

# Despite Increase in Unit Labour Costs, Improvement of Austrian Unit Labour Cost Position in 2019

Werner Hölzl, Thomas Leoni

- The paper examines the development of wage-related competitiveness on the basis of unit labour cost developments in manufacturing and in the Austrian economy as a whole, relative to its main trading partners.
- Relative unit labour cost developments are a composite measure of changes in labour costs, productivity and the exchange rate.
- Austria's nominal effective exchange rate declined by 0.5 percent in 2019, which corresponds to a slight depreciation.
- Due to the slowdown in the business cycle, the unit labour costs of Austrian manufacturing rose by 3.8 percent in 2019.
- Despite this increase, the Austrian unit labour cost position relative to the weighted average of trading partners improved by 0.7 percent. Compared with Germany, unit labour costs in Austria fell by 2.5 percent.

## Development of relative labour costs and unit labour costs in manufacturing

In €, 2015 = 100



In recent years, Austria's unit labour cost position vis-à-vis its trading partners has improved, mainly due to relatively stronger productivity growth (Source: Eurostat, AMECO, national statistical offices, WIFO calculations; excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan).

"Austrian unit labour costs relative to the average of all trading partners have fallen by about 4 percent since 2014 and relative to Germany by slightly more than 7 percent since 2011. However, these shifts must be put into perspective in the context of earlier fluctuations. Especially the unit labour cost position vis-à-vis Germany has been remarkably stable for decades."

# Despite Increase in Unit Labour Costs, Improvement of Austrian Unit Labour Cost Position 2019

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## Despite Increase in Unit Labour Costs, Improvement of Austrian Unit Labour Cost Position 2019

Despite sluggish growth in Austrian foreign trade and in manufacturing, the Austrian unit labour cost position in the manufacturing sector improved, compared to the weighted average of the trading partners. This development was partly determined by the unit labour cost dynamics in Germany, where productivity declined significantly in 2019. The exchange rate development of the euro contributed to the improvement of the Austrian unit labour cost position, compared to the average of the non-euro trading partners.

**JEL-Codes:** F16, F31, J3, L6 • **Keywords:** Unit labour costs, price competitiveness, manufacturing

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**Cut-off date:** 29 September 2020

ISSN 1605-4709 • © Austrian Institute of Economic Research 2020

Impressum: Herausgeber: Christoph Badelt • Chefredakteur: Andreas Reinstaller ([andreas.reinstaller@wifo.ac.at](mailto:andreas.reinstaller@wifo.ac.at)) •

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<https://bulletin.wifo.ac.at> • Verlags- und Herstellungsort: Wien

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## 1. Relative unit labour costs as a measure of price competitiveness

The interaction of production costs, productivity and exchange rates plays an important role in the international competitiveness of economies. The relative development of unit labour costs is a composite measure that allows the effects of changes in labour costs, productivity and exchange rates on cost-determined competitiveness to be presented in one indicator. This is done by comparing unit labour cost developments (i.e. labour costs per unit produced) with developments in other countries and adjusting for exchange rate changes.

However, unit labour costs are only a partial measure of the international competitiveness of a sector or even an entire economy, as they only reflect the price- or, more precisely, wage-related dimension of competitiveness. Some econometric studies show that the change in relative unit labour costs in the medium term contributes significantly to explaining trade flows and shifts in market shares between trading partners (e.g. *Carlin – Glyn – van Reenen, 2001, Köhler-Töglhofer – Url – Glauningner, 2017*). Other studies, however, stress the role of other factors, such as technology and organisational structures, in the development of exports and market

shares, while attributing only limited explanatory power to changes in unit labour costs (*Dosi – Grazzi – Moschella, 2015*).

This paper examines the development of wage-related competitiveness on the basis of the development of unit labour costs in the manufacturing and in the overall economy in Austria and its main trading partners. This annual update of the analysis covers the period from 1995 to 2019, the latest year for which national accounts data are available. The choice of countries included in the comparison is limited by the availability of longer time series on unit labour costs or their individual components. The analysis is therefore limited to the EU member countries (except Cyprus and Malta), Norway, the USA, Japan and Canada. These 29 countries together cover almost 79 percent of Austrian imports and exports.

With the national accounts for 2019, published in September 2020, the data for the years 2016, 2017 and 2018 were also revised. Although this revision led to a correction of some figures, the assessment of unit labour cost developments in the period under review hardly changed.

Unit labour costs are a partial measure of international competitiveness.

## 2. Nominal effective exchange rate down by 0.5 percent in 2019

The relative unit labour cost position of an economy reflects the real external value of the national currency in international competition and corresponds to a real effective exchange rate of that currency. The starting point for any consideration of price competitiveness is the nominal effective exchange rate, i.e. a comparison of the value of the national currency with a basket of currencies which, using a weighting scheme, reflects the relevance of each trading partner (see box "Calculation method and data basis for unit labour cost comparisons"). The nominal effective exchange rate is deflated with unit labour costs to determine the unit labour cost position of domestic production of tangible goods. Since the introduction of the common currency, exchange rate changes have become less important for Austria's export industry, as its main trading partners also belong to the euro area. In the weighting scheme of the effective exchange rate used here, slightly more than 70 percent are accounted by the countries of the euro area. Nevertheless, the development of the nominal effective exchange rate remains a relevant determinant of price competitiveness.

