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Austria's International Unit Labour Cost Position Heavily Influenced by Economic Crisis in 2009

As anticipated, the economic crisis had a significant impact on the unit labour cost position of the Austrian manufacturing sector in 2009. Labour productivity per person employed decreased by 10.1 percent in Austria, and by 11.1 percent among the EU trading partners. Unit labour costs rose by 2.0 percent per capita in Austria, but decreased by 1.0 percent in the weighted average of the EU trading partners. This means that manufacturing unit labour costs increased by 13.5 percent in Austria and 9.8 percent within the weighted average of the EU trading partners. Austria also exhibited an above average increase in unit labour costs within the economy as a whole at +4.8 percent (+2.7 percent among the EU trading partners, and +3.4 percent among all trading partners). However, in 2009 the temporary effects of economic stabilisation policies and the differing decline in production and employment among countries reduced the explanatory power of unit labour costs as an indicator of international cost competitiveness.

Economic crisis impedes interpretation of unit labour cost position development

In 2009, the global economic crisis resulted in a slump in world trade (real −12.2 percent). Due to Austria's strong export orientation, the Austrian economy was particularly exposed to the crisis. In 2009, Austrian exports in manufactured goods dropped by 18.6 percent (in real terms) and product imports declined by 15.3 percent. In Austrian manufacturing, production declined by 14.3 percent and employment dropped by 6 percent.

In the course of the crisis, many countries implemented policies to stimulate their economies. These measures (for example, employment packages) as well as the design and effect of automatic stabilisers were different across countries. The specific effects of the economic crisis on unit labour costs can therefore not only be attributed to structural factors (e.g., specialisation patterns), but also to temporary effects[1]. These temporary effects particularly apply to the data for gross compensation per employee and number of employees. Based on the available information, it is not possible to determine to what extent the effects of short-time work and other labour market policy measures have influenced the actual labour costs of firms. Internationally, employment declined to varying degrees – in part probably as a result of labour hoarding, which is typical of branches with a high incidence of firm-specific skills.

The economic crisis also resulted in a much greater decline in production compared to employment. Labour productivity, which is calculated here as real net output per employee, therefore dropped significantly. This decline could be primarily attributed to the state of the economy, and not to a reduction in productivity per employee.

An international comparison of unit labour cost development in manufacturing and the economy as a whole is therefore extremely difficult at the moment. There is also

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[1] Hourly labour costs in manufacturing are presented in the appendix. Because the estimates are based on the labour cost survey of 2004, we refrain from presenting them in great detail.

ample indication that the available data on labour costs and productivity for 2009 will be subject to extensive revisions. The data published here should therefore be understood as an approximation, but nevertheless provide a good indication of long-term developments in competitiveness. The present study therefore not only focuses on an analysis of unit labour cost development, but also discusses the relevance and explanatory power of unit labour costs as a measure of international cost competitiveness.

The international competitiveness of an economy is a frequent focus of economic and labour policy discussions, as a change in international competitiveness also has an effect on the composition and amount of the gross domestic product. However, the application of the term "competitiveness" to an entire economy is controversial, especially when an analogy is drawn between an economy and a company (e.g., *Krugman,* 1994). Foreign trade is not a zero sum game; a gain for one country does not amount to a loss for its trading partners. Furthermore, long-term imbalances can be compensated for through the exchange rate mechanism.

Most definitions of competitiveness are based on the ability of an economy to achieve a balanced trade position while increasing income and prosperity. This is fundamentally about how effectively a country uses its resources in the production process (*Porter,* 1990). In the long term, the competitiveness of an economy depends on many factors, in particular on firms' capacity to innovate, the qualifications of the labour force, labour relations, the tax structure and the institutional configuration of the economic system (e.g., *Hall – Soskice,* 2001). While these indicators provide insight into long-term competitive advantages and resulting differences in economic development, they contribute little to an explanation of short term changes in a country's foreign trade position. Here, factors like prices, productivity and exchanges rates play a greater role[2].

This is why price or cost indicators are generally used for the ongoing observation of the short and medium term development of competitiveness in foreign trade. All of the common indicators relate the external value of the national currency (the real exchange rate) to that of the trading partners. Since the exchange rate is a nominal quantity, an economically relevant comparison requires a corresponding deflation. This is usually done using the consumer price index, export prices or – as in the present study – unit labour costs, in other words a cost indicator for the use of labour as a factor of production (*Lipschitz – McDonald,* 1992, *Turner – Van't dack,* 1993, *Marsh – Tokarick,* 1996, *Turner – Golub,* 1997)[3]. The resulting indicators are frequently also called real effective exchange rate indices.

Unit labour costs as a measure of competitiveness

The deflationing of the nominal effective exchange rate index using the consumer price index (CPI) has the drawback that it includes prices for tradable, non-tradable and consumer goods. Yet international trade involves only tradable goods and services, and many traded goods are intermediate products. In addition, consumer price indices are influenced by price controls and taxes on goods, which do not play a role in international trade. One advantage of the consumer price index is that it is calculated using representative bundles of goods and is highly accurate.

Because of these disadvantages, foreign trade price indices, which are calculated on the basis of unit values, are frequently used as indicators instead of the CPI. The main drawback of export unit values (export value divided by export amount) as a deflator is that only those products which are internationally competitive are taken into consideration. Non-competitive goods are under-represented or not even in-

Advantages and disadvantages of different exchange rate indices

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[2] The discussion in recent years about current account imbalances in the European region shows the importance of exchange rates. Without the option of a price adjustment through the exchange rate, the imbalances have to be compensated for through prices, that is through a change in productivity or labour costs (*Ederer,* 2010).

[3] Labour costs alone are not a suitable indicator for competitiveness, as they do not take labour productivity into account.

cluded. This obscures actual competitiveness. In addition, export price indices are based on product prices and not on value added. A "pricing to market" – a compensation for temporary exchange rate-related price increases by a (partial) reduction of the profit margin in order to secure market shares – can therefore not be pictured. Export price indices are therefore more suitable for an analysis of international market shares than for an explanation of the international cost competitiveness of an economy.

