

# Revised and New Competitiveness Indicators for Austria Reflect Improvement Trend since EMU Accession

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Maintaining and improving competitiveness is one key goal of economic policy. In the short run, it is primarily price and cost developments as well as exchange rate changes that have the biggest impact on the development of an economy's competitiveness. The competitiveness of Austrian manufacturing exporters has continued to augment since the country's entry into Economic and Monetary Union (EMU) – this has been confirmed by the 2006 revision of the price competitiveness indicator for Austria (deflated by the (Harmonised) Index of Consumer Prices – HICP/CPI) and even more so by the new cost competitiveness indicator (deflated by relative unit labor costs) launched in this context. The marked improvement of the cost competitiveness indicator in recent years reflects moderate wage policies coupled with comparatively solid productivity growth in the Austrian manufacturing sector. The lower gain measured by the price competitiveness indicator may be linked to the fact that the HICP/CPI was broadly driven by oil price developments in 2004 and 2005, which masked the favorable unit labor cost developments in the manufacturing industry. Contrary to the development in the manufacturing sector, the price competitiveness in Austria's travel and tourism sector has deteriorated somewhat: Even though price developments in Austria were more favorable than in the competition markets, they did not wholly offset losses in competitiveness related to exchange rate developments.

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## 1 Competitiveness Indicators in EMU

Small, open economies need to pursue economic policies that allow them to remain competitive and to keep improving their global competitiveness. The international competitiveness of an economy is fundamentally influenced by *firm-specific factors* (such as innovative capacity, product and marketing quality, delivery reliability and customer care) and macroeconomic *location factors* (such as human capital, natural resources, public goods, labor relations and the tax system). Above all, factors such as education policies, scientific advances, research efforts and innovative capacities determine the medium- to long-term international competitiveness of an economy. In the short run, however, competitiveness burns down

to the price competitiveness of the external sector, which is driven by relative price changes reflecting the level of labor and capital costs, productivity gains or losses, and exchange rate changes.

Thus, any assessment of the short-term (price and cost) competitiveness of a country will have to start by analyzing how its exchange rates and domestic price and cost indices have changed compared with those of its trading partners. With regard to exchange rates, bilateral exchange rate shifts tend to draw the biggest media attention, but it must be noted that, in this respect, only the overall exchange rate effect is a meaningful macroeconomic indicator.

The basic aggregate indicator for such analyzes is the *nominal effective exchange rate index*. Calculated as the

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weighted average of bilateral exchange rates, this index shows how the external value of a currency moves in relation to the currencies of the country's trading partners. Deflating the nominal effective exchange rate by a measure for relative prices or costs yields the *real effective exchange rate index*.<sup>1</sup> Real effective exchange rate indices reflect changes in the competitiveness of producers on both home and external markets – which is why policymakers and economists consider them to be key indicators for the international price/cost competitiveness of a country. Ideally, these indices relate to those sectors of the economy that are exposed to international competition, depict trade relations as accurately as possible, and represent underlying prices/costs in a reliable and internationally comparable manner.<sup>2</sup>

In the case of the respective indices calculated by the European Central Bank (ECB), the real effective exchange rate index of the euro provides important information on how competitive the euro area is as a whole in terms of prices and costs, while the ECB's nominal effective exchange rate index tracks the euro's movements vis-à-vis the currencies of the euro area countries' major trading partners.<sup>3</sup> As such, the nominal effective exchange rate index of the euro is an important yardstick for assessing monetary conditions in view of (expected) inflation and price developments – and thus the more important of the two measures *from the perspec-*

*tive of the Eurosystem's single monetary policy.*

As an aggregate price/cost competitiveness index for the euro area as a whole, the ECB's real effective exchange rate for the euro, by definition, masks differences in the price/cost competitiveness between individual euro area member states. Yet from a national perspective, such differences are, of course, a major yardstick for the growth performance of the individual member countries. The national central banks (NCBs) of the euro area therefore calculate and publish *national price/cost competitiveness indicators* (i.e. *national real effective exchange rate indices*), based on a harmonized methodology adopted in 1999 when the euro was introduced.

Both the ECB's and the NCBs' indicators are revised at regular intervals, to catch up with changing external trade patterns<sup>4</sup> and to avoid misjudgments of shifts in the short-term competitiveness of individual countries. In the case of Austria, the recent update of the national price competitiveness indicator in 2006 resulted in a broadening of the coverage of partner countries and in a readjustment of country weights; moreover, a new cost competitiveness indicator deflated by unit labor costs was calculated.

In what follows, section 2 presents the major changes in calculating the price competitiveness indicator, describes the new cost competitiveness indicator, and analyzes the implications of choosing unit labor costs

<sup>1</sup> See Köhler-Töglhofer (1999).

<sup>2</sup> In other words, these indices must cover all internationally tradable goods and – ideally – services; the reliability and international comparability of data on services is, however, limited.

<sup>3</sup> See ECB (2000, 2002, 2003).

<sup>4</sup> See Hahn et al. (2001) on the revision of 2001.

instead of the (Harmonised) Index of Consumer Prices (HICP/CPI) as deflators. Section 3 provides a competitiveness assessment based on the revised and new framework. Section 4 discusses above all the revision of the subindex for travel and tourism, Austria's flagship service industry, and reassesses the sector's competitiveness on the basis of the revised data.

## 2 Revised Price and New Cost Competitiveness Indicators for Austria

Since 1999, the euro area NCBs have used a harmonized methodology to calculate national competitiveness indicators. The NCBs typically revise those indicators in five-year intervals. Austria's original framework for calculating the national competitiveness indicator was already consistent with this harmonized methodology, so that the revision in 2006 altered neither the concept nor the composition of the indicator. Specifically, the below-listed characteristic building blocks of Austria's competitiveness indicator remained unchanged:<sup>5</sup>

- subindices for manufactured goods, food, crude materials, and travel and tourism;
- the geometrical weighting of the index (this means that a basket of bilateral exchange rates is used to calculate the geometrically weighted average, which yields the price competitiveness indicator when adjusted for relative consumer prices); and
- the fixed weighting system consisting of bilateral import weights, bilateral export weights for food and crude materials, and multilateral (double) export weights for manufactured goods and for travel and tourism.

While bilateral export weights are easy to calculate and intuitive, they neglect third-market effects, which gain importance as trade ties expand. The method of choice to catch third-market effects are double export weights. Double weights are more difficult to calculate and less intuitive (see box 1) but more comprehensive, as they reflect both home and external market competition with individual competitors (depicted in competition matrices; see annex).

Box 1

### Algebraic Presentation of Double Export Weights

For  $k$  foreign markets on which a country  $j$  competes with  $h$  competitors, the weight to be allocated to country  $i$  in the effective exchange rate index of country  $j$  may be expressed algebraically as follows:

$$\text{Double export weight: } w_i^x = \left( \frac{x_j^i}{x_j} \right) \left( \frac{y_i}{y_i + \sum_h x_h^i} \right) + \sum_{k \neq i} \left( \frac{x_j^k}{x_j} \right) \left( \frac{x_i^k}{y_k + \sum_h x_h^k} \right)$$

$y_j$  = share of domestic output in the domestic demand of country  $j$  (defined as GDP minus exports plus imports)

$x_j^i$  = exports of country  $j$  to country  $i$

$x_j$  = total exports of country  $j$

$\sum_h x_h^i$  = sum of exports from  $h$  (excluding  $j$ ) to country  $i$

<sup>5</sup> See Mooslechner (1995), Köhler-Töglhofer (1999) and Hahn et al. (2001).

In the algebraic expression of the double export weight, the first parenthesis term in the first block of the equation represents the direct export competition between exports from  $j$  to  $i$ . The second parenthesis term is a measure of the openness of economy  $i$ . If  $i$  is an important market for exports from  $j$  (as expressed by  $\left(\frac{x_j^i}{x_j}\right)$ ) and/or if  $i$  displays a relatively small degree of openness (i.e. if most manufactured goods available in  $i$  stem from domestic production – as expressed by  $\left(\frac{y_i}{y_i + \sum_h x_h^i}\right)$  – and compete heavily with exports from  $j$  on market  $i$ ), then  $i$  enters the currency basket of  $j$  with a higher weighting.

The second block of the equation represents competition in third markets, i.e. any market  $k$  in which  $i$  competes with  $j$ . If  $k$  is an important market for exports from  $j$  (as calculated by  $\left(\frac{x_j^k}{x_j}\right)$ ) and/or if exports from  $i$  account for a high market share of  $k$  (as calculated by  $\left(\frac{x_i^k}{y_k + \sum_h x_h^k}\right)$ ), this means that, from the perspective of  $j$ ,  $i$  is a major competitor of  $j$  in third markets and thus is given a higher weight in the currency basket of  $j$ .<sup>1</sup>

<sup>1</sup> See Klau (2006).

## 2.1 Austria's Competitiveness Indicator Adjusted to a Changing Global Competition Environment

### 2.2.1 Broader Country Coverage

To reflect changes in the pattern of Austrian exports, the *sample of partner countries* was enlarged from 53 to 62, specifically by Malta, Ukraine, Serbia and Montenegro, Bosnia and Herzegovina, Belarus, the United Arab Emirates, Saudi Arabia, Egypt and Iran. This expansion underlines the growing complexity of Austria's trade patterns in general, and the increasing importance of trade with

Southern and Southeastern European as well as Arab countries in particular.

The new indicator also uses more recent *calculation periods* to determine the fixed country weights. The country weights were rebased from 1995–1997 averages to 1999–2001 averages to reflect more recent export and import flows.<sup>6</sup>

The *index base period* as such has been left unchanged at the first-quarter average of 1999 (i.e. 1999 Q1 = 100), which is also the base period used in the corresponding ECB exchange rate indices. Note, how-

<sup>6</sup> The country weights for the manufactured goods subindex are based on trade flows in manufactured goods as defined in SITC (Standard International Trade Classification) sections 5 to 8; for the crude materials subindex on trade flows in crude materials including fuel as defined in SITC 2 to 4; and for the food subindex on trade flows in food as defined in SITC 0 and 1. To establish double export weights, the manufactured goods subindex is also based on gross manufacturing output figures of the respective countries.

ever, that the price competitiveness index is a “chained index” for post-1993 data. That is to say, for the period up to 1999, the price competitiveness indicator remains based on the old sample of partner countries and on the 1995–1997 calculation period, which reflects Austria’s trade relations and thus Austria’s competitive situation more adequately for the period from 1993 up to 1999. For the period since 1999, the revised index is the basis for evaluations of Austria’s competitiveness.

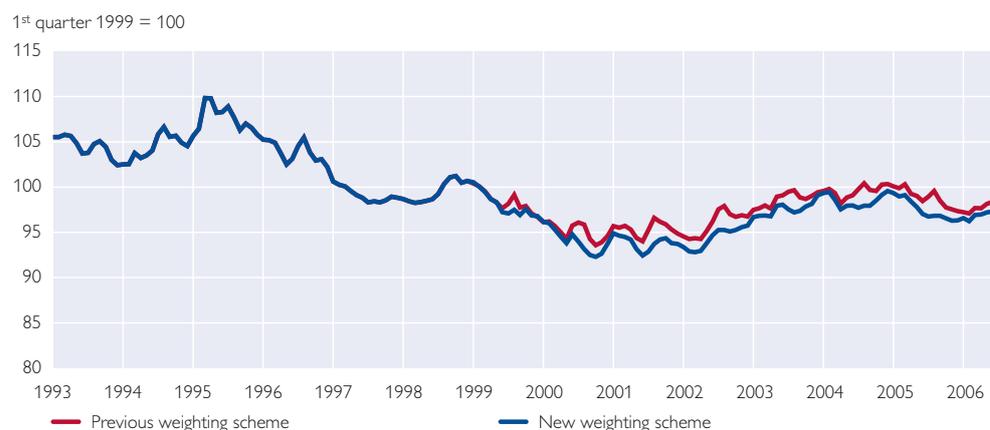
The enlarged sample of partner countries and the shift of the calculation period have not caused the country weights to change considerably. The ranking of Austria’s major competitors has remained broadly unchanged, but their relative importance has shifted somewhat, basically as a result of the new calculation period and not so much because of the larger sample of partner countries.

The **aggregate index** continues to be characterized by a high foreign trade share (66.1%) of the old EU Member States. The slight contraction of this group (–3 percentage points compared with the previous country weighting) is largely due to the relative loss of importance of France, whereas Germany’s weight has decreased only marginally. The share of those Member States that joined the EU in 2004 was boosted to 8.5% (from 7% in the old country/currency basket). The weight of the three old EU Member States that have opted not to join the euro area has remained constant, as has Switzerland’s weight (3.5%). Japan’s weight has remained broadly unchanged at 2.5%, while that of the U.S.A. has inched up to 8%.<sup>7</sup> The countries newly added to the index, finally, account for a share of about 1%.

Turning to the effects of the revision of double export weights for the

Chart 1

### Chained Aggregate Index of Austria’s Price Competitiveness – Developments since 1993



Source: OeNB/WIFO.

<sup>7</sup> The comparatively high weight of the U.S. dollar is also due to the fact that imports of manufactured goods, crude materials as well as food from “other countries” have been allocated to U.S. dollar trade. This approach is warranted by the dominant role of the U.S. dollar as a transaction currency in international energy and commodity markets; the bulk of Austria’s crude material imports, for instance, is invoiced in U.S. dollars.

*manufactured goods subindex*, we can observe only minor weight changes. Germany was the only country to suffer a marked loss (–5 percentage points), while the U.S.A., China, the Czech Republic and Hungary have been allocated slightly higher weights (table 1). The index continues to show a highly negative third-market effect for our major trading partner, Germany, as well as for Hungary and Switzerland (i.e. their direct export weights are higher than the export weights adjusted for competition in third markets).

On balance, the EU-25 account for a share of 71% (down from 73%) in the weightings established for Austria's *price competitiveness index for manufactured goods*, and the euro area for 55.6% (down from 59.1%). While

exchange rate uncertainty has disappeared within the euro area, the 55.6% must not be misinterpreted as the share of Austrian exports that is no longer exposed to any exchange rate risks.<sup>8</sup>

The 13 EU Member States that do not participate in the euro area have a combined weight of 15.4% (up from 14.3%); within this group, Denmark, the United Kingdom and Sweden still represent a broadly constant weight of 7.7%. The weight of Switzerland has declined slightly to 3.6%, while that of the U.S.A. has increased from close to 6% to 7.5%. Japan's weight has remained virtually unchanged at 3.2%, but the weight of Asia excluding Japan has risen by 1 percentage point to 7.2%. China's weight, finally, comes to 2%.

<sup>8</sup> As the double export weights account for the competition between, for example, Austrian and German exports both in the German market and in all other EMU and non-EMU markets, exchange rate changes of the euro to non-EMU currencies matter for Austrian and German exporters alike.

