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Position, but Data Distorted by
COVID-19 Measures**

Benjamin Bittschi, Andreas Reinstaller

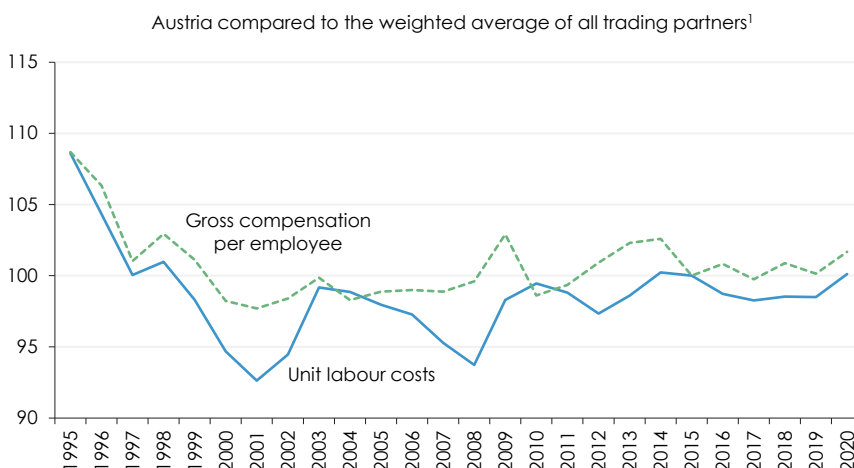
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- The paper examines the development of wage-related competitiveness on the basis of labour cost developments in the manufacturing sector and in the Austrian economy as a whole, relative to its main trading partners.
- Relative unit labour cost developments are a composite measure of changes in labour costs, productivity and the exchange rate.
- Austria's nominal effective exchange rate appreciated slightly by 0.7 percent in 2020.
- Unit labour costs in Austrian manufacturing rose by 6.0 percent in 2020.
- The domestic unit labour cost position deteriorated relative to both the weighted average of all trading partners (+1.7 percentage points) and EU trading partners (+1.5 percentage points).
- The 2020 data are distorted by the COVID-19 measures, so the results should be interpreted with great caution.

Development of relative labour costs and unit labour costs in manufacturing

In €, 2015 = 100



"In the crisis year 2020, Austria's unit labour cost position deteriorated vis-à-vis its main trading partners. However, COVID-19 measures in Austria and abroad distort the data, which is why the development of the price competitiveness of the domestic export economy in 2020 should be interpreted with caution."

After a prolonged period of improvement or stagnation, Austria's unit labour cost position vis-à-vis its trading partners deteriorated in 2020 (Source: Eurostat, AMECO, national statistical offices, WIFO calculations; excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan).

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In 2020, there was a marked year-on-year increase in unit labour costs in the manufacturing sector of 6.0 percent. Austria's unit labour cost position deteriorated both relative to the weighted average of all its trading partners (+1.7 percentage points) and relative to its EU trading partners (+1.5 percentage points). Despite this overall development, the unit labour cost position relative to Germany, Austria's most important trading partner (+0.1 percentage point) is largely unaltered. Due to differences in policy design and implementation of the COVID-19 aid measures (especially with regard to short-time work) across countries as well as the statistical treatment of these measures in the Quarterly National Accounts, the data underlying our calculations for 2020 are distorted and comparability across countries is limited.

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1. Relative unit labour costs reflect Austria's price competitiveness in manufacturing

The analysis of relative unit labour costs allows an assessment of the development of the price competitiveness of Austrian goods over time. Relative unit labour costs are an index that combines changes in labour costs, productivity and the exchange rate in one indicator and compares them with the unit labour costs (i.e. labour costs per unit produced) of the main partners, adjusted for exchange rate changes.

However, unit labour costs are only a partial measure of the international competitiveness of a sector or even of an entire economy, as they only reflect the price- or, more precisely, wage-related dimension of competitiveness. Some econometric studies show, the change in relative unit labour costs contributes significantly to explaining trade flows and shifts in market shares between trading partners in the medium term (e.g. Carlin et al., 2001; Köhler-Töglhofer et al., 2017). However, other studies emphasise 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 et al., 2015).

This paper is the annual update of the analysis of unit labour cost developments. It covers the period from 1995 to 2020 and, for the first time, also includes the effects of the COVID-19 pandemic on Austria's unit labour cost position vis-à-vis its main trading partners. However, the unit labour cost position determined for the year 2020 is only meaningful to a limited extent. This concerns both the comparability with previous years and the relation to the main partner countries. These limitations are due to country-specific differences in the design and implementation as well as the statistical coverage of measures intended to mitigate the negative effects of the COVID-19 health policy restrictions (e.g. short-time work).

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 (with the exception of Cyprus and Malta) as well as the UK, Norway, the USA, Japan and Canada. These 29 countries together cover around four-fifths of Austrian imports and exports.

With the National Accounts for 2020, which were published in September 2021, the data for the years 2016 to 2019 were also revised.

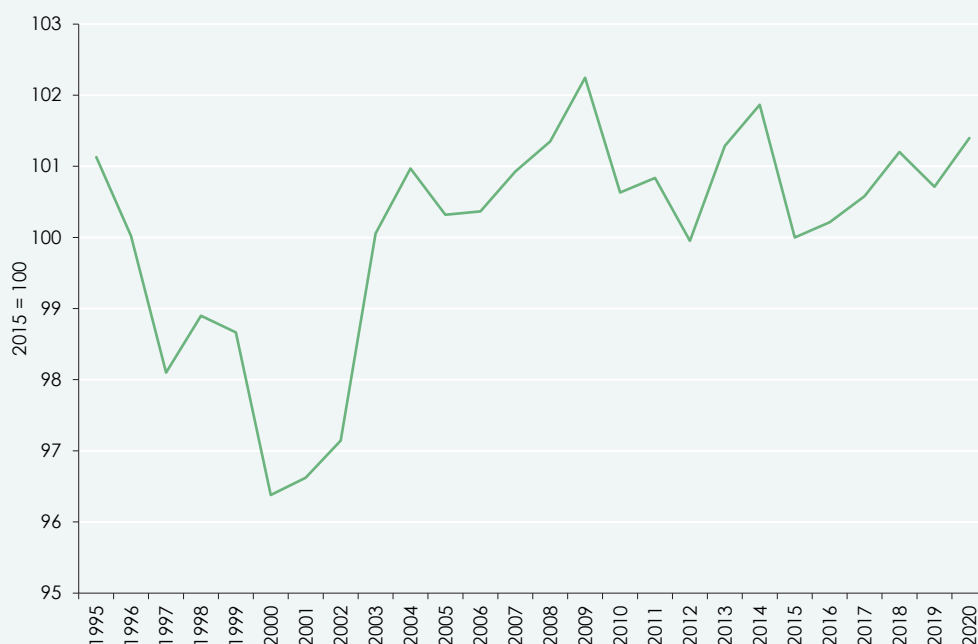
This revision resulted in a correction of individual values. The assessment of the development of unit labour costs in the period under review changed primarily with regard to the trading partners as a whole and the EU trading partners. Compared with the analysis from the previous year (Leoni and Hölzl, 2020), the development of relative unit labour costs shifted somewhat to the disadvantage of Austrian industry.

