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Austria's International Unit Labour Cost Position Improved Again in 2018

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In 2018, the ongoing good economic state of the Austrian manufacturing sector led to an improvement in the unit labour cost position compared with the weighted average of all trading partners. Productivity rose more strongly than in the other countries, while labour cost development was in line with the average. This favourable development was largely determined by the labour cost relation to Germany and the other EU trading partners. Compared with non-European trading partners, the Austrian unit labour cost position deteriorated, partly due to an appreciation of the euro.

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

Production costs, productivity and exchange rates play a central role in the international competitiveness of national economies. The relative development of unit labour costs is a summarising measure which allows the effects of changes in labour costs, productivity and exchange rates on cost-determined competitiveness to be presented in one indicator. The development of unit labour costs (unit labour costs per unit produced) measures the change in labour costs in relation to the development of productivity. As econometric studies show, the change in relative unit labour costs in the medium term contributes significantly to explaining shifts in market shares between trading partners (e.g. *Carlin Glyn van Reenen, 2001*).

The present issue of the annual WIFO analysis on the development of price competitiveness based on unit labour costs in the manufacturing sector and in the economy as a whole between Austria and its main trading partners refers to the period from 1996 to 2018, the most recent year for which National Accounts data are available. This year, Bulgaria, Croatia and Romania could also be included in the analysis for the first time due to the improved availability of data. This means that the country sample includes 29 countries, i.e. all EU member countries (except Cyprus and Malta) as well as Norway, the USA, Japan and Canada.

With the National Accounts for 2018, published in September 2019, the data for the years 2015, 2016 and 2017 have also been revised, in some cases substantially. As will be explained in more detail below, according to these new data the unit labour cost position of Austrian industry vis-à-vis its most important trading partners has improved more in recent years, than previously assumed.

2. Nominally effective exchange rate increased by 0.6 percent in 2018

The relative unit labour cost position of an economy represents the real external value of the national currency in international competition and corresponds to a real effective exchange rate of this 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 currency basket that reflects the relevance of the individual trading partners on the basis of a weighting scheme (see box "Calculation method and database for unit labour cost comparison"). The nominal-effective exchange rate is deflated with unit labour costs to determine the unit labour cost position of domestic manufacturing. Since the introduction of the euro, exchange rate changes have become less important for Austria's export economy, as its most important trading partners also belong to the euro area. In the weighting scheme of the effective exchange rate used here, slightly more than 70 percent is accounted for by the countries of the euro area. Nevertheless, the development of the nominal-effective exchange rate remains an important determinant of price competitiveness.

From a longer-term perspective, the development of the exchange rate index weighted by foreign trade shares can be simplified into three phases (Figure 1): from an Austrian perspective, the nominal-effective exchange rate declined between 1995 and the early 2000s¹. In the following years and until 2009, however, the euro became more expensive against the dollar, but also against the currencies of other relevant trading partners. The resulting rise in the nominal-effective exchange rate made imports from the non-euro area cheaper, but made Austrian exports more expensive. After 2009, the exchange rate declined again somewhat and fluctuated in the following years without a clear trend emerging so far.

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



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

In 2018, a slight appreciation (+0.6 percent) was recorded from an Austrian perspective, measured against the nominal-effective exchange rate. The exchange rate index had also risen moderately in 2016 and 2017, so that the cumulative development of the past three years was less significant than the perceptible depreciation in 2015. The rise in the exchange rate index in 2018 was the result of a general appreciation of the euro against foreign currencies. With the exception of the Croatian kuna and

¹ A decline in the nominal-effective exchange rate corresponds to a depreciation of the reference currency (the euro or, before 1999, the Austrian schilling) and an increase corresponds to an appreciation.

the Czech koruna, in 2018 the euro appreciated against all currencies represented in our sample. The appreciation was moderate in most cases and particularly affected the Swedish krona (+6 percent), the dollar (+4.5 percent), the Canadian dollar (+4.3 percent) and the Japanese yen (+3 percent). By contrast, the exchange rate against the British pound hardly changed in 2018 (+1 percent) despite the threat of Brexit.

Calculation method and data basis for unit labour cost comparison

Unit labour costs in national currency (*ULC*) in an industry, a sector or the total economy are defined by the relation between the nominal wage sum (*WS*) and real gross value added (*GVA*):

$$ULC = \frac{WS}{GVA}$$

Dividing both the wage sum and value added by a measure of labour input yields both components of unit labour costs: labour costs per labour unit and labour productivity. A change in the share of self-employed in the number of persons engaged can be considered through a representation of unit labour costs as a quotient of labour costs per employee (*LF*) and gross value added, measured against the number of all persons engaged in employment (*EMP*):

$$ULC = \frac{\frac{WS}{LF}}{\frac{GVA}{EMP}}$$

WIFO uses this formula and data obtained following the National Accounts methodology to calculate the unit labour costs. For the determination of the Austrian manufacturing, however, instead of using the person-based concept (employees and persons engaged), it bases its calculations on the number of employment relationships.