Cost competitiveness is usually analysed using the nominal effective exchange rate index, deflated by unit labour costs. The development of unit labour costs (labour costs per unit produced) therefore establishes a connection between changes in labour costs and changes in productivity. In an international comparison, relative unit labour cost development is a synthetic measure of the effects of changes in labour costs, productivity and the exchange rate on cost competitiveness. According to *Cerra – Soikkeli – Saxena* (2003), unit labour costs are the best single indicator because they describe the area of tradable goods in a targeted way. As econometric studies have repeatedly shown, changes in relative unit labour costs have contributed significantly to the explanation of shifts in market shares among trading partners (e.g., *Carlin – Glyn – Van Reenen,* 2001).

An important drawback of indicators using unit labour costs is that labour costs cover only part of the overall costs of production. The share of labour costs in the total production value of manufacturing is declining due to increasing capital intensity. In Austria, for instance, the share of labour compensation in the gross production value declined from 23.2 percent to 16 percent between 1998 and 2008. Even if capital intensity and capital productivity affect the level of labour productivity, this obscures origins of changes in competitiveness.

Another important disadvantage arises from the cyclicality of labour productivity: it increases during upturns and falls during recessions. In order to make statements on the development of competitiveness, the cyclical component would have to be eliminated. The calculation of current productivity trends is technically difficult because the cyclical component cannot be separated from the trend. In addition, the substitution of labour with capital is often associated with an increase in capital costs. Therefore, the improvements in competitiveness indicated through the development of unit labour costs are often overestimated in the short term due to the economic situation and in the long term due to mechanisation. A strong increase in productivity in manufacturing does not necessarily point toward improved competitiveness; it can also indicate problems in competitiveness, if the production of tradable goods decreases at the same time.

In general, therefore, none of the price or cost indices used for deflationing is suitable for explaining the international competitiveness of an economy in all its detail (*Marsh – Tokarick,* 1996). The real effective exchange rate index deflated by unit labour costs is particularly suited as an indicator of cost competitiveness.

The unit labour costs of manufactured goods are frequently the only indicator used to calculate the real effective exchange rate index, because foreign trade is strongly shaped by the exchange of goods, despite an overall structural shift towards a service economy. The export of services often requires direct investments, which are not included in international trade statistics. In Austria, the share of exports in manufactured goods in total exports was largely constant between 1995 and 2009 (Figure 1). However, an analysis of competitiveness that is solely based on unit labour costs in manufacturing raises methodological problems: capital costs and productivity, as well as the prices of imported intermediate inputs, energy and raw materials play an important role in the competitiveness of the manufacturing industry. Changes in the prices of intermediate inputs or investment goods are inadequately represented by the unit labour costs of manufacturing (*Köhler-Töglhofer – Magerl – Mooslechner,* 2006). In addition, as previously mentioned, the share of labour costs in manufacturing has declined due to increasing capital intensity.

Competitiveness is also determined by unit labour costs in the economy as a whole

*Figure 1: Share of manufactured goods in total exports in Austria*
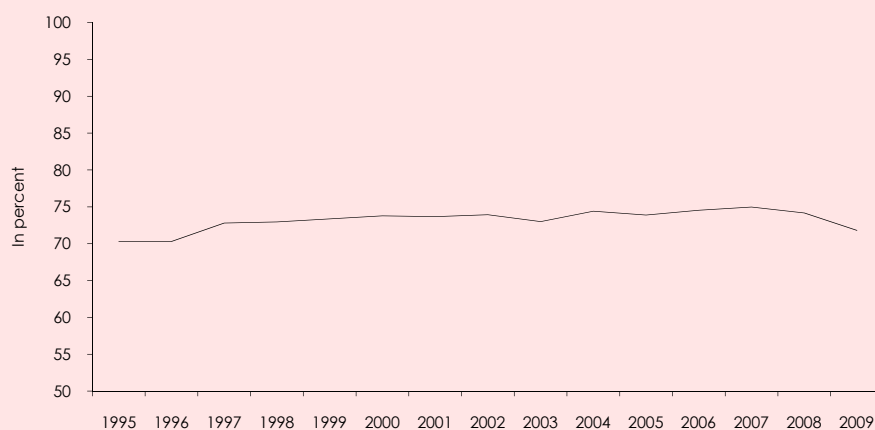
Source: WIFO database.

At the level of the economy as a whole, the situation is different. Despite the decline in the wage share, labour costs are by far the largest cost component. Due to the relative immobility of labour and the differing comparative advantages of economies, this cost component varies significantly on an international scale. Therefore, labour and productivity development in the area of non-tradable goods and services can be relevant to the competitiveness of sectors involved in foreign trade. When non-tradable goods play a role as inputs, their cost development has a major impact on the competitiveness of an economy. Deviations in the development of unit labour costs between manufacturing and the economy as a whole point toward a divergence in labour cost and productivity developments (*Deutsche Bundesbank,* 1998). As *Carlin – Glyn – Van Reenen* (2001) show, the sensitivity of export growth to changes in unit labour costs is declining as technology intensity increases. Therefore, a connection should always exist between the development of indicators for manufacturing and those for the economy as a whole.

Effective exchange rate indices reflect the overall effect of all bilateral exchange rate fluctuations among the relevant trading partners. The nominal effective exchange rate shows simultaneously occurring bilateral appreciations compared to some individual currencies and bilateral depreciations compared to other currencies. For this reason, it is useful to the study of the effect of changes in domestic unit labour costs and their components on price competitiveness with respect to relevant foreign markets.