2. In 2020, the nominal effective exchange rate was up by 0.7 percent

The starting point for the calculation of the relative unit labour cost position is the nominal effective exchange rate. It compares 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 scheme¹. By deflating the nominal effective exchange rate with unit labour costs, the unit labour cost position of

domestic production of tangible goods can be determined. The unit labour cost position thus reflects the real external value of the national currency in international competition and therefore corresponds to a real effective exchange rate of this currency (see box "Calculation method and data basis for the unit labour cost comparison").

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.

In 2020, there was a slight appreciation in the nominal effective exchange rate for industrial goods from an Austrian perspective (+0.7 percent)². This increase was the result of a combination of appreciation and depreciation of the euro against the national currencies of the various trading partners (Figure 1). The euro appreciated against the

pound sterling (+1.36 percent), the dollar (+1.94 percent), the Canadian dollar (+2.94 percent), the Norwegian krone (+8.88 percent), the Hungarian forint (+7.99 percent), the Polish zloty (+3.39 percent) and the Romanian lei (+1.94 percent). These upward trends were offset by depreciation movements against other currencies.

¹ Since slightly more than 70 percent of the weighting scheme used in the currency basket is accounted for by euro area countries, exchange rate changes play only a minor role in the calculation of the nominal effective exchange rate.

² A decline in the nominal effective exchange rate corresponds to a depreciation of the reference currency (the euro or, before 1999, the schilling), while an increase corresponds to an appreciation.

Despite the slight appreciation in 2020, the nominal effective exchange rate for domestic industrial goods has remained broadly unchanged in the recent past.

The euro depreciated against the Swedish krona (-0.93 percent), the Swiss franc (-3.81 percent), the Japanese yen (-0.23 percent) and the Danish krone (-0.16 percent). However, these losses were more than compensated for by the aforementioned appreciations, resulting in an overall increase in the nominal effective exchange rate for Austrian industrial goods.

Since 2004, however, the nominal effective exchange rate for industrial goods has remained broadly unchanged (Figure 1). For a number of years, it has been moving within a relatively narrow fluctuation band, without a clear trend becoming apparent³.

Calculation method and data basis for the 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 the real gross value added (*GVA*):

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

Dividing both total wages and gross value added by a measure of labour input, gives the two components of unit labour costs: labour costs per unit of labour and labour productivity.

A change in the share of the self-employed in the labour force can be taken into account by expressing unit labour costs as the ratio 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 formulas and with data determined according to the National Accounts survey concept. 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 has to 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.

WIFO relies 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 weights as well as a new chaining of the weighted country data was introduced (for details on the method see Mooslechner, 1995; Köhler-Töglhofer and Magerl, 2013; Köhler-Töglhofer et al., 2017). The double export weighting considers competition with trading partners in the respective domestic markets, but also competition in all other export markets. The weights are determined and applied for specific periods of time. The most recent recalculation is based on the 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. An adjustment of the weighting scheme is planned for 2022.

The data on gross compensation (remuneration), productivity and unit labour costs in manufacturing and in the economy 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).

To the country selection

The aggregate "EU trading partners" includes the following countries: EU 27 excluding Austria, Malta and Cyprus. The term "All trading partners" includes the aggregate "EU trading partners" plus the UK, Norway, the USA, Canada and Japan.

3. The decline in labour costs and productivity during the COVID-19 crisis was weaker in Austria relative to its main trading partners

The development of labour costs in manufacturing is assessed on the basis of gross compensation (remuneration) per employee in national currency (Table 1). These National Accounts figure records the total

wages and salaries including employers' social security contributions per capita.

In nominal terms, gross compensation per capita in Austrian manufacturing remained

³ The range of variation would be larger if a larger number of non-euro countries could be included in

the analysis than is possible here due to data availability.

at the previous year's level in 2020, according to the latest National Accounts data. In the year of the COVID-19 crisis, labour costs in Austria thus remained unchanged, compared to the previous year⁴. However, as a result of the government's COVID-19 aid measures in 2020, the financing of compensation of employees shifted to a significant extent from companies to the public sector. Since this circumstance is not reflected in the National Accounts, the data on labour costs do not provide any information on the actual expenditure of companies. They are therefore not meaningful as a determinant of price competitiveness for the year 2020. This problem does not only apply to Austria, but also to the comparative countries in a similar way. Moreover, very different support measures were taken, which makes the comparison of labour costs very difficult, both between countries and within individual countries over time.

Accordingly, the development of labour costs per capita among Austria's main trading partners shows very different patterns. In the weighted average of all partner countries, however, they declined only slightly in 2020 (–0.7 percent). The gap between Austria (±0.0 percent) and its EU trading partners, as well as Germany is larger: on a weighted average of the EU trade partners, labour costs fell by 1.6 percent in 2020, and in Germany by even 2.4 percent.

In a longer-term comparison, however, labour costs per capita grew somewhat more dynamically in Austria than in the weighted average of the trading partners. Between 2010 and 2020, they rose by an average of 2.4 percent p.a. in Austria, while they increased by 2.2 percent p.a. both on average for all trading partners and on average for EU trading partners. However, these comparisons based on figures in national currency, do not yet take exchange rate fluctuations into account.

As the analysis in the single currency – i.e. taking exchange rate fluctuations into account – shows, labour costs in Austria rose relative to the reference countries, especially in the crisis year 2009 and then again between 2011 and 2014 (Figure 2). In 2015, relative labour costs in Austria declined again and have fluctuated only slightly since then, although a slight increase can be seen again at the current margin. After taking exchange rate changes into account, labour costs per capita in Austria were roughly the same in 2020 as in 1999

relative to its trading partners. The same applies when comparing Austria with its EU trading partners. Here, relative labour costs in 2020 were at the level of the early 2000s.