For international comparisons, unit labour costs have to be expressed in a common currency, as exchange rate fluctuations can alter the cost position of a country similarly to the development of unit labour costs. The relative unit labour cost position of a country is the ratio of unit labour costs of both countries, as measured in a single currency. For a comparison with several countries, a weighted method has to be used, as the relevance of different countries for foreign trade will usually differ. Independently of the methodological approach, such a weighted scheme is based on foreign trade data statistics and therefore reflects the foreign trade interdependence of an economy.

WIFO uses a harmonised method, which is also used by the central banks of the euro area to measure international competitiveness. The weighting scheme consists of simple (bilateral) import weights and double (multilateral) export weights for industrial goods (SITC 5 to 8). In 2013 a new calculation of the weights and a new method of interlinking the weighted country data were implemented (for a detailed illustration and explanation of this method, see Mooslechner, 1995, Köhler-Töglhofer – Magerl, 2013, Köhler-Töglhofer – Url – Glauningner, 2017). Due to the double export weighting, competition with trading partners on the respective domestic markets can be taken into account, in addition to competition on all other export markets. The weights are calculated and applied for specific time periods. The most recent calculations are based on the three-year averages for the periods 1995-1997, 1998-2000, 2001-2003, 2004-2006, 2007-2009 and 2010-2012; and the most recent weights are applicable for the period after 2010. Using this variable weighting method makes it possible to take into account shifts in market shares. The new calculation should ensure as accurate a picture as possible of country-specific trade interdependencies.

The data on gross labour compensation, productivity and unit labour costs in manufacturing and the economy as a whole were largely generated based on Eurostat figures. Only if the Eurostat database did not contain current values, figures from the AMECO database and national statistics of the respective countries were used (this concerned the USA, Canada, Japan as well as Croatia and Poland).

Information on the selection of countries

The aggregate "EU trading partners" includes the following countries: EU 28 without Austria, Malta and Cyprus. The term "all trading partners" considers the aggregate "EU trading partners" plus Norway, the USA, Canada and Japan; this aggregate covers more than three quarters of all Austrian exports and all imports. Bulgaria, Croatia and Romania could also be included in the aggregates "EU trading partners" and "All trading partners" for the first time in this report.

3. Labour cost development corresponds to average of trading partners, productivity development more dynamic

The development of labour costs in manufacturing is assessed on the basis of gross compensation per employee in national currency (Table 1). This national-accounting ratio measures total wages and salaries including employers' social contributions per capita.

In nominal terms, gross wages per capita in Austrian industry rose by 3.3 percent in 2018 according to the National Accounts. Labour costs in Austria thus rose 1 percentage point more strongly than in the previous year. In 2018, the increase was as high

as the average for trading partners and slightly lower (–0.1 percentage point) than the average for EU trading partners.

In the longer term, labour costs in Austria developed similarly to the average for trading partners. In the past ten years, labour costs in Austria have risen by 2.4 percent p.a., the average for EU trading partners and all trading partners was 2.5 percent and 2.4 percent respectively per year. However, in the past five years the increase was less dynamic in Austria than in the other countries (+2.2 percent compared to +2.7 percent per year), which is mainly due to the considerable wage increases in the "new" EU member countries of Eastern Central Europe.

Table 1: Development of per-capita labour costs in the manufacturing sector

In national currency

	Ø 2008-2013	Ø 2013-2018	Ø 2008-2018	2016	2017	2018
	Year-to-year percentage changes			Percentage changes from previous year		
Austria	+2.6	+2.2	+2.4	+2.8	+1.0	+3.3
Belgium	+2.5	+1.6	+2.1	+0.6	+3.2	+1.2
Denmark	+3.0	+2.2	+2.6	+2.3	+2.0	+1.9
Germany	+2.0	+2.4	+2.2	+2.3	+1.9	+2.1
Ireland	+2.0	+3.2	+2.6	+3.4	+3.1	+7.4
Greece	–2.1	–0.5	–1.3	–0.1	+0.6	+1.7
Spain	+2.6	+0.7	+1.7	+1.1	+1.1	+0.2
France	+2.7	+1.8	+2.3	+1.1	+1.8	+1.7
Italy	+1.5	+1.7	+1.6	+1.0	+1.2	+1.6
Luxembourg	+1.2	+1.1	+1.1	+0.3	+1.8	+1.3
Netherlands	+2.1	+1.9	+2.0	+2.5	+1.9	+2.0
Portugal	+1.3	+1.9	+1.6	+2.5	+2.6	+3.1
Finland	+2.0	+0.9	+1.5	+1.5	–1.1	+0.8
Sweden	+2.6	+2.9	+2.8	+4.0	+2.1	+4.6
UK	+3.3	+1.6	+2.4	+1.9	+2.3	+3.0
Bulgaria	+7.7	+9.8	+8.8	+7.8	+11.1	+13.9
Czech Republic	+1.9	+4.9	+3.4	+4.1	+6.8	+7.0
Estonia	+4.7	+5.9	+5.3	+4.7	+5.4	+8.4
Croatia	+2.8	+2.1	+2.5	+1.4	+0.6	+5.6
Latvia	+0.5	+8.8	+4.6	+6.7	+9.2	+9.9
Lithuania	+2.3	+7.1	+4.7	+7.0	+7.5	+4.4
Hungary	+4.2	+5.7	+5.0	+5.3	+6.1	+9.2
Poland	+4.8	+4.6	+4.7	+4.3	+4.2	+7.6
Romania	–1.6	+10.8	+4.4	+12.2	+9.3	+19.6
Slovenia	+3.4	+3.1	+3.3	+2.6	+3.2	+3.7
Slovakia	+3.8	+4.5	+4.1	+2.4	+6.4	+6.9
Norway	+3.4	+2.3	+2.8	+2.0	+1.3	+2.5
USA	+1.3	+2.2	+1.7	+0.3	+3.5	+2.6
Japan	–0.4	+1.6	+0.6	+0.8	+1.1	+3.0
Canada	+1.7	+2.4	+2.0	–0.2	+0.3	+3.6
All trading partners ¹	+2.1	+2.7	+2.4	+2.2	+2.6	+3.3
EU trading partners ²	+2.3	+2.7	+2.5	+2.5	+2.6	+3.4
Austria						
All trading partners ¹ = 100	+0.5	–0.4	+0.0	+0.5	–1.6	+0.0
EU trading partners ² = 100	+0.4	–0.5	–0.1	+0.3	–1.6	–0.1
Germany = 100	+0.6	–0.1	+0.3	+0.5	–0.9	+1.1