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REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Table 1

Weighting Scheme of the New Exchange Rate Index																		
	Exports						Imports						Exports and imports					
	Manu- factured goods <sup>1</sup>	Crude mate- rials	Food	Goods	Travel <sup>1</sup>	Total	Manu- factured goods <sup>1</sup>	Crude mate- rials	Food	Goods	Travel <sup>1</sup>	Total	Manu- factured goods <sup>1</sup>	Crude mate- rials	Food	Goods	Travel <sup>1</sup>	Total
France	6.86	1.54	2.43	6.38	6.13	6.34	4.87	0.85	5.81	4.52	2.60	4.32	5.86	1.06	4.30	5.42	4.73	5.34
Belgium	2.70	0.89	1.27	2.55	1.36	2.36	2.02	0.97	2.18	1.92	1.99	1.93	2.36	0.94	1.78	2.22	1.61	2.15
Luxembourg	0.24	0.05	0.03	0.22	0.21	0.22	0.17	0.00	0.04	0.14	0.16	0.14	0.20	0.02	0.03	0.18	0.19	0.18
Netherlands	2.41	1.44	3.02	2.39	4.47	2.71	2.78	3.56	6.43	3.06	1.35	2.88	2.59	2.89	4.91	2.74	3.24	2.80
Germany	28.75	28.02	35.13	29.02	35.74	30.06	42.77	27.42	41.07	41.14	25.25	39.48	35.78	27.61	38.42	35.30	31.58	34.72
Italy	8.79	29.43	21.21	10.40	9.40	10.25	7.43	3.56	12.37	7.32	16.33	8.25	8.11	11.68	16.31	8.80	12.15	9.26
Ireland	0.94	0.03	0.18	0.86	0.39	0.78	0.97	0.08	0.43	0.85	0.49	0.81	0.95	0.07	0.32	0.85	0.43	0.80
Portugal	0.58	0.16	0.26	0.54	0.77	0.58	0.54	0.16	0.10	0.47	0.38	0.47	0.56	0.16	0.17	0.51	0.62	0.52
Spain	3.06	0.51	1.59	2.86	6.70	3.46	1.35	0.62	4.04	1.42	3.44	1.63	2.20	0.58	2.95	2.12	5.41	2.56
Finland	0.90	0.32	0.40	0.85	0.23	0.75	1.17	0.45	0.15	1.04	0.17	0.95	1.04	0.41	0.26	0.95	0.21	0.85
Greece	0.33	0.46	0.93	0.36	1.33	0.52	0.14	0.13	0.84	0.18	3.19	0.49	0.23	0.23	0.88	0.27	2.07	0.50
Cyprus	0.01	0.01	0.24	0.02	0.31	0.07	0.00	0.00	0.09	0.01	0.27	0.04	0.01	0.00	0.16	0.02	0.29	0.05
Czech Republic	2.16	5.97	2.28	2.35	0.99	2.14	2.33	5.78	0.78	2.59	2.50	2.58	2.24	5.84	1.45	2.47	1.59	2.36
Denmark	0.79	0.08	0.46	0.74	1.35	0.83	0.60	0.33	1.04	0.60	0.32	0.57	0.70	0.25	0.78	0.67	0.94	0.70
Estonia	0.06	0.02	0.09	0.06	0.00	0.05	0.03	0.02	0.01	0.03	0.00	0.02	0.04	0.02	0.05	0.04	0.00	0.04
Hungary	2.38	3.31	1.62	2.39	0.76	2.13	3.29	4.69	3.09	3.42	4.48	3.53	2.83	4.25	2.43	2.92	2.23	2.82
Latvia	0.03	0.01	0.11	0.03	0.00	0.03	0.02	0.03	0.01	0.02	0.00	0.02	0.03	0.03	0.05	0.03	0.00	0.03
Lithuania	0.06	0.02	0.10	0.06	0.00	0.05	0.04	0.05	0.07	0.04	0.00	0.04	0.05	0.04	0.08	0.05	0.00	0.04
Malta	0.03	0.04	0.09	0.03	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.01	0.02	0.01	0.04	0.02	0.00	0.02
Poland	1.70	0.68	1.27	1.63	0.86	1.51	0.84	2.65	1.18	1.04	0.46	0.98	1.27	2.03	1.22	1.32	0.70	1.25
Sweden	1.54	0.17	1.46	1.47	0.90	1.38	1.45	1.52	0.28	1.39	0.39	1.29	1.50	1.10	0.81	1.43	0.70	1.34
Slovenia	0.60	3.39	2.55	0.83	0.23	0.74	1.06	0.42	0.16	0.94	1.66	1.02	0.83	1.35	1.23	0.89	0.79	0.88
Slovakia	0.70	2.20	0.96	0.79	0.18	0.69	1.16	3.39	0.24	1.33	0.92	1.29	0.93	3.02	0.56	1.07	0.48	0.99
United Kingdom	5.35	2.81	5.00	5.21	6.10	5.35	3.06	1.40	1.46	2.81	8.17	3.37	4.20	1.84	3.04	3.96	6.92	4.37
Australia	0.38	0.08	0.12	0.35	0.75	0.41	0.04	0.09	0.19	0.05	0.46	0.10	0.21	0.08	0.16	0.20	0.63	0.26
Canada	0.76	0.08	0.11	0.69	1.05	0.75	0.55	0.67	0.14	0.54	2.18	0.71	0.66	0.48	0.12	0.61	1.50	0.73
Japan	3.16	4.38	1.11	3.12	0.61	2.73	2.92	0.14	0.05	2.48	0.29	2.25	3.04	1.47	0.52	2.79	0.48	2.50
Norway	0.42	0.06	0.16	0.39	0.00	0.33	0.15	0.75	0.07	0.20	0.00	0.18	0.28	0.54	0.11	0.29	0.00	0.26
Switzerland	3.59	5.57	3.86	3.70	4.18	3.77	3.35	2.14	2.41	3.17	4.09	3.27	3.47	3.22	3.06	3.43	4.14	3.52
U.S.A.	7.49	1.72	2.37	6.96	11.78	7.71	6.86	15.81	6.75	7.75	13.76	8.38	7.17	11.39	4.80	7.37	12.56	8.04
South Korea	1.01	0.39	0.19	0.94	0.00	0.80	0.55	0.01	0.01	0.47	0.00	0.42	0.78	0.13	0.09	0.70	0.00	0.61
Hong Kong	0.12	0.35	0.05	0.13	0.00	0.11	0.42	0.00	0.02	0.36	0.00	0.32	0.27	0.11	0.03	0.25	0.00	0.21
Singapore	0.56	0.01	0.09	0.51	0.00	0.43	0.21	0.00	0.01	0.18	0.00	0.16	0.38	0.01	0.05	0.34	0.00	0.30
New Zealand	0.06	0.00	0.17	0.06	0.00	0.05	0.01	0.02	0.48	0.03	0.00	0.03	0.03	0.01	0.34	0.05	0.00	0.04
Algeria	0.05	0.13	0.03	0.05	0.00	0.04	0.00	1.98	0.00	0.20	0.00	0.18	0.02	1.40	0.02	0.13	0.00	0.11
Argentina	0.14	0.03	0.02	0.13	0.00	0.11	0.01	0.02	0.39	0.03	0.00	0.03	0.07	0.02	0.23	0.08	0.00	0.07
Brazil	0.57	0.14	0.30	0.54	0.00	0.45	0.11	0.69	1.71	0.26	0.00	0.23	0.34	0.52	1.08	0.39	0.00	0.34
Bulgaria	0.19	0.11	0.31	0.19	0.00	0.16	0.12	0.12	0.20	0.12	0.00	0.11	0.15	0.12	0.25	0.16	0.00	0.14
China	2.04	0.53	0.01	1.87	0.00	1.58	1.83	0.40	0.37	1.60	0.00	1.44	1.93	0.44	0.21	1.73	0.00	1.51
Croatia	0.58	1.15	1.80	0.67	0.63	0.66	0.39	0.42	0.23	0.38	1.87	0.54	0.48	0.65	0.93	0.52	1.12	0.60
India	0.40	0.03	0.01	0.37	0.00	0.31	0.25	0.03	0.27	0.23	0.00	0.21	0.33	0.03	0.15	0.30	0.00	0.26
Indonesia	0.35	0.18	0.03	0.32	0.00	0.27	0.19	0.21	0.26	0.20	0.00	0.18	0.27	0.20	0.15	0.26	0.00	0.22
Israel	0.28	0.14	0.15	0.26	0.00	0.22	0.15	0.09	0.26	0.15	0.00	0.14	0.21	0.11	0.21	0.00	0.18	
Malaysia	0.42	0.02	0.01	0.38	0.00	0.32	0.49	0.19	0.03	0.43	0.00	0.39	0.45	0.14	0.02	0.41	0.00	0.35
Mexico	0.43	0.03	0.06	0.39	0.00	0.33	0.18	0.05	0.10	0.16	0.00	0.14	0.30	0.04	0.08	0.27	0.00	0.24
Morocco	0.07	0.03	0.05	0.06	0.00	0.05	0.07	0.13	0.10	0.08	0.00	0.07	0.07	0.10	0.08	0.07	0.00	0.06
Philippines	0.22	0.00	0.02	0.20	0.00	0.17	0.09	0.02	0.06	0.08	0.00	0.07	0.15	0.01	0.04	0.14	0.00	0.12
Romania	0.57	0.23	1.21	0.58	0.00	0.49	0.48	0.45	0.21	0.46	0.00	0.41	0.52	0.38	0.66	0.52	0.00	0.45
Russian Federation	1.18	0.40	1.39	1.15	0.27	1.01	0.29	11.51	0.07	1.40	0.35	1.29	0.73	8.03	0.66	1.28	0.30	1.15
South Africa	0.46	0.04	0.38	0.43	0.00	0.37	0.08	1.90	0.59	0.29	0.00	0.26	0.27	1.32	0.50	0.36	0.00	0.31
Taiwan	0.89	0.31	0.08	0.82	0.00	0.70	1.00	0.01	0.01	0.84	0.00	0.75	0.94	0.10	0.04	0.83	0.00	0.73
Thailand	0.32	0.04	0.02	0.29	0.40	0.31	0.27	0.09	0.39	0.26	0.34	0.27	0.30	0.07	0.23	0.28	0.38	0.29
Turkey	0.86	0.95	0.20	0.83	1.43	0.92	0.56	0.45	2.02	0.63	1.70	0.74	0.71	0.61	1.21	0.73	1.54	0.83
Iceland	0.03	0.00	0.03	0.02	0.00	0.02	0.02	0.02	0.01	0.02	0.00	0.02	0.02	0.02	0.02	0.02	0.00	0.02
Ukraine	0.35	0.13	0.20	0.33	0.00	0.28	0.15	1.67	0.20	0.30	0.00	0.27	0.25	1.19	0.20	0.32	0.00	0.28
Serbia and Montenegro	0.24	0.29	0.75	0.27	0.00	0.23	0.03	0.06	0.25	0.05	0.00	0.04	0.14	0.13	0.47	0.15	0.00	0.14
Bosnia and Herzegovina	0.09	0.13	1.32	0.15	0.00	0.12	0.03	0.22	0.02	0.05	0.00	0.05	0.06	0.19	0.60	0.10	0.00	0.09
Belarus	0.10	0.00	0.03	0.09	0.00	0.08	0.03	0.02	0.03	0.02	0.00	0.02	0.06	0.02	0.03	0.06	0.00	0.05
Iran	0.32	0.05	0.04	0.29	0.00	0.25	0.02	0.05	0.13	0.03	0.00	0.03	0.17	0.05	0.09	0.16	0.00	0.14
United Arab Emirates	0.11	0.02	0.24	0.11	0.00	0.09	0.01	0.01	0.00	0.01	0.00	0.01	0.06	0.01	0.11	0.06	0.00	0.05
Saudi Arabia	0.15	0.60	0.38	0.18	0.00	0.15	0.01	1.43	0.00	0.15	0.00	0.14	0.08	1.17	0.17	0.17	0.00	0.15
Egypt	0.11	0.11	0.05	0.11	0.51	0.17	0.02	0.06	0.08	0.03	0.43	0.07	0.07	0.07	0.07	0.47	0.00	0.12
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: OeNB/WIFO.

<sup>1</sup> Double weights.

Box 2

### How the Weighting Patterns of the OeNB/WIFO and the ECB Price Competitiveness Indices Differ

The ECB started publishing nominal effective and real effective exchange rate indices for the euro in 1999, using the euro area's aggregate exports and imports of manufactured goods (SITC 5 to 8) as a basis for calculation. The nominal effective exchange rate of the euro tracks the development of the euro's international value, i.e. depicts how the euro moves in relation to the other currencies covered by the index. The real effective exchange rate mirrors the price and cost competitiveness of the euro area as a whole compared with non-euro area trading partners. The respective index weights are calculated on the basis of the euro area's overall external trade with non-euro area countries, excluding any intra-euro area trade (intra-EU-12).

Of course, the extent to which bilateral exchange rate changes of the euro affect the real economies of the euro area countries differs across the euro area, depending on the extent of national trade flows to and from non-euro area countries. Thus, parity changes between the euro and the U.S. dollar will hit Germany more strongly than Austria, because Germany trades more heavily with the U.S.A. Austria's competitiveness, in turn, is influenced more strongly than that of the other euro area countries by parity changes of the euro against the currencies of Central, Eastern and Southeastern European countries.

In the case of Austria, the exclusion of intra-EU-12 trade from calculations of the euro's effective exchange rate indices implies that close to 56% of Austria's manufactured goods exports do not enter the calculation. Yet even as a member of the European Economic and Monetary Union (EMU), Austrian producers face price and cost competition on the respective domestic markets and on third markets (i.e. any intra- and extra-euro area markets in which Austrian exports compete with exports from other euro area countries).

Hence, the individual EMU participants quite obviously continue to analyze the development of national price and cost competitiveness on the basis of comprehensive national foreign trade matrices, which reflect both cross-border trade with individual euro area members and with other relevant non-euro area countries. Such an analysis is crucial for estimating how bilateral exchange rate changes of the euro affect the national economies of the euro area countries, i.e. their national export, production and employment developments. Unlike the exchange rate indices of the euro, these national competitiveness indicators hold little importance for monetary policymaking, but they are important indicators for income and structural policies, which have been kept under the responsibility of national governments, and for the analysis of macroeconomic performance differences between individual EMU members.