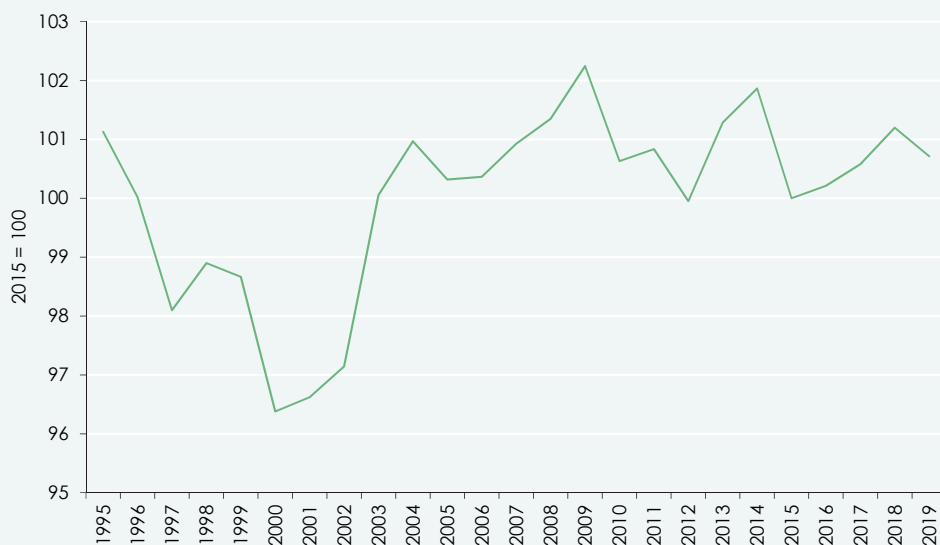
In 2019, from an Austrian perspective, a slight depreciation of the nominal effective exchange rate was recorded (-0.5 percent)<sup>1</sup>. This decline was the result of a

combination of appreciation and depreciation of the euro against the national currencies of the various trading partners. The euro appreciated against most other national currencies in the EU, most notably against the Swedish krona (+3.1 percent), the Hungarian forint and the Romanian leu (both up by almost +2 percent). However, these upward developments were more than offset by depreciation against currencies outside the EU. This concerned in particular the Japanese yen (-6.8 percent), the dollar (-5.5 percent), the Canadian dollar (-3 percent) and, to a lesser extent, the pound sterling (-0.9 percent).

Despite annual fluctuations, the nominal effective exchange rate has been broadly stable in the recent past (Figure 1). Larger shifts occurred in the second half of the 1990s, when the nominal effective exchange rate fell significantly. At the beginning of the 2000s and until 2009, an opposite trend could be observed: the euro appreciated noticeably against the dollar, but also against the currencies of other relevant trading partners, which made Austrian exports to these countries more expensive. Since 2010 the nominal effective exchange rate has been moving within a relatively narrow fluctuation band without a clear trend becoming apparent<sup>2</sup>.

Despite annual fluctuations, the nominal effective exchange rate has been broadly stable in the recent past.

Figure 1: Development of the nominal effective exchange rate index for industrial goods



Source: WIFO calculations. Weighted average of the group of countries according to the calculation of unit labour costs.

<sup>1</sup> A decline in the nominal effective exchange rate corresponds to a depreciation of the reference currency, while an increase corresponds to an appreciation.

<sup>2</sup> The fluctuation margin would naturally be somewhat wider if a larger number of non-euro countries could be included in the analysis.

## Calculation method and data basis for unit labour cost comparison

Unit labour costs in national currency (*ULC*) of an industry, a sector or the economy as a whole are defined by the ratio of the nominal wage bill (*NWT*) to real gross value added (*GVA*):

$$ULC = \frac{NWT}{GVA} .$$

Dividing both the wage bill and gross value added by a measure of labour input gives the two components of unit labour costs: labour costs per work unit and labour productivity.

A change in the share of self-employed in the employed population can be taken into account by presenting unit labour costs as the quotient of labour costs per employee (*EM*) and gross value added measured in terms of persons employed (*PE*):

$$ULC = \frac{\frac{NWT}{EM}}{\frac{GVA}{PE}} .$$

WIFO calculates unit labour costs using these formula and with data determined according to the survey concept of national accounts. For the determination of unit labour costs in Austrian manufacturing, the number of jobs or employment relationships is used instead of the concept of persons (employees and workers).

For international comparisons, unit labour costs must be expressed in a common currency because exchange rate shifts affect a country's cost position in the same way as unit labour cost developments. The relative unit labour cost position of a country is thus the quotient of the unit labour costs of both countries, measured in a single currency. For a comparison with several countries, a weighting scheme must be used, since the individual markets usually have different importance in foreign trade. Irrespective of the methodological approach, such a weighting scheme is based on data from foreign trade statistics and thus reflects the foreign trade integration of an economy.

Our calculations rely on a harmonised method which is also used by the central banks of the euro area to measure international competitiveness. The weighting scheme consists of single (bilateral) import weights and double (multilateral) export weights for industrial goods (SITC 5 to 8). In 2013, a recalculation of the weighting as well as a new chaining of the weighted country data was introduced (for details on the method see Mooslechner, 1995, Köhler-Töglhofer – Magerl, 2013, Köhler-Töglhofer – Url – Glauning, 2017). The double export weighting takes into account competition with trading partners on domestic markets as well as competition on all other export markets. The weights are determined and applied for specific periods of time. The most recent recalculation is based on three-year averages for the periods 1995-1997, 1998-2000, 2001-2003, 2004-2006, 2007-2009 and 2010-2012, with the most recent weightings applied for the period since 2010. Due to this variable weighting scheme, shifts in market shares are included in the calculation. The recalculation is designed to ensure that the country-specific trade patterns are as accurate as possible.

Data on gross wages, productivity and unit labour costs in manufacturing and in the economy as a whole were mainly generated on the basis of Eurostat data. Only when the Eurostat database did not contain up-to-date values, figures from the AMECO database and national statistics of the respective countries were used (this concerns the USA, Canada, Japan and Romania).

### Country selection

The "EU trading partners" aggregate includes the following countries: EU 28 excluding Austria, Malta and Cyprus. The term "All trading partners" includes the aggregate "EU trading partners" including Norway, the USA, Canada and Japan, which account for more than three quarters of all Austrian exports and imports of goods.

## 3. Dynamic labour cost development, weak productivity development

The development of labour costs in manufacturing is assessed on the basis of gross wages per employee in national currency (Table 1). This national accounts figure records the total wages and salaries including employers' social security contributions per capita.