Source: Eurostat, AMECO, national statistics, WIFO calculations. – ¹ Without Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index. – ² Without Austria, Malta, Cyprus, weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

As can be seen from the analysis when data are converted in the single currency, i.e. after taking exchange rate fluctuations into account, labour costs in Austria rose relative to the comparable countries, especially in the crisis period 2008 and 2009 and then again in 2011 to 2014 (Figure 2). In 2015, relative labour costs in Austria declined again, followed by slight fluctuations in the last three years, with an increase of 0.7 percent from 2017 to 2018. In a longer-term perspective, the opposite fluctuations largely

balance each other out. After taking exchange rate changes into account, Austrian labour costs relative to trading partners in 2018 were about the same as in 2008.

Germany, as Austria's most important trading partner, plays a special role for the assessment of labour costs; the development there also indirectly influences the wage bargaining process in Austria. 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), in this period labour costs rose more strongly than in Germany. This pattern changed after the outbreak of the financial and economic crisis (Figure 2): between 2013 and 2018, with some fluctuations, gross per capita wages rose somewhat less than in Germany. The most recent figures for 2018 again show a higher cost dynamic in Austria than in Germany (+3.3 vs. +2.1 percent).

Table 2: Development of per-capita productivity in the manufacturing sector

In national currency

	Ø 2008-2013	Ø 2013-2018	Ø 2008-2018	2016	2017	2018
	Year-to-year percentage changes			Percentage changes from previous year		
Austria	+0.8	+2.4	+1.6	+4.0	+3.4	+2.1
Belgium	+2.2	+2.9	+2.5	+0.3	+1.9	+0.3
Denmark	+6.3	+1.0	+3.6	+5.1	-0.3	+1.3
Germany	+0.5	+2.2	+1.3	+3.8	+2.3	-0.2
Ireland	+4.7	+18.0	+11.2	-2.3	+6.1	+11.1
Greece	+1.0	+1.0	+1.0	+7.0	+0.2	+1.8
Spain	+3.2	+1.4	+2.3	+0.6	+0.7	+0.5
France	+2.5	+1.6	+2.0	+1.4	+1.6	-0.0
Italy	+0.1	+2.3	+1.2	+1.7	+3.0	+0.6
Luxembourg	-0.9	+3.7	+1.4	+13.2	-3.9	-0.3
Netherlands	+1.2	+2.6	+1.9	+1.6	+5.1	+2.7
Portugal	+2.5	-0.2	+1.1	+1.0	-0.0	-2.3
Finland	-2.3	+2.9	+0.3	+4.7	+7.9	-1.8
Sweden	+2.0	+1.5	+1.8	+4.0	+2.2	+2.1
UK	+0.8	+0.3	+0.5	+0.7	+0.6	-1.0
Bulgaria	+4.5	+4.3	+4.4	+4.6	+5.0	+3.9
Czech Republic	+1.7	+3.3	+2.5	+0.8	+9.1	+0.5
Estonia	+4.9	+2.5	+3.7	+1.9	-0.5	+6.5
Croatia	+0.1	+1.2	+0.7	+3.2	-0.1	-4.3
Latvia	+2.8	+3.9	+3.3	+2.4	+8.0	+1.7
Lithuania	+6.2	+2.3	+4.2	-0.5	+6.4	-0.1
Hungary	+0.6	+2.4	+1.5	-3.1	+0.6	+1.1
Poland	+6.1	+2.2	+4.2	-0.8	-2.0	+4.6
Romania	+2.5	+3.7	+3.1	+3.4	+3.4	+2.1
Slovenia	+1.8	+2.3	+2.1	+2.1	+4.7	-0.9
Slovakia	+5.1	+6.2	+5.7	+3.4	+1.9	+2.3
Norway	+1.7	+0.7	+1.2	+0.2	+2.1	+0.0
USA	+1.3	+0.7	+1.0	+0.1	+1.5	+2.8
Japan	+1.1	+3.2	+2.1	+1.8	+3.7	+2.8
Canada	+0.8	+2.1	+1.5	+1.0	+0.9	+3.2
All trading partners ¹	+1.2	+2.3	+1.8	+2.2	+2.4	+0.8
EU trading partners ²	+1.2	+2.4	+1.8	+2.4	+2.5	+0.5
Austria						
All trading partners ¹ = 100	-0.4	+0.1	-0.2	+1.8	+1.0	+1.3
EU trading partners ² = 100	-0.4	-0.0	-0.2	+1.6	+0.9	+1.6
Germany = 100	+0.3	+0.3	+0.3	+0.2	+1.1	+2.4

