For the EU1 countries, the 1995–2001 average was calculated only for the aggregate consumer price level (household final consumption expenditure). For all other goods and services, for the period preceding the changeover to euro banknotes and coins only the average for 1999–2001 could be calculated due to a lack of data.

Note: EU1 countries: EU countries with an „investment grade“ rating.

communication. In this sector, too, price convergence is further advanced in the euro area than in most of the other country groups.

By contrast, in the case of nontradable goods – and in particular services such as education – higher levels of price variability emerged in the euro

area after 2001, a trend which has only started to reverse slightly in the last few years (see also table 1). Evidence on whether the introduction of the euro played a role here is as yet inconclusive. Table 1 shows the mean variation coefficients for all 35 goods and services aggregates for both the euro area and

the EU1 countries, before and after the changeover to euro banknotes and coins.

The quantitative value of the mean variation coefficient for the euro area (as constituted by the 11 founding members) shows that, for the aggregate consumer price level (household final consumption expenditure), this value was only marginally lower in the years after 2001 than it was before 2001 (0.10 versus 0.11). A clear-cut decrease in the variation coefficients for the “fixed composition” euro area group – in particular in the case of clothing, footwear, personal transport equipment, audio-visual, photographic and information processing equipment and alcoholic beverages – was offset by a rise in other categories, most notably in the case of nonalcoholic beverages and tobacco. A test of the equality of the mean variation coefficients across all goods and services aggregates before and after 2001 reveals that these do not differ significantly in the case of the “fixed” and “flexible” composition euro area clusters, but that they do in the case of the EU1 countries. However, it must be emphasized that the tests are based on a relatively small number of samples (23 product groups) and that the underlying normal distribution assumption is thus subject to a degree of uncertainty.¹⁰ Overall, the statistical tests do not offer any conclusive evidence that the pace of price convergence changed in the euro area after 2001.

Even though – as described above – price convergence in the euro area countries is at a more advanced stage than in other country groups, the

question remains why convergence is not complete or why the prices of some product groups continue to diverge. A series of studies (ECB, 2011; Andersson et al., 2009; Rogers, 2007; Sturm et al., 2009) cite the following determinants for price gaps between countries.

Economies with a relatively high level of prosperity (as measured by real per capita GDP) and taxation have been empirically found to also have higher price levels. While the effect of taxation on the price level is evident, the positive correlation between real GDP and the price level operates through both demand (e.g. higher consumer demand) and supply factors (higher productivity and thus higher wages). In the studies mentioned above, reference is also made to the fact that geographical distance between economies has a substantial influence on price level differences. The greater the geographical distance, the larger the price differences are. Alongside these macroeconomic conditions, several structural factors have also been proved to have a causal effect on existing price differences: both retail profit margins and barriers to market entry for newly established firms show a positive correlation with the price level; that is to say, the higher the profit margins and/or entry barriers, the higher the price level. In the case of trade concentration measures, different results were generated depending on the indicator used: while the Herfindahl-Hirschman Index (HHI) is negatively correlated with the price level gap between countries, the concentration ratio (C_k) for the k largest trading companies shows a positive

¹⁰ A two-sample test was conducted for the difference in arithmetic means for paired samples (Bleymüller et al., 2008). Higher-level aggregates, such as nondurable goods (which are mainly composed of food products), were not included. Thus, of the 35 aggregates listed in table 1, only 23 products and services can be used for the calculation of the test statistics.

correlation with this price gap. In the HHI's case this means that, with a rising degree of concentration, the price level differences between countries diminish, while in the case of the concentration ratio (Ck) the opposite holds true (price gaps between countries widen as the degree of concentration rises). This seemingly contradictory result is interpreted below.

Companies operate in both the end-user market (*vis-à-vis* consumers) and the procurement market (*vis-à-vis* product manufacturers), acting as suppliers in the former and consumers in the latter. On the one hand, a concentrated market structure among retail firms can make for better purchasing conditions in the procurement markets, while on the other firms' dominant position in the end-user market can be exploited to set excessively high prices. Against the backdrop of the (seemingly) contradictory correlations between the concentration ratios and the price level gap cited above we can conjecture that, from an empirical perspective, the HHI is clearly a better indicator for the buying power of companies in the procurement markets for obtaining more favorable purchase terms. By contrast, the concentration ratio (Ck) apparently provides a better empirical measure of the potential for firms to set excessively high prices in the end-user markets due to dominant market position (ECB, 2011).

2 Price Level Developments in Austria versus Germany, Italy and the Euro Area

Based on the relative price level indices,¹¹ marked convergence in the gen-

eral consumer price level can be seen between Austria and its main trading partners Italy and Germany since 1995 (chart 4, left-hand panel). At the beginning of this period, the price level in Austria was considerably above Italy's, and marginally below Germany's. Between 1995 and 1999, factors contributing to consumer price convergence between Austria and Italy included exchange rate effects (appreciation of the Italian lira). However, in the last few years the difference in consumer price levels between Austria and its main trading partners has begun to increase slightly again.