In nominal terms, gross remuneration per capita in Austrian manufacturing rose by 3.2 percent in 2019 according to national accounts. Thus, labour costs in Austria rose at about the same rate as in the previous year (+3.3 percent). The rise was stronger in both 2018 and 2019 than the average of all trading partners and the EU trading partners. In the longer term, however, labour costs in Austria have been developing similarly to the weighted average of the trading partners. Over the past ten years, they rose by

2.7 percent p.a. in Austria, by 2.8 percent per year on average of all trading partners and by 2.9 percent per year on average of the EU trading partners.

As the analysis in the common currency, i.e. after taking exchange rate fluctuations into account, shows, labour costs in Austria increased relative to the countries of comparison, especially in the crisis year 2009 and then again in 2011 to 2014 (Figure 2). In 2015, relative labour costs in Austria fell again, followed by slight fluctuations in the last four years. Overall, the opposing developments over the years largely offset each other, this also applies to the longer period back to the late 1990s. After taking exchange rate changes into account, labour costs in Austria relative to its trading partners in 2019 were about the same as in 1999.

**In the longer term, labour costs in Austria have been developing similarly to the average of its trading partners.**

Table 1: **Development of labour costs per capita (persons employed) in manufacturing**

In national currency

	Ø 2009-2014	Ø 2014-2019	Ø 2009-2019	2017	2018	2019
	Percentage changes p. a.			Percentage changes from previous year		
Austria	+ 3.0	+ 2.4	+ 2.7	+ 1.3	+ 3.3	+ 3.2
Belgium	+ 3.4	+ 1.5	+ 2.4	+ 3.2	+ 1.1	+ 2.1
Denmark	+ 2.8	+ 1.8	+ 2.3	+ 1.9	+ 1.6	+ 1.0
Germany	+ 3.2	+ 2.2	+ 2.7	+ 1.9	+ 2.1	+ 2.2
Ireland	+ 3.6	+ 3.3	+ 3.5	+ 2.1	+ 7.1	+ 5.1
Greece	- 2.9	+ 0.4	- 1.3	+ 0.6	+ 1.7	+ 1.8
Spain	+ 1.5	+ 0.5	+ 1.0	+ 1.2	+ 1.0	+ 1.1
France	+ 2.7	+ 1.2	+ 2.0	+ 2.3	+ 1.7	- 1.8
Italy	+ 2.6	+ 1.7	+ 2.1	+ 1.8	+ 1.4	+ 1.3
Luxembourg	+ 1.3	+ 1.3	+ 1.3	+ 3.5	+ 1.0	+ 0.3
Netherlands	+ 1.9	+ 1.7	+ 1.8	+ 1.9	+ 1.9	+ 2.8
Portugal	+ 1.4	+ 2.3	+ 1.8	+ 2.8	+ 3.5	+ 3.3
Finland	+ 1.9	+ 1.1	+ 1.5	- 1.2	+ 1.0	+ 1.8
Sweden	+ 2.5	+ 2.9	+ 2.7	+ 1.7	+ 2.4	+ 3.5
UK	+ 3.6	+ 1.8	+ 2.7	- 0.1	+ 3.6	+ 4.7
Bulgaria	+ 8.2	+ 9.6	+ 8.9	+11.1	+ 9.0	+11.4
Czech Republic	+ 2.8	+ 5.5	+ 4.2	+ 7.6	+ 7.3	+ 5.3
Estonia	+ 7.8	+ 5.2	+ 6.5	+ 8.1	+ 9.5	+ 9.9
Croatia	+ 0.8	+ 0.1	+ 0.4	+ 1.3	- 0.1	- 3.3
Latvia	+ 4.2	+ 8.7	+ 6.4	+ 8.7	+10.4	+ 8.8
Lithuania	+ 6.2	+ 7.4	+ 6.8	+ 9.1	+ 3.9	+ 9.6
Hungary	+ 4.7	+ 6.6	+ 5.6	+ 5.2	+ 6.2	+11.7
Poland	+ 5.6	+ 5.8	+ 5.7	+ 4.2	+ 8.0	+10.8
Romania	+ 6.6	+11.2	+ 8.8	+13.7	+ 7.6	+12.5
Slovenia	+ 3.9	+ 3.2	+ 3.6	+ 3.2	+ 3.7	+ 4.0
Slovakia	+ 4.4	+ 5.7	+ 5.0	+ 7.7	+ 8.6	+ 4.6
Norway	+ 4.0	+ 2.5	+ 3.2	+ 1.5	+ 2.4	+ 4.4
USA	+ 2.5	+ 2.1	+ 2.3	+ 3.5	+ 2.6	+ 1.7
Japan	+ 1.5	+ 1.5	+ 1.5	+ 1.5	+ 2.5	+ 1.9
Canada	+ 2.5	+ 2.2	+ 2.4	+ 0.7	+ 3.3	+ 2.4
All trading partners <sup>1</sup>	+ 3.0	+ 2.6	+ 2.8	+ 2.7	+ 2.9	+ 2.9
EU trading partners <sup>2</sup>	+ 3.1	+ 2.7	+ 2.9	+ 2.7	+ 2.9	+ 3.0
Austria						
All trading partners <sup>1</sup> = 100	- 0.0	- 0.2	- 0.1	- 1.3	+ 0.4	+ 0.2
EU trading partners <sup>2</sup> = 100	- 0.1	- 0.3	- 0.2	- 1.3	+ 0.4	+ 0.1
Germany = 100	- 0.2	+ 0.2	+ 0.0	- 0.6	+ 1.2	+ 0.9

Source: Eurostat, AMECO, national statistical offices, WIFO calculations. – <sup>1</sup> Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to the calculation of WIFO exchange rate indices. – <sup>2</sup> Excluding Austria, Malta, Cyprus; weighted average of trading partners according to the calculation of WIFO exchange rate indices.