Nominal effective exchange rate shows long-term appreciation

Figure 2: Development of the nominal effective exchange rate
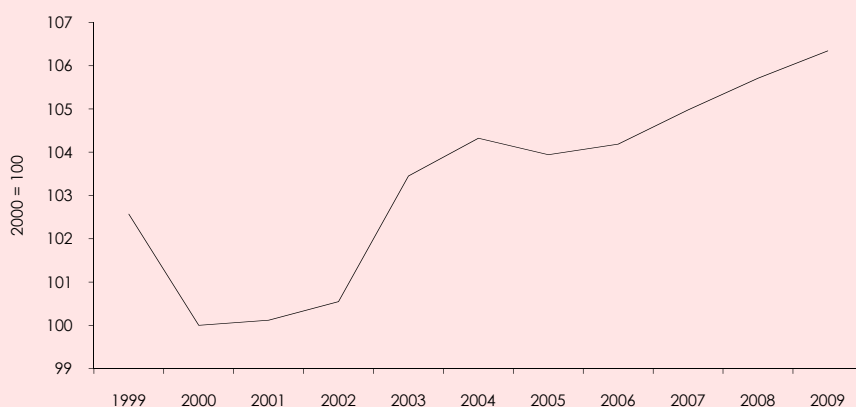
Source: WIFO database.

For almost ten years now, exchange rate developments have exerted slight pressure on the production costs of the Austrian export economy (Figure 2). Between 1995 and 2000 the nominal effective exchange rate – that is, the exchange rate index weighted by foreign trade shares – for the Austrian manufacturing sector declined by 6.1 percent. Since then, it has increased again by 6.3 percent. In the period between 2003 and 2008, the average annual increase amounted to 0.4 percent, and in 2009 it reached 0.6 percent. This development can primarily be attributed to the strength of the euro against the dollar. Between 2000 and 2009 the dollar lost about a third of its value against the euro. The euro also significantly increased its strength compared to the currencies of other relevant trading partners, rising by about 46 percent against the British pound, by more than 30 percent against the yen and by over 25 percent against the Swedish krona.

Calculation method and data basis for the comparison of unit labour costs

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

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

Dividing labour costs and value added by a measure of labour input yields both components of unit labour costs: labour costs per unit of labour and labour productivity. The optimal measure for labour input would be the number of hours worked. As reliable data on the working hours of employees in individual sectors are not available for most countries, international comparisons rely on the number of persons employed.

A further adjustment affects changes in the share of self-employed in the labour force within a branch, a sector or the economy as a whole. To keep the number of self-employed constant in the calculation of unit labour costs, one can represent unit labour costs as a ratio of labour costs per employee (*EMP*) and gross value added, divided by the labour force (*LF*):

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

The unit labour costs published in the macroeconomic database of the European Commission (AMECO) are calculated using this method. WIFO also uses this method to calculate the unit labour costs of Austrian manufacturing, as published in the WIFO database.

For international comparisons, unit labour costs have to be expressed in a common currency, as exchange rate fluctuations can influence a country's cost position as well as domestic unit labour cost development. Here, it is important to select a method that establishes a connection between the entirety (or a group) of the foreign trading partners (weighting). If one limits the comparison to two countries, the relative unit labour cost position of a country is a ratio of the unit labour costs of both countries, measured in a single currency. To compare several countries, a weighting scheme is required to portray the relevance of these individual countries for the competitiveness of domestic firms. Independently of the methodological approach, such a weighting scheme is based on data from international trade statistics and therefore on the degree of internationalisation 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). A detailed description and explanation of this method can be found in *Mooslechner* (1995) and *Köhler-Töglhofer – Magerl – Mooslechner* (2006). In addition to competition with trading partners on respective domestic markets, double export weighting allows for a depiction of competition on all other export markets. For this fixed weighting system, the weights for a specific time period are calculated and then applied to the entire period of observation. The most recent available weighting refers to the average of the years between 1999 and 2001. Due to the fixed weighting, which is also useful for data-related reasons, ongoing shifts in market shares between the countries examined are not taken into consideration.

WIFO gets its data on gross wages, productivity and labour unit costs in manufacturing and the economy as a whole from the AMECO database. These are calculated following the methodology of national accounts and not per hour worked, but rather per person employed. As no current data are available for some countries (Canada, Denmark and the UK), the present study had to draw on OECD statistics. The annual figures missing in the AMECO database were updated based on the OECD database using the respective growth rates.

The basis for an assessment of the international labour cost trends in the manufacturing sector is the development of labour costs per employee in national currencies (Table 1). Between 2004 and 2009, labour costs rose nominally in Austria by an average of 3.3 percent per year, which was considerably faster than the average of the EU trading partners (+2.2 percent). Part of this difference can be traced to devel-

Gross compensation per employee increased on average

opments in 2009. In the crisis year, according to WIFO calculations, gross labour compensation increased by 2.0 percent per capita in Austria, whereas the AMECO database shows a decline of 0.7 percent among the trading partners, mainly due to the favourable development of costs in Germany (–3.0 percent) and Italy (–1.8 percent). In a single currency, gross compensation per employee rose by 1.7 percent per year on average among the trading partners between 2004 and 2009. However, in 2009 it significantly decreased, dropping by 1.2 percent.