Before the beginning of Stage Three of EMU in 1999, the nominal and effective exchange rates for the Austrian schilling were calculated by the Austrian Institute of Economic Research (WIFO). Since January 1999, the OeNB in cooperation with WIFO has calculated an indicator of the price competitiveness of the Austrian economy, comparing price developments in Austria (as measured by the HICP) with those of its trading partners within and beyond the euro area. In 2007 the ECB will start to publish a set of harmonized price competitiveness indicators for the individual euro area countries; these indicators are in fact real effective exchange rate indices from the perspective of the individual euro area members. While the methodologies used by the OeNB/WIFO and the ECB to calculate the indicators are basically identical, the OeNB/WIFO price competitiveness indicator for Austria nonetheless differs somewhat from the ECB measure, given national specifics:

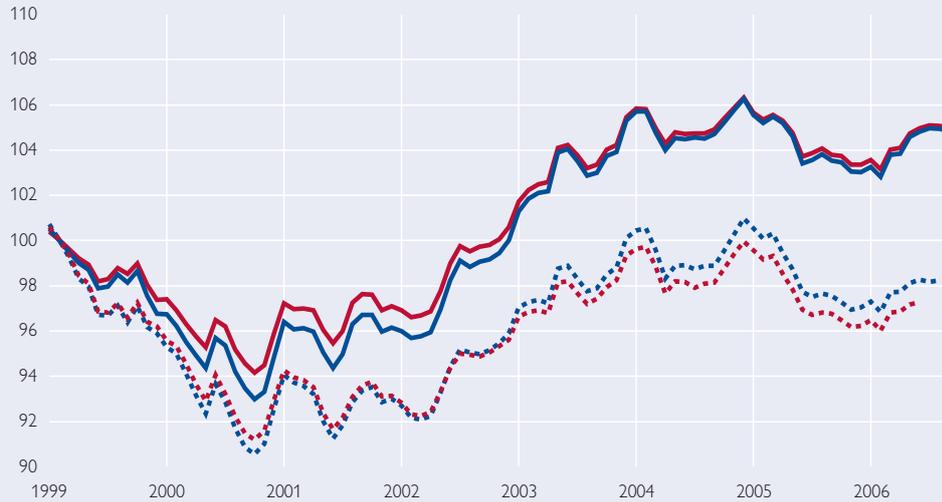
- The sample of 62 trading partners or 52 currencies in the OeNB/WIFO indicator compares with 56 trading partners or 46 currencies covered by the ECB indicator. The latter does not include Ukraine, Serbia and Montenegro, Bosnia and Herzegovina, Belarus, Iran, the United Arab Emirates, Saudi Arabia and Egypt, while the OeNB/WIFO index excludes Chile and Venezuela.
- The OeNB/WIFO indicator is a summary competitiveness indicator composed of four subindices, whereas the ECB indicator corresponds to the “manufactured goods” subindex of the OeNB/WIFO indicator. Specifically, the country (currency) weights of the ECB indicator are based on cross-border trade in manufactured goods (SITC 5 to 8), whereas the OeNB/WIFO indicator also includes the subindices travel and tourism, crude materials (SITC 2 to 4) and food (SITC 0 to 1).
- Both the OeNB/WIFO and the ECB base their indicators and their country weights on the weighted average of simple import weights and double (multilateral) export weights. As shown in box 1, it takes complex competition matrices which also track any goods purchased on the domestic market that were manufactured domestically and thus compete with imports from other countries to establish the double export weights. The competition matrix for manufactured goods underlying the OeNB/WIFO indicator is based on **gross manufacturing output**, while the ECB uses **net manufacturing output** (gross manufacturing output less intermediate consumption by manufacturing). It should be noted that the OeNB considers only gross manufacturing output to be consistent with the foreign trade statistics derived from gross flows. Moreover, intermediate consumption is not negligible for the competitiveness development. All other calculation steps are the same for both indicators.
- Finally, the OeNB/WIFO calculations are based on the UN Commodity Trade Statistics Database, while the ECB’s weights for the EU Member States are derived from Eurostat’s COMEXT database.

Chart 2

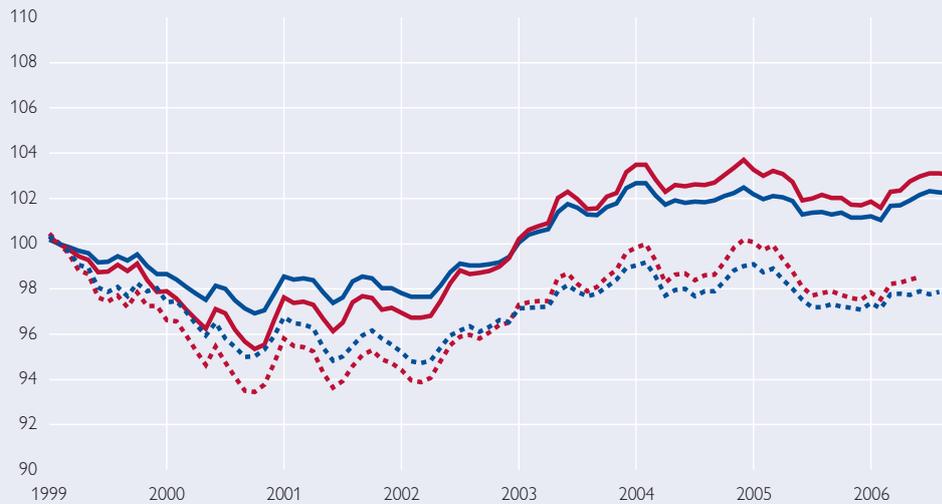
**Comparison of OeNB/WIFO Indicators with ECB Indicators**

1<sup>st</sup> quarter 1999 = 100

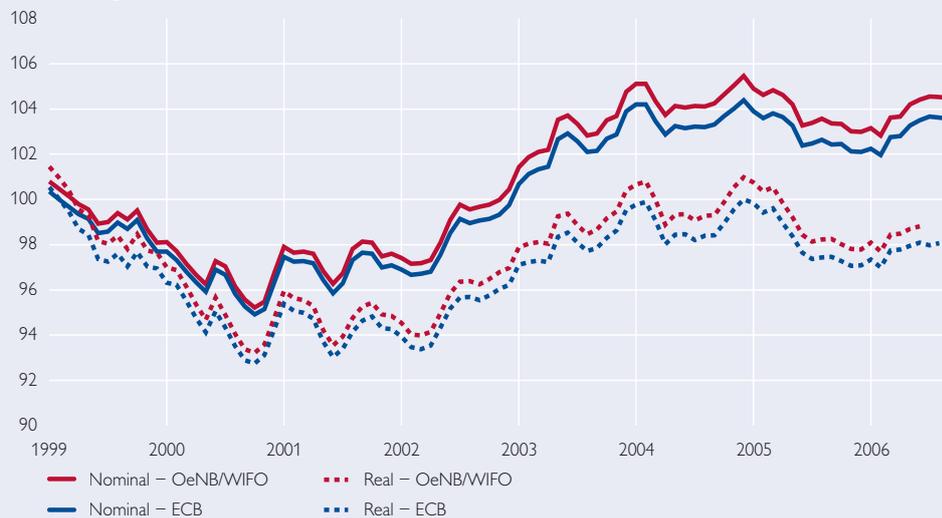
Manufactured goods exports



Manufactured goods imports



Manufactured goods, total



— Nominal – OeNB/WIFO      ···· Real – OeNB/WIFO  
— Nominal – ECB              ···· Real – ECB

Source: ECB, OeNB/WIFO.

Table 2

<b>Weighting Scheme of the ECB and the OeNB/WIFO Indicator</b>						
%	ECB			OeNB/WIFO		
	Manufactured goods					
	Exports	Imports	Total	Exports	Imports	Total
France	6.13	7.83	4.42	6.86	4.87	5.86
Belgium	2.92	3.24	2.59	2.70	2.02	2.36
Luxembourg	0.22	0.23	0.21	0.24	0.17	0.20
Netherlands	4.30	4.16	4.45	2.41	2.78	2.59
Germany	34.34	22.34	46.40	28.75	42.77	35.78
Italy	7.50	8.01	6.99	8.79	7.43	8.11
Ireland	0.85	1.05	0.64	0.94	0.97	0.95
Portugal	0.46	0.66	0.25	0.58	0.54	0.56
Spain	2.02	2.99	1.03	3.06	1.35	2.20
Finland	0.96	0.88	1.04	0.90	1.17	1.04
Greece	0.26	0.41	0.11	0.33	0.14	0.23
Cyprus	0.01	0.02	0.00	0.01	0.00	0.01
Czech Republic	2.11	1.95	2.28	2.16	2.33	2.24
Denmark	0.80	1.01	0.58	0.79	0.60	0.70
Estonia	0.04	0.06	0.02	0.06	0.03	0.04
Hungary	3.54	2.56	4.52	2.38	3.29	2.83
Latvia	0.03	0.05	0.02	0.03	0.02	0.03
Lithuania	0.05	0.08	0.03	0.06	0.04	0.05
Malta	0.02	0.04	0.01	0.03	0.01	0.02
Poland	1.22	1.70	0.74	1.70	0.84	1.27
Sweden	1.43	1.50	1.37	1.54	1.45	1.50
Slovenia	1.18	0.91	1.45	0.60	1.06	0.83
Slovakia	0.95	0.75	1.16	0.70	1.16	0.93
United Kingdom	4.43	6.13	2.71	5.35	3.06	4.20
Australia	0.21	0.39	0.04	0.38	0.04	0.21
Canada	0.67	0.84	0.49	0.76	0.55	0.66
Japan	2.77	3.85	1.68	3.16	2.92	3.04
Norway	0.28	0.47	0.09	0.42	0.15	0.28
Switzerland	3.97	3.36	4.59	3.59	3.35	3.47
U.S.A.	6.42	8.14	4.68	7.49	6.86	7.17
South Korea	0.85	1.27	0.42	1.01	0.55	0.78
Hong Kong	0.79	1.29	0.29	0.12	0.42	0.27
Singapore	0.43	0.76	0.09	0.56	0.21	0.38
New Zealand	0.03	0.06	0.00	0.06	0.01	0.03
Algeria	0.03	0.06	0.00	0.05	0.00	0.02
Argentina	0.08	0.15	0.00	0.14	0.01	0.07
Brazil	0.32	0.56	0.09	0.57	0.11	0.34
Bulgaria	0.16	0.20	0.11	0.19	0.12	0.15
China	1.79	2.34	1.24	2.04	1.83	1.93
Croatia	0.53	0.64	0.43	0.58	0.39	0.48
India	0.32	0.49	0.15	0.40	0.25	0.33
Indonesia	0.21	0.33	0.08	0.35	0.19	0.27
Israel	0.25	0.36	0.13	0.28	0.15	0.21
Malaysia	0.28	0.44	0.13	0.42	0.49	0.45
Mexico	0.33	0.53	0.12	0.43	0.18	0.30
Morocco	0.06	0.08	0.03	0.07	0.07	0.07
Philippines	0.15	0.24	0.06	0.22	0.09	0.15
Romania	0.53	0.55	0.51	0.57	0.48	0.52
Russian Federation	0.63	1.11	0.15	1.18	0.29	0.73
South Africa	0.24	0.43	0.04	0.46	0.08	0.27
Taiwan	0.83	0.98	0.67	0.89	1.00	0.94
Thailand	0.30	0.42	0.18	0.32	0.27	0.30
Turkey	0.68	0.88	0.47	0.86	0.56	0.71
Iceland	0.02	0.03	0.00	0.03	0.02	0.02
Chile	0.06	0.10	0.01	x	x	x
Venezuela	0.04	0.07	0.00	x	x	x
Ukraine	x	x	x	0.35	0.15	0.25
Serbia and Montenegro	x	x	x	0.24	0.03	0.14
Bosnia and Herzegovina	x	x	x	0.09	0.03	0.06
Belarus	x	x	x	0.10	0.03	0.06
Iran	x	x	x	0.32	0.02	0.17
United Arab Emirates	x	x	x	0.11	0.01	0.06
Saudi Arabia	x	x	x	0.15	0.01	0.08
Egypt	x	x	x	0.11	0.02	0.07
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: ECB, OeNB/WIFO.

### 2.1.2 A New Analysis Tool:

#### A Competitiveness Indicator Based on Unit Labor Costs

The OeNB/WIFO used to deflate the nominal effective exchange rate index with the HICP/CPI to establish the national *price competitiveness* indicator. Using the HICP/CPI as a deflator is in fact the most widespread method of calculating real exchange rate indices. The key advantages of this method are the *timely availability* and the *international comparability* of data, given that they are derived from standardized baskets of goods reflecting average living standards. Moreover, a HICP/CPI-deflated measure reflects not only changes in labor costs, but also changes in all other cost and price elements.

Yet this method also comes with crucial disadvantages. First, the goods basket underlying consumer price indices contains large amounts of non-tradable goods, which makes those indices an imperfect proxy for changes in tradable goods.<sup>9</sup> Second, consumer price indices may be “misleading indicators of the prices of traded goods” (Lafrance et al., 1998) as the exposed and protected sectors of an economy tend to have different productivity patterns. Third, HICP/CPI-deflated measures do not reflect the development of the prices of capital goods, which account for a large share of foreign trade. Fourth, import prices have a significant influence on the development of the HICP/CPI. Finally, the meaningfulness of the indicator may be distorted by indirect taxes on goods that are reimbursed upon export (unless goods are acquired directly by foreign households) and by export subsidies.

To provide a more robust assessment of the competitiveness of Austrian manufacturers in the future, the OeNB and WIFO have introduced an additional competitiveness indicator for manufactured goods based on unit labor costs in the manufacturing sector. In other words, a *cost competitiveness* indicator now complements the *price competitiveness* indicator. The two indicators differ not only with regard to the deflator but also with regard to the sample of partner countries. This sample is comparatively narrower for the cost competitiveness indicator, as comparable data on unit labor cost developments are available only for the members of the Organisation for Economic Co-operation and Development (OECD). Therefore, the sample consists of only 24 countries (OECD excluding Denmark, Luxembourg, Portugal, Slovakia and Turkey). Those countries cover 85% of all relevant exports, however.

Unlike price indicators, *cost indicators* such as labor costs also reflect any short-term deterioration which businesses absorb through pricing-to-market behavior that cuts into their margins. That said, even an indicator deflated with labor costs has some shortcomings. For instance, by definition, it reflects only the labor part of total costs – and the share of unit labor costs in aggregate manufacturing output actually decreases as an industry’s capital intensity grows. Furthermore, it neglects any labor costs contained indirectly in intermediate goods of other domestic and foreign industries. Yet such indirect labor costs do affect the export competitiveness of the manufacturing in-

<sup>9</sup> In the Austrian HICP, nontradable goods and services have a weight of approximately 50%.

dustry, as do capital costs and the prices of imported crude materials.<sup>10</sup> Moreover, high labor costs do not dampen the international competitiveness of an economy as long as they are compensated by productivity advantages.

Against this backdrop, it makes sense to use *unit labor costs* – rather than labor costs – as a deflator. Unit labor costs reflect not only changes in labor costs but also changes in labor productivity, as they are calculated by dividing the (hourly) compensation per employee by the (hourly) real value added per person employed in the manufacturing industry. As such, they are a key determinant of manufactured goods prices and thus a key indicator of the short-term competitiveness of an economy. Yet unit labor costs also create methodological problems for a number of reasons: First, labor productivity grows in boom phases but drops during economic downturns<sup>11</sup>; in other words, labor productivity is sensitive to the cycle.<sup>12</sup> Second, the transition from labor-intensive to capital-intensive production methods reduces the meaningfulness of the cost competitiveness indicator. If labor productivity grows because capital was substituted for labor and if declining unit labor costs go hand in hand with rising capital unit costs, the cost competitiveness indicator overstates com-

petitiveness gains. A third methodological problem consists in the fact that productivity growth as such is endogenous and that strong productivity gains need not necessarily imply an improvement in competitiveness, but may also imply existing competitiveness problems.<sup>13</sup>

### 3 Austria's Competitiveness Has Improved Significantly since EMU Accession

The *cost competitiveness index*, calculated back to the beginning of 1999 and based on the first quarter of 1999 (i.e. 1999Q1 = 100), shows more volatile movements than the price competitiveness index and exhibits significant competitiveness gains for Austrian manufacturing exporters since 1999. The new index uses labor cost and productivity developments as determinants of relative unit labor cost developments and compares them with developments for Austria's trading partners.

