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**Austrian Industrial Production in a Country
Comparison. Update 2025**

Marcus Scheiblecker

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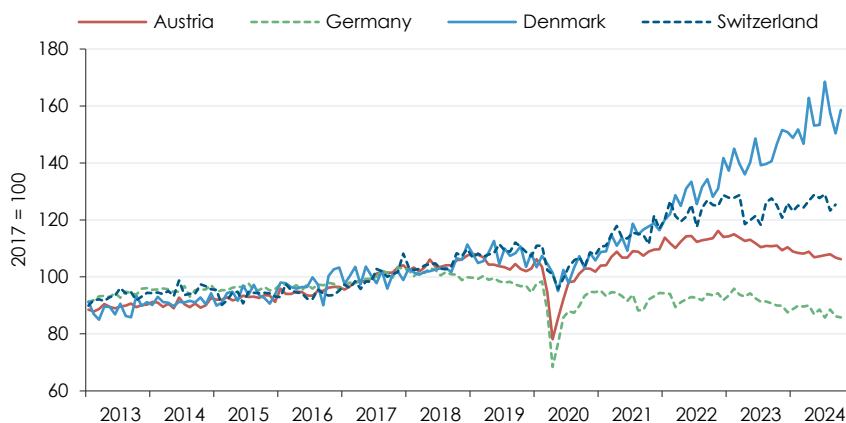
Update 2025

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- Since 2019, Austria's industry has performed weaker than that of Denmark and Switzerland, but significantly better than that of Germany.
- The good performance of Denmark and Switzerland is largely due to the pharmaceutical industry, which is the most important manufacturing sector in both countries.
- Excluding the pharmaceutical industry or transferring the domestic industrial structure to the comparison countries, Austria has performed similarly well as to Denmark and Switzerland over the past decade, while Germany's gap remains unchanged.
- Austria was also able to keep up with Switzerland and Denmark in terms of labour productivity in manufacturing excluding the pharmaceutical industry.
- The production of energy-intensive industrial products has shrunk more sharply in Denmark and Germany than in Austria since the significant rise in natural gas and electricity prices in 2021-22.

Development of production in manufacturing

Industrial production index NACE 2008, section C, seasonally and working day adjusted



"The better performance of Denmark and Switzerland is due to the pharmaceutical industry. Without this industry, Austria is not lagging behind in terms of production, value added or labour productivity."

While Austria's industrial production increased steadily after the COVID-19 crisis and has only been declining since the onset of the recession in early 2023, Germany's has been falling since 2018 (source: Eurostat, Statistics Austria, WIFO calculations, Macrobond).

Austrian Industrial Production in a Country Comparison

Update 2025

Marcus Scheiblecker

January 2025

Austrian Industrial Production in a Country Comparison. Update 2025

This paper updates an analysis of Austria's industrial development compared to Switzerland, Germany and Denmark published in March 2023. Since the end of the COVID-19 pandemic, industrial production in Switzerland and Denmark has developed significantly better than in Austria and Germany. However, industrial growth in Switzerland and Denmark is mainly focused on the pharmaceutical industry, which has shown a stronger trend growth and remained unaffected by the European economic downturn that began in 2023. Excluding the pharmaceutical sector, Austria's gap with Denmark and Switzerland largely disappears. In comparison with Germany, Austria performs significantly better. Austrian industrial labour productivity per hour worked (excluding the pharmaceutical sector) has risen at a similar rate to Denmark in recent years, somewhat more slowly than in Switzerland and significantly more strongly than in Germany. To examine the different effects of the energy price increases in 2021 and 2022, the analysis was extended to energy-intensive producing industries. They suffered somewhat weaker production losses in Austria than in Germany and Denmark.

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1. Introduction

An analysis published in March 2023 (Scheiblecker, 2023) compared the development of the industrial production index in Austria, Germany, Denmark and Switzerland. At that time, it was shown that domestic industrial production had performed significantly better than that in Germany in the period from 2017 to 2022. Austria was also able to keep up with successful countries such as Denmark and Switzerland if the pharmaceutical industry was excluded from the analysis. Although it is the most important industrial sector in both Denmark and Switzerland, it is subject to laws that go beyond business cycle dynamics and price-driven competitiveness.

After overcoming the COVID-19 pandemic and the sharp rise in inflation, Austrian industry was once again faced with major challenges. On the one hand, employees demanded a full compensation of the high inflation by wage increases, while on the

other, European industry slipped into recession.