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

In national currencies

	Ø 1999-2004	Ø 2004-2009	2007	2008	2009
			Year-to-year percentage changes		
Austria	+ 2.6	+ 3.3	+ 3.9	+ 3.9	+ 2.0
Belgium	+ 2.8	+ 2.9	+ 4.5	+ 1.8	+ 2.9
Denmark	+ 4.0	+ 4.0	+ 4.2	+ 4.1	+ 2.7
Germany	+ 2.9	+ 0.8	+ 1.0	+ 1.4	– 3.0
Greece	+ 5.1	+ 4.4	+ 9.0	+ 4.0	+ 1.5
Spain	+ 3.4	+ 4.5	+ 4.8	+ 4.5	+ 5.3
France	+ 2.7	+ 2.5	+ 3.6	+ 2.9	– 0.1
Ireland	+ 5.3	+ 7.2	+ 3.6	+ 10.7	+ 7.7
Italy	+ 3.1	+ 1.9	+ 3.0	+ 3.0	– 1.8
Luxembourg	+ 2.8	+ 2.1	+ 0.2	+ 1.2	– 0.7
Netherlands	+ 4.6	+ 2.5	+ 3.3	+ 3.5	+ 1.2
Portugal	+ 3.6	+ 3.8	+ 3.6	+ 5.4	+ 1.8
Finland	+ 3.9	+ 2.7	+ 2.8	+ 4.4	– 1.3
Sweden	+ 5.1	+ 3.2	+ 6.5	+ 1.8	+ 3.2
UK	+ 4.9	+ 5.7	+ 4.4	+ 3.2	+ 8.1
Czech Republic	+ 7.0	+ 3.6	+ 7.1	+ 4.9	– 3.7
Estonia	+ 10.9	+ 10.4	+ 21.7	+ 2.3	– 1.2
Latvia	+ 6.7	+ 14.5	+ 28.6	+ 13.8	– 5.3
Lithuania	+ 7.5	+ 6.5	+ 8.3	+ 7.5	– 5.9
Hungary	+ 8.8	+ 4.3	+ 7.5	+ 5.6	– 4.2
Poland	+ 2.9	+ 3.7	+ 5.7	+ 7.0	+ 3.5
Slovenia	+ 10.0	+ 5.3	+ 7.0	+ 5.6	+ 1.0
Slovakia	+ 9.4	+ 7.3	+ 10.3	+ 6.8	+ 0.7
Japan	+ 0.6	– 0.5	– 0.5	+ 0.4	– 2.5
Canada	+ 3.3	+ 1.0	+ 2.4	– 0.6	– 4.2
Norway	+ 4.9	+ 4.9	+ 4.7	+ 5.0	+ 2.6
USA	+ 4.5	+ 2.7	+ 3.2	+ 1.8	+ 3.0
EU trading partners[1]	+ 3.7	+ 2.2	+ 2.8	+ 2.7	– 1.0
Austria					
All trading partners[1] = 100	– 1.0	+ 1.1	+ 1.1	+ 1.4	+ 2.8
EU trading partners[1] = 100	– 1.0	+ 1.0	+ 1.0	+ 1.2	+ 3.0
Germany = 100	– 0.3	+ 2.4	+ 2.9	+ 2.5	+ 5.2

Source: AMECO, Statistics Austria, OECD, WIFO calculations. – [1] Without Austria, Switzerland, Malta, Cyprus, Romania, Bulgaria; weighted average of Austria's trading partners according to WIFO exchange rate indices.

Internationally, the preliminary data for 2009 indicate great differences in per-capita labour cost development. A marked reduction is determined for Lithuania (–5.9 percent), Latvia (–5.3 percent) and Canada and Hungary (both –4.2 percent), as well as the Czech Republic (–3.7 percent) and Germany (–3.0 percent), while the UK (+8.1 percent) and Ireland (+7.7 percent) recorded a significant increase.

However, on average, between 2004 and 2008, gross compensation per employee also increased more in Austria (+3.6 percent per year) than it did among the trading partners (+2.9 percent per year). In the long term, they therefore increased less rapidly than they did abroad (in national currencies, 1999-2008, Austria +3.0 percent per year, compared to +3.3 percent among the trading partners).

Table 2: Development of productivity in manufacturing

In national currency

	Ø 1999-2004	Ø 2004-2009	2007	2008	2009
		Year-to-year percentage changes			
Austria	+ 3.0	+ 1.8	+ 6.4	+ 2.7	− 10.1
Belgium	+ 2.7	+ 1.1	+ 4.8	− 0.4	− 2.1
Denmark	+ 2.6	+ 1.3	+ 0.2	− 0.3	− 1.7
Germany	+ 3.7	− 1.2	+ 1.3	− 1.4	− 15.9
Greece	+ 1.7	+ 3.9	+ 8.0	+ 12.1	− 8.7
Spain	+ 1.1	+ 0.2	+ 1.2	− 1.1	− 1.6
France	+ 3.0	− 0.2	+ 2.1	− 1.1	− 7.5
Ireland	+ 6.3	+ 7.2	+ 9.9	+ 2.3	+ 15.8
Italy	+ 0.4	− 2.5	+ 1.0	− 4.2	− 11.7
Luxembourg	+ 0.7	− 3.6	+ 9.0	− 5.5	− 18.0
Netherlands	+ 3.8	+ 0.7	+ 2.8	− 1.2	− 6.2
Portugal	+ 2.4	+ 0.9	+ 4.5	+ 0.3	− 5.0
Finland	+ 6.8	+ 1.7	+ 8.0	+ 1.5	− 14.5
Sweden	+ 7.0	+ 0.7	+ 1.8	− 3.0	− 8.9
UK	+ 4.6	+ 1.8	+ 2.7	− 0.2	− 3.4
Czech Republic	+ 5.5	+ 5.0	+ 7.3	+ 6.8	− 9.9
Estonia	+ 9.1	+ 2.6	+ 8.2	− 6.9	− 11.8
Latvia	+ 8.4	+ 1.0	+ 2.3	− 4.4	− 0.8
Lithuania	+ 11.9	+ 3.0	+ 3.1	+ 1.9	− 3.8
Hungary	+ 5.6	+ 2.3	+ 6.0	+ 0.2	− 7.6
Poland	+ 8.0	+ 5.1	+ 7.0	+ 3.5	+ 4.2
Slovenia	+ 6.8	+ 2.8	+ 6.9	+ 0.6	− 7.8
Slovakia	+ 10.1	+ 10.4	+ 16.4	+ 8.7	+ 2.5
Japan	+ 4.7	− 0.3	+ 3.1	− 0.3	− 11.3
Canada	+ 1.4	− 1.0	+ 2.1	− 4.4	− 5.3
Norway	+ 4.5	− 0.4	− 1.7	− 0.1	− 1.4
USA	+ 5.8	+ 2.2	+ 3.6	+ 0.1	+ 0.2
EU trading partners[1]	+ 3.6	− 0.1	+ 2.5	− 0.9	− 11.1
Austria					
All trading partners[1] = 100	− 0.8	+ 1.7	+ 3.7	+ 3.6	+ 0.0
EU trading partners[1] = 100	− 0.6	+ 1.9	+ 3.7	+ 3.7	+ 1.1
Germany = 100	− 0.6	+ 3.0	+ 5.0	+ 4.1	+ 6.9

Source: AMECO, Statistics Austria, OECD, WIFO calculations. – [1] Without Austria, Switzerland, Malta, Cyprus, Romania, Bulgaria; weighted average of Austria's trading partners according to WIFO exchange rate indices.