The weighted average of all trading partners is the result of sometimes very different labour cost trends in the individual countries or groups of countries. As the most important trading partner, Germany plays a special role in the analysis of labour costs. In the 2000s and until the outbreak of the financial market and economic crisis in 2008, labour costs in German manufacturing rose very moderately. Although the scope for wage policy was not fully exploited in Austria either (Leoni, 2017), labour costs rose much more strongly than in Germany during this period (Figure 2). This pattern changed after the outbreak of the financial and economic crisis. Since then, there has been no clear shift

in the cost ratio between the two countries. The most recent figures show higher cost dynamics in Austria than in Germany in both 2018 and 2019, although gross wages per capita rose more slowly in Austria than in Germany in the preceding years.

While labour costs in Germany and Austria rose at about the same rate in the 2010s as the average of all EU countries, other countries in the euro area recorded a smaller increase. With the exception of Ireland, this applies in particular to those countries that suffered considerably from the financial market and economic crisis and the subsequent national debt crisis. After a strong rise

in labour costs in the 2000s, a noticeable correction occurred in the 2010s in countries such as Greece, Spain and Portugal, i.e. costs rose only slightly or in some cases even

declined. In other countries, such as France, the Netherlands and Finland, labour cost dynamics were also significantly weaker than the EU average during this period.

Table 2: **Development of productivity per capita (employees) in manufacturing**

In national currency

	Ø 2009-2014	Ø 2014-2019	Ø 2009-2019	2017	2018	2019
	Percentage changes p. a.			Percentage changes from previous year		
Austria	+ 3.7	+ 1.7	+ 2.7	+ 2.4	+ 2.6	- 0.6
Belgium	+ 3.7	+ 0.6	+ 2.1	+ 2.1	- 1.6	- 1.0
Denmark	+ 6.3	+ 2.5	+ 4.4	+ 1.4	+ 3.6	+ 4.5
Germany	+ 5.3	+ 0.4	+ 2.8	+ 2.6	- 0.9	- 3.9
Ireland	+ 5.6	+14.4	+ 9.9	+ 2.3	+12.9	+ 1.2
Greece	+ 1.2	- 0.1	+ 0.6	+ 0.2	+ 1.8	- 4.3
Spain	+ 3.5	+ 0.1	+ 1.8	+ 1.5	- 0.9	- 1.2
France	+ 3.1	+ 1.2	+ 2.2	+ 2.6	- 0.1	- 0.4
Italy	+ 3.4	+ 1.8	+ 2.6	+ 2.8	+ 1.2	- 0.8
Luxembourg	+ 1.6	+ 5.0	+ 3.3	- 1.8	- 2.2	+ 0.5
Netherlands	+ 3.4	+ 1.6	+ 2.5	+ 5.3	+ 1.9	- 1.4
Portugal	+ 3.1	- 0.1	+ 1.5	+ 2.3	- 1.6	- 1.4
Finland	+ 1.1	+ 3.4	+ 2.3	+ 8.8	- 4.2	+ 5.0
Sweden	+ 3.9	+ 2.4	+ 3.2	+ 1.4	- 0.2	+ 1.1
UK	+ 1.9	- 0.3	+ 0.8	+ 0.7	- 1.0	- 0.6
Bulgaria	+ 4.6	+ 4.6	+ 4.6	+ 4.7	+ 0.6	+10.1
Czech Republic	+ 3.4	+ 3.7	+ 3.5	+ 7.0	+ 1.2	+ 4.3
Estonia	+ 8.5	+ 2.8	+ 5.6	+ 0.3	+10.1	+ 3.6
Croatia	+ 0.7	+ 0.2	+ 0.5	+ 0.5	- 4.3	- 4.4
Latvia	+ 3.7	+ 2.9	+ 3.3	+ 6.9	+ 1.7	+ 1.5
Lithuania	+ 7.5	+ 1.9	+ 4.7	+ 6.3	- 1.4	+ 4.2
Hungary	+ 3.0	+ 1.2	+ 2.1	+ 0.0	- 3.2	+ 4.5
Poland	+ 5.9	+ 2.6	+ 4.2	- 2.0	+ 4.7	+ 7.7
Romania	+ 2.1	+ 3.7	+ 2.9	+ 4.2	+ 2.1	+ 1.3
Slovenia	+ 4.1	+ 1.5	+ 2.8	+ 4.7	- 1.0	+ 1.0
Slovakia	+ 9.8	+ 2.5	+ 6.1	- 2.2	+ 9.8	+ 0.9
Norway	+ 2.9	+ 0.3	+ 1.6	+ 2.2	- 0.5	+ 1.4
USA	+ 1.5	+ 0.6	+ 1.0	+ 1.6	+ 2.2	- 0.3
Japan	+ 4.7	+ 1.8	+ 3.3	+ 3.0	+ 0.4	+ 1.8
Canada	+ 2.8	+ 0.8	+ 1.8	+ 0.9	+ 2.3	- 2.1
All trading partners <sup>1</sup>	+ 4.1	+ 1.1	+ 2.6	+ 2.5	+ 0.2	- 1.2
EU trading partners <sup>2</sup>	+ 4.4	+ 1.2	+ 2.8	+ 2.5	+ 0.1	- 1.3
Austria						
All trading partners <sup>1</sup> = 100	- 0.4	+ 0.6	+ 0.1	- 0.1	+ 2.3	+ 0.6
EU trading partners <sup>2</sup> = 100	- 0.6	+ 0.5	- 0.1	- 0.2	+ 2.5	+ 0.8
Germany = 100	- 1.5	+ 1.3	- 0.1	- 0.2	+ 3.5	+ 3.5

Source: Eurostat, AMECO, national statistical offices, WIFO calculations. – <sup>1</sup> Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to the calculation of WIFO exchange rate indices. – <sup>2</sup> Excluding Austria, Malta, Cyprus; weighted average of trading partners according to the calculation of WIFO exchange rate indices.