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 2009, labour costs per capita in Germans manufacturing rose only very moderately. During this period, labour costs in Austria grew much faster than in Germany (Figure 2). This pattern changed after the outbreak of the financial market and economic crisis. Until 2017, there was no clear shift in the cost ratio between the two countries. However, the data for 2018 to 2020 show a stronger increase in gross compensation per capita in Austria than in Germany.

While labour costs per capita in Germany and Austria increased at roughly the same rate as the average for all EU countries in the 2010s, other countries in the euro area recorded lower increases. With the exception of Ireland, this applies in particular to those countries that suffered significantly from the financial market and economic crisis and the subsequent sovereign debt crisis. A sharp rise in labour costs per capita in the 2000s was followed in the 2010s by a noticeably muted development in countries such as Greece, Spain and Portugal, with costs rising or falling only slightly. In other countries, such as France, Italy and Finland, labour cost dynamics were also significantly weaker than the EU average during this period.

In the Eastern European countries, on the other hand, a process of catching up with the Western European high-wage countries has been taking place since the 1990s in terms of labour costs. After the outbreak of the financial and economic crisis, this process came to a halt in some countries, such as Poland and Hungary. In the years that followed, however, rates of increase well above the EU average were again recorded, indicating a continuation of the catching-up process. Even at the current margin, labour costs are rising extremely strongly in many Eastern European countries.

In addition to labour costs per employee, productivity is the second important component in the calculation of relative unit labour costs. It is measured as real gross value added per capita (employed persons).

Between 2010 and 2020, labour costs per capita in Austria grew somewhat more dynamically than the average of the trading partners.

⁴ Due to the revision of the National Accounts data, the growth rates of labour costs had to be adjusted compared to the previous year's contribution (Hölzl and Leoni, 2020). For 2018, the growth rate is now

slightly higher at 3.5 percent (+0.2 percentage points), while for 2019 it is slightly lower at 2.5 percent (–0.7 percentage points).

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

In national currency

	Ø 2010-2015	Ø 2015-2020	Ø 2010-2020	2018	2019	2020
	Percentage changes p.a.			Percentage changes from previous year		
Austria	+ 2.9	+ 2.0	+ 2.4	+ 3.5	+ 2.5	+ 0.0
Belgium	+ 2.8	+ 0.8	+ 1.8	+ 0.9	+ 2.4	- 2.7
Denmark	+ 2.1	+ 1.9	+ 2.0	+ 0.8	+ 3.2	+ 2.0
Germany	+ 2.7	+ 1.2	+ 2.0	+ 2.0	+ 2.4	- 2.4
Ireland	+ 1.6	+ 3.1	+ 2.3	+ 7.2	+ 4.1	+ 0.2
Greece	- 4.0	+ 1.1	- 1.4	+ 3.7	+ 3.3	- 1.0
Spain	+ 0.8	+ 0.0	+ 0.4	+ 1.1	+ 1.0	- 3.6
France	+ 2.2	- 0.2	+ 1.0	+ 2.0	- 3.5	- 3.2
Italy	+ 2.2	- 0.5	+ 0.8	+ 1.6	+ 1.6	- 8.2
Luxembourg	+ 1.6	+ 0.1	+ 0.8	+ 1.0	+ 0.3	- 3.6
Netherlands	+ 2.3	+ 2.4	+ 2.3	+ 1.9	+ 2.6	+ 3.1
Portugal	+ 0.6	+ 2.7	+ 1.7	+ 4.3	+ 3.3	+ 2.2
Finland	+ 2.0	+ 0.1	+ 1.1	+ 0.9	+ 1.2	- 1.8
Sweden	+ 2.8	+ 2.4	+ 2.6	+ 2.4	+ 2.8	+ 1.0
UK	+ 1.9	+ 3.3	+ 2.6	+ 3.4	+ 4.6	+ 5.7
Bulgaria	+ 7.6	+ 8.9	+ 8.2	+ 9.0	+ 9.7	+ 7.1
Czech Republic	+ 2.4	+ 5.1	+ 3.7	+ 7.3	+ 6.1	+ 0.7
Estonia	+ 6.1	+ 6.5	+ 6.3	+ 9.3	+ 10.0	+ 4.5
Croatia	+ 0.6	+ 0.1	+ 0.4	+ 1.4	- 4.0	+ 2.5
Latvia	+ 6.6	+ 7.9	+ 7.3	+ 9.9	+ 9.0	+ 5.4
Lithuania	+ 6.4	+ 6.8	+ 6.6	+ 4.0	+ 10.2	+ 3.4
Hungary	+ 5.1	+ 5.3	+ 5.2	+ 7.9	+ 7.4	+ 3.3
Poland	+ 3.8	+ 6.3	+ 5.0	+ 6.8	+ 11.6	+ 4.7
Romania	+ 4.5	+ 9.8	+ 7.1	+ 6.6	+ 10.7	+ 5.7
Slovenia	+ 2.8	+ 3.3	+ 3.0	+ 3.7	+ 4.4	+ 2.4
Slovakia	+ 4.0	+ 4.8	+ 4.4	+ 8.7	+ 5.0	+ 0.9
Norway	+ 4.0	+ 1.8	+ 2.9	+ 2.1	+ 3.6	+ 0.1
USA	+ 2.1	+ 2.7	+ 2.4	+ 2.6	+ 1.7	+ 5.3
Japan	+ 0.8	+ 1.3	+ 1.0	+ 2.7	+ 0.4	+ 1.1
Canada	+ 2.5	+ 2.7	+ 2.6	+ 3.9	+ 2.2	+ 6.8
All trading partners ¹	+ 2.5	+ 1.9	+ 2.2	+ 2.9	+ 2.8	- 0.7
EU trading partners ²	+ 2.6	+ 1.8	+ 2.2	+ 2.9	+ 2.9	- 1.6
	Growth difference in percentage points p.a.			Growth difference in percentage points		
Austria						
All trading partners ¹ = 100	+ 0.4	+ 0.0	+ 0.2	+ 0.6	- 0.3	+ 0.7
EU trading partners ² = 100	+ 0.3	+ 0.1	+ 0.2	+ 0.5	- 0.4	+ 1.6
Germany = 100	+ 0.2	+ 0.8	+ 0.5	+ 1.4	+ 0.1	+ 2.4

Source: Eurostat, AMECO, national statistical offices, WIFO calculations. –¹ Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods. –² Excluding Austria, Malta, Cyprus, the UK; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods.

In 2020, Austrian productivity slumped due to the COVID-19 crisis. Its slow-down was in line with the average decline in productivity observed for Austria's main trading partners.