In the 1990s, Austria's industry achieved high, sustained growth in labour productivity (measured as gross value added per person employed). In the period between 1999 and 2004, productivity growth lagged behind that of the trading partners. In addition to the Eastern European countries, which, as expected, exhibited a significant catching-up process, the USA and Japan, as well as some European countries (UK, Ireland, Sweden and Finland) showed much stronger productivity growth than Austria. Particularly in the years 2002 and 2003, the productivity growth of Austrian industry was lower than that of most other countries. In 2004, due to a vigorous recovery based on rapid export expansion, Austria once again recorded above-average productivity growth. The slump in production and productivity during the 2009 economic crisis was more pronounced for important trading partners than for Austria (−10.1 percent per-capita labour productivity in manufacturing in Austria, −18.0 percent in Luxembourg, −15.9 percent in Germany, −14.5 percent in Finland, −11.8 percent in Estonia, and −11.7 percent in Italy). In Slovakia (+2.5 percent), Poland (+4.2 percent) and Ireland (+15.8 percent), productivity nevertheless increased in 2009[4].

Decline in productivity in Austria and most trading partners

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[4] Due to a decline of GDP by 10 percent, the value for Ireland seems improbable and will likely be subject to revision.

Table 3: Development of unit labour costs in manufacturing and the economy as a whole

In €

	Ø 1999-2004	Ø 2004-2009	2007	2008	2009
			Year-to-year percentage changes		
Manufacturing					
Austria	− 0.4	+ 1.5	− 2.3	+ 1.1	+ 13.5
Belgium	+ 0.1	+ 1.7	− 0.3	+ 2.2	+ 4.9
Denmark	+ 1.4	+ 2.9	+ 4.3	+ 3.6	+ 6.4
Germany	− 0.8	+ 2.0	− 0.3	+ 2.8	+ 15.4
Greece	+ 2.4	+ 0.5	+ 1.0	− 7.2	+ 11.2
Spain	+ 2.2	+ 4.3	+ 3.5	+ 5.7	+ 7.0
France	− 0.3	+ 2.8	+ 1.5	+ 4.2	+ 8.0
Ireland	− 0.9	− 0.3	− 5.7	+ 5.8	− 6.3
Italy	+ 2.7	+ 4.5	+ 2.0	+ 7.4	+ 11.2
Luxembourg	+ 2.1	+ 5.9	− 8.1	+ 7.2	+ 21.2
Netherlands	+ 0.8	+ 1.9	+ 0.5	+ 4.8	+ 8.4
Portugal	+ 1.2	+ 2.9	− 0.8	+ 5.1	+ 7.1
Finland	− 2.7	+ 1.0	− 4.8	+ 2.8	+ 15.4
Sweden	− 2.5	− 0.7	+ 4.6	+ 1.0	+ 1.9
UK	− 0.3	− 1.7	+ 1.2	− 11.1	+ 0.0
Czech Republic	+ 4.4	+ 2.4	+ 1.9	+ 9.3	+ 0.8
Estonia	+ 1.6	+ 7.6	+ 12.5	+ 9.8	+ 12.0
Cyprus	− 2.8	+ 12.1	+ 25.0	+ 18.6	− 4.9
Latvia	+ 0.3	+ 3.4	+ 5.0	+ 5.5	− 2.2
Lithuania	+ 3.1	+ 0.7	+ 6.7	+ 5.4	− 2.8
Hungary	− 6.0	− 0.2	+ 1.8	+ 11.3	− 18.3
Poland	− 1.1	+ 2.4	+ 0.1	+ 5.0	+ 9.5
Slovenia	+ 1.3	+ 2.9	+ 4.5	+ 6.2	+ 1.9
Slovakia	+ 0.1	+ 1.7	− 0.3	+ 2.2	+ 4.9
Japan	− 5.9	+ 1.0	− 12.6	+ 9.9	+ 28.0
Canada	+ 1.4	+ 2.3	− 1.3	− 1.8	− 0.6
Norway	+ 0.2	+ 4.4	+ 6.9	+ 2.4	− 2.0
USA	− 4.2	− 1.7	− 8.7	− 5.2	+ 8.4
EU trading partners[1]	+ 0.0	+ 2.1	+ 0.7	+ 3.2	+ 9.8
Austria					
All trading partners[1] = 100	+ 0.1	− 0.2	− 1.7	− 1.5	+ 3.1
EU trading partners[1] = 100	− 0.5	− 0.6	− 3.0	− 2.0	+ 3.5
Germany = 100	+ 0.4	− 0.6	− 2.0	− 1.6	− 1.6
Economy as a whole					
Austria	+ 0.5	+ 2.1	+ 0.9	+ 2.7	+ 4.8
EU trading partners[1]	+ 1.9	+ 1.7	+ 1.8	+ 2.7	+ 2.7
All trading partners[1]	+ 1.3	+ 1.5	+ 0.6	+ 2.1	+ 3.4
Austria					
All trading partners[1] = 100	− 0.9	+ 0.6	+ 0.3	+ 0.5	+ 1.4
EU trading partners[1] = 100	− 1.4	+ 0.4	− 0.9	− 0.1	+ 2.0
Germany = 100	− 0.2	+ 1.0	+ 0.8	+ 0.5	− 0.3

Source: AMECO, Statistics Austria, OECD, WIFO calculations. – [1] Without Austria, Switzerland, Malta, Cyprus, Romania, Bulgaria; weighted average of Austria's trading partners according to WIFO exchange rate indices. Unit labour costs: ratio of gross per-capita wages (employees) and real per-capita gross value added or GDP (number engaged).