This article updates the study from March 2023 and reviews the conclusions drawn at that time in light of recent developments. The country comparison is again mainly based on the industrial production index and productivity measures based on it. However, its informative value is limited by the fact that the development of production in volume terms only covers one aspect of competitiveness. A lack of pricing power on international markets could force domestic companies to offer their products at the same prices as their foreign competitors despite higher costs. In this case, the quantities sold according to the industrial production index would not indicate a competitive disadvantage, but a higher increase in wage and energy costs than in competitor countries would result in relatively lower profit margins. This could in turn lead to a reduction in cash-flow needed for investment,

which could result in a lower competitiveness of affected companies in the medium term. The relatively higher cost burden could also lower Austria's attractiveness as a business location, causing domestic companies to move abroad and foreign companies to favour other locations. However, it is not yet possible to judge whether Austria's industry will actually suffer more of such effects than its competitors abroad.

2. The industrial production index

The sectoral breakdown of industrial production follows the NACE 2008 classification. Production is generally calculated for sections B to E (industry) or extended by section F for the producing sector (Table 1). As in the original article from March 2023, only section C "manufacturing" will be considered here

This update pays additional attention to energy-intensive production. This intends to take account of the fact that energy prices in Austria rose particularly sharply in 2021 and 2022 and, despite declines from the turn of the year 2022-23, are still high and are expected to remain higher than before the inflationary surge in the medium term (Baumgartner et al., 2024).

instead of industrial production in the broader sense. This sector is particularly exposed to international competition and covers the majority of industrial production (2023: 82 percent of the value added of sections B to E).

Table 1: NACE classification of economic sectors in industry

Code	Designation
B	Mining and quarrying
C	Manufacturing or production of goods
D	Electricity, gas, steam and air conditioning supply
E	Water supply; sewerage, waste management and remediation activities
F	Construction

Source: Eurostat.

Like all indices, the industrial production index¹ is based on a weighting of growth rates, which are standardised to a value of 100 for a reference point in time. While a re-basing leaves the volume growth rates at company level unchanged, the weights, which correspond to the relative size of the companies, have been adjusted since the analysis of March 2023. Instead of the value added shares of companies in 2015, those of 2021 now serve as weights for the aggregate production index. The update of the weights is intended to bring the index closer to the current economic situation. This is based on the assumption that the corporate and industrial structure is subject to a smooth trend-like change over time.

While this is plausible for output, there can be large fluctuations of value added between individual years which form the basis of weighting of the industrial production index. For example, the value added as the difference between output and intermediate consumption can be significantly lower in the base year than in the other years due to a sharp rise in the price of raw materials or energy.

When the production index is revised, the company sample is adjusted to the

changed population of enterprises at the same time. This makes it possible to integrate newly registered companies into the production index². The Austrian industrial production index 2015 was based on a selection of around 9,800 companies in sections B to F (sections B to E: 5,800 companies, section F: 4,000 companies) from a population of around 63,600 companies. The updated production index 2021 now comprises around 10,300 companies.

As an innovation, gross value added at factor cost is no longer used to calculate the weights in the base year, but gross value added at basic prices (European Commission, 2020). Both concepts include subsidies on products, but no taxes on products. But the former calculation at factor cost is additionally corrected for other subsidies and other taxes on production (Eurostat, 2014). However, these two variables hardly play a role in industry, meaning that the difference between the two calculation methods is likely to be small.

In general, the production index also appears to describe the value added in volume terms in the relevant sectors well, although it is only an output indicator. This means that the price-adjusted ratio of input

¹ The suitability of the industrial production index as a measure of the development of output and value added will be given little attention here. It was discussed in more detail in Scheiblecker (2023).