One striking aspect here is the diverging patterns of price level convergence for services and consumer goods: in the services sector, Austria's position relative to Germany changed from a considerably lower to a slightly higher price level between 1995 and 2010, while its distinctly higher price level of the 1990s compared to Italy's subsequently showed marked convergence. At the same time, price convergence in consumer goods significantly trailed price convergence in services. Moreover, Austria's goods price level was above that of both neighboring countries from 1995 to 2002. In other words, the price level developments between Austria and its main trading partners did not mirror the convergence process that prevailed at the euro area level where the convergence of services prices trailed the convergence of consumer goods prices.

As discussed in section 1, determinants of price levels include standard of living, taxation arrangements, and structural variables in the retail trade

¹¹ The price level indices compiled under the Eurostat/OECD Purchasing Power Parities Programme are normalized to the EU average (EU-15 = 100 or EU-27 = 100). In order to compare Austrian price levels directly with those in Germany (Italy and the euro area), the price level indices for Austria (normalized here to EU-15 = 100) are divided by those of the other country or region and then multiplied by 100. If the resulting relation is over (under) 100, Austria's price level is above (below) that of the other country or region.

Chart 4

Differences in Price Levels: Austria versus Germany, Italy and the Euro Area

Consumer price level

Relative price level for Austria vis-à-vis DE, IT and the EA according to purchasing power parities¹



Consumer goods and services

Relative price level for Austria vis-à-vis DE and IT according to purchasing power parities¹



Source: Eurostat (price level indices from the European Comparison Programme), author's calculations.

¹ Austria versus Germany (Italy/the euro area) is defined as the price level index for Austria divided by that for Germany (Italy/the euro area) and multiplied by 100. The Eurostat price level indices used are normalized to EU-15 = 100. Euro area (fixed composition): founding members of monetary union.

sector (such as market regulation, labor costs, profit margins, and company concentration). The following paragraphs highlight some striking developments in these variables in the context of the development in the price gap between Austria, Germany, and Italy.

One salient factor here is the *harmonization in the degree of regulation* among the countries studied, which may have contributed to price level convergence. The influence of regulation on price level differences was demonstrated in ECB (2011). According to OECD indi-

cators, the degree of regulation in both Austria and Italy decreased substantially in the period from 1998 to 2008¹² while remaining consistently low in Germany over the same period.¹³ OECD indicators also show that regulations on store opening hours, restrictions on commercial undertakings with a large amount of trading space as well as barriers to market entry and operational restrictions for firms are particularly strict in Austria compared to other countries.

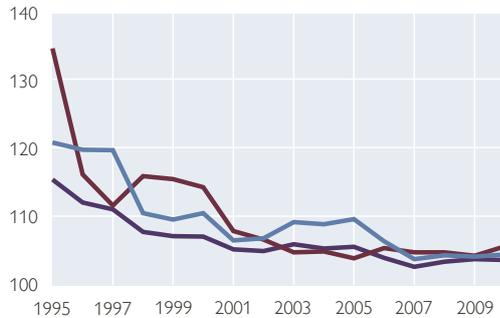
¹² The latest available indicators on retail industry regulation are for 2008. All indicators can be provided on request.

¹³ Some non-EU countries, such as Switzerland, are even less regulated than Germany, Italy or Austria.

Differences in Price Levels: Austria versus Germany and Italy

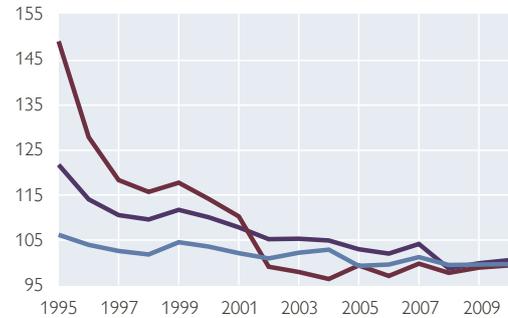
Personal transport equipment

Relative price level according to purchasing power parities¹



Clothing and footwear

Relative price level according to purchasing power parities¹



Communication

Relative price level according to purchasing power parities¹



Food

Relative price level according to purchasing power parities¹



Source: Eurostat (price level indices from the European Comparison Programme), author's calculations.

¹ Austria versus Germany (Italy/the euro area) is defined as the price level index for Austria divided by that for Germany (Italy/the euro area) and multiplied by 100. The Eurostat price level indices used are normalized to EU-15 = 100. Euro area (fixed composition): founding members of monetary union.