A long-term comparison is more meaningful in this context. On average, between 2004 and 2009, productivity in Austrian manufacturing rose by 1.8 percent per year, compared to 0.1 percent in the weighted average of all trading partners. On average, the EU trading partners showed slightly negative productivity. The productivity development of Austrian industry exceeded that of the EU 25 (excluding Austria, Malta and Cyprus) by an average of 1.9 percentage points, and that of the EU 15 (excluding Austria) by 2.4 percentage points. On average, between 2004 and 2008, excluding the crisis of 2009, Austria's lead was even more pronounced (+5.0 percent per year, and +2.8 percent per year compared to all trading partners). Since 1999, the productivity of domestic companies has increased by 3.9 percent per year, which is nearly half a percentage point faster than in the countries of comparison.

Unit labour costs (labour costs per unit of production) decreased in the Austrian manufacturing sector in the late 1990s as a result of a combination of moderate labour cost development and high productivity growth (1998-2001 −1.3 percent per year). The increase in the years 2002 and 2003 was primarily due to weak productivity. Between 2004 and 2008, unit labour costs again showed a favourable development (−1.4 percent per year).

Unit labour costs in manufacturing up 13.5 percent in 2009

Figure 3: Development of relative labour and unit labour costs in manufacturing

In €, 2000 = 100
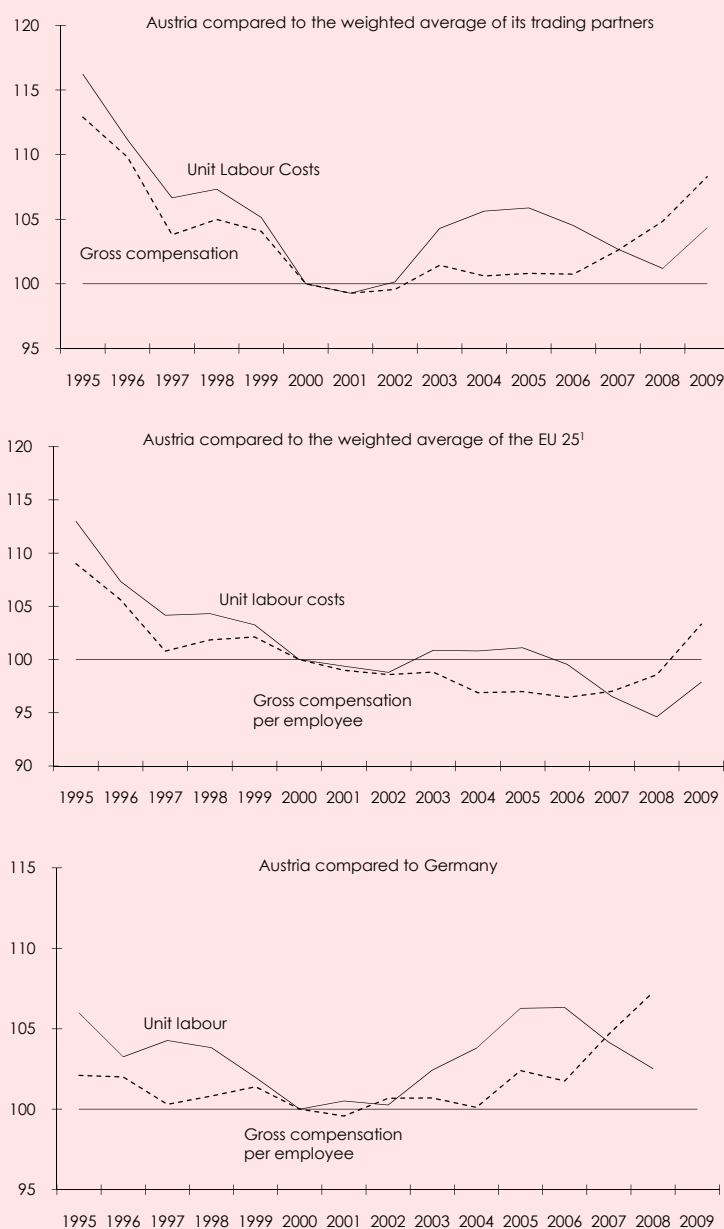
Source: AMECO, OeNB, WIFO calculations. – [1] Without Austria, Malta and Cyprus.

In 2009, Austria, like many other industrialised countries, saw an unusually strong increase in unit labour costs (+13.5 percent, +9.8 percent among the EU trade partners), which can be attributed to the sharp decline in production during the recession. In a recession, sales and therefore production tend to decline more rapidly than employment (labour hoarding). This dampens labour productivity, while, due to nominal wage rigidity and the hoarding of skilled labour, per-capita labour costs tend to change little. The most pronounced deterioration of unit labour costs took place in export-oriented economies. The increase was only higher than Austria in

Japan (+28.0 percent), Luxembourg (+21.2 percent), Finland (+15.4 percent) and Germany (+15.4 percent), while Poland (–18.3 percent), Ireland (–6.3 percent), Latvia (–4.9 percent), Hungary (–2.8 percent), Lithuania (–2.2 percent) and Norway (–2.0 percent) recorded an improvement in their unit labour cost position, partly due to depreciation of their national currencies against the euro.
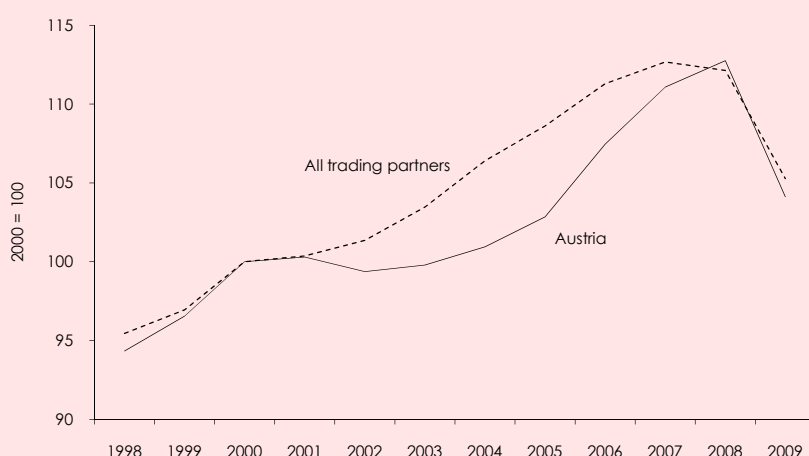
In 2009, unit labour costs in Austrian manufacturing worsened by 3.1 percent relative to the sum of the trading partners and by 3.5 percent relative to the EU trading partners. Compared to Germany, Austria saw an improvement of 1.6 percent. In the long term (1995 to 2009, Figure 3) unit labour costs and per-capita labour costs sank relative to the average of the trading partners. The difference between the course of relative unit labour costs and that of relative per-capita labour costs can be attributed to relative productivity development. Compared to the weighted average of the EU trading partners, unit labour costs developed more positively after 2000.