The Eastern European countries have been catching up with Western European high-wage countries in terms of labour costs since the 1990s. After the outbreak of the financial market and economic crisis, this catching-up process came to a halt. In some countries – such as Poland, Hungary and the Czech Republic – labour costs initially rose only at the same rate or even more slowly than in Western European countries. In the

following years, however, rates of increase were again well above the EU average, indicating that the catching-up process would continue. On average over the last five years, labour costs in most countries have risen by more than 5 percent per year, even when viewed in terms of the single currency. In Bulgaria and Romania, the growth rate of gross wages, after conversion into euro, was



just under 10 percent per year in both countries.

The assessment of price competitiveness requires not only international comparisons of exchange rates and labour cost changes, but also of productivity developments. This is measured as real gross value added per capita (employed persons).

With the economic slowdown, productivity in 2019 developed only very moderately in Austria, but also in the majority of the other countries examined here (Table 2). According to the national accounts figures published in September, per capita productivity in Austrian manufacturing declined slightly in 2019 (–0.6 percent). The development was even more unfavourable for the weighted average of trading partners, at –1.2 percent (or –1.3 percent for EU trading partners). The figure for Germany is particularly significant, as productivity fell by almost 4 percent due to the onset of the economic downturn in industry. Other major European and non-European trading partners also recorded slight falls in productivity, such as Italy, France, Spain and the USA. Productivity grew

robustly in most of the countries of central and eastern Europe, but also in Finland and Denmark.

In relation to the weighted average of trading partners, the productivity index of Austrian industry improved slightly in 2019 (+0.6 percentage points relative to all trading partners, +0.8 percentage points relative to EU trading partners). However, the comparison with the trading partners is also favourable for Austria in the medium term: in the past five years, productivity in Austria has increased by an average of about ½ percentage points per year more than the average of its trading partners. Apart from Germany, where the development was negative above all in 2018 and 2019, the USA, the UK and Spain, among others, recorded a very weak productivity development in this period. In the longer term, however, these differences largely balance each other out. In 2009-2019, productivity in Austria, with an average annual growth rate of 2.7 percent, developed similarly to Germany (+2.8 percent) and to the average of all trading partners (+2.6 percent) and the EU trading partners (+2.8 percent).

**In 2019, productivity fell slightly in Austria and more markedly in Germany.**

#### 4. Slight improvement in the unit labour cost position in manufacturing

The combined change in labour costs (gross wages per capita) and productivity (gross value added per capita) gives the development of unit labour costs (labour costs per unit of production). For 2017 and 2018, the revised national accounts show first a decrease and then a slight increase (–1.0 percent and +0.7 percent), i.e. only small changes in unit labour costs (Table 3). In 2019, unit labour costs increased markedly (+3.8 percent), mainly due to weak productivity growth. In the medium-term average of the years 2014 to 2019 there was an annual increase of 0.7 percent, in the longer-term average of the years 2009 to 2019 the level remained unchanged.

To assess unit labour costs as an indicator of price competitiveness, we need to compare them internationally. Table 3 gives a detailed overview of the unit labour cost dynamics of the individual trading partners and the development of the Austrian unit labour cost position, i.e. the real effective exchange rate deflated by unit labour costs in relation to the trading partners. The Austrian unit labour cost position improved in 2019 with a decline by 0.7 percent compared to the weighted average of all trading partners. This favourable development was mainly driven by the improvement vis-à-vis Germany (–2.5 percent) and by strong unit labour cost increases in countries such as the UK, the USA and Japan. In the majority of (other) EU

countries, however, unit labour costs developed more favourably (or less unfavourably) than in Austria, which is why Austria's unit labour cost position vis-à-vis EU trading partners remained almost unchanged.

Over the past ten years (2009-2019), Austria's unit labour cost position has hardly changed in relation to the average of its EU trading partners and also in relation to Germany. Compared to the weighted average of all trading partners a slight improvement was recorded, with an average annual decline of 0.2 percent. A breakdown by sub-period shows a very differentiated pattern with a deterioration in 2009-2014 and an improvement in 2014-2019.

In the figure, trend reversals and long-term changes become clearer (Figure 2). According to this, the price competitiveness of Austrian manufacturing improved considerably in the second half of the 1990s compared to the average of all trading partners. After a contrary development in the early 2000s, there was another improvement from the Austrian perspective until the outbreak of the financial market and economic crisis in 2008. The economic crisis triggered a further turnaround, with a deterioration of the relative unit labour cost position of Austrian manufacturing in 2009-10 and a fluctuating but largely stable development until 2014. The development since 2014 can be interpreted

**The relative unit labour cost position has improved markedly in recent years and remained stable over the longer term.**

as a sustained improvement of the Austrian unit labour cost position. Also in comparison with Germany, an improvement of the

Austrian unit labour cost position can be observed since 2011.

**Table 3: Development of unit labour costs per capita (persons employed) in manufacturing and in the economy as a whole**

