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In 2017, the economic upturn in the Austrian manufacturing sector led to an improvement in the unit labour cost position compared with the weighted average of all trading partners. Productivity increased more strongly than in previous years, while labour costs in Austria rose only moderately. The Austrian unit labour cost position also improved in comparison with Germany and the other EU trading partners.

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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 synthetic measure which allows the representation of the effects of changes in labour costs, productivity and exchange rates on cost-determined competitiveness in one single indicator. The development of unit labour costs (labour costs per unit produced) measures the change in labour costs in relation to changes in productivity. As econometric studies show, the change in relative unit labour costs in the medium term is closely related to 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 Austrian price competitiveness based on unit labour costs in the manufacturing sector and in the economy as a whole refers to the period 1995 to 2017. 2017 is the the last year for which national accounts data are available. As will be explained in more detail below, with the publication of the national accounts for 2017, the data for previous years have been significantly revised. This resulted in a revaluation of unit labour costs in 2016. According to this, Austria's relative unit labour cost position in 2016 may have developed less unfavourably than previously assumed.

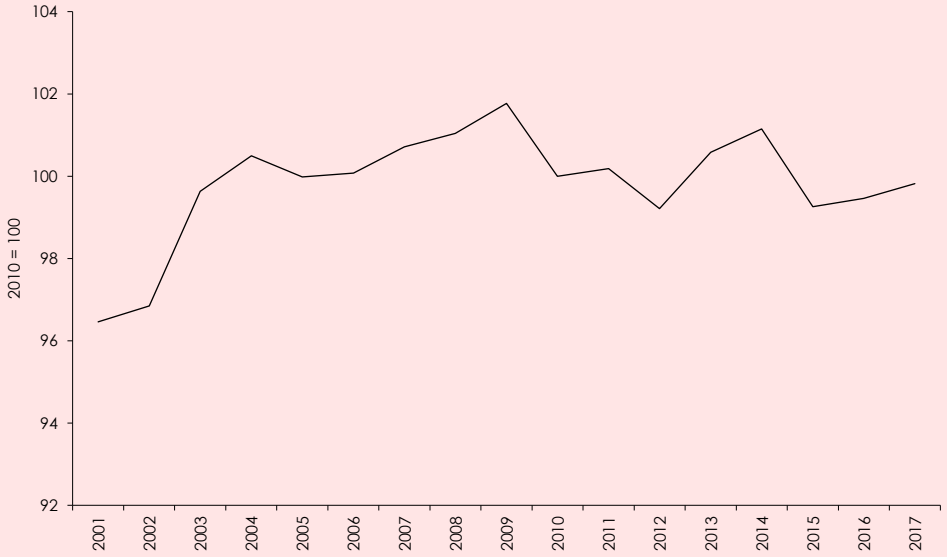
2. Nominal-effective exchange rate 2017 up by 0.4 percent

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 the national 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 data basis 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 single currency, 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, more than 70 percent is accounted for by the countries of the euro area. Nevertheless, the development of the nominal-effective exchange rate (Figure 1) remains an important determinant of price competitiveness. A case in point is the year 2015, when the euro depreciated significantly against the dollar and the Austrian unit labour cost position improved against the USA. At the same time, imports traded in dollar became more expensive.

Especially in the 1990s and early 2000s, the exchange rate index weighted by foreign trade shares fluctuated considerably. From an Austrian perspective, the nominal-effective exchange rate declined between 1995 and 2000[1]. Between 2000 and 2009, on the other hand, 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.

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.

Between 2010 and 2017, the overall development was quite stable from the point of view of the Austrian export industry. After a moderate devaluation, a nominal-effective appreciation of 2 percent followed between 2012 and 2014, which was compensated by a further devaluation in the following year. This decline was mainly caused by a depreciation of the euro against the dollar in 2015 (–16.5 percent). In 2016 (+0.2 percent) and now also in 2017, the nominal-effective exchange rate increased slightly compared to the previous year (+0.4 percent). This was mainly due to the appreciation of the euro against the British pound (almost +7 percent), the Japanese yen (+5 percent), the dollar and the Swedish krona (both around +2 percent). The slight depreciation of the euro against other EU currencies such as the Polish zloty (–2.5 percent), the Czech koruna (–2.6 percent) and the Hungarian forint (–0.7 percent) only partially offset this appreciation.

[1] An increase in the nominal-effective exchange rate corresponds to an appreciation of the reference currency (euro or before 1999 of the Schilling), a decrease in a depreciation.

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 – Glauninger,* 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 and Japan).

Information on the selection of countries

The aggregate "EU trading partners" includes the following countries: EU 28 without Austria, Malta, Cyprus, Croatia, Romania and Bulgaria. 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.

3. Moderate rise in labour costs, good productivity development

The development of labour costs in manufacturing is assessed on the basis of gross compensation per employee expressed in national currency (Table 1). This national-

accounting indicator measures total wages and salaries per capita, including employers' social contributions.