Manufacturing unit labor costs in fact started to grow at a considerably slower pace in Austria than in its trading partner countries in the 1990s. Austrian industrial productivity had risen at an above-average rate in recent decades. It is likely to have benefited above all from the stronger internationalization of markets and from the rapid globalization of production in the wake of the European

<sup>10</sup> However, a macroeconomic analysis shows that, measured in terms of aggregate domestic value added (or national income), labor costs are the single biggest cost determinant (accounting for just under 60% of costs) and one of the key location factors for investors.

<sup>11</sup> Productivity decreases during sharp economic setbacks or recessions. As a case in point, a quarterly analysis of productivity data for Austria shows three successive quarters of declining productivity in 2002.

<sup>12</sup> Consequently, unit labor costs will rise during economic downturns and drop during economic upswings. Therefore, an adequate assessment of changes in cost competitiveness would require these changes to be adjusted for cyclical components.

<sup>13</sup> When excessive wage increases make jobs unprofitable, staff layoffs or business closures cause jobs – typically those with the highest unit labor costs – to be destroyed. As a consequence, productivity will rise and unit labor costs will decline.

integration process and the fall of the Iron Curtain. The productivity rises were bolstered by a contraction in employment (especially through early retirement) and by the outsourcing of services. Austria's manufacturing industry boomed above all in the second half of the 1990s, reporting average annual growth rates of 5.4% (Guger, 2006). Since early 2000 productivity growth rates have, however, slowed markedly.

Given only moderate wage pressures, manufacturing unit labor costs thus sank by 3.5% per annum on average in the second half of the 1990s.<sup>14</sup> As a consequence of the comparatively low productivity growth since early 2000, the decline in unit labor costs has also slowed down since. In the current decade the annual average decline totaled only 1.9%, adding up to -9.3% until the end of 2005. This compares with euro area average increases of 1.2% per annum and 6.2% on a cumulative basis. Within the euro area, unit labor costs were pushed up above all by Italy (+3.1% per annum and +16.6% cumulatively), Spain (+1.8% per annum and +9.5% cumulatively), Greece (+3.2% per annum and +17.1% cumulatively) and the Netherlands (+1.7% per annum and +8.9% cumulatively). In contrast, Germany, Austria's biggest trading partner, reported a strong decline of -1.3% per annum and -6.5% on a cumulative basis.<sup>15</sup> Poland (-4.9% per annum and -22.1% cumulatively), Sweden (-1.0% per annum and -5.1% cumulatively) and Japan (-2.2% per annum and -10.7% cumulatively) also recorded favorable

unit labor cost developments, as measured in national currencies. Among the countries that joined the EU in 2004, especially Hungary reported comparatively high annual (+3.3%) and cumulative (+17.5%) unit labor cost growth rates. Switzerland, finally, also suffered competitiveness losses through a marked rise in unit labor costs.

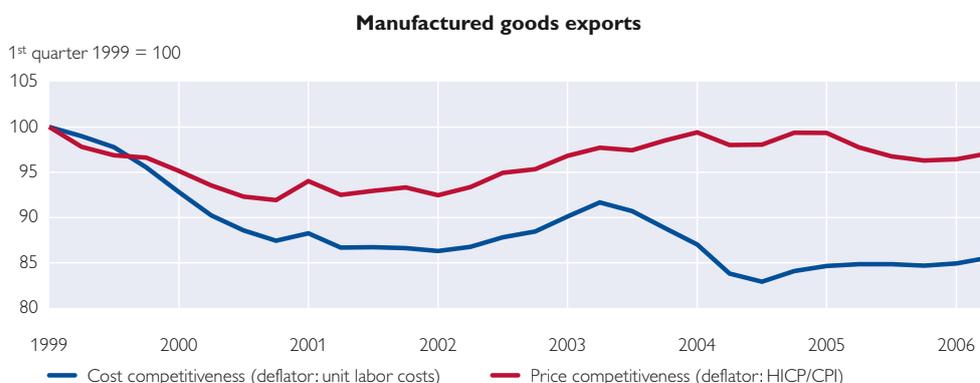
Measured by the *cost competitiveness* indicator, the international competitiveness of Austrian manufacturers' exports improved by about 15% between the beginning of 1999 and the end of 2005. This improvement can be fully ascribed to the more favorable development of unit labor costs in Austria than in its trading partner countries, whereas on balance the influence of exchange rate changes was insignificant over this period. However, a breakdown shows that short intervals within this period did show exchange rate effects. Domestic exporters benefited from the low exchange rate of the euro above all from early 1999 to end-2000, but they lost those exchange rate advantages between the beginning of 2001 and the end of 2005.

Austria's manufacturing industry posted the biggest gains in cost competitiveness from early 1999 to early 2002 and from mid-2003 to the fall of 2004. While about 40% of the cost-based gains during the first phase can be traced to favorable exchange rate changes, cost-based gains were virtually fully attributable to sinking unit labor costs during the second phase. Between 2003 and 2004,

<sup>14</sup> See Guger (2006).

<sup>15</sup> The single currency has made productivity and wage differences among individual euro area countries much more transparent. In terms of wage policies, EMU poses problems above all for those countries that have rigid wage-setting mechanisms.

**Development of Austria's Price and Cost Competitiveness since 1999**



Austrian manufacturers reported a productivity gain of close to 7% coupled with extremely moderate wage growth (about 2% nominal wage growth according to the negotiated standard wage rate index for the manufacturing sector). By comparison, the losses in cost competitiveness recorded from 2002 to mid-2003 broadly reflected exchange rate changes, whereas the losses suffered since the second half of 2004 are basically the result of unit labor cost increases.

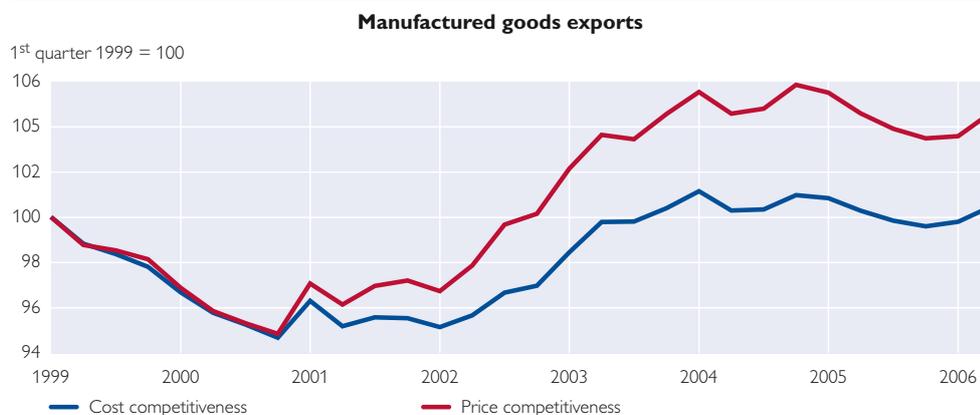
Initially, i.e. between early 1999 and early 2002, the *price competitiveness* index (relating to exports of manufactured goods) mirrors the trend of the cost competitiveness index, but in a less pronounced manner. The price competitiveness gains in this period totaled about 8%, about half of which were attributable to exchange rate gains.

In the second quarter of 2003, however, the two real effective indices started to display divergent trends. Using the HICP/CPI as a deflator, the price competitiveness indicator shows neither the marked gains up to the

second half of 2004 nor the subsequent losses revealed by the cost competitiveness indicator. To some extent, this may be explained by the fact that the HICP/CPI was broadly driven by oil price developments in 2004 and 2005 and that the favorable unit labor cost developments in the manufacturing industry do not show up in this calculation. However, the divergence between the two indicators since the second quarter of 2003 also reflects the different weighting structures used, which put the nominal effective exchange rate indices underlying the two indices on diverging paths. From the beginning of 1999 to the end of 2000, the two nominal effective exchange rates moved broadly in sync, given the low euro exchange rate. The subsequent strong depreciation of the Japanese yen and the U.S. dollar against the euro dampened both the price and the cost competitiveness of Austrian manufacturing exports. Yet the comparatively faster increase since early 2001 of the nominal effective exchange rate index underlying the price competitiveness indicator can be largely ascribed to the

Chart 4

**Development of Nominal Effective Exchange Rate Indices for Austria**



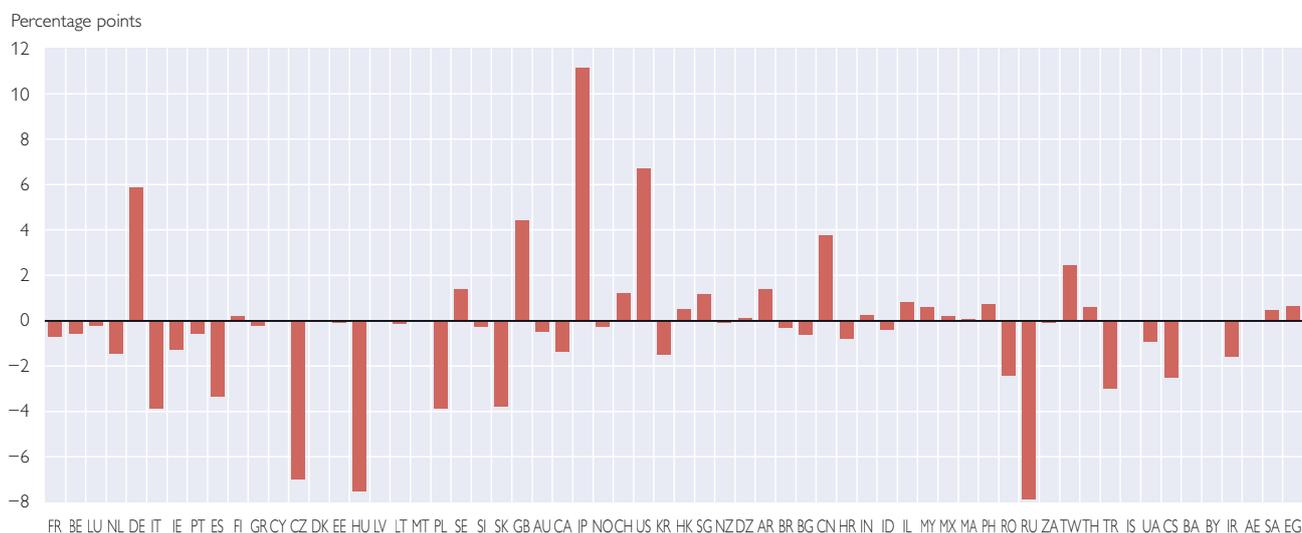
euro's exchange rate changes against the currencies of the EU candidate countries (i.e. Bulgaria,<sup>16</sup> Romania,<sup>16</sup> Croatia and Turkey), Asian countries (excluding Japan) and "other countries." Indeed, since the end of 2000, the euro has appreciated by as much as 85% in nominal terms against the currencies of the EU candidate countries, which have a combined weight of 2%, while the euro appreciated by about 40% against the other two country groups in the same period.

The *contributions to growth* reveal that from early 1999 to mid-2006, Austrian manufacturing exporters outperformed above all their competitors from the Russian Federation, Hungary and the Czech Republic, but also from Italy, Spain, Poland, Slovakia and Turkey in terms of price competitiveness. At the same time, Austrian exporters suffered price competitiveness losses especially vis-à-vis Japan and the U.S.A. as well as against Germany, the United Kingdom and Canada. Within the euro area, gains

and losses generally resulted from divergent price developments, whereas both price and exchange rate changes played a role in cross-border trade beyond the euro area. Austria's competitiveness losses against the U.S.A., for instance, reflect the depreciation of the U.S. dollar against the euro rather than price developments, which were more moderate in Austria than in the U.S.A. Austria's losses against Japan, in contrast, were due to both exchange rate changes and price developments. Conversely, Austria's competitiveness gains against Poland, the Czech Republic and Slovakia also reflect both exchange rate and price developments. Hungary is a case in point for divergent price developments alone driving Austrian manufacturing exporters' gains in price competitiveness. The weakening currencies of Turkey and the Russian Federation, finally, could only partly offset extremely strong price increases.

<sup>16</sup> Bulgaria and Romania joined the EU on January 1, 2007.

**Growth Contributions to Changes in the Price Competitiveness of Austrian Manufacturing Exports  
(January 1999 to June 2006)**



Source: OeNB/WIFO.

**4 Austria’s Competitiveness is Increasingly Shaped by Services**

Manufacturing and international trade in goods have traditionally formed the basis for the calculation of exchange rate indices or national price competitiveness indicators. This approach, however, is yielding too narrow a measure of macroeconomic competitiveness – especially in developed economies where the service sector plays a growing role. In Austria, for instance, this sector accounts for more than two-thirds of nominal gross value added (2005), comprising 80% of Austrian enterprises and 61% of dependently employed persons according to the 2004 structural business statistics. In 2005, the share of services in Austria’s foreign trade augmented to 44% of the goods transactions, while the share of services in world trade came to 24%.

Service sector competitiveness has thus become a highly relevant aspect of an economy’s total competi-

tiveness. In Austria – unlike in other countries – this aspect has been accounted for over many years in the calculation of competitiveness indicators: They include subindices for travel and tourism, mainly because (international) tourism has always been of key significance for the Austrian economy. In terms of travel and tourism exports, the country ranks first among the EU-15 (5% of nominal GDP), followed by Portugal (4.5%) and Spain (4.2%). The direct and indirect value added effects of travel and tourism come to just under 9% of GDP (Smeral, 2006). Long-term structural developments, such as the opening up of Eastern Europe or the increasing attractiveness of long-distance travel, are a big challenge for the Austrian tourism industry, however.

The data problems involved in adequately capturing the service sector in competitiveness indicators are much bigger than those in the goods sector. The calculation of the new

indices is based on a weighting according to tourism revenues rather than the number of overnight stays to

depict Austria's international competitive situation in tourism more accurately.<sup>17</sup>

Box 3

### Methodological Revision of the Travel and Tourism

#### Indices' Weighting Structure

*In the calculation of the travel and tourism indices, the formerly used weighting of target and home countries was merely an imperfect approximation of the economically relevant revenue and expenditure weighting, a method chosen for lack of data. While the data are still incomplete, the current revision attempts to create a competition matrix based on travel and tourism revenues for as large a group of countries as possible. Regional balance of payments statistics (Eurostat) and central bank data on tourism were used as primary data sources.*

*Estimates based on home country data as well as overnight stay statistics and data on average expenditure per overnight stay were used to close the remaining data gaps. To ensure consistency, the estimation results were cross-checked with country totals (where available) of travel and tourism revenues and expenditures.*

*Finally, the revised indices also account for the (highly relevant) competitive situation of domestic and outbound tourism by explicitly including domestic tourism. The data on domestic tourists' expenditure were based on national accounts data (tourism satellite account<sup>1</sup>), complemented by estimates on the basis of overnight stay statistics.*

*The result is a comprehensive competition matrix for travel and tourism with 30 partner countries, which covers all countries with a share of at least 0.25% of Austria's travel and tourism (including Finland and Luxembourg) as reported in the Austrian balance of payments. The high plausibility of its results confirms that this competition matrix substantially improves the tools available for assessing price competitiveness in Austria's tourism industry despite all remaining data problems.*

<sup>1</sup> For details on the methodology used to compile the Austrian tourism satellite account, see Smeral et al. (2002).