The subdued development of productivity per capita in 2019 was followed by a sharp slump in the COVID-19 crisis year 2020 (Table 2): according to National Accounts figures published in September 2021, Austrian manufacturing recorded a productivity per capita decline of 5.6 percent in 2020 (-0.9 percent in 2019). However, in the weighted average of trading partners, the decline was similarly strong in 2020 (-5.5 percent and -6.3 percent for EU trading partners, respectively). In Germany, where productivity per capita had already shrunk

by almost 1.3 percent in 2019 due to the onset of the economic downturn in industry, a slump of as much as -7.8 percent followed in 2020.

Other important European and non-European trading partners also recorded significant productivity losses in 2020. The decline was particularly sharp in Italy and France. Here, productivity per capita slumped by more than 10 percent in each case. In other countries such as Sweden, Norway, Belgium and the Netherlands, the productivity

declines were more moderate than in Austria. Some Eastern European countries, on the other hand, may even have recorded

slight productivity gains, such as Denmark or the USA, for example.

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

In national currency

	Ø 2010-2015	Ø 2015-2020	Ø 2010-2020	2018	2019	2020
	Percentage changes p.a.			Percentage changes from previous year		
Austria	+ 1.9	+ 0.1	+ 1.0	+ 1.6	- 0.9	- 5.6
Belgium	+ 2.8	- 0.8	+ 1.0	- 0.9	+ 1.2	- 3.2
Denmark	+ 3.2	+ 4.4	+ 3.8	+ 1.4	+ 5.3	+ 2.5
Germany	+ 1.4	- 0.7	+ 0.3	- 0.5	- 1.3	- 7.8
Ireland	+ 13.9	+ 5.0	+ 9.3	+ 12.4	+ 0.4	+ 19.2
Greece	- 0.9	- 0.1	- 0.5	+ 0.6	+ 1.1	+ 0.1
Spain	+ 3.1	- 1.3	+ 0.9	- 1.7	- 1.0	- 5.3
France	+ 2.2	- 1.2	+ 0.5	+ 1.7	- 0.9	- 10.2
Italy	+ 1.5	- 1.4	+ 0.0	+ 0.7	- 0.8	- 10.9
Luxembourg	+ 2.1	+ 1.0	+ 1.5	- 2.2	+ 0.5	- 6.6
Netherlands	+ 2.0	+ 1.0	+ 1.5	+ 1.9	- 1.6	- 1.9
Portugal	+ 1.1	- 0.6	+ 0.3	+ 0.2	- 0.1	- 5.6
Finland	- 0.9	+ 1.9	+ 0.5	- 5.9	+ 2.9	- 0.2
Sweden	+ 1.0	- 0.4	+ 0.3	- 0.2	- 1.4	- 4.0
UK	- 0.1	- 1.4	- 0.7	+ 0.5	- 1.5	- 6.6
Bulgaria	+ 5.8	+ 1.9	+ 3.8	+ 0.6	+ 1.8	- 2.2
Czech Republic	+ 1.2	+ 2.3	+ 1.7	+ 1.1	+ 5.3	- 3.8
Estonia	+ 2.8	+ 2.6	+ 2.7	+ 10.3	+ 4.3	- 5.0
Croatia	+ 1.4	- 1.4	- 0.0	- 3.4	- 5.0	- 2.3
Latvia	+ 1.5	+ 3.7	+ 2.6	+ 6.5	+ 1.5	+ 2.6
Lithuania	+ 4.2	+ 2.1	+ 3.2	- 1.4	+ 4.2	+ 2.0
Hungary	+ 2.3	- 0.9	+ 0.7	+ 0.7	+ 1.6	- 1.8
Poland	+ 3.6	+ 2.5	+ 3.0	+ 5.1	+ 7.3	+ 2.9
Romania	+ 1.3	+ 1.7	+ 1.5	+ 3.4	+ 1.8	- 4.1
Slovenia	+ 1.8	+ 1.9	+ 1.8	- 1.5	+ 5.6	- 0.8
Slovakia	+ 5.4	- 2.0	+ 1.6	+ 9.6	- 1.7	- 10.2
Norway	+ 1.3	+ 0.6	+ 0.9	+ 0.4	+ 0.8	- 0.7
USA	- 0.1	+ 1.4	+ 0.6	+ 2.6	+ 0.9	+ 2.8
Japan	+ 0.2	+ 0.2	+ 0.2	+ 2.5	- 1.2	- 2.8
Canada	+ 1.5	- 0.3	+ 0.6	+ 1.9	- 3.7	+ 0.1
All trading partners ¹	+ 1.6	- 0.2	+ 0.7	+ 0.7	- 0.2	- 5.5
EU trading partners ²	+ 1.9	- 0.3	+ 0.8	+ 0.5	- 0.2	- 6.3
	Growth difference in percentage points p.a.			Growth difference in percentage points		
Austria						
All trading partners ¹ = 100	+ 0.3	+ 0.3	+ 0.3	+ 0.9	- 0.6	- 0.2
EU trading partners ² = 100	+ 0.0	+ 0.4	+ 0.2	+ 1.2	- 0.6	+ 0.7
Germany = 100	+ 0.4	+ 0.9	+ 0.7	+ 2.1	+ 0.5	+ 2.3

Source: Eurostat, AMECO, national statistical offices, WIFO calculations. – ¹ Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods. – ² Excluding Austria, Malta, Cyprus, the UK; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods.

The comparison of productivity development with trading partners is positive for Austria in the medium term: between 2015 and 2020, productivity per capita in Austria grew by an average of about 0.3 percentage points per year more than the average of its trading partners. In the same period, the

growth difference with Germany was even 0.9 percentage points (Table 2).

This picture also emerges when the observation is extended to a ten-year window. While productivity per capita in Austria grew by 1 percent per year in the period 2010-2020,

Between 2010 and 2020, productivity in Austria grew more dynamically than in the main partner countries.

the average weighted increases for the trading partners were around 0.7 percent per year (0.8 percent for the EU trading partners). In Germany, productivity per capita rose by only about 0.3 percent per year in

the same period. This means, that productivity in Austria increased more dynamically in the medium to long term than in the case of the main trading partners.

4. Deterioration of the unit labour cost position in manufacturing

The combined change in unit labour costs (labour costs per unit of output) is derived from the change in labour costs (gross compensation per capita) and productivity (gross value added per capita). For 2018 and 2019, the revised National Accounts values show a significant increase in labour costs per unit of output of 1.8 percent and 3.3 percent, respectively (Table 3). For 2020, a noticeable increase in unit labour costs (+6.0 percent) follows from the decline in productivity per capita and the stagnation of labour costs – due to the COVID-19 aid measures. On average in 2015-2020, the annual increase was thus 1.9 percent, and in the longer-term average of 2010-2020, 1.4 percent.