In nominal terms, gross labour compensation per capita in Austrian industry rose by 1.9 percent in 2017 according to the national accounts. Labour costs in Austria thus increased considerably less than in the previous year (+2.6 percent) and roughly parallel to labour costs per hour according to the Labour Cost Survey (+1.8 percent; Figure 4). The increase in 2017 was 0.8 percentage points lower than the average for trading partners.

In the longer term, labour costs in Austria developed somewhat more dynamically than the average for trading partners. Over the past ten years, they have risen by 2.6 percent p.a. in Austria and by an average of 2.3 percent and 2.2 percent p.a. respectively among EU trading partners and all trading partners. However, in the past five years the development of labour costs in Austria has lagged slightly behind that of the comparable countries.

As can be seen from the computation in 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 years 2008 and 2009 and then again in the period 2011 to 2014 (Figure 2). Due to the favourable development in 2015 and 2017, relative labour costs in Austria have fallen again in recent years.

As the most important trading partner, Germany plays a special role in the assessment of Austrian labour costs. The developments in Germany also indirectly influence the wage determination process in Austria. In the 2000s and until the outbreak of the economic crisis in 2008, labour costs in German manufacturing rose very moderately. Although the scope for wage rises was not fully exploited in Austria either (*Leoni,* 2017), in this period the rise in labour costs was stronger in Austria than in Germany. This pattern changed after the outbreak of the financial and economic crisis (Figure 2): between 2009 and 2017, gross per-capita labour compensation increased at a similar pace to Germany, with some fluctuations. The most recent figures for 2017 show a slightly lower cost dynamic in Austria than in Germany (+1.9 percent vs. +2.0 percent).

In the other countries of the euro area, especially those that were or are more severely affected by the crisis, the trend differed 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 even declined. This correction was particularly pronounced in Greece, but labour costs rose much more slowly than the EU average also in Portugal and Spain.

Since the 1990s, Eastern European countries have been catching up with Western European high-wage countries in terms of labour costs. Following the outbreak of the economic crisis, however, labour cost developments were more heterogeneous: In some countries, particularly in the Baltic states and Hungary, Slovenia, the catch-up process continued after a crisis-related interruption from 2011 onwards. Other countries, most notably Slovenia, Poland and the Czech Republic, recorded wage increases that were only as high or slightly higher than those in Austria. Between 2010 and 2017, total labour costs in Slovenia and the Czech Republic rose by 20 percent (in euro), the same rate as in Austria. In Poland, the cumulative increase was around 25 percent. In 2017, however, labour costs in Poland and the Czech Republic rose much more strongly than in Austria.

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

Productivity in the Austrian manufacturing sector rose only moderately in the medium term. For the period 2012-2017, a slight productivity disadvantage of Austrian manufacturing (+1.9 percent p.a.) compared to the average of EU trading partners (+2.5 percent) and all trading partners (+2.4 percent) can be observed. In 2007-2012, the increase in Austria was somewhat more dynamic than in the average of the trading partners, although this period also includes the crisis years. Compared to Germany, the first five-year period (2007-2012) showed a productivity growth advantage of +1.3 percent, but a disadvantage of –0.5 percent per year for the period 2012-2017.