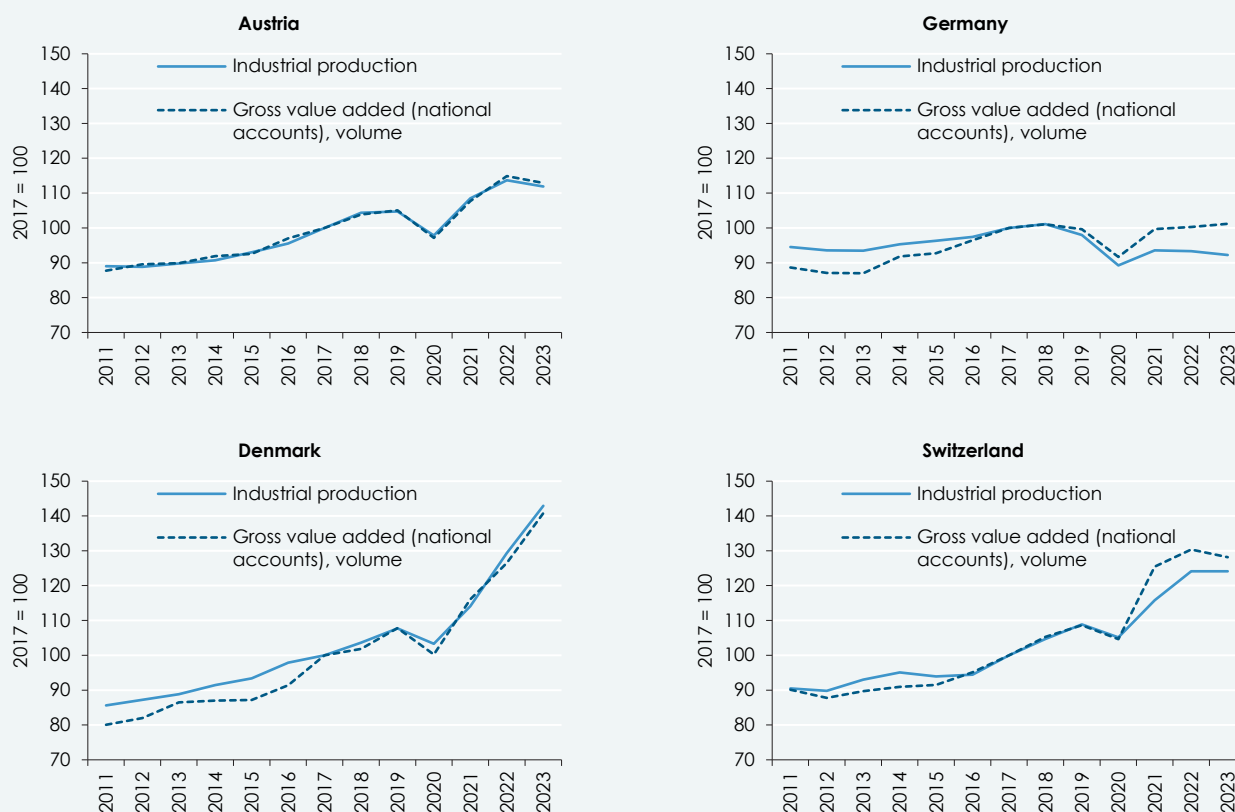
² However, companies that have ceased operations over time are continuously excluded from the survey.

The 2021 production index published by Statistics Austria from January 2024 is based on an updated weighting scheme.

to output, i.e. the intermediate input ratio in industry, is likely to have remained largely constant during the period under review (Figure 1). Only in Switzerland and Germany

has the value added developed better than the output according to industrial production in the last three years.

Figure 1: Development of gross value added and industrial output in manufacturing



Source: Eurostat, Statistics Austria, WIFO calculations, Macrobond. The production indices (base year 2021) and gross value added (base year 2015) were rebased to 2017 = 100 for better comparability.

3. Differences in the economic structure

The importance of industry is measured, among other things, by its contribution to GDP. In the three countries compared, industry in the narrower sense accounts for a similar share of total value added as in Austria. In Austria, Denmark and Switzerland it amounted to 18 percent in 2021 and in Germany to 20 percent. All four countries compete internationally as small open economies. Denmark and Switzerland are not part of the euro area and could gain a competitive advantage over Germany and Austria, at least in the short term, with an independent exchange rate policy.

Although the slump in the wake of the COVID-19 pandemic was much more severe in Austria, production recovered quickly and was almost able to catch up. From 2022 at the latest, however, Denmark achieved a significant acceleration in growth that Austria was no longer able to follow. The Swiss industry also expanded more strongly, but the economic downturn in 2023 had a negative impact on its development. While the German industry continued to stagnate, production in Austria expanded steadily until the turn of the year 2022-23.

While Switzerland and Denmark are highly specialised in the production of pharmaceuticals, Germany and Austria have a much more diversified industrial production.

Figure 1 shows the production index for the NACE 2008 section C, i.e. industry in the narrower sense. As can be clearly seen, the development in the four countries was very synchronised until 2018. A trend reversal in German industry set in at the end of 2018, causing the momentum in Germany to slow significantly. The Austrian industry, on the other hand, was able to keep pace with Switzerland and Denmark until 2021.