To assess unit labour costs as an indicator of price competitiveness, we need to compare them internationally. Table 3 provides a detailed overview of the unit labour cost dynamics of the individual trading partners and the development of Austria's unit labour cost position, i.e. the real effective exchange rate deflated by unit labour costs in relation to its trading partners. Accordingly, Austria's unit labour cost position deteriorated in 2020, with an increase of 1.7 percentage points relative to the weighted average of its trading partners. This development is due in particular to the deterioration vis-à-vis important partner countries such as the USA (+0.6 percent) and Italy (+3.0 percent). By contrast, the position vis-à-vis Germany remained essentially unchanged in 2020 (+0.1 percentage points). In contrast, unit labour costs in the other EU countries mostly developed more favourably than in Austria, which is why Austria's position vis-à-vis its EU trading partners deteriorated (+1.5 percentage points).

Over the past ten years (2010-2020), Austria's unit labour cost position has hardly changed compared to the average of its (EU) trading partners or to Germany. Compared to the weighted average of all trading partners and the EU trading partners, there was a slight deterioration in each case (+0.1 and +0.2 percentage points), and a slight improvement compared to Germany (–0.2 percentage points). A further

breakdown into subperiods also shows hardly any changes.

The graphical representation makes trend reversals and long-term changes clearer (Figure 2). According to the figure, 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 again an improvement from Austria's perspective until the outbreak of the financial market and economic crisis in 2008. The economic crisis triggered a further trend reversal, with a deterioration in the relative unit labour costs of Austrian industry in 2009-10. Since 2010, domestic unit labour costs have developed in a fluctuating but largely stable manner, compared to the weighted average of trading partners, with a slight deterioration at the current margin. In comparison to Germany, however, a slight improvement has been observed since 2011.

The comparison of the time series of relative unit labour costs and relative labour costs (gross compensation per capita) also implicitly shows how productivity in Austria developed in comparison with its trading partners. If unit labour costs declined more than relative gross compensation, productivity in Austria developed better than in the other countries. A parallel development of the two time series, signals an even productivity progress, a stronger decline in gross compensation than in relative unit labour costs, a deterioration of productivity in Austria relative to its trading partners.

The even progression of the two time series in recent years thus reflects an even progress in productivity. However, the current trend, especially for 2020, should be interpreted with great caution, as the National Accounts data for both Austria and the other countries may still be subject to significant revisions. Austria's unit labour cost position vis-à-vis its main trading partners has been remarkably stable for decades, except for the fluctuations around the financial market and economic crisis of 2008-09.

Unit labour costs rose more strongly in Austrian goods manufacturing than in its trading partners in 2020.

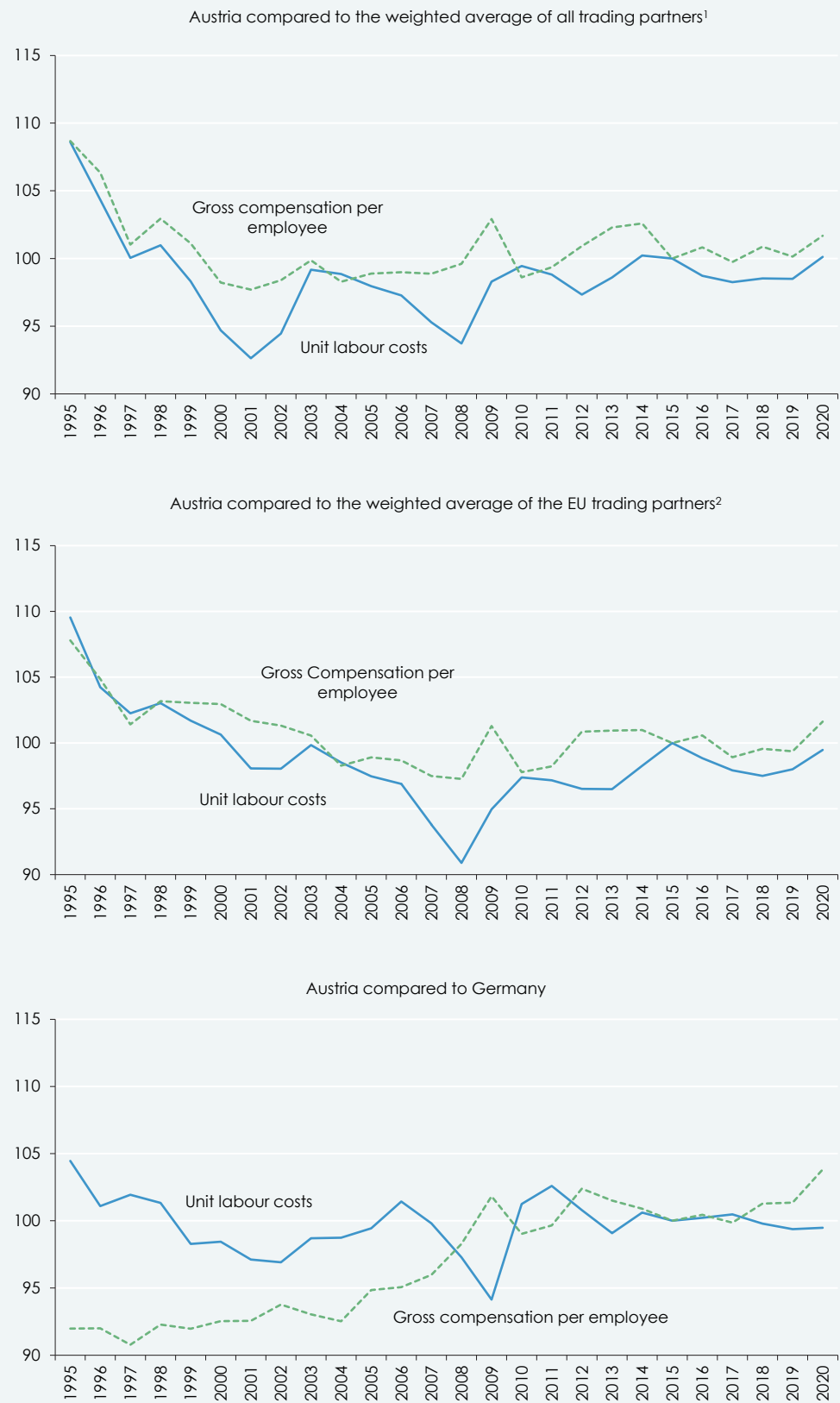
Table 3: **Development of unit labour costs per capita (persons employed) in manufacturing and in the economy as a whole**
In €