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

In national currency

	Ø 2007-2012	Ø 2012-2017	Ø 2007-2017	2015	2016	2017
	Year-to-year percentage changes			Percentage changes from previous year		
Austria	+ 2.9	+ 2.2	+ 2.6	+ 1.7	+ 2.6	+ 1.9
Belgium	+ 2.3	+ 1.8	+ 2.1	+ 0.3	– 0.1	+ 3.1
Denmark	+ 3.2	+ 2.1	+ 2.7	+ 2.0	+ 2.2	+ 1.9
Germany	+ 1.5	+ 2.5	+ 2.0	+ 2.5	+ 2.1	+ 2.0
Ireland	+ 2.2	+ 1.9	+ 2.1	+ 1.1	– 1.4	+ 1.5
Greece	– 1.7	– 2.2	– 2.0	– 1.9	– 0.4	+ 1.0
Spain	+ 2.7	+ 0.7	+ 1.7	+ 0.1	+ 0.6	+ 0.9
France	+ 2.9	+ 2.0	+ 2.4	+ 2.9	+ 1.4	+ 1.8
Italy	+ 1.6	+ 1.9	+ 1.7	+ 3.1	+ 0.5	+ 1.4
Luxembourg	+ 1.1	+ 1.7	+ 1.4	+ 2.3	– 0.6	+ 3.1
Netherlands	+ 2.6	+ 2.0	+ 2.3	– 0.5	+ 2.5	+ 2.1
Portugal	+ 1.8	+ 1.3	+ 1.6	+ 0.6	+ 1.9	+ 2.3
Finland	+ 1.9	+ 0.8	+ 1.4	+ 2.5	+ 1.5	– 1.3
Sweden	+ 2.9	+ 2.4	+ 2.6	+ 1.3	+ 4.0	+ 2.1
UK	+ 2.8	+ 2.3	+ 2.6	+ 1.7	+ 1.8	+ 2.7
Czech Republic	+ 2.7	+ 3.6	+ 3.2	+ 3.2	+ 4.1	+ 6.7
Estonia	+ 4.1	+ 5.3	+ 4.7	– 1.0	+ 4.7	+ 5.4
Latvia	+ 3.1	+ 7.9	+ 5.5	+ 9.1	+ 6.3	+ 9.6
Lithuania	+ 3.1	+ 7.6	+ 5.3	+ 7.4	+ 6.2	+ 10.4
Hungary	+ 4.2	+ 5.8	+ 5.0	+ 4.3	+ 5.5	+ 8.9
Poland	+ 6.1	+ 3.7	+ 4.9	+ 2.2	+ 4.9	+ 5.0
Slovenia	+ 3.9	+ 2.8	+ 3.3	+ 2.1	+ 2.7	+ 3.0
Slovakia	+ 4.8	+ 3.7	+ 4.2	+ 3.7	+ 2.9	+ 5.5
Norway	+ 3.3	+ 2.7	+ 3.0	+ 2.2	+ 2.1	+ 1.4
USA	+ 1.5	+ 1.8	+ 1.6	+ 1.8	+ 0.3	+ 4.2
Japan	– 0.3	+ 1.3	+ 0.5	+ 1.1	+ 1.6	+ 1.8
Canada	+ 2.1	+ 1.8	+ 1.9	+ 1.4	+ 2.1	+ 0.3
All trading partners[1]	+ 2.0	+ 2.4	+ 2.2	+ 2.3	+ 2.0	+ 2.7
EU trading partners[2]	+ 2.2	+ 2.5	+ 2.3	+ 2.4	+ 2.1	+ 2.6
Austria						
All trading partners[1] = 100	+ 0.8	– 0.2	+ 0.3	– 0.6	+ 0.6	– 0.7
EU trading partners[2] = 100	+ 0.7	– 0.3	+ 0.2	– 0.7	+ 0.5	– 0.7
Germany = 100	+ 1.4	– 0.3	+ 0.5	– 0.8	+ 0.5	– 0.0

Source: Eurostat, AMECO, national statistics, Conference Board, European Central Bank, WIFO calculations. – [1] Without Austria, Malta, Cyprus, Romania, Bulgaria, Croatia, 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, Romania, Bulgaria, Croatia; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

The unfavourable figures for the period 2012 to 2017 are mainly attributable to the development up to 2015. In 2016 (+2.9 percent) and above all in 2017, productivity growth in Austrian manufacturing, at +3.2 percent, was significantly higher than the average for trading partners (+2.1 percent; Figure 2). In Germany, gross value added per capita rose by 1.6 percent in 2017, 1.6 percentage points less than in Austria. In the EU countries the rate of change was +2.0 percent, the average for all trading partners was +2.1 percent.

A look at individual countries reveals a heterogeneous picture: in particular Belgium, Estonia, Slovakia, but also Denmark and Canada as well as the crisis countries Greece, Portugal and Spain recorded weak or even declining productivity figures in 2017. The average value was raised by a few countries with high growth rates (mainly Eastern European countries as well as Ireland and Finland).