Aggregate unit labour costs rose in Austria by 4.8 percent in 2009 – more significantly than the average of the trading partners, but less dramatically than in domestic manufacturing. Austria's aggregate unit labour cost position deteriorated by 1.4 percent compared to that of all trading partners and by 2.0 percent compared to the EU trading partners. The deterioration was less significant when compared to Germany (+0.3 percent).

Weaker rise in unit labour costs in the economy as a whole

Cost pressures on the competitiveness of the manufacturing sector arising from developments in other industries can be evaluated by looking at the relationship between unit labour cost dynamics in the economy as a whole and those in manufacturing. As the share of labour costs in the production value of manufactured goods is comparatively small, the evolution of the relative unit labour cost position in manufacturing can only deliver a correct indication of the cost competitiveness of manufacturing if the structure of aggregate unit labour costs remains unchanged (*Deutsche Bundesbank,* 1998). If the relation of unit labour costs in individual areas varies greatly depending on the country, the interpretation of an international unit labour cost comparison in manufacturing becomes difficult.

Figure 4: Relation of unit labour costs in the economy as a whole to those in manufacturing


Source: WIFO calculations.

Both in Austria and among the trading partners, unit labour costs rose more in the economy as a whole until 2008 than they did in the manufacturing sector (Figure 4). This corresponds with expectations, because the manufacturing sector provides greater possibilities to increase labour productivity through mechanisation and automation. In the period between 1998 and 2001 relative unit labour costs in Austria and among the trading partners showed parallel development. This was followed by a period in which the aggregate unit labour costs in relation to those in manufacturing

initially rose more slowly (2001-2005) and subsequently increased more rapidly (2005-2008) in Austria than in the countries of comparison. During the economic crisis in 2009, the relation between the rate of change of unit labour costs in the economy as a whole and that of manufacturing reversed for the first time. Viewed over the entire period, the ratio of unit labour costs in the economy as a whole compared to those of manufacturing in Austria and among the trade partners showed analogous development.

Figure 5: Labour costs in manufacturing in 2009

In €, Austria = 100
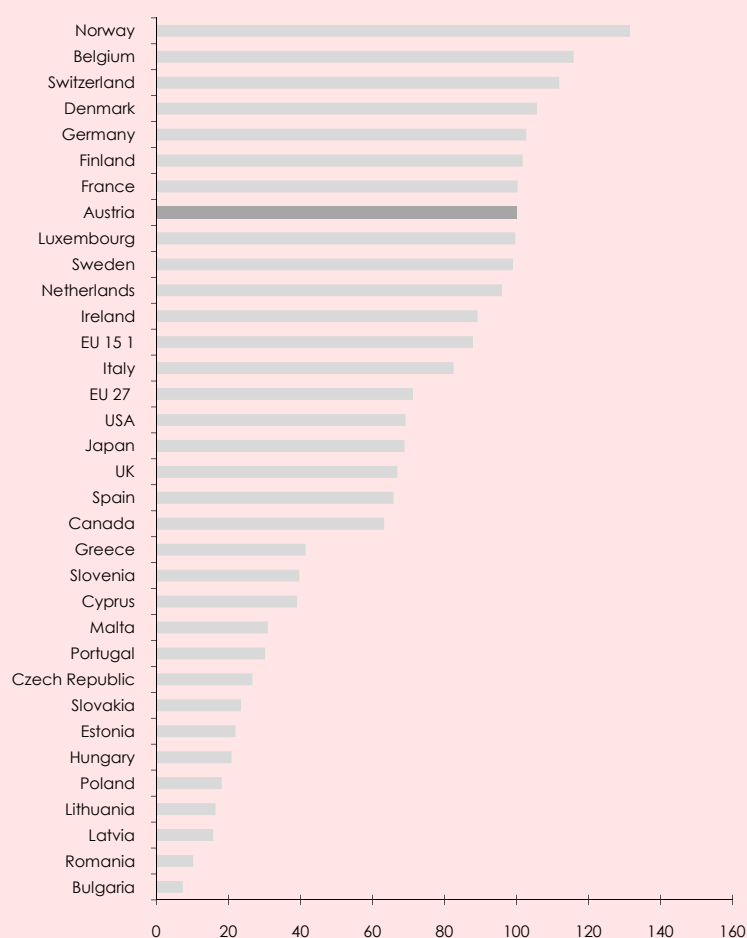
Source: Eurostat (2004 Labour Force Survey, Labour Cost Index), Institute of the German Economy, WIFO. – [1] Weighted by the number of employees in industry (Eurostat).