#### 4.1 Austrian Tourism is Concentrated on the EU-25

The revised competition matrix (and the derived weighting structure of the travel and tourism indices) did not in fact yield unexpected results, but it did correct several misperceptions. Unsurprisingly, Germany accounts for the bulk of Austria's travel and tourism exports (35.7%), followed by the U.S.A. (11.8%) and Italy (9.4%). Spain, France and the United Kingdom have shares between 6% and 7%; the French share – which had been too high on the basis of overnight statistics – was revised down-

ward. As regards travel and tourism imports, Germany also ranks first (25.3%), followed by Italy (16.3%), the U.S.A. (13.8%) and the United Kingdom (8.2%). Please note that the indices also cover business trips, which are characterized by a shorter average duration and higher expenditure per person and overnight stay. They play a rather important role in Austrian travel and tourism imports, for instance from Germany.

Euro area countries account for 66.7% and the EU-25 for 78.4% of Austrian travel and tourism exports. For travel and tourism imports, the

<sup>17</sup> See box 3 for a description of the methodology used.

share of euro area countries is markedly lower at 55.3%, but this is almost offset by the larger proportion of imports from non-EMU EU countries (19.2%), so that the share of the EU-25 amounts to 74.5%. The large import value seems to be attributable to higher expenditure by Austrian tourists traveling to destinations like the United Kingdom or Scandinavia and to the substantial share of business trips to Central and Eastern Europe. Countries like Hungary (4.5%), the Czech Republic (2.5%) or Slovenia (1.7%) account for significant proportions of Austrians' travel expenditure; the Hungarian share now even surpasses that of Switzerland (4.1%). By contrast, the Central and Eastern European countries account for less than 1% of Austria's travel and tourism exports (i.e. revenues), whereas Switzerland's share amounts to 4.2%; thus, the country has a roughly equal weight in Austria's travel and tourism exports and imports.<sup>18</sup> According to the available data, the weight of Russia in Austria's tourism industry is still rather low at 0.3%. Here, too, Austria's travel and tourism imports are slightly higher than its exports. In general, the new weighting structure indicates that, especially for travel and tourism exports, changes in price competitiveness are primarily driven by relative price developments and not so much by exchange rate fluctuations.

Moreover, the new competition matrix reveals interesting structural differences between the competitive situation of domestic tourism and that

of outbound tourism. While the share of domestic tourism<sup>19</sup> comes to 94% in the U.S.A., it is below 10% in Luxembourg. In large countries, such as France (74.9%), Italy (71.6%) or Germany (62.1%), domestic tourism is generally more significant than in small countries. Apart from country size – and various culture-dependent preferences – the income level is also an important determinant of tourism patterns. This is substantiated by the relatively large share of domestic tourism in most Central and Eastern European countries (Poland 89.1%, the Czech Republic 70.2%, Hungary 67.8%), with the exception of Slovenia (9.3%). Slovakia has an intermediate position at 55.5%, which may be attributable to its geographical proximity to the greater Vienna area.

#### **4.2 Austria's Price Competitiveness in Travel and Tourism on a Downtrend since 2000**

Owing to the new methodology used to compile the travel and tourism index, comparability with old index data is limited. Therefore, we concentrated on tracing the development of price competitiveness. It seems that the past decade was characterized by substantial changes: While the impact of exchange rate changes on competitiveness was very limited between 1995 and 2000, a nominal loss of competitiveness of around 7% was recorded from 2000 to mid-2006 – primarily owing to the strong appreciation of the euro against the U.S. dollar. As expected, the bulk of this loss was offset by more favorable

<sup>18</sup> All in all, Austria's travel and tourism exports (EUR 12.4 billion) far exceed the country's imports (EUR 8.9 billion) in 2005.

<sup>19</sup> See the figure reported for each country in the competitiveness matrix (main diagonal of table 4 in the annex).

price developments in Austria than in the competition markets.<sup>20</sup> All in all, the real effective loss in the competitiveness of Austria's travel and tourism industry came to 2.7% in this period, which breaks down to a loss of 3.1% for exports and 2% for imports.

The size of this loss in competitiveness seems rather small for a six-year period. However, this development differs remarkably from that observed in the period from 1995 to 2000, when the price competitiveness of Austrian travel and tourism improved by no less than 15%, with imports (19%) again posting better results than exports (12%). This gain in price competitiveness was primarily attributable to more favorable price developments (by more than 10 percentage points on average) than in the competition markets. It was also supported by nominal effective depreciations of those currencies that were later replaced by the euro; these depreciations were mainly linked to the appreciation of the U.S. dollar. The price advantages for the period from 2000 to mid-2006 were less than half this size.

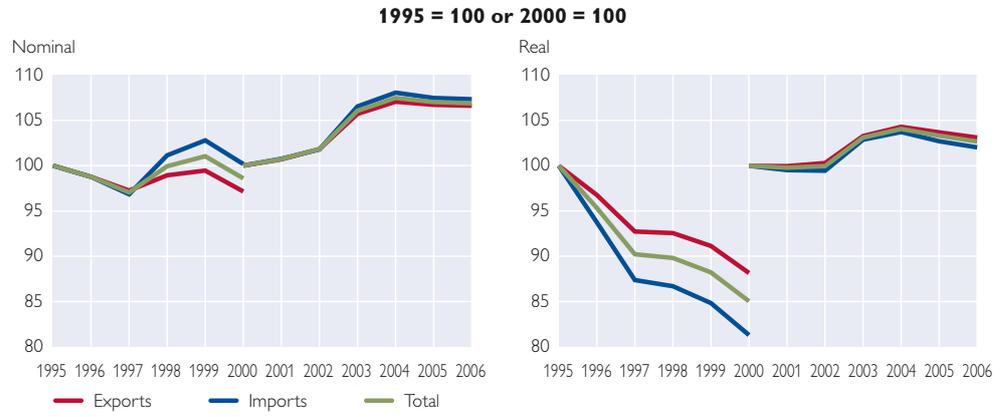
A breakdown by competition markets shows that the improvement in Austria's competitive position in travel and tourism exports between

1995 and 2000 was mainly vis-à-vis the U.S.A. (5.3 percentage points), the United Kingdom (2.2 percentage points), Italy (1.8 percentage point) and, to a lesser extent, also vis-à-vis Turkey, Spain, France and Greece. In the period from 2000 to mid-2006, the loss in competitiveness was chiefly vis-à-vis the U.S.A. (2.8 percentage points), the United Kingdom (0.9 percentage point) and Germany (0.5 percentage point). At the same time, the competitiveness of Austria's tourism sector improved slightly vis-à-vis Spain, Italy and Turkey.

The methodological revision of the weighting structure used in the travel and tourism indices was an important step to gain a clearer understanding of developments in this sector. The travel and tourism industry plays a significant role in a competitiveness assessment for the Austrian economy – after all, its contribution to Austria's GDP is especially large by international standards. One important challenge for the immediate future is to capture not just travel and tourism, but the entire service sector in the price and cost competitiveness indicators, given the steady shift toward service-based economies and the growing international tradability of services.

<sup>20</sup> Due to a lack of more specific data, these calculations are based on the difference between HICP and CPI inflation rates, not on travel cost data.

**Competitiveness of the Austrian Travel and Tourism Industry**



Source: OeNB/WIFO.

## References

- ECB. 2000.** The Nominal and Real Effective Exchange Rates of the Euro. In: ECB Monthly Bulletin. April.
- ECB. 2002.** The Effective Exchange Rates of the Euro. In: Occasional Paper 2. February.
- ECB. 2003.** Developments in the Euro Area's International Cost and Price Competitiveness. In: ECB Monthly Bulletin. August.
- Guger, A. 2006.** 2005 internationale Lohnstückkostenposition unverändert. In: WIFO-Monatsberichte 9. 655–665.
- Hahn, F., W. Köhler-Töglhofer, C. Magerl and P. Mooslechner. 2001.** Updating the Calculation of the Indicator for the Competitiveness of Austria's Economy. In: Focus on Austria 2/2001. OeNB. 217–257.
- Klau, M. and S. Fung. 2006.** The New BIS Effective Exchange Rate Indices. In: BIS Quarterly Review. March. 57–74.
- Köhler-Töglhofer, W. 1999.** Berechnung effektiver Wechselkursindizes als Indikatoren der Wettbewerbsfähigkeit. In: Berichte und Studien 1/1999. OeNB. 104–128.
- Lafrance, R., P. Osakwe and P. St-Amant. 1998.** Evaluating Alternative Measures of the Real Effective Exchange Rate. Working Paper 20. Bank of Canada. November.
- Mooslechner, P. 1995.** Abnehmende Inflationsdifferenz verstärkt real-effektive Schillingaufwertung. In: WIFO-Monatsberichte 9. 580–592.
- Smeral, E., A. Franz and P. Laimer. 2002.** Ein Tourismussatellitenkonto für Österreich. Ökonomische Zusammenhänge, Methoden und Hauptergebnisse. In: WIFO-Monatsberichte 12. 29–37.
- Smeral, E. 2006.** Kräftiges Wachstum im Welttourismus. In: WIFO-Monatsberichte 4. 267–272.
- Turner, P. and J. Van't Dack. 1993.** Measuring International Price and Cost Competitiveness. In: BIS Economic Papers 39.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Annex

Table 3

Competition Matrix for the National Exchange Rate Index for Manufactured Goods – Part 1

Market share in %

Competition markets	Target markets															
	France	Belgium	Luxembourg	Netherlands	Germany	Italy	Ireland	Portugal	Spain	Finland	Greece	Cyprus	Czech Republic	Denmark	Estonia	Hungary
France	63.07	9.86	6.22	5.16	4.03	3.67	3.73	6.00	8.01	1.95	4.47	3.71	3.45	3.77	1.38	3.94
Belgium	4.07	25.86	12.97	9.02	2.79	1.59	2.09	2.22	2.06	1.29	2.29	1.31	1.54	2.68	0.83	2.54
Luxembourg	0.24	0.53	57.08	0.18	0.18	0.08	0.09	0.09	0.07	0.08	0.06	0.03	0.11	0.10	0.02	0.09
Netherlands	1.95	7.72	1.23	15.62	2.78	1.29	1.69	1.79	1.51	1.80	1.98	1.27	1.67	3.99	1.22	1.85
Germany	8.59	15.61	9.83	14.79	63.12	6.35	5.02	8.82	7.22	7.81	8.24	6.47	23.85	15.24	6.09	23.90
Italy	4.38	3.98	1.90	3.19	3.60	73.67	2.37	5.39	4.54	1.56	9.89	6.08	3.30	3.55	2.06	6.55
Ireland	0.74	2.28	0.22	1.95	0.92	0.47	30.57	0.34	0.54	0.48	0.52	0.36	0.54	1.03	0.42	0.51
Portugal	0.46	0.79	0.09	0.44	0.49	0.17	0.21	48.94	1.24	0.13	0.22	0.28	0.08	0.58	0.07	0.28
Spain	2.95	1.64	0.70	1.59	1.26	1.46	1.18	14.53	63.23	0.49	2.36	2.40	1.00	1.20	0.35	1.34
Finland	0.29	0.57	0.17	0.81	0.51	0.28	0.38	0.40	0.33	63.13	0.74	0.24	0.50	1.91	19.67	0.85
Greece	0.04	0.04	0.01	0.08	0.10	0.08	0.05	0.07	0.05	0.02	48.19	7.33	0.05	0.13	0.03	0.09
Cyprus	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.06	28.08	0.00	0.01	0.00	0.00
Czech Republic	0.19	0.43	0.26	0.38	1.21	0.19	0.34	0.19	0.16	0.17	0.23	0.19	47.51	0.34	0.58	1.32
Denmark	0.24	0.35	0.43	0.74	0.68	0.14	1.06	0.24	0.23	1.29	0.44	0.65	0.29	36.13	1.41	0.34
Estonia	0.00	0.02	0.00	0.04	0.02	0.00	0.01	0.01	0.00	1.21	0.00	0.04	0.01	0.18	39.69	0.06
Hungary	0.22	0.53	0.05	0.71	1.06	0.25	0.47	0.26	0.15	0.16	0.17	0.16	0.79	0.26	0.25	35.34
Latvia	0.00	0.01	0.00	0.02	0.03	0.00	0.02	0.00	0.00	0.04	0.00	0.01	0.02	0.19	1.32	0.01
Lithuania	0.02	0.03	0.00	0.05	0.04	0.01	0.02	0.01	0.02	0.06	0.00	0.04	0.03	0.35	0.86	0.02
Malta	0.04	0.04	0.00	0.01	0.03	0.01	0.01	0.00	0.00	0.02	0.00	0.02	0.01	0.01	0.01	0.03
Poland	0.23	0.53	0.13	0.70	1.06	0.31	0.11	0.27	0.15	0.22	0.23	0.75	1.93	1.31	1.17	1.58
Sweden	0.57	1.73	0.13	1.75	0.71	0.44	0.74	0.64	0.62	5.13	1.08	1.06	0.93	7.15	6.97	0.90
Slovenia	0.09	0.07	0.03	0.08	0.27	0.20	0.02	0.02	0.03	0.03	0.06	0.06	0.34	0.17	0.07	0.44
Slovakia	0.08	0.15	0.15	0.16	0.33	0.18	0.02	0.03	0.04	0.07	0.09	0.10	3.19	0.10	0.07	1.16
United Kingdom	3.27	7.61	1.32	8.20	2.90	1.96	26.46	3.14	3.11	2.65	3.23	6.14	2.91	6.14	1.60	2.45
Australia	0.02	0.09	0.00	0.13	0.04	0.03	0.12	0.02	0.04	0.02	0.12	0.09	0.01	0.08	0.00	0.01
Canada	0.13	0.47	0.33	0.36	0.12	0.07	0.33	0.05	0.08	0.16	0.23	0.12	0.08	0.53	0.04	0.08
Japan	1.04	3.05	1.26	6.35	1.89	0.94	2.79	1.35	1.02	1.68	2.15	6.91	0.51	1.46	0.79	2.17
Norway	0.13	0.19	0.16	0.41	0.21	0.08	0.39	0.21	0.13	0.61	0.30	0.61	0.07	1.80	0.58	0.07
Switzerland	1.11	0.92	0.82	1.30	1.88	1.09	0.61	0.87	0.78	0.67	1.23	0.80	1.04	1.29	0.32	1.18
U.S.A.	2.72	6.66	3.43	8.74	2.64	1.38	10.50	1.33	1.47	1.80	2.23	2.02	1.22	2.57	0.67	1.40
South Korea	0.26	0.54	0.04	1.31	0.49	0.34	0.92	0.53	0.49	0.69	2.74	4.83	0.17	0.78	0.25	0.56
Hong Kong	0.05	0.04	0.00	0.29	0.11	0.02	0.08	0.01	0.04	0.11	0.04	0.04	0.00	0.23	0.01	0.04
Singapore	0.30	0.43	0.05	2.07	0.41	0.07	2.44	0.05	0.13	0.38	0.08	0.60	0.05	0.21	0.15	0.49
New Zealand	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.03	0.02	0.00
Algeria	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Argentina	0.02	0.04	0.00	0.07	0.02	0.03	0.00	0.03	0.05	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Brazil	0.10	0.40	0.25	0.40	0.11	0.19	0.20	0.34	0.11	0.03	0.15	0.06	0.02	0.07	0.04	0.12
Bulgaria	0.03	0.15	0.01	0.04	0.04	0.10	0.01	0.02	0.03	0.01	0.67	0.19	0.03	0.04	0.02	0.06
China	0.52	1.33	0.23	3.17	0.93	0.58	0.60	0.39	0.64	1.01	1.21	2.30	0.84	1.54	2.01	2.45
Croatia	0.02	0.02	0.00	0.02	0.07	0.13	0.05	0.01	0.01	0.00	0.11	0.59	0.05	0.02	0.01	0.08
India	0.13	0.83	0.03	0.33	0.18	0.19	0.14	0.20	0.17	0.08	0.16	0.52	0.08	0.33	0.07	0.11
Indonesia	0.09	0.44	0.01	0.50	0.12	0.09	0.08	0.06	0.12	0.09	0.19	0.32	0.03	0.22	0.01	0.09
Israel	0.10	0.97	0.02	0.36	0.14	0.13	0.44	0.10	0.14	0.07	0.34	3.97	0.09	0.12	0.07	0.19
Malaysia	0.12	0.47	0.02	1.91	0.22	0.07	0.85	0.06	0.09	0.18	0.15	0.17	0.14	0.20	0.11	0.36
Mexico	0.05	0.12	0.05	0.22	0.18	0.03	0.20	0.08	0.07	0.01	0.01	0.03	0.02	0.05	0.01	0.30
Morocco	0.32	0.09	0.00	0.04	0.03	0.04	0.04	0.05	0.17	0.00	0.01	0.01	0.00	0.01	0.00	0.00
Philippines	0.04	0.08	0.00	1.50	0.14	0.02	0.25	0.02	0.02	0.03	0.02	0.02	0.01	0.04	0.00	0.22
Romania	0.11	0.11	0.00	0.15	0.17	0.41	0.06	0.03	0.04	0.00	0.51	0.29	0.04	0.05	0.01	0.76
Russian Federation	0.04	0.19	0.09	1.17	0.19	0.11	0.11	0.04	0.04	1.94	0.67	1.76	0.47	0.20	6.99	1.07
South Africa	0.05	0.39	0.01	0.26	0.15	0.09	0.08	0.03	0.07	0.01	0.09	0.06	0.02	0.03	0.00	0.01
Taiwan	0.34	0.41	0.20	1.61	0.58	0.25	1.42	0.15	0.28	0.36	0.38	0.81	0.51	0.68	0.52	1.12
Thailand	0.11	0.68	0.04	0.92	0.13	0.11	0.34	0.18	0.14	0.14	0.30	0.82	0.06	0.34	0.03	0.36
Turkey	0.24	0.33	0.00	0.37	0.52	0.27	0.26	0.33	0.21	0.07	0.86	3.08	0.16	0.42	0.16	0.36
Iceland	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01	0.06	0.00
Ukraine	0.01	0.04	0.00	0.04	0.06	0.08	0.01	0.01	0.03	0.04	0.14	1.43	0.13	0.05	0.67	0.60
Serbia and Montenegro	0.00	0.00	0.00	0.01	0.02	0.03	0.00	0.00	0.00	0.00	0.13	0.37	0.03	0.00	0.01	0.10
Bosnia and Herzegovina	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Belarus	0.01	0.01	0.02	0.03	0.02	0.01	0.00	0.00	0.00	0.02	0.01	0.03	0.06	0.04	0.21	0.06
Iran	0.01	0.02	0.00	0.01	0.03	0.02	0.00	0.01	0.01	0.00	0.05	0.02	0.00	0.02	0.00	0.00
United Arab Emirates	0.00	0.01	0.00	0.03	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Saudi Arabia	0.01	0.07	0.00	0.09	0.01	0.03	0.01	0.02	0.04	0.00	0.03	0.13	0.00	0.00	0.00	0.00
Egypt	0.01	0.02	0.00	0.04	0.01	0.06	0.01	0.02	0.03	0.00	0.13	0.07	0.01	0.01	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	4.77	1.64	0.20	2.35	33.95	6.77	0.30	0.50	2.88	0.60	0.46	0.04	2.74	0.81	0.05	5.06