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

In national currency

	Ø 2007-2012	Ø 2012-2017	Ø 2007-2017	2015	2016	2017
	Year-to-year percentage changes			Percentage changes from previous year		
Austria	+ 0.7	+ 1.9	+ 1.3	+ 0.9	+ 2.9	+ 3.2
Belgium	+ 1.1	+ 3.2	+ 2.2	+ 5.7	+ 0.2	– 0.8
Denmark	+ 5.1	+ 1.9	+ 3.5	– 0.2	+ 4.3	+ 0.3
Germany	– 0.5	+ 2.5	+ 1.0	+ 2.1	+ 4.2	+ 1.6
Ireland	+ 5.3	+ 14.0	+ 9.6	+ 82.2	– 0.9	+ 6.3
Greece	– 2.3	+ 3.9	+ 0.7	+ 1.8	+ 10.5	+ 0.5
Spain	+ 1.9	+ 2.3	+ 2.1	+ 1.5	+ 0.6	+ 0.7
France	+ 1.8	+ 2.1	+ 2.0	+ 2.8	+ 2.4	+ 2.4
Italy	– 0.6	+ 1.9	+ 0.6	+ 3.7	+ 0.6	+ 1.4
Luxembourg	– 8.6	+ 6.1	– 1.5	+ 1.0	– 2.4	+ 3.1
Netherlands	+ 0.8	+ 1.9	+ 1.3	+ 0.6	+ 1.9	+ 3.2
Portugal	+ 2.1	+ 0.6	+ 1.3	– 0.2	– 0.7	+ 0.7
Finland	– 4.0	+ 3.5	– 0.3	+ 0.2	+ 4.2	+ 6.2
Sweden	+ 1.1	+ 1.4	+ 1.2	– 1.3	+ 4.0	+ 2.2
UK	+ 0.8	+ 0.6	+ 0.7	– 1.0	+ 0.7	+ 1.3
Czech Republic	+ 3.7	+ 2.7	+ 3.2	+ 1.6	+ 0.8	+ 9.1
Estonia	+ 3.2	+ 1.6	+ 2.4	– 2.9	+ 1.9	– 0.5
Latvia	+ 2.1	+ 3.7	+ 2.9	+ 1.7	+ 5.1	+ 8.5
Lithuania	+ 5.6	+ 3.3	+ 4.4	+ 0.9	– 0.6	+ 6.4
Hungary	– 0.4	+ 3.2	+ 1.4	+ 10.4	– 1.8	+ 1.6
Poland	+ 7.2	+ 2.0	+ 4.6	+ 3.9	– 0.7	+ 3.0
Slovenia	+ 1.6	+ 2.8	+ 2.2	+ 0.6	+ 2.0	+ 4.5
Slovakia	+ 5.3	+ 5.8	+ 5.5	+ 8.8	+ 7.0	– 0.8
Norway	+ 1.5	+ 0.9	+ 1.2	– 1.9	– 0.4	+ 1.8
USA	+ 1.1	+ 0.4	+ 0.8	– 0.1	+ 0.0	+ 1.9
Japan	+ 0.8	+ 3.1	+ 1.9	+ 4.6	+ 2.3	+ 4.2
Canada	+ 0.9	+ 1.8	+ 1.3	+ 2.4	+ 0.9	+ 0.7
All trading partners[1]	+ 0.6	+ 2.4	+ 1.5	+ 3.1	+ 2.4	+ 2.1
EU trading partners[2]	+ 0.5	+ 2.5	+ 1.5	+ 3.3	+ 2.6	+ 2.0
Austria						
All trading partners[1] = 100	+ 0.2	– 0.5	– 0.1	– 2.1	+ 0.5	+ 1.1
EU trading partners[2] = 100	+ 0.2	– 0.6	– 0.2	– 2.3	+ 0.3	+ 1.2
Germany = 100	+ 1.3	– 0.5	+ 0.4	– 1.2	– 1.3	+ 1.6

Source: Eurostat, AMECO, national statistics, Conference Board, European Central Bank, WIFO calculations. – [1] Without Austria, Malta, Cyprus, Romania, Bulgaria, Croatia, 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, Romania, Bulgaria, Croatia; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

4. Relative unit labour cost position of manufacturing improved

Changes in labour costs (gross labour compensation per capita) and productivity (gross value added per capita) give the evolution of unit labour costs (labour costs per unit of production). After a slight increase of 0.2 percent in 2014, unit labour costs rose again by 0.8 percent in 2015. For 2016, the revised national accounts figures show a slight deterioration of unit labour costs in Austrian manufacturing (–0.3 percent). In 2017, unit labour costs fell for the second time in a row (–1.2 percent). The medium-term average for the years 2007 to 2017, on the other hand, shows an increase in unit labour costs of 1.2 percent p.a.

In relation to the average of all trading partners, price competitiveness in Austria deteriorated by around 0.3 percent per year between 2007 and 2017, compared to Germany by an average of 0.2 percent per year. The year 2017 deviates from this longer-term average with an improvement in the unit labour cost position of 1.4 percent compared to trading partners and 1.6 percent compared to Germany. This development was partly due to the lower increase in labour costs in Austria, but above all to the significantly better productivity development in 2017. In 2016, the Austrian unit labour cost position had also deteriorated relative to the average of trading partners,

despite an improvement in labour costs in absolute values. As the latest national accounts figures show, the development was more favourable than previously assumed, with a deterioration of Austrian unit labour costs compared to the trading partners by 0.5 percent[2].

While the change in 2016 was mainly due to the development of Austrian labour costs, the medium-term deterioration in the unit labour cost position vis-à-vis EU trading partners in the years 2012 to 2015 can primarily be explained by below-average productivity developments in Austria.

In addition, the reduction of imbalance positions in the European crisis countries and the associated improvement in unit labour costs in these countries are reflected in the relative deterioration of the Austrian position. Apart from Ireland, where a correction of the national accounts in 2015 led to an oversized increase in productivity, Greece recorded the sharpest decline in unit labour costs among its trading partners since the crisis. In Spain, too, the trend was clearly downward. In Portugal and Italy, the development was more similar to Austria, but we can observe a trend reversal compared to the pre-crisis years when unit labour costs had risen much more than in Austria.