Summary

The economic crisis had a significant negative impact on the unit labour cost position of Austrian manufacturing in 2009. Export losses had a negative effect on productivity per employee (–10.1 percent), but to a lesser degree than they did in the average of the EU trading partners (–11.1 percent) or in Germany (–15.9 percent). Labour costs per person employed increased by 2.0 percent in Austria, while they decreased by 1.0 percent in the average of the EU trading partners and by 3.0 percent in Germany. Thus, unit labour costs in Austrian manufacturing rose by 13.5 percent, compared to 9.8 percent in the average of the EU trading partners and 15.4 percent in Germany. In the economy as a whole, unit labour costs increased more significantly in Austria (+4.8 percent) than in the average of the EU trading partners (+2.7 percent) and all trading partners (+3.4 percent). In the longer term (2004-2009) Austria showed an improvement of its unit labour cost position in manufacturing compared to the trading partners, while the relative unit labour cost position in the economy as a whole deteriorated slightly.

However, the explanatory power of labour costs as an indicator of international cost competitiveness is tarnished in 2009 due to the temporary effects of economic stabilisation policies and the differing decline of production and employment among countries.

Table 4: Hourly labour costs in manufacturing

	2004	2005	2006	2007	2008	2009
			In €			
Bulgaria	1.4	1.5	1.6	1.8	2.2	2.4
Romania	1.6	2.0	2.5	3.2	3.5	3.4
Latvia	2.5	2.7	3.3	4.3	5.2	5.2
Lithuania	3.0	3.2	3.9	4.8	5.7	5.4
Poland	4.0	4.8	5.2	6.0	7.1	6.0
Hungary	5.5	6.0	6.1	7.0	7.5	6.9
Estonia	4.0	4.5	5.3	6.4	7.3	7.3
Slovakia	4.2	4.8	5.4	6.4	7.2	7.8
Czech Republic	5.5	6.0	6.8	7.4	8.7	8.8
Portugal	8.6	8.8	8.8	9.3	9.6	10.0
Malta	8.7	8.7	9.2	9.5	9.7	10.3
Cyprus	11.0	11.5	12.0	12.0	12.6	13.0
Slovenia	9.6	10.4	10.7	11.3	12.5	13.2
Greece	13.9	12.3	12.5	12.9	13.3	13.8
Canada	19.6	21.6	23.5	23.5	22.5	21.0
Spain	17.4	18.2	19.0	19.8	20.7	21.9
UK	24.9	25.5	26.6	27.3	24.4	22.2
Japan	21.6	21.5	20.4	18.4	19.8	22.9
USA	22.3	23.4	23.9	22.6	21.7	23.0
EU 27	20.1	20.6	21.4	22.0	22.9	23.6
EU 25	21.7	22.2	23.0	23.7	24.6	25.4
Italy	22.2	22.8	23.5	24.1	25.6	27.4
EU 15[1]					28.5	29.2
Euro area[2]	25.6	26.1	27.0	27.6	28.6	29.5
Ireland	23.5	24.5	25.2	26.9	27.6	29.6
Netherlands	28.1	28.5	29.3	30.2	31.2	31.9
Sweden	32.0	32.5	32.8	34.5	34.6	32.9
Luxembourg	27.9	27.8	28.7	29.6	30.4	33.1
Austria	27.5	28.3	28.9	29.9	31.6	33.2
France	29.3	30.3	31.2	32.2	33.2	33.3
Finland	26.8	27.9	28.9	31.2	31.9	33.8
Germany	30.8	31.1	32.2	32.4	33.4	34.1
Denmark	30.1	30.6	31.5	32.8	34.1	35.1
Switzerland	33.0	33.4	33.5	32.8	34.5	37.1
Belgium	32.3	33.3	34.2	35.7	36.8	38.5
Norway	33.9	37.2	39.4	42.6	44.1	43.7

Source: Eurostat (2004 Labour Force Survey, Labour Cost Index) Institute of the German Economy, WIFO. – [1] Weighted by the number of employees in industry (Eurostat). – [2] Without Slovenia, Malta and Cyprus.

Appendix: Hourly labour costs in manufacturing

The data for labour costs per man-hour are based on the labour cost survey which is carried out in the EU countries every four years. The annual development between two labour cost surveys is updated on the basis of a labour cost index. The results of the 2008 labour force survey will be available in the coming months and the present account is based on updated values of the 2004 labour force survey. For some countries, as in the past, WIFO uses data from the Institute of the German Economy (*Schröder,* 2009). Unlike the labour cost survey, the labour cost index is not calculated using the same statistical concept in all countries, limiting international comparability. For Austria, the index is based on data from the business cycle survey. A change in the NACE industry classification in 2008, requires a fundamental revision of the labour cost index. The 2004 anchor values are currently updated using new rates of change, which complicates a comparison with previous publications. Figure 4 depicts the labour cost values obtained using the revised labour cost index for the entire period between 2004 and 2009. The absolute values for hourly labour costs in euros only diverge slightly from the figures published in the previous year for most countries (*Hölzl – Leoni – Zulehner,* 2009).

In 2009, it was particularly difficult to determine hourly labour costs in international comparison. First, the effect of short-time work on the development of labour costs is not completely depicted in the Austrian business cycle survey, as the public share of

additional costs is not taken into consideration. Second, there is no information on the extent of the influence of short-time work or other labour policy measures taken during the economic crisis on the labour cost data for other countries. The values for 2009 should therefore be interpreted with caution.

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Austria's International Unit Labour Cost Position Heavily Influenced by Economic Crisis in 2009 – Summary

The economic crisis has affected the unit labour cost position of the Austrian manufacturing sector. Per-capita labour productivity declined by 10.1 percent in Austria, while EU trading partners saw a drop in productivity of 11.1 percent. At the same time, labour costs rose by 2.0 percent in Austria, compared to an average decline of 1.0 percent among the EU trading partners. Thus manufacturing unit labour costs increased by 13.5 percent in Austria, while EU trading partners saw a rise in unit labour costs of 9.8 percent. In the economy as a whole, unit labour costs rose by 4.8 percent, more than the average of EU trading partners (+2.7 percent) and of all trading partners (+3.4 percent). These numbers must be considered with some caution. Policy measures to fight the crisis and their impact differed between countries. Moreover, countries were differently affected by the global economic crisis. This limits the explanatory power of unit labour costs as an indicator of international competitiveness for 2009.