In €

	Ø 2009-2014	Ø 2014-2019	Ø 2009-2019	2017	2018	2019
	Percentage changes p. a.			Percentage changes from previous year		
<b>Manufacturing</b>						
Austria	- 0.7	+ 0.7	+ 0.0	- 1.0	+ 0.7	+ 3.8
Belgium	- 0.3	+ 0.9	+ 0.3	+ 1.1	+ 2.8	+ 3.2
Denmark	- 3.3	- 0.7	- 2.0	+ 0.6	- 2.1	- 3.5
Germany	- 2.0	+ 1.8	- 0.1	- 0.7	+ 3.0	+ 6.4
Ireland	- 1.8	- 9.7	- 5.9	- 0.2	- 5.1	+ 3.8
Greece	- 4.1	+ 0.5	- 1.8	+ 0.4	- 0.1	+ 6.4
Spain	- 1.9	+ 0.4	- 0.8	- 0.2	+ 1.8	+ 2.3
France	- 0.3	- 0.0	- 0.2	- 0.3	+ 1.8	- 1.4
Italy	- 0.8	- 0.0	- 0.4	- 1.0	+ 0.2	+ 2.1
Luxembourg	- 0.3	- 3.6	- 2.0	+ 5.3	+ 3.2	- 0.2
Netherlands	- 1.4	+ 0.1	- 0.7	- 3.2	+ 0.1	+ 4.2
Portugal	- 1.7	+ 2.4	+ 0.3	+ 0.5	+ 5.2	+ 4.8
Finland	+ 0.7	- 2.2	- 0.7	- 9.2	+ 5.4	- 3.1
Sweden	+ 1.8	- 2.5	- 0.4	- 1.5	- 3.7	- 0.8
UK	+ 3.7	+ 0.3	+ 2.0	- 7.3	+ 3.7	+ 6.1
Bulgaria	+ 3.4	+ 4.7	+ 4.1	+ 6.1	+ 8.4	+ 1.2
Czech Republic	- 1.4	+ 3.2	+ 0.9	+ 3.3	+ 8.9	+ 0.9
Estonia	- 0.7	+ 2.4	+ 0.8	+ 7.8	- 0.6	+ 6.1
Croatia	- 0.7	+ 0.4	- 0.1	+ 1.8	+ 5.0	+ 1.1
Latvia	+ 0.6	+ 5.7	+ 3.1	+ 1.8	+ 8.6	+ 7.1
Lithuania	- 1.2	+ 5.4	+ 2.0	+ 2.7	+ 5.4	+ 5.2
Hungary	- 0.3	+ 4.3	+ 2.0	+ 6.0	+ 6.4	+ 4.8
Poland	+ 0.5	+ 2.6	+ 1.5	+ 8.9	+ 3.1	+ 2.0
Romania	+ 3.4	+ 5.8	+ 4.6	+ 7.2	+ 3.4	+ 8.9
Slovenia	- 0.1	+ 1.7	+ 0.8	- 1.4	+ 4.7	+ 3.0
Slovakia	- 4.9	+ 3.1	- 1.0	+10.0	- 1.1	+ 3.7
Norway	+ 2.0	- 1.2	+ 0.4	- 1.1	+ 0.0	+ 0.3
USA	+ 2.0	+ 5.1	+ 3.5	- 0.2	- 4.0	+ 7.6
Japan	- 4.5	+ 2.6	- 1.0	- 6.4	- 0.9	+ 7.0
Canada	+ 1.2	+ 1.1	+ 1.2	- 0.0	- 3.4	+ 7.7
All trading partners <sup>1</sup>	- 1.1	+ 1.6	+ 0.2	- 0.1	+ 2.0	+ 4.5
EU trading partners <sup>2</sup>	- 1.2	+ 1.3	+ 0.0	+ 0.2	+ 2.7	+ 4.2
Austria						
All trading partners <sup>1</sup> = 100	+ 0.5	- 0.9	- 0.2	- 1.0	- 1.3	- 0.7
EU trading partners <sup>2</sup> = 100	+ 0.6	- 0.6	- 0.0	- 1.2	- 1.9	- 0.4
Germany = 100	+ 1.3	- 1.1	+ 0.1	- 0.3	- 2.3	- 2.5
<b>Overall Economy</b>						
Austria	+ 1.6	+ 1.8	+ 1.7	+ 0.9	+ 2.0	+ 2.6
All trading partners <sup>1</sup>	+ 1.0	+ 2.2	+ 1.6	+ 1.3	+ 2.2	+ 3.4
EU trading partners <sup>2</sup>	+ 1.0	+ 1.9	+ 1.4	+ 1.6	+ 2.8	+ 2.9
Austria						
All trading partners <sup>1</sup> = 100	+ 0.6	- 0.4	+ 0.1	- 0.4	- 0.2	- 0.8
EU trading partners <sup>2</sup> = 100	+ 0.7	- 0.1	+ 0.3	- 0.7	- 0.7	- 0.3
Germany = 100	+ 0.4	- 0.5	- 0.0	- 0.5	- 0.9	- 0.8

Source: Eurostat, AMECO, national statistical offices, WIFO calculations. Unit labour costs: ratio of gross compensation per capita (employees) to real gross value added or real GDP per capita (persons employed). – <sup>1</sup> Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to the calculation of WIFO exchange rate indices. – <sup>2</sup> Excluding Austria, Malta, Cyprus; weighted average of trading partners according to the calculation of the WIFO exchange rate indices.



Figure 1: **Development of relative labour costs and unit labour costs in manufacturing**

In €, 2015 = 100



Source: Eurostat, AMECO, national statistical offices, WIFO calculations. – <sup>1</sup> Excluding Austria, Malta, Cyprus, but including Norway, USA, Canada and Japan – <sup>2</sup> Excluding Austria, Malta, Cyprus

The comparison of the time series of relative unit labour costs and relative labour costs (gross wages per capita) also implicitly shows how productivity in Austria developed in comparison with its trading partners. If unit labour costs decreased more than relative gross wages, productivity in Austria developed better than in the other countries. A parallel development of the two time series

signals a steady progress in productivity, while a stronger decline in gross wages than in relative unit labour costs indicates a deterioration of productivity in Austria relative to its trading partners. In particular, the more favourable productivity developments in Austria have been the main factor behind the recent improvement in its unit labour cost position.

However, current developments should be interpreted with caution, as national accounts data for both Austria and the other countries may still be subject to significant revisions. Cumulatively, unit labour costs in Austria have fallen by about 4 percent since 2014 relative to the average of all trading partners and by slightly more than 7 percent since 2011 relative to Germany. However, these shifts must be put into perspective in the context of earlier fluctuations. Especially the unit labour cost position vis-à-vis Germany has been remarkably stable for decades, if one excludes the "anomaly" of the years around the financial and economic crisis of 2008-09.