In the 2023 country comparison (Scheiblecker, 2023), the higher momentum in Switzerland and Denmark was attributed to the manufacture of basic pharmaceutical products and pharmaceutical preparations (NACE 2008, division C21). In Austria and Germany, this industry only accounts for a small share of the value added of manufacturing at less than 4 percent (Table 2). In general, industry in Germany and Austria is

less concentrated in individual sectors than in Switzerland and Denmark. This is also indicated by the Herfindahl-Hirschman Index, which shows comparatively low values for Germany and Austria³. Compared to 2015, the base year of the production indices in

Scheiblecker (2023), the degree of specialisation in Germany and Austria has fallen slightly or remained stable according to the Herfindahl-Hirschman Index, while it has continued to rise in Switzerland and Denmark.

Table 2: **Weights of the NACE divisions in the manufacturing section**

	Austria	Germany	Denmark	Switzerland
	Share of gross value added at basic prices 2021 in percent			
C10	7.2	6.3	11.0	6.7
C11	4.3	1.1	1.0	0.6
C12	0.0	0.4	0.3	–
C13	0.9	0.7	0.8	0.4
C14	0.2	0.3	0.4	0.2
C15	0.3	0.1	–	–
C16	5.4	1.7	1.7	2.3
C17 ¹	3.3	1.7	1.1	0.6
C18	1.0	0.9	0.7	0.8
C19 ¹	1.5	1.3	–	0.1
C20 ¹	6.0	7.6	5.1	7.5
C21	3.5	3.8	20.9	29.1
C22 ¹	3.9	5.0	2.8	2.2
C23 ¹	4.1	2.9	3.8	1.7
C24 ¹	7.1	3.5	1.1	1.2
C25	10.6	9.3	6.8	6.4
C26	4.9	5.8	6.2	17.8
C27	6.6	7.0	2.6	3.0
C28	14.0	16.5	16.0	7.9
C29	6.1	15.5	0.8	0.7
C30	2.1	2.0	0.7	1.0
C31	2.2	1.2	2.3	0.7
C32	2.0	3.0	11.0	3.5
C33	2.8	2.2	2.5	1.5
HHI _n	6.80	8.70	10.98	14.30

Source: Eurostat, Structural Business Statistics; WIFO calculations; Macrobond. The five largest divisions are highlighted in bold. – ¹ Energy-intensive sectors (see Figure 9). – ² Measure of sector concentration.

The figures in bold font in Table 2 indicate the five largest industrial sectors in the respective country according to Structural Business Statistics (SBS). The SBS is used for the production index weightings. In Austria, manufacture of machinery and equipment (NACE 2008, division C28) is the largest industry in terms of gross value added, ahead of manufacture of fabricated metal products (C25), manufacture of food products (C10), manufacture of basic metals (C24) and manufacture of electrical equipment (C27). According to the 2015 industrial production index, Germany's largest industrial sector was the production of motor vehicles, trailers and semi-trailers (C29), which accounted for just under 18 percent of the value added in section C. Due to the ongoing crisis in the motor vehicle sector, its share fell to 15.5 percent in 2021; manufacture of

machinery and equipment n.e.c. (16.5 percent) is now the largest industry within manufacturing in Germany.

The manufacture of basic pharmaceutical products and pharmaceutical preparations (C21) clearly dominates in Switzerland and Denmark. While its share of value added in Denmark is nearly 21 percent and has thus hardly changed compared to the 2015 production index, it has risen to almost 30 percent in Switzerland. The second most important industry of Switzerland is the manufacture of computer, electronic and optical products, which also includes the manufacture of watches. In Denmark, on the other hand, the manufacture of machinery and equipment n.e.c. with a share of 16 percent ranks second.

Manufacture of machinery and equipment is the most important industrial sector in Austria. Manufacture of motor vehicles, trailers and semi-trailers only ranks 6th.

³ The index is calculated as $\frac{1}{N} \times 100$, where N corresponds to the number of NACE 2008 divisions. In this case, a value of 4.17 would mean that all sectors are of equal size, while a value of 100 would mean that all

production is accounted for by a single industry. For Germany and Austria, the index values shown in Table 2 are significantly lower than for Denmark and Switzerland.