Source: Eurostat, AMECO, national statistics, Conference Board, WIFO calculations. – ¹ Without Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index. – ² Without Austria, Malta, Cyprus; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

In the other countries of the euro area, especially those that were or are more strongly affected by the crisis, the development deviated from that in Germany. Following a sharp rise in labour costs before the outbreak of the crisis, there has since been a noticeable correction in a number of countries, i.e. costs have risen only weakly or, in

some cases, have also declined. This correction was particularly marked in Greece, but labour costs also rose more slowly than the EU average in Italy, Portugal and Spain over the past decade. In addition, labour cost dynamics were particularly subdued in Finland and Japan.

Since the 1990s, Eastern European countries have been catching up with Western European high-wage countries in terms of labour costs. After the outbreak of the financial market and economic crisis, this catching-up process came to a halt; in some countries, labour costs initially increased only as fast or even slower than in Western European countries. This applies in particular to Poland, Hungary and the Czech Republic: in single currency, the average annual growth rates of gross salaries in the period 2008-2013 were at or below 1 percent, and in Romania labour costs even fell. In recent years, however, growth rates above those in Austria were also observed in these countries. In 2018, wages rose particularly rapidly in the countries of Central and Eastern Europe. On average over the past five years, in most countries labour costs have risen more than twice as fast as in Austria. Romania and Bulgaria even achieved double-digit growth rates, which is in line with the expectations of an economic convergence process in these countries.

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

Productivity in the Austrian manufacturing has risen more strongly in recent years (Table 2). For the period 2013-2018 there is a slight productivity advantage (+2.4 percent p.a.) compared to the average of all trading partners (+2.3 percent) or a parallel development to the average of the EU trading partners (+2.4 percent). In 2008-2013, productivity growth in Austria was less dynamic than the average for trading partners, partly because of the different chronological sequence of the economic crisis: in many countries (including Germany) productivity levels already fell slightly in 2008, while in Austria they remained constant between 2007 and 2008 and only collapsed in 2009. The period from 2008 to 2013 thus covers a period that in some countries reflects only part of the crisis-related decline in productivity, while for Austria the effects of the crisis fell entirely into this phase.

The National Accounts figures for 2018 published in September 2019 and the revisions from 2015 to 2017 paint a favourable picture of productivity development in Austrian industry, especially for the last three years. After a very weak development in the years 2013 to 2015, the productivity level in 2016 rose by +4 percent, significantly more than the average of the comparable countries (and more than the previous National Accounts figures indicated). In 2017 (+3.4 percent) and 2018 (+2.1 percent), productivity in Austria rose more slowly, but again much more strongly than in most of the countries examined here. This is particularly true for 2018, when according to the available data many countries showed a very restrained, and in some cases even negative, productivity dynamic. Germany is one of the countries in which manufacturing recorded a slight decline in productivity in 2018. However, the comparison with Austria's most important trading partner is also positive for the medium to long term: both for the overall period 2008-2018 and for the subperiods 2008-2013 and 2013-2018 considered here, annual productivity growth in Austria was 0.3 percentage points higher than in Germany.

4. Relative unit labour cost position of manufacturing improved

Changes in labour costs (gross wages per capita) and productivity (gross value added per capita) give the evolution of unit labour costs (labour costs per unit of production). For 2016 and 2017, the revised National Accounts show a decrease (-1.2 percent and -2.3 percent respectively), i.e., a reduction in labour costs per unit of production. Unit labour costs increased again in 2018 (+1.1 percent). The medium-term average for the years 2013 to 2018 was an annual reduction of 0.2 percent.

The analysis of unit labour costs as an indicator of price competitiveness is only meaningful when the development in other countries is considered at the same time.

Figure 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. In 2018, the Austrian unit labour cost position improved by 0.6 percent compared to the weighted average of all trading partners. This favourable development was mainly due to the improvement vis-à-vis EU trading partners (1.5 percent) and Germany (1.2 percent). By contrast, unit labour costs rose in Austria compared with non-European trading partners, mainly due to unfavourable exchange rate developments.

In the longer term, the Austrian unit labour cost position deteriorated somewhat in the past decade (2008-2018) compared to the average of the trading partners (+0.2 percent p.a.; compared to the EU trading partners +0.4 percent p.a.) and remained largely unchanged compared to Germany. A breakdown by subperiod shows a differentiated pattern with a noticeable deterioration in 2008-2013 and an improvement in 2013-2018.