Source: OeNB/WIFO.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
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Table 3

**Competition Matrix for the National Exchange Rate Index for Manufactured Goods – Part 2**

Market share in %

Competition markets	Target markets															
	Latvia	Lithuania	Malta	Poland	Sweden	Slovenia	Slovakia	United Kingdom	Australia	Canada	Japan	Norway	Switzerland	U.S.A.	South Korea	Hong Kong
France	2.37	2.75	13.83	3.18	3.38	10.25	2.96	4.36	0.84	0.68	0.18	1.83	7.16	0.58	0.51	1.65
Belgium	1.29	1.76	1.31	1.54	2.01	1.52	1.51	2.92	0.49	0.19	0.08	1.06	2.15	0.24	0.11	0.90
Luxembourg	0.07	0.11	0.02	0.09	0.07	0.20	0.03	0.11	0.01	0.01	0.00	0.04	0.11	0.01	0.00	0.01
Netherlands	2.03	1.65	1.51	1.81	2.43	2.44	1.58	2.51	0.34	0.16	0.07	2.30	2.25	0.17	0.19	0.36
Germany	12.88	14.45	7.10	14.09	8.66	22.12	24.58	7.37	2.33	1.15	0.54	7.12	20.86	1.44	0.92	2.52
Italy	3.35	4.05	12.88	4.08	1.80	17.78	5.33	2.73	1.22	0.56	0.17	1.68	6.89	0.56	0.39	2.01
Ireland	0.34	0.23	0.25	0.30	0.87	0.37	0.27	2.49	0.38	0.10	0.12	0.83	1.84	0.32	0.15	0.31
Portugal	0.10	0.12	0.20	0.10	0.30	0.07	0.08	0.45	0.07	0.02	0.00	0.43	0.22	0.03	0.00	0.05
Spain	0.56	1.31	2.22	0.90	0.81	2.65	1.78	1.45	0.23	0.11	0.03	0.91	0.84	0.10	0.05	0.28
Finland	5.99	3.04	0.14	0.82	2.61	0.38	0.56	0.62	0.27	0.09	0.03	1.93	0.57	0.09	0.07	0.24
Greece	0.08	0.07	0.96	0.04	0.07	0.10	0.03	0.09	0.02	0.01	0.00	0.06	0.07	0.01	0.00	0.03
Cyprus	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Czech Republic	1.07	1.79	0.10	1.55	0.28	2.27	15.51	0.23	0.02	0.02	0.00	0.22	0.35	0.02	0.01	0.06
Denmark	2.17	3.16	0.36	0.79	3.30	0.43	0.30	0.50	0.17	0.07	0.03	4.09	0.45	0.05	0.05	0.10
Estonia	5.07	1.60	0.01	0.02	0.39	0.00	0.00	0.01	0.00	0.00	0.00	0.11	0.01	0.00	0.00	0.00
Hungary	0.45	0.45	0.08	0.52	0.19	1.50	1.91	0.21	0.02	0.01	0.00	0.06	0.27	0.04	0.00	0.02
Latvia	17.91	2.02	0.01	0.03	0.06	0.04	0.06	0.01	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00
Lithuania	4.12	29.35	0.00	0.09	0.10	0.01	0.02	0.03	0.00	0.00	0.00	0.07	0.01	0.00	0.00	0.00
Malta	0.00	0.00	9.86	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.09	0.01	0.00	0.01
Poland	3.54	8.83	0.85	59.86	0.57	1.01	2.20	0.22	0.01	0.04	0.00	0.54	0.20	0.02	0.01	0.02
Sweden	4.68	2.91	0.28	1.39	58.04	1.61	0.76	1.00	0.60	0.25	0.09	10.10	0.92	0.17	0.10	0.38
Slovenia	0.19	0.37	0.04	0.25	0.05	20.46	0.57	0.03	0.01	0.01	0.00	0.03	0.08	0.01	0.00	0.00
Slovakia	0.41	0.34	0.08	0.59	0.08	1.07	31.43	0.04	0.01	0.00	0.00	0.07	0.17	0.00	0.00	0.00
United Kingdom	2.15	2.84	6.52	2.02	4.27	2.28	1.76	55.69	2.24	0.95	0.23	4.56	3.95	0.87	0.31	2.53
Australia	0.00	0.00	0.03	0.01	0.03	0.01	0.01	0.12	65.21	0.04	0.08	0.03	0.05	0.07	0.25	0.69
Canada	0.13	0.10	0.16	0.08	0.10	0.15	0.04	0.44	0.37	49.63	0.07	0.23	0.17	4.09	0.14	0.39
Japan	0.20	0.23	5.49	0.42	1.41	0.75	0.24	2.40	5.88	2.05	91.53	1.81	1.67	3.31	6.21	16.34
Norway	0.47	0.46	2.32	0.19	1.73	0.06	0.10	0.32	0.05	0.03	0.02	53.45	0.13	0.03	0.07	0.05
Switzerland	1.02	0.58	0.75	0.78	0.80	1.67	1.05	0.80	0.47	0.21	0.16	0.57	39.16	0.26	0.14	1.59
U.S.A.	1.34	1.02	6.43	0.70	2.78	1.09	0.71	5.90	7.27	39.29	1.95	2.46	4.44	78.54	4.72	7.03
South Korea	0.25	0.29	5.74	0.73	0.40	0.75	0.12	0.82	1.45	0.59	0.62	0.86	0.25	0.84	79.92	6.12
Hong Kong	0.00	0.00	0.07	0.01	0.13	0.02	0.00	0.23	0.09	0.12	0.03	0.03	0.12	0.17	0.04	3.26
Singapore	0.06	0.03	10.05	0.05	0.07	0.05	0.03	0.62	1.75	0.13	0.39	0.08	0.38	0.55	1.04	5.43
New Zealand	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	1.07	0.02	0.03	0.01	0.01	0.02	0.04	0.07
Algeria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Argentina	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.03	0.03	0.01	0.01	0.02	0.03	0.00	0.03
Brazil	0.01	0.01	0.03	0.14	0.12	0.01	0.03	0.15	0.10	0.10	0.04	0.03	0.25	0.26	0.07	0.16
Bulgaria	0.06	0.06	0.03	0.02	0.02	0.04	0.05	0.02	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00
China	0.64	0.67	1.36	0.91	0.62	0.64	0.33	1.05	2.26	0.84	1.56	0.74	0.60	1.25	2.03	28.78
Croatia	0.04	0.03	1.88	0.02	0.02	2.69	0.06	0.01	0.00	0.00	0.00	0.08	0.02	0.00	0.00	0.00
India	0.08	0.11	0.46	0.07	0.12	0.14	0.06	0.33	0.26	0.16	0.04	0.09	0.35	0.20	0.09	1.78
Indonesia	0.02	0.04	0.05	0.06	0.06	0.04	0.03	0.22	0.54	0.09	0.21	0.06	0.07	0.16	0.19	0.78
Israel	0.26	0.08	0.43	0.13	0.09	0.51	0.08	0.21	0.18	0.08	0.04	0.07	0.36	0.28	0.09	0.89
Malaysia	0.15	0.03	1.64	0.05	0.15	0.07	0.07	0.49	1.16	0.19	0.40	0.08	0.14	0.47	0.42	2.67
Mexico	0.00	0.00	0.01	0.01	0.02	0.03	0.00	0.09	0.06	0.77	0.02	0.02	3.11	0.05	0.11	0.11
Morocco	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Philippines	0.00	0.00	0.01	0.01	0.04	0.02	0.03	0.24	0.17	0.08	0.21	0.02	0.04	0.26	0.24	1.21
Romania	0.02	0.02	0.47	0.11	0.06	0.16	0.16	0.09	0.00	0.01	0.00	0.10	0.04	0.01	0.00	0.01
Russian Federation	18.90	9.06	1.05	0.30	0.08	0.62	1.85	0.32	0.00	0.02	0.06	0.16	0.58	0.07	0.09	0.06
South Africa	0.00	0.03	0.02	0.01	0.06	0.03	0.01	0.30	0.28	0.04	0.04	0.01	0.22	0.05	0.11	0.18
Taiwan	0.17	0.34	0.62	0.46	0.38	0.64	0.63	0.74	1.15	0.80	0.56	0.59	0.46	0.83	0.84	8.76
Thailand	0.02	0.02	0.22	0.06	0.20	0.03	0.02	0.36	0.79	0.14	0.32	0.07	0.29	0.29	0.19	1.83
Turkey	0.28	0.38	1.57	0.22	0.14	0.44	0.12	0.33	0.05	0.04	0.00	0.11	0.16	0.07	0.02	0.08
Iceland	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.05	0.00	0.00	0.00
Ukraine	3.24	1.15	0.04	0.19	0.01	0.09	0.70	0.02	0.00	0.01	0.00	0.04	0.02	0.01	0.02	0.01
Serbia and Montenegro	0.02	0.00	0.01	0.01	0.00	0.31	0.05	0.00	0.00	0.00	0.00	0.01	0.07	0.00	0.00	0.00
Bosnia and Herzegovina	0.00	0.00	0.00	0.00	0.00	0.29	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Belarus	1.74	2.05	0.00	0.16	0.01	0.02	0.16	0.01	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01
Iran	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.03	0.00	0.00	0.00
United Arab Emirates	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.02	0.01
Saudi Arabia	0.00	0.00	0.35	0.00	0.01	0.00	0.00	0.09	0.06	0.01	0.01	0.01	0.06	0.01	0.04	0.17
Egypt	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.07	0.08	0.03	1.68	1.20	1.62	1.12	4.56	0.46	0.79	1.09	0.42	6.20	5.31	0.39	0.60