When interpreting unit labour cost dynamics, it should be borne in mind that average rates of change over a period are strongly influenced by the choice of the start and end year. For instance, over the period 2012-2017, unit labour costs in Austrian manufacturing increased by 0.3 percent p.a., while a shift by one year, to the period 2011-2016, results in a yearly change rate of +1.2 percent. The figure showing the development of the Austrian unit labour cost position, i.e., the real effective exchange rate deflated by unit labour costs, shows trend reversals and changes over time more clearly (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, followed by a renewed slight improvement until the outbreak of the economic crisis, the unit labour cost position deteriorated again in 2009 and 2010. Since 2010, unit labour costs in Austrian industry have fluctuated around a constant level relative to the average of all trading partners. Compared to the EU's trading partners, the development in the most recent period was somewhat less favourable. In the case of Germany, on the other hand, despite many fluctuations and the "anomaly" in the 2009 recession year, a remarkably stable development is also evident in the longer term.

5. Relative unit labour costs in the economy as a whole developed in parallel 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).

In Austria, labour costs per unit of production across all sectors rose by 0.6 percent in 2017, 0.6 percentage points less than the weighted average of all trading partners. Compared to the EU trading partners, relative unit labour costs in the economy as a whole fell by 1.0 percent in 2017. In 2016, the increase had been 1.7 percent, corresponding to a deterioration of 0.7 percent vis-à-vis trading partners.

[2] In the previous year, the national accounts figures for 2016 showed an increase in unit labour costs of 2.3 percent (*Hölzl – Leoni,* 2017). After the 2017 revision, however, a decline of 0.3 percent results (Table 3). For the relative unit labour cost position vis-à-vis EU trading partners in 2016, a deterioration of 2.6 percent was reported in the previous year; today, the result is a deterioration of 1 percent (Figure 3). The position vis-à-vis Germany was less extensively revised, and instead of a deterioration of 2 percent, the relative unit labour cost position now shows a deterioration of 1.8 percent. The assessment of the unit labour cost position was therefore also affected by the revisions in national accounts carried out by other countries.

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

In €

	Ø 2007-2012	Ø 2012-2017	Ø 2007-2017	2015	2016	2017
	Year-to-year percentage changes			Percentage changes from previous year		
Manufacturing						
Austria	+ 2.1	+ 0.3	+ 1.2	+ 0.8	– 0.3	– 1.2
Belgium	+ 1.2	– 1.3	– 0.1	– 5.1	– 0.4	+ 3.9
Denmark	– 1.8	+ 0.1	– 0.8	+ 2.1	– 1.8	+ 1.7
Germany	+ 2.0	+ 0.1	+ 1.0	+ 0.4	– 2.1	+ 0.4
Ireland	– 2.9	– 10.6	– 6.8	– 44.5	– 0.6	– 4.5
Greece	+ 0.7	– 5.9	– 2.7	– 3.7	– 9.8	+ 0.4
Spain	+ 0.8	– 1.6	– 0.4	– 1.4	– 0.0	+ 0.2
France	+ 1.0	– 0.2	+ 0.4	+ 0.2	– 0.9	– 0.5
Italy	+ 2.3	– 0.0	+ 1.1	– 0.6	– 0.1	– 0.1
Luxembourg	+ 10.5	– 4.2	+ 2.9	+ 1.3	+ 1.8	– 0.0
Netherlands	+ 1.8	+ 0.1	+ 1.0	– 1.0	+ 0.6	– 1.1
Portugal	– 0.3	+ 0.8	+ 0.2	+ 0.8	+ 2.6	+ 1.6
Finland	+ 6.2	– 2.5	+ 1.7	+ 2.3	– 2.7	– 7.1
Sweden	+ 3.0	– 1.1	+ 1.0	– 0.2	– 1.2	– 1.9
UK	– 1.4	+ 0.1	– 0.7	+ 14.1	– 10.5	– 5.3
Czech Republic	+ 1.0	+ 0.0	+ 0.5	+ 2.5	+ 4.2	+ 0.4
Estonia	+ 0.9	+ 3.6	+ 2.2	+ 2.0	+ 2.7	+ 5.9
Latvia	+ 1.1	+ 3.9	+ 2.5	+ 7.2	+ 1.1	+ 1.0
Lithuania	– 2.3	+ 4.1	+ 0.9	+ 6.4	+ 6.9	+ 3.7
Hungary	+ 1.7	+ 1.2	+ 1.4	– 5.9	+ 7.0	+ 8.0
Poland	– 3.0	+ 1.3	– 0.9	– 1.6	+ 1.3	+ 4.4
Slovenia	+ 2.2	+ 0.1	+ 1.1	+ 1.5	+ 0.7	– 1.5
Slovakia	+ 1.8	– 2.0	– 0.1	– 4.6	– 3.8	+ 6.3
Norway	+ 3.3	– 2.7	+ 0.3	– 2.7	– 1.2	– 0.8
USA	+ 1.7	+ 4.0	+ 2.9	+ 22.0	+ 0.5	+ 0.2
Japan	+ 8.4	– 5.9	+ 1.0	+ 1.0	+ 10.9	– 7.2
Canada	+ 3.9	– 2.6	+ 0.6	+ 2.5	– 2.1	– 0.2
All trading partners[1]	+ 1.7	+ 0.0	+ 0.9	+ 1.8	– 0.8	+ 0.2
EU trading partners[2]	+ 1.5	– 0.2	+ 0.7	– 0.1	– 1.2	+ 0.4
Austria						
All trading partners[1] = 100	+ 0.4	+ 0.2	+ 0.3	– 1.0	+ 0.5	– 1.4
EU trading partners[2] = 100	+ 0.7	+ 0.4	+ 0.6	+ 0.9	+ 1.0	– 1.7
Germany = 100	+ 0.1	+ 0.2	+ 0.2	+ 0.4	+ 1.8	– 1.6
Total economy						
Austria	+ 2.4	+ 1.7	+ 2.0	+ 1.5	+ 1.7	+ 0.6
All trading partners[1]	+ 2.1	+ 1.2	+ 1.7	+ 3.2	+ 0.9	+ 1.2
EU trading partners[2]	+ 2.0	+ 1.0	+ 1.5	+ 1.2	+ 0.7	+ 1.6
Austria						
All trading partners[1] = 100	+ 0.3	+ 0.5	+ 0.4	– 1.7	+ 0.7	– 0.6
EU trading partners[2] = 100	+ 0.4	+ 0.7	+ 0.5	+ 0.2	+ 1.0	– 1.0
Germany = 100	+ 0.2	– 0.0	+ 0.1	– 0.4	+ 0.4	– 1.3