**In the EU countries of Central and Eastern Europe, labour costs have risen more dynamically than productivity in recent years.**

Unit labour cost developments have been heterogeneous across countries: in those countries that were hit hardest by the financial market and economic crisis and the subsequent sovereign debt crisis in the euro area, a reduction of imbalances in price competitiveness has been observed in

recent years. With the exception of Ireland, where a correction of the national accounts in 2015 resulted in a sharp increase in productivity growth<sup>3</sup>, Greece recorded the sharpest decline in unit labour costs among the euro area countries since the crisis. In Spain and Italy, unit labour costs also developed more favourably than in Austria, while in Portugal, after a significant correction immediately after the crisis, they have recently been rising more strongly. In addition to these countries on the periphery of the monetary union, a number of other EU and non-EU countries, such as Sweden, Finland, Denmark, the Netherlands and Japan, have also seen a significant reduction in unit labour costs in recent years. In the EU countries of central and eastern Europe, by contrast, unit labour cost dynamics have accelerated considerably in recent years, almost without exception, as productivity has not kept pace with labour cost dynamics, despite robust growth rates.

## 5. Decline in unit labour costs in the economy as a whole compared to other countries

The competitiveness of the export economy is determined not only by the unit labour costs in manufacturing but also by those of the economy as a whole: So far as services and non-tradable goods are important as intermediate inputs, their cost development influences the competitiveness of the sectors involved in foreign trade (*Deutsche Bundesbank*, 1998).

**Unit labour costs in the economy as a whole rose at a slower pace in 2019 than in the manufacturing sector.**

In Austria, labour costs per unit of production increased by 2.6 percent across all sectors in 2019, 0.8 percentage points less than in Germany and than the weighted average of all trading partners. Compared to the EU trading partners, a decrease of 0.3 percent was recorded. This was the third consecutive improvement of the unit labour cost position of the Austrian economy in international comparison after 2017 and 2018. In the long term (2009-2019), however, unit labour costs in the overall economy in Austria grew by 0.3 percentage points p.a. faster than the

average of the EU's trading partners and at about the same pace as in Germany. As in the case of the manufacturing, a less favourable development was also observed at the macroeconomic level until 2014, but since 2014 the Austrian unit labour cost position has improved by international comparison. This applies equally to the comparison with Germany and with the average of its trading partners.

Unit labour costs in the economy as a whole rose less strongly in 2019 than in the manufacturing sector. In the longer term, however, the dynamics of unit labour costs in the economy as a whole were significantly stronger than in manufacturing, both in Austria and in its trading partners. This is in line with expectations, as manufacturing offers the greatest potential for increasing labour productivity through mechanisation and automation.

## 6. Summary

Available data show an improvement in the relative unit labour cost position of Austrian manufacturing in 2019. Labour costs increased slightly more than the average of the trading partners (+3.2 percent compared to +2.9 percent). After two years of robust productivity growth, value added per capita (measured by the number of persons employed) declined slightly in 2019

(-0.6 percent), but Germany and other major trading partners recorded much larger productivity losses (-1.2 percent on average). The nominal effective exchange rate increased by ½ percentage point as the euro depreciated against the dollar and other non-European currencies.

<sup>3</sup> These changes are also likely to be reflected in the jump in productivity in 2018. The new national accounts rules provide for the allocation of income from intellectual property rights held in Ireland to Irish GDP (OECD, 2016). This mainly concerns manufacturing, thereby more accurately reflecting economic activity

in Ireland, but distorts the assessment of unit labour costs. Unit labour cost developments in the production of tangible goods can only fully reflect intellectual property rights, if the country of production and the country of allocation of these rights are the same. In global value chains, however, these can differ.

Together, these developments resulted in an improvement of 0.7 percent relative to the weighted average of trading partners, despite an increase of 3.8 percent in unit labour costs in Austrian manufacturing. Compared to Germany, where unit labour costs rose by more than 6 percent due to the slowdown in exports, unit labour costs in Austria fell by 2.5 percent. This development was caused mainly by the weakness of the business cycle and the demand for exports in the course of 2019, which was marked by international trade conflicts in addition to the international economic slowdown (Friesenbichler et al., 2020). Due to the exchange rate developments, the data for 2019 show a somewhat stronger improvement vis-à-vis all trading partners than vis-à-vis EU trading partners.

A longer-term view reveals different phases in the development of the price

competitiveness of the Austrian export economy: between 2004 and 2008 the relative unit labour cost position of Austrian manufacturing improved, while the trend was slightly negative in 2009 to 2014. Since then a noticeable improvement has been recorded. This applies to the comparison with all trading partners and the EU trading partners. The data for the recent past and in particular for the period 2017 to 2019 also show an improvement of the Austrian unit labour cost position compared to Germany.

Unit labour costs in the economy as a whole rose by 2.6 percent in 2019, almost 1 percentage point less than the average for all trading partners and 0.3 percentage points less than the average for EU trading partners. In 2019, as in 2017 and 2018, there was also an improvement in total unit labour costs in comparison with Germany.