Source: OeNB/WIFO.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Table 3

Competition Matrix for the National Exchange Rate Index for Manufactured Goods – Part 3																
Market share in %																
Competition markets	Target markets															
	Singapore	New Zealand	Algeria	Argentina	Brazil	Bulgaria	China	Croatia	India	Indonesia	Israel	Malaysia	Mexico	Morocco	Philippines	Romania
France	1.53	1.04	22.02	1.36	0.88	4.65	0.33	3.16	0.55	0.42	3.01	0.55	0.51	18.57	0.67	3.93
Belgium	0.35	0.51	2.08	0.37	0.30	1.48	0.11	1.46	2.05	0.17	8.43	0.16	0.20	1.62	0.11	1.19
Luxembourg	0.01	0.03	0.04	0.01	0.01	0.05	0.01	0.05	0.01	0.00	0.06	0.00	0.01	0.08	0.01	0.03
Netherlands	0.68	0.38	0.76	0.24	0.19	1.83	0.07	1.41	0.22	0.22	1.76	0.19	0.14	1.39	0.20	1.47
Germany	3.19	2.10	4.34	1.66	2.04	11.89	0.94	12.75	1.25	1.33	6.15	1.33	1.98	4.31	1.21	11.60
Italy	1.25	1.03	7.71	1.54	1.01	8.55	0.28	12.86	0.56	0.43	4.16	0.59	0.71	5.19	0.37	12.46
Ireland	0.42	0.19	0.14	0.08	0.07	0.30	0.02	0.26	0.05	0.05	0.84	0.60	0.12	0.64	0.84	0.20
Portugal	0.06	0.06	0.20	0.06	0.04	0.20	0.00	0.03	0.01	0.00	0.20	0.01	0.02	0.62	0.01	0.06
Spain	0.36	0.26	4.08	1.17	0.51	1.31	0.05	0.84	0.12	0.21	1.85	0.08	0.60	8.08	0.13	0.53
Finland	0.21	0.32	0.08	0.14	0.14	0.66	0.14	0.30	0.14	0.11	0.30	0.09	0.08	0.37	0.48	0.16
Greece	0.01	0.01	0.15	0.01	0.00	5.50	0.00	0.11	0.01	0.01	0.24	0.00	0.00	0.19	0.00	1.30
Cyprus	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.02
Czech Republic	0.10	0.01	0.17	0.02	0.02	1.42	0.01	1.59	0.04	0.01	0.16	0.02	0.01	0.07	0.03	0.82
Denmark	0.19	0.18	0.21	0.08	0.07	0.56	0.03	0.44	0.07	0.04	0.27	0.04	0.03	0.16	0.05	0.22
Estonia	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hungary	0.17	0.01	0.05	0.01	0.02	0.93	0.01	1.11	0.01	0.01	0.15	0.03	0.03	0.05	0.04	2.19
Latvia	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lithuania	0.00	0.00	0.02	0.00	0.00	0.05	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Malta	0.28	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Poland	0.10	0.01	0.11	0.03	0.03	0.79	0.01	0.57	0.05	0.01	0.17	0.01	0.02	0.17	0.01	0.60
Sweden	0.43	0.55	0.26	0.34	0.31	0.73	0.18	0.92	0.19	0.24	0.77	0.33	0.27	1.00	0.19	0.72
Slovenia	0.00	0.01	0.12	0.01	0.01	0.44	0.00	6.80	0.01	0.00	0.04	0.00	0.00	0.01	0.00	0.25
Slovakia	0.01	0.00	0.03	0.02	0.00	0.47	0.00	0.57	0.03	0.01	0.03	0.00	0.01	0.03	0.01	0.47
United Kingdom	1.93	2.01	1.21	0.58	0.43	1.93	0.22	1.14	1.30	0.45	4.66	0.86	0.41	4.09	0.63	2.44
Australia	0.57	12.14	0.01	0.03	0.04	0.01	0.06	0.01	0.12	0.72	0.11	0.39	0.01	0.01	0.38	0.02
Canada	0.20	0.40	0.37	0.18	0.23	0.07	0.14	0.24	0.12	0.14	0.51	0.12	0.39	0.08	0.12	0.09
Japan	14.58	5.87	1.87	0.97	1.01	0.34	3.19	0.14	1.47	7.58	2.70	8.20	2.04	1.11	13.22	0.09
Norway	0.18	0.06	0.01	0.01	0.02	0.04	0.02	0.31	0.03	0.01	0.09	0.02	0.01	0.12	0.03	0.07
Switzerland	0.83	0.41	0.75	0.37	0.33	1.27	0.10	0.93	0.26	0.17	2.30	0.23	0.27	0.68	0.24	0.76
U.S.A.	13.31	7.79	5.15	5.86	5.67	0.89	1.49	0.97	1.98	1.69	14.61	6.10	34.65	2.16	10.19	1.08
South Korea	4.07	1.14	1.94	0.60	0.65	0.32	1.77	0.41	0.86	3.52	1.45	2.30	1.00	0.72	4.30	0.85
Hong Kong	0.43	0.08	0.00	0.03	0.01	0.02	0.76	0.00	0.09	0.10	0.04	0.19	0.04	0.04	0.39	0.00
Singapore	21.57	1.60	0.07	0.11	0.12	0.16	0.51	0.06	1.50	0.00	0.49	13.74	0.34	0.25	3.98	0.01
New Zealand	0.06	55.62	0.01	0.02	0.01	0.00	0.01	0.00	0.01	0.02	0.01	0.03	0.01	0.01	0.04	0.00
Algeria	0.00	0.00	36.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00
Argentina	0.02	0.03	0.08	74.44	1.43	0.00	0.02	0.00	0.02	0.01	0.01	0.04	0.13	0.06	0.02	0.00
Brazil	0.13	0.08	0.14	7.32	82.74	0.02	0.04	0.04	0.06	0.08	0.12	0.04	0.65	0.28	0.04	0.01
Bulgaria	0.00	0.00	0.04	0.00	0.00	40.88	0.00	0.03	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.26
China	4.31	1.80	1.52	0.85	0.47	0.97	85.81	0.92	0.73	2.49	1.82	1.48	0.56	1.64	1.91	0.91
Croatia	0.01	0.00	0.01	0.00	0.00	0.03	0.00	47.00	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.01
India	0.61	0.26	0.17	0.11	0.08	0.09	0.05	0.04	83.22	0.30	1.22	0.29	0.08	0.31	0.17	0.04
Indonesia	3.80	0.45	0.29	0.09	0.05	0.15	0.11	0.02	0.16	75.61	0.00	0.84	0.08	0.10	0.75	0.02
Israel	0.25	0.15	0.00	0.13	0.13	0.16	0.03	0.09	0.34	0.02	36.11	0.35	0.07	0.06	0.34	0.49
Malaysia	12.59	0.94	0.05	0.11	0.09	0.18	0.25	0.03	0.39	1.23	0.00	55.53	0.23	0.11	1.80	0.04
Mexico	0.28	0.07	0.01	0.38	0.21	0.00	0.02	0.00	0.01	0.01	0.03	0.03	53.03	0.01	0.02	0.00
Morocco	0.00	0.12	0.08	0.01	0.02	0.00	0.00	0.02	0.20	0.00	0.00	0.00	0.00	42.78	0.00	0.00
Philippines	2.31	0.06	0.01	0.02	0.01	0.02	0.07	0.01	0.04	0.14	0.12	0.90	0.09	0.02	52.93	0.00
Romania	0.01	0.00	0.15	0.01	0.00	0.99	0.00	0.10	0.02	0.00	0.12	0.01	0.01	0.06	0.01	51.65
Russian Federation	0.17	0.02	0.76	0.04	0.09	2.57	0.34	0.14	0.56	0.02	0.23	0.22	0.04	0.40	0.09	0.40
South Africa	0.15	0.14	0.28	0.09	0.07	0.04	0.02	0.01	0.17	0.07	0.99	0.07	0.05	0.08	0.03	0.03
Taiwan	3.99	1.17	0.17	0.35	0.29	0.40	2.46	0.41	0.29	1.08	1.12	2.46	0.83	0.45	2.39	0.35
Thailand	3.86	0.66	0.20	0.09	0.05	0.08	0.18	0.05	0.25	0.92	0.64	1.40	0.16	0.10	1.40	0.05
Turkey	0.11	0.03	3.67	0.03	0.01	3.56	0.01	0.24	0.03	0.02	1.62	0.01	0.02	0.53	0.01	1.33
Iceland	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Ukraine	0.06	0.00	1.32	0.01	0.02	2.66	0.06	0.24	0.09	0.09	0.15	0.01	0.02	0.31	0.12	0.48
Serbia and Montenegro	0.00	0.00	0.03	0.00	0.00	0.19	0.00	0.35	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.08
Bosnia and Herzegovina	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Belarus	0.00	0.00	0.16	0.00	0.03	0.12	0.02	0.14	0.03	0.01	0.00	0.01	0.00	0.07	0.00	0.10
Iran	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.02	0.00	0.00	0.00	0.01	0.00	0.02
United Arab Emirates	0.03	0.03	0.08	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.00	0.02	0.00	0.02	0.03	0.00
Saudi Arabia	0.20	0.13	0.16	0.01	0.00	0.00	0.04	0.02	0.17	0.15	0.00	0.05	0.00	0.52	0.07	0.01
Egypt	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.00	0.11	0.00	0.04
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.32	0.07	0.11	0.13	0.48	0.34	0.90	1.00	0.19	0.24	0.21	0.15	0.24	0.05	0.12	0.77

Source: OeNB/WIFO.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Table 3

**Competition Matrix for the National Exchange Rate Index for Manufactured Goods – Part 4**

Market share in %

Competition markets	Target markets															Double weighting
	Russian Federation	South Africa	Taiwan	Thailand	Turkey	Iceland	Ukraine	Serbia and Montenegro	Bosnia and Herzegovina	Belarus	Iran	United Arab Emirates	Saudi Arabia	Egypt	Rest of the world	
France	0.94	1.38	0.75	0.96	2.51	2.53	1.04	0.93	1.39	0.58	0.96	5.01	1.85	3.62	6.39	6.86
Belgium	0.43	0.79	0.18	0.73	1.17	1.44	0.78	0.38	0.65	0.47	0.31	1.47	0.77	1.10	1.70	2.70
Luxembourg	0.02	0.02	0.01	0.01	0.03	0.14	0.05	0.02	0.03	0.02	0.00	0.03	0.02	0.03	0.07	0.24
Netherlands	0.65	0.90	0.54	0.38	1.04	3.20	0.68	0.43	1.00	0.76	0.23	1.54	0.72	0.93	4.36	2.41
Germany	4.25	5.20	1.91	2.53	5.65	8.66	5.73	3.80	10.14	7.02	1.80	5.09	3.89	5.36	14.56	28.75
Italy	1.68	1.33	0.49	0.73	3.25	1.94	2.06	4.48	10.14	1.52	1.20	4.10	2.68	5.23	5.79	8.79
Ireland	0.09	0.54	0.11	0.12	0.27	1.14	0.10	0.04	0.14	0.03	0.01	0.37	0.32	0.24	0.63	0.94
Portugal	0.01	0.08	0.01	0.02	0.06	0.43	0.01	0.01	0.01	0.01	0.01	0.05	0.09	0.05	0.34	0.58
Spain	0.26	0.40	0.11	0.23	1.19	1.67	0.26	0.28	0.60	0.15	0.36	0.71	0.96	1.32	2.17	3.06
Finland	1.30	0.43	0.13	0.31	0.40	1.25	0.46	0.04	0.09	0.22	0.10	0.72	0.27	0.31	0.81	0.90
Greece	0.13	0.01	0.00	0.02	0.11	0.07	0.10	0.90	0.25	0.03	0.02	0.14	0.08	0.18	0.25	0.33
Cyprus	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.01
Czech Republic	0.28	0.02	0.01	0.03	0.11	0.33	0.64	0.58	1.71	0.64	0.07	0.31	0.06	0.23	0.63	2.16
Denmark	0.19	0.12	0.05	0.14	0.14	8.25	0.26	0.29	0.34	0.18	0.06	0.21	0.19	0.46	0.99	0.79
Estonia	0.11	0.00	0.00	0.00	0.01	0.04	0.21	0.01	0.00	0.15	0.00	0.00	0.00	0.00	0.03	0.06
Hungary	0.19	0.04	0.03	0.02	0.13	0.07	0.61	1.01	2.28	0.22	0.04	0.05	0.04	0.08	0.76	2.38
Latvia	0.05	0.00	0.00	0.00	0.00	0.07	0.13	0.00	0.01	0.27	0.01	0.00	0.00	0.01	0.01	0.03
Lithuania	0.17	0.00	0.00	0.00	0.05	0.05	0.31	0.01	0.00	1.06	0.00	0.00	0.00	0.00	0.02	0.06
Malta	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.03
Poland	0.44	0.02	0.02	0.05	0.10	2.73	2.91	0.21	0.66	2.30	0.04	0.08	0.05	0.21	0.41	1.70
Sweden	0.40	0.46	0.27	0.37	0.70	5.32	0.47	0.56	0.65	0.17	0.22	0.55	0.80	0.87	0.80	1.54
Slovenia	0.14	0.01	0.00	0.01	0.04	0.05	0.16	1.30	10.34	0.18	0.04	0.04	0.03	0.11	0.30	0.60
Slovakia	0.08	0.01	0.00	0.01	0.04	0.02	0.46	0.24	0.43	0.10	0.01	0.02	0.01	0.10	0.30	0.70
United Kingdom	0.67	2.68	0.55	1.05	1.84	7.32	1.07	0.45	0.84	0.55	0.66	5.00	3.24	2.47	7.47	5.35
Australia	0.00	0.29	0.40	0.74	0.02	0.02	0.00	0.01	0.00	0.00	0.02	0.42	1.10	0.04	0.92	0.38
Canada	0.07	0.12	0.19	0.19	0.06	0.36	0.05	0.03	0.05	0.01	0.04	0.21	0.31	0.29	0.59	0.76
Japan	0.41	2.48	13.44	18.31	0.91	2.29	0.20	0.16	0.29	0.04	0.90	6.47	6.13	2.78	7.19	3.16
Norway	0.05	0.04	0.02	0.02	0.06	3.57	0.05	0.07	0.11	0.01	0.02	0.17	0.09	0.11	0.32	0.42
Switzerland	0.25	0.49	0.41	0.67	0.71	0.52	0.33	0.65	0.64	0.18	0.35	1.10	1.02	0.93	1.65	3.59
U.S.A.	0.99	3.63	7.69	7.48	2.36	6.38	0.62	0.22	0.94	0.25	0.00	5.13	9.80	8.28	13.26	7.49
South Korea	0.49	0.73	3.06	2.78	0.85	0.92	0.63	0.13	0.10	0.08	1.44	4.43	2.37	1.93	4.67	1.01
Hong Kong	0.01	0.03	0.33	0.25	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.11	0.01	0.06	0.18	0.12
Singapore	0.07	0.49	3.00	7.80	0.13	0.02	0.05	0.01	0.00	0.00	0.12	2.29	0.48	0.45	1.56	0.56
New Zealand	0.00	0.03	0.03	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.01	0.10	0.06
Algeria	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.05
Argentina	0.00	0.05	0.01	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.02	0.06	0.74	0.14
Brazil	0.01	0.38	0.11	0.18	0.11	0.05	0.00	0.00	0.01	0.01	0.03	0.21	0.10	0.22	1.87	0.57
Bulgaria	0.08	0.00	0.00	0.00	0.17	0.00	0.68	0.64	0.26	0.07	0.01	0.01	0.00	0.07	0.09	0.19
China	1.36	1.36	2.00	2.79	0.69	0.68	0.64	0.56	0.04	0.22	0.97	4.99	2.05	2.73	4.59	2.04
Croatia	0.05	0.00	0.00	0.00	0.01	0.01	0.03	0.46	10.61	0.04	0.00	0.01	0.01	0.02	0.20	0.58
India	0.44	0.39	0.12	0.68	0.22	0.15	0.22	0.05	0.02	0.04	0.23	5.19	0.81	0.77	1.52	0.40
Indonesia	0.02	0.20	0.39	1.00	0.09	0.05	0.05	0.01	0.01	0.00	0.15	1.79	0.85	0.67	0.80	0.35
Israel	0.09	0.32	0.17	0.50	0.32	0.12	0.23	0.04	0.06	0.06	0.00	0.00	0.00	0.18	0.73	0.28
Malaysia	0.04	0.23	1.41	3.60	0.20	0.05	0.03	0.03	0.00	0.02	0.09	1.80	0.42	0.28	0.63	0.42
Mexico	0.00	0.02	0.06	0.10	0.01	0.02	0.00	0.00	0.00	0.00	0.02	0.05	0.03	0.02	1.37	0.43
Morocco	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.08	0.02	0.09	0.07
Philippines	0.00	0.04	1.24	1.74	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.15	0.03	0.01	0.12	0.22
Romania	0.02	0.00	0.01	0.04	0.32	0.01	0.14	0.74	0.30	0.03	0.03	0.09	0.03	0.34	0.18	0.57
Russian Federation	78.71	0.03	0.14	0.09	1.00	0.02	6.47	0.56	0.10	0.00	0.85	0.35	0.10	1.19	1.22	1.18
South Africa	0.01	72.91	0.17	0.21	0.05	0.03	0.00	0.02	0.01	0.00	0.03	0.28	0.13	0.07	1.56	0.46
Taiwan	0.06	0.75	59.36	3.37	0.35	0.58	0.06	0.03	0.00	0.26	0.16	1.38	0.51	0.44	1.14	0.89
Thailand	0.02	0.32	0.87	39.02	0.10	0.16	0.04	0.02	0.00	0.00	0.06	1.27	0.49	0.32	1.08	0.32
Turkey	0.40	0.09	0.02	0.03	71.57	0.11	0.87	0.64	1.01	0.13	0.30	0.71	0.53	1.29	1.13	0.86
Iceland	0.00	0.00	0.00	0.00	0.00	37.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
Ukraine	1.65	0.01	0.06	0.19	0.58	0.02	69.05	0.33	0.16	2.34	0.15	0.16	0.05	0.60	0.67	0.35
Serbia and Montenegro	0.04	0.00	0.00	0.00	0.01	0.00	0.07	78.14	7.19	0.05	0.00	0.00	0.00	0.03	0.07	0.24
Bosnia and Herzegovina	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.38	36.30	0.00	0.00	0.00	0.00	0.01	0.01	0.09
Belarus	2.17	0.01	0.01	0.01	0.03	0.05	0.81	0.09	0.01	79.52	0.03	0.03	0.00	0.05	0.09	0.10
Iran	0.01	0.03	0.02	0.08	0.07	0.00	0.15	0.00	0.01	0.00	87.69	0.42	0.11	0.04	0.25	0.32
United Arab Emirates	0.01	0.01	0.04	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.04	34.02	0.09	0.03	0.14	0.11
Saudi Arabia	0.00	0.08	0.04	0.23	0.07	0.00	0.00	0.00	0.00	0.00	0.09	1.08	56.00	1.05	0.29	0.15
Egypt	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.05	0.14	51.65	0.09	0.11
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	1.02	0.43	0.36	0.18	0.68	0.03	0.31	0.25	0.19	0.06	0.34	0.29	0.21	0.19	1.43	100.00