Source: Eurostat, AMECO, national statistics, Conference Board, European Central Bank, 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, Romania, Bulgaria, Croatia, 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, Romania, Bulgaria, Croatia; weighted average of the trading partners based on the calculation of the WIFO Exchange Rate Index.

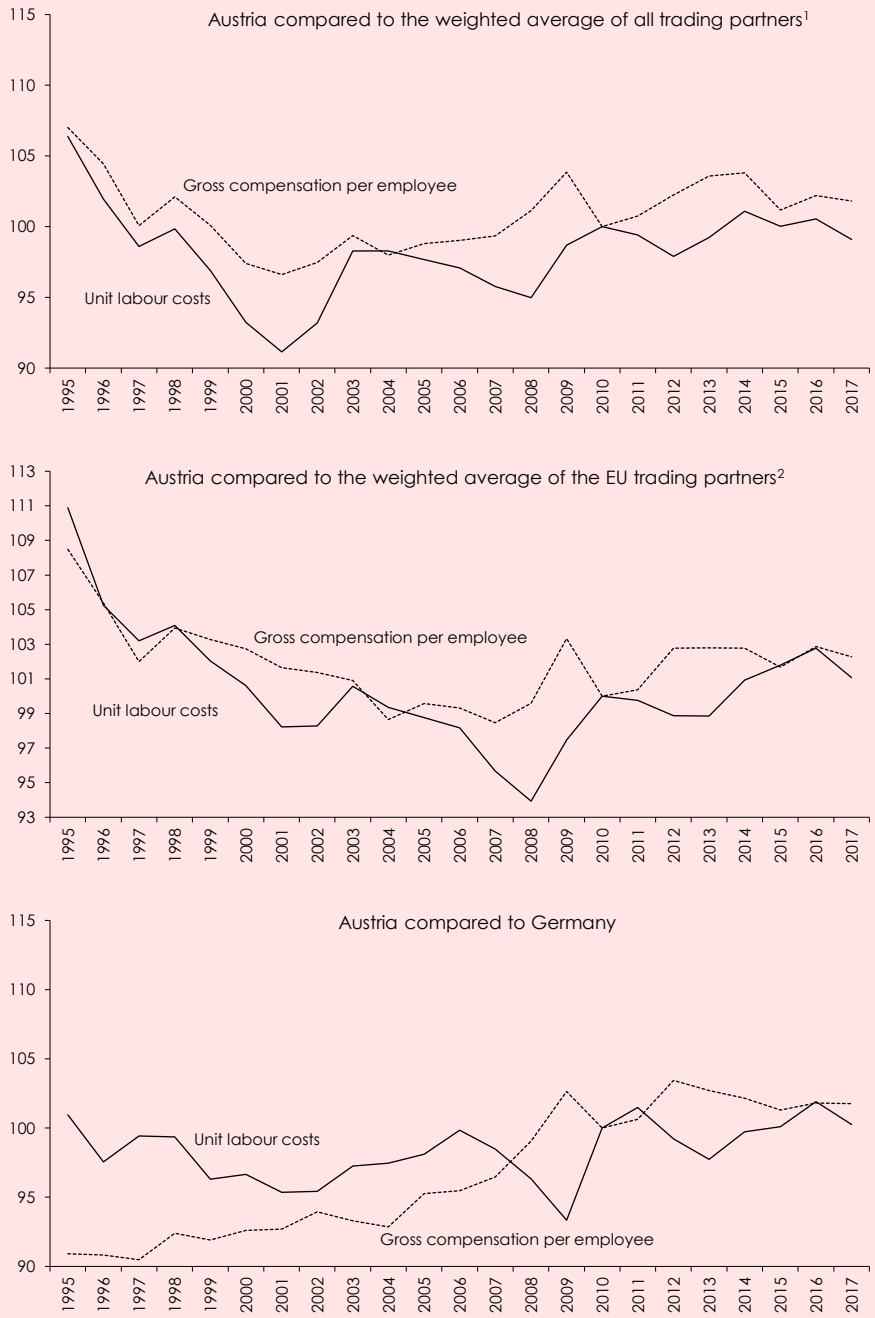
In the long term (2007-2017), unit labour costs across all sectors in Austria grew by 0.4 percent p.a. faster than the average for trading partners, and in the medium term (2012-2017) the increase was also 0.5 percentage points higher per year. In the pre-crisis period, this pattern was primarily determined by Germany, where unit labour costs showed very modest increases. The difference between Germany and the other EU countries was particularly pronounced between the beginning of the 2000s and 2008. Since the economic crisis, wage developments in Germany have picked up and in recent years have risen in line with those of other trading partners. In the period 2012-2017, Germany and Austria thus recorded a very similar average change in unit labour costs. From the Austrian point of view, the development was particularly