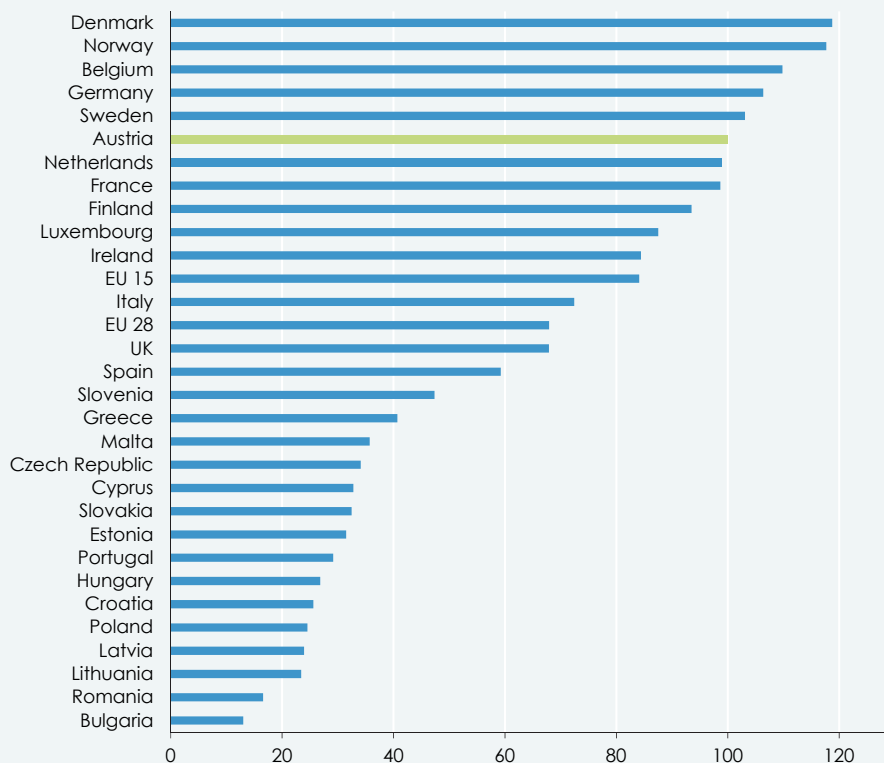
## 7. Annex: hourly labour costs in manufacturing

While only data on labour costs per worker are available for the calculation of current, internationally comparable unit labour costs in manufacturing, labour costs per hour worked are available for the subset of European countries. They are based on the Labour Cost Survey, which is carried out every

four years in the EU member countries. The annual development that takes place between two surveys is monitored using a Labour Cost Index. The results published here are based on the 2016 survey published in 2018.

Figure 2: Labour costs in manufacturing compared internationally

Labour costs per hour in €, 2019, Austria = 100



Source: Eurostat, Labour Cost Survey 2016, Labour Cost Index, WIFO calculations. Without apprentices. Norway: 2019 extrapolated using the rates of change from labour costs including apprentices.

Table 4: Hourly labour costs in the manufacturing

	2015	2016	2017 In €	2018	2019	Ø 2014-2019 Percentage changes
Bulgaria	3.5	3.8	4.3	4.7	5.2	+ 10.3
Romania	4.4	4.8	5.4	5.9	6.6	+ 9.5
Lithuania	6.7	7.3	8.1	8.8	9.3	+ 8.2
Latvia	6.8	7.2	7.8	8.8	9.5	+ 8.8
Poland	7.8	7.8	8.5	9.2	9.7	+ 5.3
Hungary	8.0	8.4	9.2	9.8	10.6	+ 6.6
Croatia	9.1	8.4	8.9	9.8	10.1	+ 2.6
Portugal	10.5	10.8	11.1	11.4	11.6	+ 2.7
Estonia	9.8	10.3	11.0	11.7	12.5	+ 6.2
Slovakia	9.9	10.3	11.1	12.1	12.9	+ 6.1
Cyprus	11.8	11.8	11.8	12.2	13.0	+ 1.7
Czech Republic	9.7	10.2	11.4	12.7	13.5	+ 7.9
Malta	13.3	13.0	13.6	13.7	14.2	+ 2.4
Greece	15.3	15.1	15.2	15.5	16.1	+ 0.8
Slovenia	15.8	16.3	17.4	18.1	18.8	+ 3.6
Spain	22.5	22.6	22.8	23.0	23.5	+ 0.7
EU 28	24.4	24.9	25.5	26.2	26.9	+ 2.3
UK	29.7	26.9	25.8	26.4	26.9	+ 0.7
Italy	27.6	27.4	27.4	27.8	28.7	+ 0.7
Ireland	30.6	31.3	31.6	32.3	33.4	+ 1.5
EU 15	30.8	31.3	31.9	32.6	33.3	+ 1.9
Luxembourg	32.9	32.8	33.7	34.1	34.7	+ 1.0
Finland	36.9	37.1	36.4	36.8	37.0	+ 0.5
France	36.4	36.8	37.4	38.2	39.1	+ 1.7
Netherlands	35.9	36.4	37.3	38.3	39.2	+ 1.8
<b>Austria</b>	<b>35.7</b>	<b>36.5</b>	<b>37.1</b>	<b>38.4</b>	<b>39.6</b>	<b>+ 2.5</b>
Sweden	41.4	42.3	42.0	40.7	40.8	- 0.3
Germany	38.5	39.3	40.4	41.3	42.1	+ 2.2
Belgium	41.3	41.4	41.9	42.6	43.5	+ 1.1
Denmark	42.7	43.9	44.6	45.6	47.0	+ 2.3
Norway	48.3	47.5	48.0	47.7	46.6	- 1.8

Source: Eurostat, Labour Cost Survey 2016, Labour Cost Index, WIFO calculations. Without apprentices. Norway: 2019 extrapolated using the rates of change from labour costs including apprentices.

Unlike the labour cost survey, the labour cost index is not calculated using the same method in all countries. This somewhat affects international comparability. Due to these methodological limitations, the labour cost index data should be interpreted with caution. For Austria the index is based on data from the business survey. These data may in some cases differ significantly from the national accounts figures on the development of gross wages, which are the basis for the unit labour cost calculations, also because, unlike national accounts gross wages, labour costs include wage-related taxes paid by employers in addition to social security contributions.

Table 4 shows the hourly labour costs calculated on the basis of the labour cost index for the period 2014-2019. In 2019, the hourly labour cost in Austrian manufacturing was 39.6 €. Austria thus ranked 6th in the European comparison, just as in the previous year. In 2014-2019, the hourly labour costs in Austria increased by an average of +2.5 percent p.a., slightly more than the average of the EU countries (+2.3 percent p.a.) and in Germany (+2.2 percent p.a.). Compared to the previous year, the increase in 2019 was 3.2 percent in Austria, 2.8 percent on average in the EU and 2.1 percent in Germany.

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