A graphical representation of the development shows trend reversals and long-term changes (Figure 2). Accordingly, the price competitiveness of Austrian manufacturing improved considerably compared to the average of all trading partners in the second half of the 1990s. After a contrary development in the early 2000s, there was another improvement until the outbreak of the economic crisis. The economic crisis triggered a further turnaround with a significant deterioration in the relative unit labour costs of Austrian manufacturing in 2009-10 and a fluctuating but largely stable development until 2014. The development since 2014 can be interpreted as a sustained improvement in the Austrian unit labour cost position. In comparison with Germany, a trend towards a slight improvement began already in 2011. 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 declined more sharply than relative gross wages, productivity in Austria developed better than in the other countries. A parallel course of the two time series signals a steady progress in productivity, a stronger decline in gross wages than in relative unit labour costs signals a deterioration in productivity in Austria relative to its trading partners. As can be seen from the graph, more favourable productivity developments in Austria have been the main factor behind the recent improvement in the 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 substantial revisions. Cumulated unit labour costs in Austria have fallen by slightly less than 5 percent relative to the average of all trading partners since 2014 and by slightly more than 5 percent relative to Germany since 2011. However, these shifts must be set against the backdrop of earlier fluctuations. In particular, the unit labour cost position vis-à-vis Germany has been remarkably stable for decades, with exception of the "anomaly" of the years surrounding the 2008-09 financial market and economic crisis.

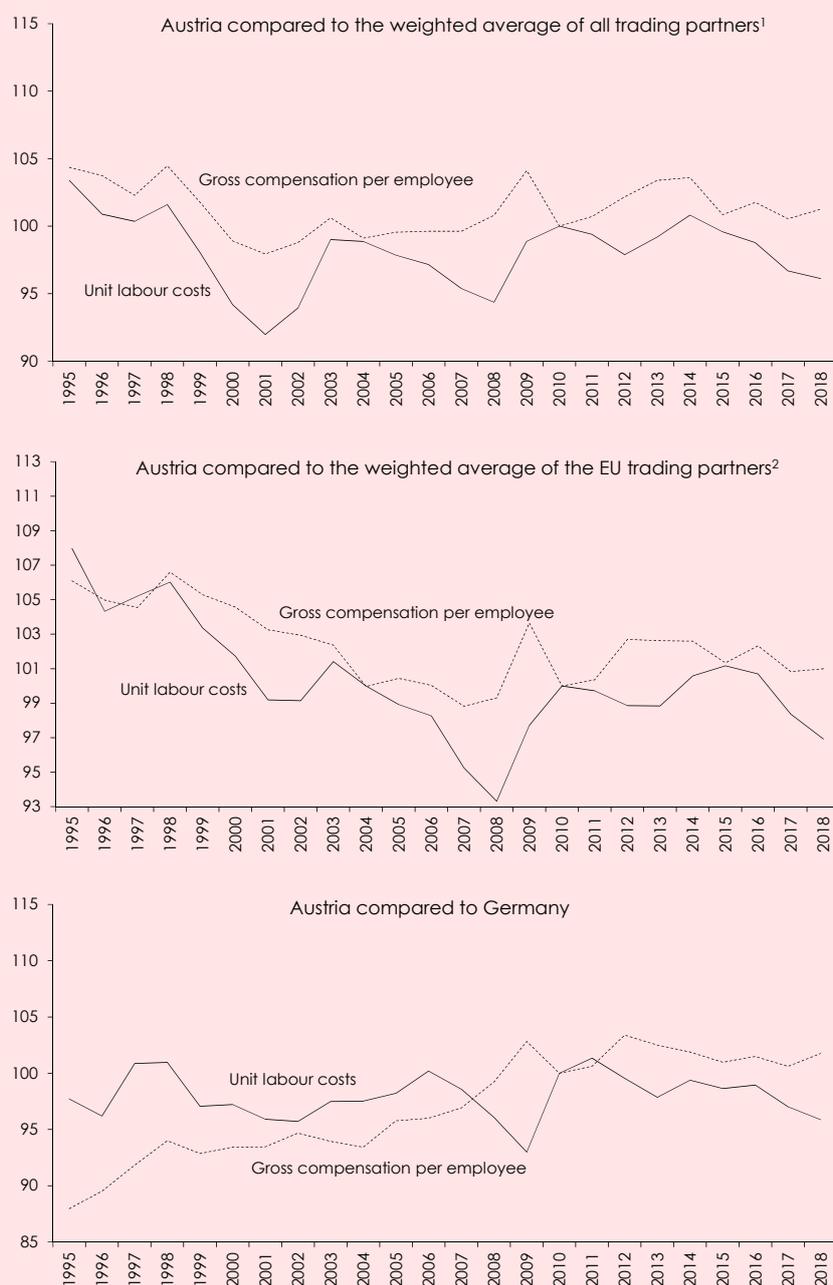
Unit labour costs developed heterogeneously across the individual countries: in those countries that were hardest hit by the economic crisis and the subsequent sovereign debt crisis in the euro area, a reduction in imbalance positions in price competitiveness has been observed in recent years. Apart from Ireland, where a correction of the National Accounts in 2015 led to an oversized increase in productivity², Greece recorded the sharpest decline in unit labour costs among trading partners since the crisis. Unit labour costs also rose more slowly in Spain and Italy than in Austria, while in Portugal, after a sharp correction immediately after the crisis, they rose again recently. In addition to these countries on the "periphery" of the monetary union, some other EU and non-EU countries such as Sweden, Finland, the Netherlands, Canada and Japan