	Ø 2010-2015	Ø 2015-2020	Ø 2010-2020	2018	2019	2020
	Percentage changes p.a.			Percentage changes from year		
Manufacturing						
Austria	+ 1.0	+ 1.9	+ 1.4	+ 1.8	+ 3.3	+ 6.0
Belgium	- 0.0	+ 1.6	+ 0.8	+ 1.9	+ 1.3	+ 0.4
Denmark	- 1.0	- 2.3	- 1.7	- 0.8	- 2.2	- 0.3
Germany	+ 1.3	+ 2.0	+ 1.6	+ 2.5	+ 3.8	+ 5.9
Ireland	-10.8	- 1.7	- 6.4	- 4.6	+ 3.7	-16.0
Greece	- 3.1	+ 1.3	- 0.9	+ 3.1	+ 2.2	- 1.1
Spain	- 2.2	+ 1.3	- 0.5	+ 2.9	+ 2.0	+ 1.9
France	+ 0.0	+ 0.9	+ 0.5	+ 0.3	- 2.5	+ 7.8
Italy	+ 0.8	+ 0.8	+ 0.8	+ 0.9	+ 2.4	+ 3.0
Luxembourg	- 0.5	- 0.8	- 0.7	+ 3.2	- 0.2	+ 3.2
Netherlands	+ 0.3	+ 1.4	+ 0.8	+ 0.1	+ 4.3	+ 5.2
Portugal	- 0.5	+ 3.4	+ 1.4	+ 4.1	+ 3.3	+ 8.2
Finland	+ 2.9	- 1.8	+ 0.5	+ 7.3	- 1.7	- 1.7
Sweden	+ 2.2	+ 0.4	+ 1.3	- 3.7	+ 1.0	+ 6.2
UK	+ 5.4	+ 0.6	+ 3.0	+ 2.0	+ 6.9	+11.6
Bulgaria	+ 1.7	+ 6.9	+ 4.3	+ 8.4	+ 7.8	+ 9.5
Czech Republic	- 0.4	+ 3.5	+ 1.5	+ 9.0	+ 0.7	+ 1.6
Estonia	+ 3.2	+ 3.8	+ 3.5	- 0.9	+ 5.5	+10.0
Croatia	- 1.6	+ 1.7	+ 0.0	+ 5.6	+ 1.1	+ 3.2
Latvia	+ 5.2	+ 4.1	+ 4.6	+ 3.2	+ 7.3	+ 2.7
Lithuania	+ 2.1	+ 4.5	+ 3.3	+ 5.5	+ 5.7	+ 1.3
Hungary	+ 0.4	+ 3.7	+ 2.0	+ 4.0	+ 3.6	- 2.6
Poland	- 0.8	+ 2.5	+ 0.9	+ 1.5	+ 3.2	- 1.5
Romania	+ 2.1	+ 6.1	+ 4.1	+ 1.2	+ 6.6	+ 8.1
Slovenia	+ 1.0	+ 1.4	+ 1.2	+ 5.3	- 1.1	+ 3.2
Slovakia	- 1.3	+ 6.9	+ 2.7	- 0.9	+ 6.8	+12.4
Norway	+ 0.3	- 2.3	- 1.0	- 1.1	+ 0.1	- 7.3
USA	+ 6.0	+ 0.7	+ 3.3	- 4.4	+ 6.3	+ 0.6
Japan	- 2.2	+ 3.0	+ 0.4	- 2.7	+ 8.6	+ 4.2
Canada	+ 0.2	+ 1.5	+ 0.9	- 2.4	+ 9.3	+ 3.6
All trading partners ¹⁾	+ 0.9	+ 1.8	+ 1.4	+ 1.5	+ 3.4	+ 4.3
EU trading partners ²⁾	+ 0.5	+ 2.0	+ 1.2	+ 2.2	+ 2.8	+ 4.4
	Growth difference in percentage points p.a.			Growth difference in percentage points		
Austria						
All trading partners ¹⁾ = 100	+ 0.1	+ 0.0	+ 0.1	+ 0.3	- 0.0	+ 1.7
EU trading partners ²⁾	+ 0.5	- 0.1	+ 0.2	- 0.4	+ 0.5	+ 1.5
Germany = 100	- 0.2	- 0.1	- 0.2	- 0.7	- 0.4	+ 0.1
	Percentage changes p.a.			Percentage changes from previous year		
Overall economy						
Austria	+ 2.0	+ 2.9	+ 2.5	+ 2.1	+ 2.5	+ 7.4
All trading partners ¹⁾	+ 1.4	+ 2.4	+ 1.9	+ 2.3	+ 3.2	+ 4.3
EU trading partners ²⁾	+ 1.0	+ 2.6	+ 1.8	+ 2.9	+ 2.6	+ 4.4
	Growth difference in percentage points p.a.			Growth difference in percentage points		
Austria						
All trading partners ¹⁾ = 100	+ 0.6	+ 0.5	+ 0.5	- 0.2	- 0.7	+ 3.0
EU trading partners ²⁾ = 100	+ 1.0	+ 0.3	+ 0.6	- 0.8	- 0.1	+ 2.9
Germany = 100	+ 0.0	+ 0.3	+ 0.2	- 1.0	- 0.7	+ 2.9

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). - ¹ Excluding Austria, Malta, Cyprus, but including Norway, the USA, Canada and Japan; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods. - ² Excluding Austria, Malta, Cyprus, the UK; weighted average of trading partners according to WIFO calculations of single import weighting and double export weighting for industrial goods.

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

In €, 2015 = 100



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

Unit labour costs developed heterogeneously in the individual countries: in those countries most affected by the financial market and economic crisis or the subsequent sovereign debt crisis in the euro area, a reduction in the imbalance positions in price competitiveness was observed in the following years. Apart from Ireland, where a correction of the National Accounts in 2015 resulted in an excessive increase in productivity⁵, Greece recorded the strongest decline in unit labour costs among the euro countries since the financial market and economic crisis. Unit labour costs also developed more favourably in Spain and Italy

than in Austria, while in Portugal, after a significant correction immediately after the 2008-09 crisis, they have recently risen more sharply. It is also striking that countries similar to Austria in terms of population size and/or per capita economic output, such as Sweden, Finland, Denmark or the Netherlands, have been able to improve their unit labour costs position compared to Austria over the past five years. In the EU countries of Central and Eastern Europe, on the other hand, the rise in unit labour costs has accelerated significantly in recent years, as productivity has not kept pace with labour cost dynamics despite robust growth.