favourable in 2017, with an improvement in relative unit labour costs in the economy as a whole by 1.3 percent compared with Germany.

In the longer term, in Austria as well as in its trading partners, unit labour costs in the economy as a whole rose faster than in manufacturing. This is in line with expectations, as manufacturing offers the greatest potential for increasing labour productivity through mechanisation and automation.

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

In €, 2010 = 100



Source: Eurostat, AMECO, national statistics, WIFO calculations. – [1] Without Austria, Malta, Cyprus, Romania, Bulgaria, Croatia, but including Norway, the USA, Japan and Canada. – [2] Without Austria, Malta, Cyprus, Romania, Bulgaria, Croatia.

6. Summary

The available data for 2017 show an improvement in the relative unit labour cost position of Austrian manufacturing. At +1.9 percent, labour costs rose slightly less than the average for trading partners. After a strong increase in productivity in 2016 (+2.9 percent), the gross value added per capita also increased above average in 2017 (+3.2 percent), while the nominal-effective exchange rate remained almost constant in 2017.

Together, these developments led to a decline in unit labour costs of 1.2 percent. The Austrian unit labour cost position thus improved by 1.4 percent in 2017 relative to the weighted average of all trading partners. The available data for 2017 also show an improvement in wage-related competitiveness vis-à-vis EU trading partners and Germany (by 1.7 percent and 1.6 percent respectively).

The improvement in Austria's relative unit labour cost position in 2017 is attributable to the good business cycle developments in manufacturing and exports. Economic growth in Austria was higher than in Germany and on average in the euro area (*Bilek-Steindl et al.,* 2018).

Unit labour costs in the economy as a whole rose by 0.6 percent in 2017, weaker than the average for all trading partners and EU trading partners. Also, in comparison to Germany unit labour costs for the economy as a whole improved in 2017.

From a longer-term perspective, different phases in the development of the price competitiveness of the Austrian export economy can be observed: a strong improvement compared to the average of all trading partners in the second half of the 1990s was followed in the early 2000s by a contrary development. Between 2003 and 2008, the relative unit labour cost position of Austrian manufacturing improved again, from 2008 to 2017 the trend was slightly negative. This applies particularly to the years 2013 to 2016 and the comparison with EU trading partners. During this period, the Austrian unit labour cost position also deteriorated compared to Germany.