² These changes are also reflected in the sharp rise in productivity in 2018. The new National Accounts regulations stipulate that income from intellectual property rights held in Ireland is to be counted as Irish GDP (OECD, 2016). This mainly concerns the manufacturing, thereby reflecting more correctly economic activity in Ireland, but distorts the assessment of unit labour costs. Unit labour cost developments in manufacturing can only fully reflect intellectual property rights if the country of production and the country of allocation of these property rights match. However, these can be different in global value chains.

have also seen a marked reduction in unit labour costs in recent years. In the Central and Eastern European EU countries, on the other hand, unit labour costs accelerated almost without exception in 2018. Even when looking at the last five years, the rates of change for most of these countries are significantly higher than for the Western European countries in the sample.

Figure 2: Development of relative labour and unit labour costs in the manufacturing sector

In €, 2010 = 100



Source: Eurostat, AMECO, national statistics, Conference Board, WIFO calculations. – ¹ Without Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan. – ² Without Austria, Malta, Cyprus.

5. Unit labour costs in the economy as a whole are rising faster than in manufacturing

The competitiveness of the export economy is determined not only by the unit labour costs of manufacturing but also by those of the economy as a whole: insofar as

services and non-tradable goods are important as intermediate inputs, their cost development has an influence on the competitiveness of the sectors involved in foreign trade (Deutsche Bundesbank, 1998).

Table 3: Development of per-capita unit labour costs in the manufacturing sector and in the total economy

In €

	Ø 2008-2013	Ø 2013-2018	Ø 2008-2018	2016	2017	2018
	Year-to-year percentage changes			Percentage changes from previous year		
<i>Manufacturing</i>						
Austria	+1.8	-0.2	+0.8	-1.2	-2.3	+1.1
Belgium	+0.3	-1.2	-0.5	+0.2	+1.3	+1.0
Denmark	-3.1	+1.1	-1.0	-2.5	+2.3	+0.4
Germany	+1.5	+0.2	+0.8	-1.5	-0.4	+2.4
Ireland	-2.6	-12.6	-7.7	+5.8	-2.8	-3.3
Greece	-3.1	-1.4	-2.2	-6.7	+0.4	-0.1
Spain	-0.5	-0.7	-0.6	+0.6	+0.4	-0.3
France	+0.3	+0.2	+0.2	-0.3	+0.2	+1.8
Italy	+1.4	-0.5	+0.4	-0.7	-1.8	+0.9
Luxembourg	+2.1	-2.5	-0.2	-11.4	+5.9	+1.6
Netherlands	+0.9	-0.7	+0.1	+0.9	-3.1	-0.7
Portugal	-1.2	+2.1	+0.5	+1.5	+2.7	+5.5
Finland	+4.4	-1.9	+1.2	-3.1	-8.3	+2.6
Sweden	+2.7	-2.0	+0.3	-1.2	-1.8	-3.8
UK	+1.2	+0.4	+0.8	-10.4	-5.0	+3.2
Bulgaria	+3.0	+5.3	+4.1	+3.0	+5.9	+9.7
Czech Republic	-0.6	+1.8	+0.6	+4.2	+0.5	+9.3
Estonia	-0.1	+3.2	+1.5	+2.7	+5.9	+1.8
Croatia	+1.7	+1.3	+1.5	-0.7	+1.6	+11.1
Latvia	-2.3	+4.7	+1.2	+4.2	+1.1	+8.1
Lithuania	-3.7	+4.7	+0.5	+7.5	+1.0	+4.5
Hungary	+0.2	+1.8	+1.0	+8.2	+6.3	+4.7
Poland	-4.7	+2.1	-1.4	+0.9	+8.9	+2.8
Romania	-7.4	+5.7	-1.1	+7.4	+3.9	+15.1
Slovenia	+1.5	+0.9	+1.2	+0.6	-1.4	+4.7
Slovakia	-0.5	-1.6	-1.1	-1.0	+4.4	+4.5
Norway	+2.7	-2.5	+0.0	-2.0	-1.1	-0.4
USA	+2.0	+3.8	+2.9	+0.4	-0.1	-4.6
Japan	+1.8	-1.7	+0.0	+10.6	-7.5	-2.7
Canada	+3.6	-2.0	+0.8	-4.5	-0.4	-3.9
All trading partners ¹	+0.8	+0.4	+0.6	-0.4	-0.2	+1.8
EU trading partners ²	+0.7	+0.2	+0.4	-0.7	-0.0	+2.7
<i>Austria</i>						
All trading partners ¹ = 100	+1.0	-0.6	+0.2	-0.8	-2.1	-0.6
EU trading partners ² = 100	+1.2	-0.4	+0.4	-0.5	-2.3	-1.5
Germany = 100	+0.4	-0.4	-0.0	+0.3	-1.9	-1.2
<i>Total economy</i>						
Austria	+2.2	+1.7	+1.9	+1.7	+0.8	+2.2
All trading partners ¹	+1.6	+1.6	+1.6	+1.1	+1.2	+2.0
EU trading partners ²	+1.5	+1.4	+1.4	+0.9	+1.5	+2.7
<i>Austria</i>						
All trading partners ¹ = 100	+0.6	+0.1	+0.3	+0.6	-0.4	+0.2
EU trading partners ² = 100	+0.7	+0.3	+0.5	+0.8	-0.7	-0.5
Germany = 100	-0.0	-0.1	-0.1	+0.4	-0.7	-0.5