Source: OeNB/WIFO.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Table 4

**Competition Matrix for the National Exchange Rate Index for Travel and Tourism – Part 1**

Market share in %

Competition markets	Target markets															
	France	Belgium	Luxembourg	Netherlands	Germany	Italy	Ireland	Portugal	Spain	Finland	Greece	Cyprus	Czech Republic	Denmark	Hungary	Poland
France	74.88	19.84	28.09	6.19	3.23	6.01	4.82	5.84	9.00	1.42	1.48	5.25	0.76	3.36	0.87	0.38
Belgium	2.55	24.32	20.11	4.99	0.58	0.34	0.72	0.88	0.97	0.97	0.45	2.30	0.39	0.67	0.39	0.06
Luxembourg	0.42	1.60	8.61	1.41	0.09	0.04	0.13	0.14	0.05	0.05	0.04	0.10	0.08	0.09	0.17	0.01
Netherlands	0.51	8.07	1.81	54.15	1.91	0.39	0.89	0.43	0.74	0.41	0.22	1.34	0.12	1.50	0.10	0.03
Germany	2.34	5.66	11.43	9.13	62.09	2.62	2.27	4.33	3.75	13.41	2.21	0.00	5.47	13.98	1.87	2.42
Italy	3.79	3.86	1.86	3.57	5.64	71.58	4.78	2.69	5.63	2.05	11.48	3.09	3.83	3.01	5.70	1.00
Ireland	0.19	0.28	0.29	0.33	0.33	0.31	21.78	0.14	0.20	0.43	0.04	0.00	0.07	0.25	0.00	0.00
Portugal	1.28	0.79	1.18	0.80	0.66	0.32	2.76	50.38	5.72	1.07	0.12	0.41	0.07	0.92	0.17	0.05
Spain	3.67	9.59	6.61	5.48	7.01	3.02	17.52	21.76	56.26	6.54	0.82	0.00	3.21	6.47	1.61	0.63
Finland	0.05	0.16	0.07	0.17	0.10	0.10	0.19	0.15	0.22	51.83	0.17	0.02	0.19	0.41	0.34	0.05
Greece	0.24	5.51	0.56	0.50	1.35	0.73	0.11	0.20	0.29	0.24	34.68	41.04	0.18	0.69	0.15	0.02
Cyprus	0.02	0.41	0.28	0.12	0.22	0.05	1.27	0.01	0.01	0.46	0.50	11.86	0.05	0.50	0.38	0.08
Czech Republic	0.08	0.22	0.15	0.32	0.91	0.36	0.14	0.12	0.48	0.39	0.15	0.40	70.15	0.99	0.96	0.78
Denmark	0.02	0.04	0.06	0.17	1.64	0.07	0.07	0.09	0.10	0.37	0.14	0.36	0.02	45.77	0.02	0.02
Hungary	0.05	0.12	0.05	0.10	0.72	0.38	0.00	0.05	0.11	0.40	0.04	0.00	0.18	0.33	67.80	0.14
Poland	0.07	0.07	0.06	0.07	0.81	0.30	0.05	0.09	0.03	0.24	0.01	0.03	3.93	0.45	0.18	89.12
Sweden	0.15	0.31	0.27	0.32	0.44	0.20	0.27	0.42	0.91	8.31	1.10	5.13	0.11	5.98	0.19	0.10
Slovenia	0.01	0.05	0.01	0.01	0.13	0.37	0.08	0.00	0.01	0.03	0.01	0.16	0.37	0.03	0.54	0.02
Slovakia	0.01	0.02	0.00	0.01	0.09	0.04	0.01	0.01	0.01	0.02	0.01	0.05	2.98	0.03	0.11	0.04
United Kingdom	1.68	3.35	2.76	2.62	1.92	2.15	26.57	3.23	4.64	2.16	6.31	14.50	2.11	3.67	3.70	0.69
Australia	0.15	0.23	0.31	0.09	0.36	0.43	4.03	0.40	0.20	0.52	1.04	1.23	0.09	1.04	0.41	0.06
Canada	0.38	0.54	0.61	1.09	0.31	0.40	0.94	1.61	0.58	0.30	0.88	0.09	0.11	0.44	4.09	0.59
Japan	0.18	0.39	0.53	0.05	0.19	0.41	0.56	0.23	0.08	0.27	0.58	0.00	0.06	0.14	0.03	0.00
Switzerland	1.38	2.20	2.24	1.53	2.64	2.35	0.29	0.75	0.90	0.74	1.38	0.00	0.40	0.71	0.46	0.06
U.S.A.	5.22	8.56	9.14	6.11	2.93	5.04	9.32	5.30	8.72	2.34	35.94	10.17	2.04	3.51	7.59	1.54
Croatia	0.01	0.05	0.03	0.07	0.53	0.40	0.03	0.02	0.01	0.01	0.01	0.00	2.45	0.06	1.72	0.23
Russian Federation	0.07	0.04	0.03	0.04	0.15	0.27	0.09	0.03	0.08	3.50	0.02	0.31	0.13	0.14	0.25	1.79
Thailand	0.16	0.33	0.20	0.07	0.33	0.31	0.00	0.18	0.06	0.90	0.03	0.00	0.02	2.48	0.00	0.00
Turkey	0.24	1.60	1.17	0.42	2.10	0.30	0.18	0.34	0.06	0.49	0.07	0.22	0.32	1.49	0.05	0.03
Egypt	0.21	1.79	1.48	0.06	0.60	0.71	0.13	0.17	0.19	0.13	0.09	1.92	0.09	0.86	0.15	0.04
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	1.77	1.96	0.17	5.54	54.25	6.02	0.14	0.13	0.77	0.17	0.20	0.14	0.49	0.75	0.38	0.34

Source: OeNB/WIFO.

REVISED AND NEW COMPETITIVENESS INDICATORS FOR AUSTRIA  
REFLECT IMPROVEMENT TREND SINCE EMU ACCESSION

Table 4

**Competition Matrix for the National Exchange Rate Index for Travel and Tourism – Part 2**

Market share in %

Competition markets	Target markets															Double weight-ing
	Sweden	Slovenia	Slovakia	United Kingdom	Australia	Canada	Japan	Switzerland	U.S.A.	Croatia	Russian Federation	Thailand	Turkey	Egypt	Rest of the world	
France	2.19	0.68	0.46	6.02	0.49	0.95	2.71	16.41	1.01	0.87	2.63	2.38	3.64	8.60	4.28	6.13
Belgium	1.82	0.12	0.10	0.99	0.02	0.05	0.15	0.91	0.16	0.07	0.10	0.06	0.21	0.34	0.45	1.36
Luxembourg	0.05	0.00	0.00	0.07	0.00	0.01	0.09	0.11	0.04	0.00	0.02	0.04	0.03	0.09	0.41	0.21
Netherlands	0.48	0.05	0.38	1.24	0.10	0.42	0.33	1.31	0.22	0.00	0.20	0.30	0.25	0.09	0.54	4.47
Germany	3.60	0.00	1.38	1.50	0.36	0.48	2.36	10.93	0.40	1.91	4.72	0.00	2.60	3.11	2.39	35.74
Italy	1.64	49.65	3.10	2.99	1.09	1.14	5.04	9.62	0.59	39.19	12.05	2.99	3.03	8.01	4.39	9.40
Ireland	0.22	0.00	0.00	1.39	0.33	0.19	0.05	0.18	0.11	0.00	0.00	0.00	0.00	0.00	0.22	0.39
Portugal	0.64	0.11	0.06	1.54	0.10	0.69	0.15	0.75	0.05	0.02	0.12	0.04	0.11	0.06	0.51	0.77
Spain	5.95	0.00	3.37	11.05	0.37	0.28	0.41	9.11	0.38	0.00	4.48	0.00	0.42	0.00	2.55	6.70
Finland	2.37	0.02	0.02	0.13	0.01	0.03	0.18	0.17	0.02	0.01	9.06	0.03	0.01	0.01	0.20	0.23
Greece	0.44	0.03	1.07	1.51	0.28	0.30	0.95	1.35	0.54	0.00	0.22	0.00	0.16	0.52	1.51	1.33
Cyprus	1.43	0.16	0.25	1.38	0.03	0.02	0.00	0.43	0.00	0.00	1.93	0.00	0.00	0.40	0.10	0.31
Czech Republic	0.30	0.77	14.04	0.20	0.04	0.04	0.12	0.15	0.02	1.32	3.13	0.01	0.27	0.03	0.76	0.99
Denmark	9.15	0.01	0.00	0.15	0.03	0.01	0.05	0.11	0.03	0.00	0.02	0.14	0.02	0.12	0.36	1.35
Hungary	0.11	2.45	0.17	0.11	0.01	0.02	0.05	0.09	0.01	0.57	0.34	0.00	0.10	0.00	2.19	0.76
Poland	1.08	0.24	0.35	0.14	0.01	0.01	0.02	0.03	0.01	0.06	0.36	0.01	0.02	0.01	2.86	0.86
Sweden	56.54	0.00	0.06	0.43	0.04	0.05	0.12	0.64	0.07	0.00	0.16	0.27	0.12	0.00	1.49	0.90
Slovenia	0.04	9.30	0.43	0.02	0.01	0.00	0.00	0.07	0.00	22.14	0.12	0.00	0.03	0.00	0.36	0.23
Slovakia	0.01	0.04	55.46	0.01	0.01	0.01	0.00	0.07	0.03	0.05	0.03	0.00	0.00	0.01	0.20	0.18
United Kingdom	2.96	2.65	3.12	56.12	3.29	2.20	2.08	2.72	0.78	2.46	5.89	13.25	7.29	12.09	5.55	6.10
Australia	0.07	0.41	0.20	1.48	83.09	1.12	4.19	0.70	0.26	0.50	0.25	18.70	0.24	0.48	3.22	0.75
Canada	0.69	0.18	0.39	1.08	0.65	67.48	3.04	0.56	1.01	0.00	1.33	4.47	0.96	0.00	1.60	1.05
Japan	0.10	0.04	0.05	0.24	0.43	0.58	44.87	0.07	0.11	0.01	0.52	7.19	0.06	0.09	1.54	0.61
Switzerland	1.00	0.47	0.61	0.71	0.06	0.23	1.79	33.52	0.07	0.29	0.56	0.71	0.32	0.39	0.36	4.18
U.S.A.	5.41	3.11	14.22	7.89	8.61	23.42	27.42	9.27	94.00	3.30	5.72	27.75	8.97	11.49	48.70	11.78
Croatia	0.03	28.24	0.57	0.03	0.00	0.00	0.00	0.03	0.00	27.03	0.18	0.00	0.01	0.00	1.62	0.63
Russian Federation	0.42	0.36	0.03	0.11	0.03	0.04	0.12	0.10	0.02	0.17	43.30	0.16	1.39	0.23	2.23	0.27
Thailand	0.71	0.13	0.00	0.48	0.46	0.16	3.58	0.36	0.04	0.00	0.42	21.46	0.00	0.12	4.17	0.40
Turkey	0.44	0.58	0.11	0.73	0.02	0.01	0.06	0.05	0.01	0.00	1.19	0.00	69.62	0.12	3.19	1.43
Egypt	0.12	0.20	0.02	0.27	0.05	0.04	0.05	0.17	0.01	0.03	0.96	0.04	0.11	53.60	2.09	0.51
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.77	0.70	0.18	7.25	0.25	0.73	0.89	6.96	6.90	0.23	0.22	0.02	0.12	0.01	1.55	100.00

Source: OeNB/WIFO.