7. Appendix: labour costs per hour in manufacturing

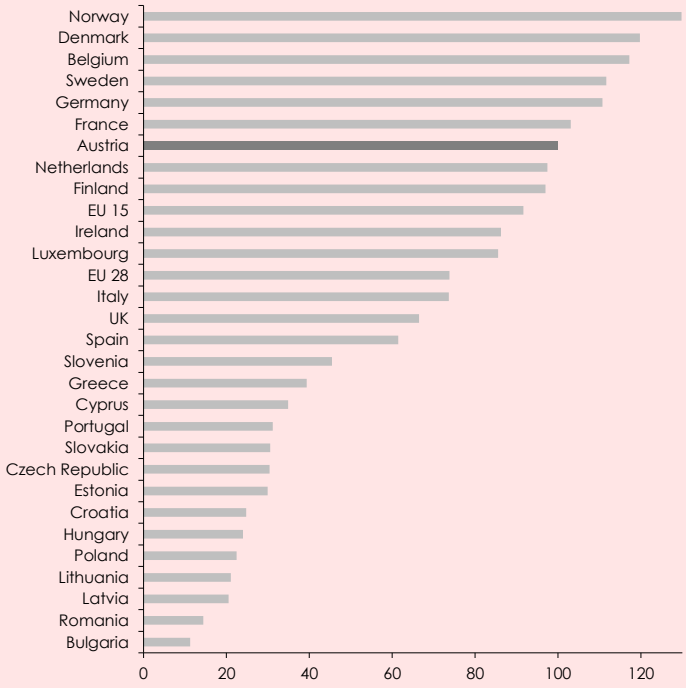
While only data on labour costs per worker are available for the calculation of current, internationally comparable unit labour costs in manufacturing, labour costs per hour worked are available at least for the European countries. They are based on the Labour Cost Survey carried out every four years in the EU countries. The annual changes between two surveys are extrapolated using the Labour Cost Index. The results published here are based on the 2012 survey published at the end of 2014.

Unlike the Labour Cost Survey, the Labour Cost Index is not compiled according to the same statistical concept in all countries. This limits international comparability somewhat. For Austria, the index is based on data from the business survey. Due to these methodological limitations, the values of the Labour Cost Index should be interpreted with caution.

Figure 4 shows the labour costs per hour for the period 2012-2017, calculated on the basis of the Labour Cost Index. In 2017, a working hour in Austria's manufacturing cost 37.4 €. Austria thus ranked 7th in a European comparison. In 2012-2017, labour costs per hour in Austria rose by an average of +2.3 percent, slightly more than the EU average (+2.1 percent p.a.) and slightly less than in Germany (+2.8 percent p.a.). In 2017, these data show an increase of 1.8 percent for Austria, 2.4 percent for the average EU trading partner and 2.5 percent for Germany.

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

Hourly labour costs in €, 2017, Austria = 100



Source: Eurostat, employee survey 2012, Labour Cost Index; WIFO calculations. Without apprentices. Malta: no data available.

Table 4: Hourly labour costs in the manufacturing sector

	2013	2014	2015	2016	2017	Ø 2012-2017
			In €			Percentage change
Bulgaria	2.96	3.13	3.41	3.73	4.21	+ 8.4
Romania	3.93	4.13	4.37	4.74	5.38	+ 8.0
Lithuania	5.80	6.14	6.67	7.15	7.69	+ 7.0
Latvia	5.87	6.10	6.55	7.15	7.86	+ 7.3
Poland	7.06	7.40	7.67	7.69	8.39	+ 4.2
Hungary	7.62	7.54	7.78	8.17	8.98	+ 3.6
Croatia	8.18	8.09	8.27	8.73	9.28	+ 3.0
Estonia	8.89	9.41	10.00	10.55	11.21	+ 6.4
Czech Republic	9.54	9.27	9.77	10.27	11.36	+ 3.4
Slovakia	9.38	9.83	10.17	10.61	11.43	+ 5.1
Portugal	10.75	10.68	11.04	11.36	11.66	+ 1.3
Cyprus	12.96	12.83	12.83	12.92	13.06	– 0.6
Greece	14.60	14.72	14.58	14.58	14.74	– 0.9
Slovenia	14.76	15.31	15.39	15.90	17.01	+ 3.1
Spain	22.71	22.82	22.69	22.80	22.98	+ 0.5
UK	23.26	25.00	28.60	25.79	24.86	+ 1.1
Italy	27.57	27.84	27.68	27.49	27.54	+ 0.3
EU 28	25.41	25.94	26.43	26.98	27.63	+ 2.1
Luxembourg	31.03	31.54	31.36	31.30	31.99	+ 1.1
Ireland	31.01	31.69	31.32	31.97	32.28	+ 0.9
EU 15	31.90	32.52	33.08	33.68	34.30	+ 1.9
Finland	35.38	36.05	36.78	37.03	36.29	+ 0.7
Netherlands	33.82	34.95	34.99	35.29	36.45	+ 1.8
Austria	34.31	35.28	36.05	36.75	37.42	+ 2.3
France	36.46	36.89	37.44	38.01	38.55	+ 1.3
Germany	37.25	38.23	39.24	40.43	41.44	+ 2.8
Sweden	42.20	41.20	41.22	42.06	41.76	+ 0.2
Belgium	42.73	43.20	43.28	43.32	43.87	+ 0.9
Denmark	41.28	42.11	42.77	44.07	44.80	+ 2.0
Norway	53.56	51.81	48.91	48.01	48.56	– 2.0

Source: Eurostat, employee survey 2012, Labour Cost Index; WIFO calculations. Without apprentices. Malta: no data available.

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