The noticeable convergence in the general price level for consumer goods between Austria and its main trading partners Germany and Italy is particularly clear for the *clothing and footwear* and *personal transport equipment* product groups (chart 5). In the services area, communication has been one of the sectors which has contributed to price convergence between Austria and its neighbors. The decisive factor here was the EU-wide liberalization of these markets, which began in the late 1990s. In contrast, in the *food sector* there was no trend toward converging price levels among the three countries studied, with the price level in Austria lying slightly above that of its neighbor countries almost constantly since 1995.

Several structural indicators for the food retail market have contributed to the stagnating, or even, more recently, slightly deteriorating level of price convergence in the food sector. Compared with the other countries studied, Austria's food trade has relatively high labor costs, which have followed a modest upward trend since 2002. Faber and Stokman (2009) provide empirical evidence that variations in labor costs across the euro area countries ("non-traded input costs") constitute a significant determinant of price level differences. In addition, profit margins in Austria are higher than Italy's. The link between profit margins and price gaps was investigated in ECB (2011). Parallel to Austria's relatively high profit mar-

gins compared to Italy, the (national) concentration in the food retail industry in Austria (and also in Germany) is greater than in Italy. The concentration process, which has been generally advancing over time, may also have worked against price convergence within the food retail industry (in Germany, this process has been particularly robust since 2004).¹⁴ However, alongside these structural factors, lower taxes on food products in Germany and Italy are also playing a role in price level differences. While VAT on food in Germany has been at 7% since 1995, and Italy charges 4%, in Austria VAT on food is charged at 10%.¹⁵

Equally, the higher price levels in the *clothing and footwear* and *personal transport equipment* sectors in Austria compared to its neighbor countries and the increasing price convergence seen since 1995 can be at least partly explained by structural factors: in all three countries in the comparison, we can observe an ongoing reduction and convergence in labor costs in the retail industry for these sectors, a development which has been especially conspicuous in the automobile trade.

3 Summary and Conclusions

In general, consumer price levels converged strongly in the 11 founding member countries especially during the preparations for European monetary union. After 1999, price convergence in the “fixed composition” euro area country group improved only moderately, while in the “flexible composition” country group it deteriorated markedly, especially after 2006. This latter development can be attributed to the accession of countries with a com-

paratively low price level (Greece, Slovenia, Malta, Cyprus, and, above all, Slovakia) in 2001 and 2007–09. At a less aggregate level, however, significant progress in convergence can be observed in the monetary union countries after the launch of the single currency. Specifically, price level convergence occurred mainly in the area of durable consumer goods and, to a lesser extent, services.

Price level differences within the non-euro area EU countries (EU1 and EU2) are considerably greater than those found in the euro area, although price gaps in the EU1 and EU2 countries have narrowed substantially since 1995. Larger price gaps than those found within the euro area can also be observed outside the EU, and some of these have not lessened since the end of the 1990s (e.g. within the NEU1 countries).

Relatively large differences in the levels of service and food prices were observed in the euro area in the course of the changeover to euro banknotes and coins. Evidence on whether there is a causal relationship between the increase in price level differences observed during the euro changeover period and the changeover is as yet inconclusive. Particularly in the case of food products, it is likely that external factors (BSE crisis) played a more significant role. The accession to the euro area of a number of low-price countries entailed not only higher price level differences, but also larger inflation differentials within the monetary union, thus making it more difficult to conduct monetary policy. This is probably a passing phase, however, as the robust productivity and economic

¹⁴ The data on developments in labor costs, profit margins and concentration indicators in the food sector are available on request.

¹⁵ European Commission (2011).

growth to be expected in the low-price countries over the medium to long term should also result in an ongoing alignment in prices toward the “core” euro area level. At all events, the standard deviation of the HICP inflation rates in the countries which joined the euro area in 2001 or later (Greece, Estonia, Malta, Slovakia, Slovenia and Cyprus), which averaged 2.7% in 1997–2001, has since fallen to 1.4% (average for the years 2002–11), meaning that it is now only marginally higher than the comparable value for the 11 euro area founder members.

Austria’s price gap vis-à-vis its main trading partners has narrowed sharply for both goods and services in the years since 1995. In some sectors, such as clothing and footwear and personal transport equipment, this price convergence has been especially noticeable, whereas in the case of food products

(where Austria’s price level lies slightly above that of Germany and Italy) there has been no perceptible narrowing of price differentials. Also striking was that the EU-level process of deregulation in the communication services sector, which began in the late 1990s, brought with it an abrupt drop in price levels in Austria.

The ongoing deregulation of retail trade and the proportional decline in labor costs and profit margins (as well as the convergence in these items between Austria and its main trading partners) may have contributed to the price level convergence seen in many sectors of the Austrian, German and Italian economies. In the case of food products, however, the trend toward moderately rising labor costs in Austria and the higher level of VAT imposed on food products could be partly responsible for the stable price gap in this area.

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