Source: Eurostat, AMECO, national statistics, Conference Board, WIFO calculations. Unit labour costs: quotient of per-capita gross wages (employees) and real per-capita gross value added or GDP (persons employed). – ¹ Without Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index. – ² Without Austria, Malta, Cyprus; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

In Austria, labour costs per unit of production across all sectors rose by 2.2 percent in 2018, 0.2 percentage points more than the weighted average of all trading partners. This was partly due to exchange rate developments; relative unit labour costs in the

economy as a whole fell by 0.5 percent in 2018 compared with EU trading partners and also Germany. In 2017, unit labour costs for the Austrian economy as a whole also improved by international standards. In 2017, unit labour costs per production unit rose by 0.8 percent, which meant an improvement of 0.4 percent in the overall unit labour cost position vis-à-vis trading partners and 0.7 percent each vis-à-vis EU countries and Germany.

In the long term (2008-2018), unit labour costs in the Austrian economy as a whole grew by 0.3 percentage points p.a. faster than the average for trading partners, while in the medium term (2013-2018) the increase was only 0.1 percentage point higher per year. In relation to Germany, unit labour costs in the economy as a whole initially remained virtually constant (2008-2013); over the past five years they have declined by an average of 0.1 percentage point per year compared with Germany.

Unit labour costs in the economy as a whole rose more strongly than in manufacturing in 2018 as well as in the longer term, both in Austria and among trading partners. This is in line with expectations, as the manufacturing sector offers the greatest potential for increasing labour productivity through mechanisation and automation.

6. Summary

The available data for 2018 show an improvement in the relative unit labour cost position of Austrian manufacturing. Labour costs increased by 3.3 percent, in line with the average for trading partners. After a strong increase in productivity in 2017 (+3.4 percent), the growth of gross value added per capita weakened in 2018 (+2.1 percent), but it was significantly higher than for most trading partners. The nominal-effective exchange rate deteriorated slightly in 2018 (by 0.6 percent) due to the appreciation of the euro.

Together, these developments caused unit labour costs to rise by 1.1 percent. This was below the average of the trading partners, therefore the Austrian unit labour cost position in the manufacturing improved by 0.6 percent in 2018 relative to the weighted average of all trading partners. This development was based on the good performance of the export-oriented manufacturing sectors in the course of the year. Economic growth in Austria was higher than in Germany and in the euro area on average (Bilek-Steindl *et al.*, 2019). Due to exchange rates developments, the available data for 2018 show a somewhat stronger improvement in wage-related competitiveness vis-à-vis EU trading partners and Germany (by 1.5 and 1.2 percent, respectively), while unit labour costs in Austria increased in comparison with the non-European countries in the sample.

In a longer-term perspective, different phases of the development of the price competitiveness of the Austrian export economy can be observed: between 2003 and 2008, the relative unit labour cost position of Austrian manufacturing improved, while the trend from 2008 to 2014 was slightly negative. Since 2015 there has been a clear upward trend. This applies to the comparison with all trading partners and (since 2016) EU trading partners. However, the new data for this period also show an improvement in the Austrian unit labour cost position compared to Germany.

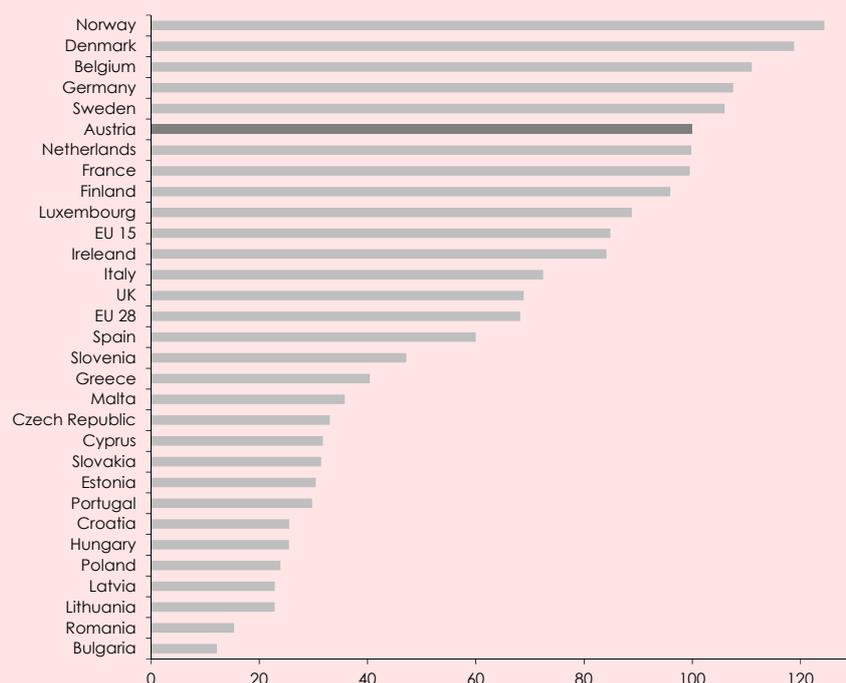
Overall unit labour costs increased by 2.2 percent in 2018, slightly more than the average for all trading partners, but slightly weaker than for EU trading partners. As in the previous year, unit labour costs in the economy as a whole improved in 2018 compared with Germany.