In the East-Central European EU countries, labour costs have developed more dynamically than productivity in recent years.

5. Decline in unit labour costs in the whole economy in international comparison

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

In Austria, labour costs per unit of production across all sectors increased by 7.4 percent in 2020, 2.9 percentage points more than in Germany and the weighted average of EU trading partners. Compared to all trading partners, there was an increase of 3.0 percentage points. Following improvements in Austria's unit labour cost position in 2018 and 2019, this represents a turnaround. However, extreme caution is also required when interpreting these results; on the one hand, because of the strong susceptibility of the data to revision, as already mentioned, and on the other hand, because of the specifics of the COVID-19 crisis. The sharp rise in unit labour costs in the sharp rise in unit labour costs in the economy as a whole is due exclusively to a huge drop in productivity, which in turn is a consequence of short-time working. Employees on short-time work

continue to be included in the statistics with their full working hours despite the de facto reduction in working hours. However, gross value added fell significantly in 2020. The sharp rise in unit labour costs in the whole economy was driven in particular by sectors that were hit hardest by the COVID-19 crisis. These include accommodation and food services, where unit labour costs rose by 39.7 percent in 2020, or the sector "arts, entertainment and recreation" with an increase of 40.5 percent.

In the long run (2010-2020), Austria's unit labour costs in the whole economy grew 0.6 percentage points p.a. faster than the average of its EU trading partners and slightly faster than Germany (+0.2 percentage points p.a.).

Over the longer term, both in Austria and among its trading partners, the dynamics of unit labour costs in the whole economy were significantly stronger than those of unit labour costs in manufacturing. This is in line with expectations, as the greatest potential for increasing labour productivity through mechanisation and automation exists in the production of goods.

As a result of the COVID-19 pandemic, Austria's unit labour costs in the whole economy increased significantly in 2020.

6. Summary

The available data show a strong increase in unit labour costs in 2020. This effect is largely due to the COVID-19 aid measures. As a result of the crisis, gross value added fell noticeably in 2020, although people on short-time work are still statistically recorded as fully employed. This results in a significant increase in unit labour costs, which is not based on any real economic changes.

A comparison with trading partners is therefore more meaningful than a comparison with the previous year. This shows a slight increase in labour costs in Austria in 2020 compared to the average of the trading partners (± 0.0 percent compared to -0.7 percent). In contrast, the crisis-related slump in value added per person employed is in line with the development in the partner countries (-5.6 percent compared to -5.5 per-

⁵ These changes are also likely to be reflected in the jump in productivity in 2018. The new National Accounts rules provide for income from intellectual property rights held in Ireland to be included in Irish GDP (OECD, 2016). This relates primarily to manufacturing, thereby more correctly reflecting economic activity in

Ireland, but distorts the assessment of unit labour costs. Unit labour cost trends in manufacturing can only fully reflect intellectual property rights if the country of production and the country of allocation of these property rights coincide. In global value chains, however, these can be different.

cent on average for all trading partners). In Germany, the decline was even more pronounced at -7.8 percent. However, it should be noted once again that these figures are distorted by the COVID-19 aid measures.

The nominal effective exchange rate deteriorated by 0.7 percentage point in 2020 as the euro appreciated against the dollar and other European and non-European currencies.

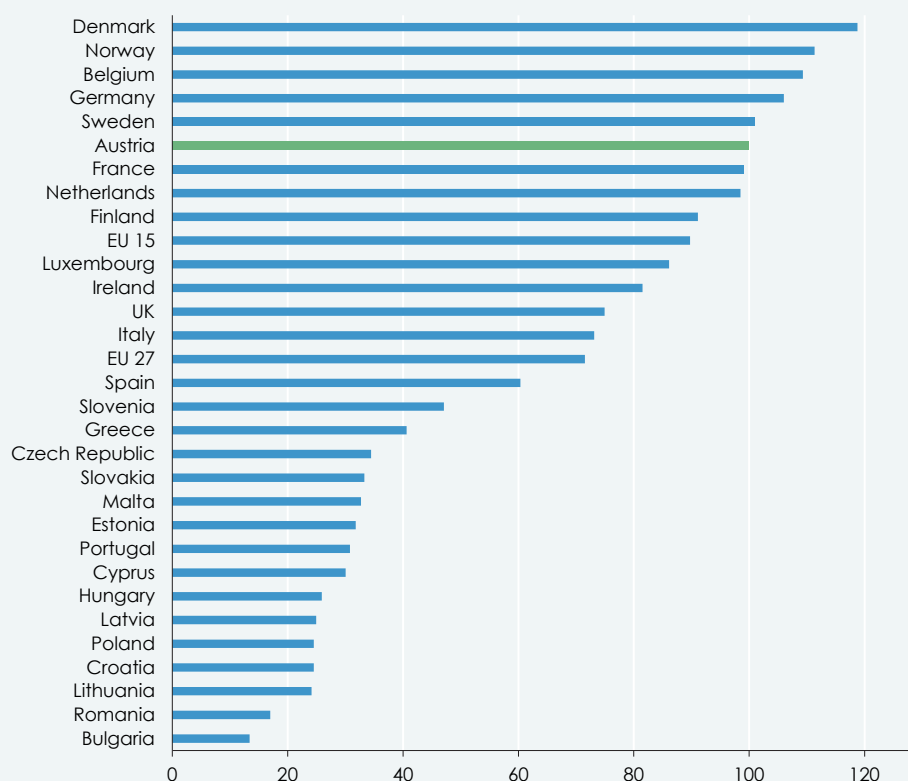
Together, these developments caused unit labour costs in Austrian manufacturing to rise by 6.0 percent and to deteriorate by 1.7 percentage points relative to the weighted average of its trading partners. Compared with Germany, unit labour costs rose slightly by 0.1 percentage points.

A longer-term analysis of relative unit labour costs in Austrian manufacturing sector initially shows a marked decline between 1995 and 2001, followed by two years of increases. Since 2003, however, unit labour costs have remained almost unchanged, both compared to the weighted average of the (EU) trading partners and to Germany. The only major fluctuations occurred in the years surrounding the financial market and economic crisis of 2008-09.

Total unit labour costs in the economy as a whole rose by 7.4 percent in 2020, significantly more than the weighted average of all trading partners (+4.3 percent) and EU trading partners (+4.4 percent). The unit labour cost position in the whole economy also deteriorated by 2.9 percentage points vis-à-vis Germany in 2020.