7. Appendix 7: labour costs per hour in manufacturing

While only data on labour costs per worker are available for the calculation of current, internationally comparable unit labour costs in manufacturing, this report can present labour costs per hour worked for the European countries. They are based on the labour cost survey carried out every four years in the EU countries. The annual evolution between two surveys is extrapolated using a labour cost index. The results published here are based on the 2016 survey published in 2018.

Figure 3: Labour costs in the manufacturing sector in international comparison

Hourly labour costs in €, 2018, Austria = 100



Source: Eurostat, employee survey 2016, Labour Cost Index; WIFO calculations. Without apprentices.

Table 4: Hourly labour costs in the manufacturing sector

	2014	2015	2016 ln €	2017	2018	Ø 2013-2018 Percentage change
Bulgaria	3.17	3.45	3.77	4.26	4.67	+9.3
Romania	4.17	4.42	4.79	5.44	5.89	+8.2
Lithuania	6.25	6.71	7.33	8.06	8.77	+7.8
Latvia	6.22	6.76	7.24	7.78	8.77	+8.4
Poland	7.51	7.78	7.81	8.51	9.18	+5.1
Hungary	7.72	7.98	8.38	9.21	9.78	+4.6
Croatia	8.92	9.12	8.42	8.92	9.80	+1.7
Portugal	10.11	10.46	10.76	11.06	11.43	+2.3
Estonia	9.22	9.79	10.34	10.98	11.68	+6.1
Slovakia	9.58	9.91	10.33	11.12	12.07	+5.7
Cyprus	11.80	11.77	11.75	11.84	12.18	+0.4
Czech Republic	9.24	9.72	10.20	11.39	12.68	+5.9
Malta	12.55	13.26	13.01	13.60	13.74	+2.2
Greece	15.47	15.32	15.11	15.17	15.52	+0.2
Slovenia	15.69	15.77	16.29	17.43	18.10	+3.7
Spain	22.66	22.55	22.64	22.84	23.02	+0.4
EU 28	24.04	24.44	24.89	25.49	26.18	+2.1
UK	25.95	29.67	26.93	25.85	26.42	+1.8
Italy	27.72	27.55	27.36	27.36	27.80	+0.3
Ireland	31.00	30.63	31.25	31.56	32.28	+1.3
EU 15	30.34	30.78	31.28	31.87	32.56	+1.8
Luxembourg	33.06	32.87	32.80	33.65	34.08	+0.9
Finland	36.11	36.85	37.11	36.44	36.81	+0.8
France	35.92	36.36	36.80	37.35	38.20	+1.4
Netherlands	35.79	35.86	36.41	37.28	38.30	+2.0
Austria	35.01	35.74	36.47	37.13	38.37	+2.4
Sweden	41.40	41.42	42.28	41.99	40.66	-0.8
Germany	37.73	38.47	39.34	40.44	41.27	+2.3
Belgium	41.27	41.35	41.39	41.93	42.59	+0.9
Denmark	41.98	42.66	43.92	44.62	45.59	+2.1
Norway	51.09	48.33	47.51	47.99	47.73	-2.0

Source: Eurostat, employee survey 2016, Labour Cost Index; WIFO calculations. Without apprentices.

Unlike the labour cost survey, the labour cost index is not calculated according to the same statistical concept in all countries. This limits international comparability somewhat. Due to these methodological limitations, the values of the labour cost index should be interpreted with caution. For Austria, the index is based on data from the business cycle survey. Some of these data may deviate noticeably from the National Accounts values for the development of gross wages, which form the basis for unit labour cost calculations. This may also be due to the fact that labour costs, unlike gross wages in National Accounts, include wage-related taxes of employers in addition to social security contributions.

Figure 4 shows the hourly labour costs calculated on the basis of the labour cost index for the period 2013-2018. In 2018, the labour hour cost in Austrian manufacturing was 38.4 €. Austria thus ranked 6th in a European comparison. In 2013-2018, labour costs per hour in Austria rose by an average of +2.4 percent, slightly more than the EU average (+2.1 percent p.a.) and slightly more than in Germany (+2.3 percent p.a.). In 2018 these data show an increase of 3.3 percent for Austria, 2.7 percent for the EU average and 2.0 percent for Germany.

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