Figure 3: **Labour costs in manufacturing compared internationally**

Labour costs per hour in €, 2020, Austria = 100



Source: Eurostat, Office for National Statistics, Labour Cost Survey 2016, Labour Cost Index, WIFO calculations. Without apprentices. Norway: 2019 and 2020 updated using rates of change from Labour Cost Index (LCI) including apprentices. UK: value for 2020 includes subsidies.

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 European countries in this paper. They are based on

the Labour Cost Survey, which is carried out in the EU countries every four years. The annual development between two surveys is updated using a Labour Cost Index. The results presented here are based on the 2016 survey published in 2018.

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 survey. In some cases, these data may deviate noticeably from the National Accounts figures on the development of gross compensation, which form the basis for the unit labour cost calculations, also because labour costs, unlike National Accounts gross compensation, include wage-related taxes paid by employers in addition to social security contributions. It should also be noted that labour costs measure the burden on the factor labour, but do not allow any statements to be made about who ultimately bears these

costs. The values shown for 2020 may be distorted by government COVID-19 aid measures affecting the labour factor.

Table 4 shows the hourly labour costs calculated on the basis of the labour cost index for the period 2015-2020. In 2020, the hourly labour cost in Austria's manufacturing sector was 40.5 €. Austria thus ranked 6th in the European comparison, as in the previous year. Since 2015, hourly labour costs in Austria have risen at the same rate as the average for EU countries (+2.5 percent p.a. in each case), but somewhat more dynamically than in Germany (+2.2 percent p.a.). Compared to the previous year, the increase in 2020 was 2.2 percent in Austria, 2.3 percent on average in the EU and 1.3 percent in Germany.

Table 4: Hourly labour costs in manufacturing

	2015	2016	2017	2018	2019	2020	Ø 2015-2020
	In €						Percentage changes
Bulgaria	3,45	3,77	4,26	4,62	5,18	5,42	+ 9.4
Romania	4,42	4,79	5,44	6,01	6,59	6,87	+ 9.2
Lithuania	6,71	7,33	8,06	8,77	9,29	9,77	+ 7.8
Croatia	9,12	8,42	8,92	9,80	10,15	9,93	+ 1.7
Poland	7,78	7,81	8,51	9,18	9,72	9,93	+ 5.0
Latvia	6,76	7,24	7,78	8,77	9,49	10,10	+ 8.4
Hungary	7,98	8,38	9,21	9,78	10,64	10,49	+ 5.6
Cyprus	11,81	11,75	11,90	12,30	12,87	12,16	+ 0.6
Portugal	10,46	10,76	11,06	11,43	11,57	12,47	+ 3.6
Estonia	9,79	10,34	10,98	11,68	12,48	12,87	+ 5.6
Malta	13,22	13,01	13,66	13,86	13,76	13,24	+ 0.0
Slovakia	9,91	10,33	11,12	12,04	12,86	13,48	+ 6.4
Czech Republic	9,72	10,20	11,39	12,71	13,70	13,95	+ 7.5
Greece	15,32	15,11	15,17	15,52	16,12	16,44	+ 1.4
Slovenia	15,77	16,29	17,43	18,10	18,77	19,06	+ 3.9
Spain	22,55	22,64	22,84	23,02	23,48	24,43	+ 1.6
EU 27	25,64	26,11	26,74	27,49	28,30	28,96	+ 2.5
Italy	27,50	27,36	27,50	27,85	28,81	29,60	+ 1.5
UK	29,61	26,93	25,85	26,27	26,74	30,33	+ 0.5
Ireland	30,63	31,25	31,56	32,28	33,44	33,00	+ 1.5
Luxembourg	32,87	32,80	33,65	34,11	34,67	34,87	+ 1.2
EU 15	32,44	32,97	33,63	34,35	35,15	36,33	+ 2.3
Finland	36,85	37,11	36,44	36,81	37,04	36,89	+ 0.0
Netherlands	35,86	36,41	37,28	38,19	39,03	39,87	+ 2.1
France	36,40	36,80	37,43	38,31	39,08	40,11	+ 2.0
Austria	35,74	36,47	37,13	38,40	39,61	40,48	+ 2.5
Sweden	41,42	42,28	41,99	40,66	40,83	40,87	- 0.3
Germany	38,47	39,34	40,40	41,35	42,37	42,92	+ 2.2
Belgium	41,35	41,39	41,93	42,59	43,50	44,25	+ 1.4
Norway	48,33	47,51	47,99	47,73	47,96	45,07	- 1.4
Denmark	42,66	43,92	44,62	45,63	47,00	48,08	+ 2.4

Source: Eurostat, Office for National Statistics, Labour Cost Survey 2016, Labour Cost Index, WIFO calculations. Excluding apprentices. Norway: 2019 and 2020 updated using rates of change from Labour Cost Index (LCI) including apprentices. UK: value for 2020 includes subsidies.

8. References

Carlin, W., Glyn, A.J., & van Reenen, J.M. (2001). Export Market Performance of OECD Countries: An Empirical Examination of the Role of Cost Competitiveness. *Economic Journal*, 111(468), 128-162.

Deutsche Bundesbank (1998). Zur Indikatorenqualität unterschiedlicher Konzepte des realen Außenwerts der D-Mark. *Monatsberichte*, 11, 41-55.

- Dosi, G., Grazzi, M., & Moschella, D. (2015). Technology and Costs in International Competitiveness: From Countries and Sectors to Firms. *Research Policy*, 44(10), 1795-1814.
- Hölzl, W., & Leoni, T. (2020). Despite Increase in Unit Labour Costs, Improvement of Austrian Unit Labour Cost Position 2019. *WIFO Bulletin*, 25(11), 101-113. <https://bulletin.wifo.ac.at/66825>.
- Köhler-Töglhofer, W., & Magerl, C. (2013). Neuberechnung der Indikatoren der preislichen und kostenmäßigen Wettbewerbsfähigkeit. *WIFO-Monatsberichte*, 86(9), 753-768. <https://monatsberichte.wifo.ac.at/46946>.
- Köhler-Töglhofer, W., Url, T., & Glauningner, U. (2017). Revised competitiveness indicators for Austria reflect a comparatively stable competitiveness development of the Austrian economy over the longer horizon. *Monetary Policy & the Economy*, Q2, 73-110.
- Mooslechner, P. (1995). Abnehmende Inflationsdifferenz verstärkt real-effektive Schillingaufwertung. Neuberechnung der WIFO-Wechselkursindizes. *WIFO-Monatsberichte*, 68(9), 580-592. <https://monatsberichte.wifo.ac.at/206>.