4. Development of industrial production in a country comparison

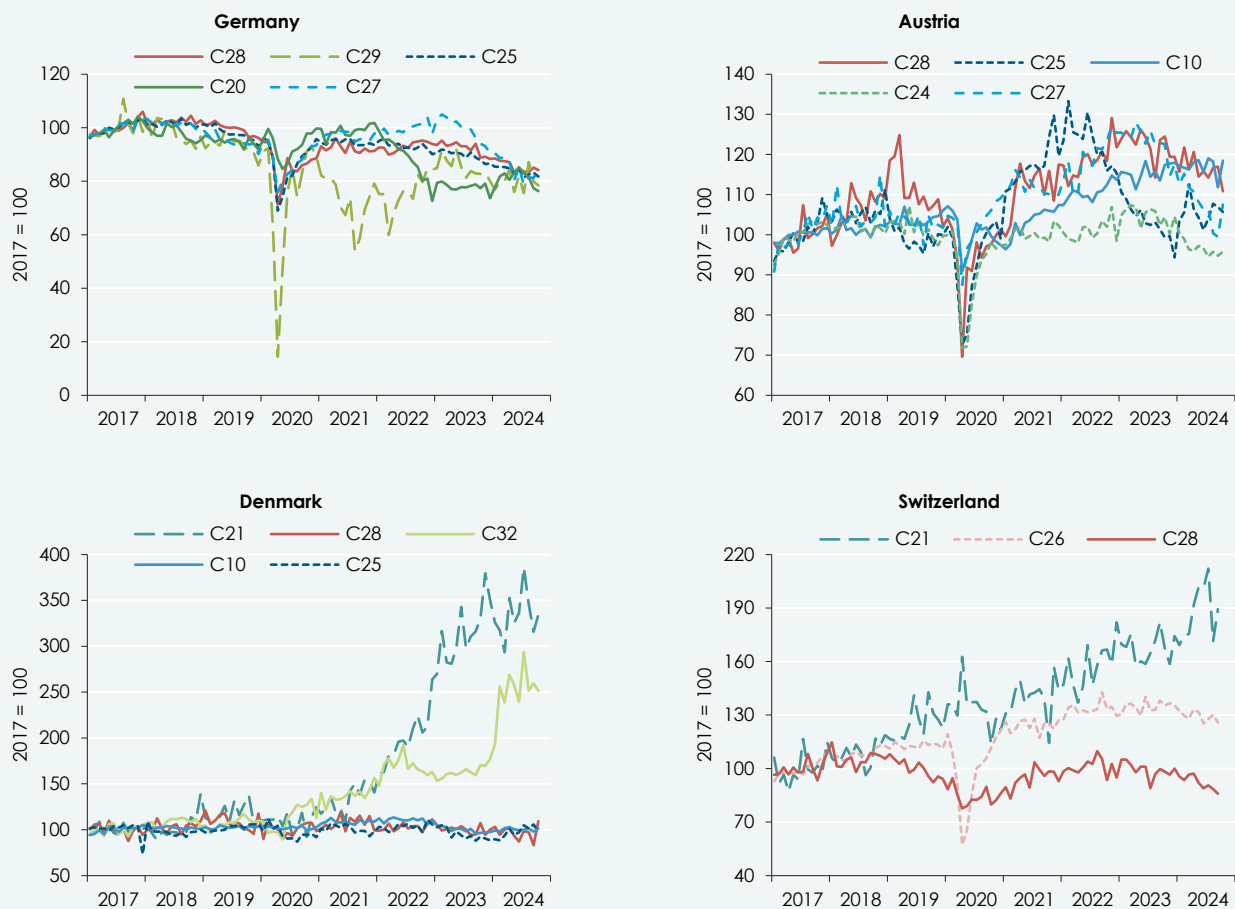
In 2021, the first year after the COVID-19 crisis, the manufacture of fabricated metal products, except machinery and equipment (C25) was the most dynamic of the five largest Austrian industrial sectors (Figure 2). However, this industry suffered the sharpest decline in production in the subsequent recession from 2023 onwards. Austria's largest industrial sector, manufacture of machinery and equipment n.e.c. (C28), expanded at a slightly weaker rate, but was still able to continuously expand its production until the end of 2022. After that, momentum steadily slowed. The third-largest domestic industrial sector, manufacture of food products (C10), was hardly affected by the recession in 2023 and was able to continuously expand its production after overcoming the losses caused by the pandemic. This upturn

continued in 2023, but lost momentum as the recession persisted.

Manufacture of basic metals (C24) has developed weakest of the five largest industrial sectors since the pandemic. After the slump in 2020, production fluctuated around the pre-crisis level until 2022. Following a temporary increase in momentum from the end of 2022 to autumn 2023, production fell back below the pre-crisis level and even below the level of 2017. Manufacture of electrical equipment (C27) is the fifth most important domestic industrial sector with a value added share of 6 percent. Its production kept pace with the successful economic trend in the manufacture of machinery and equipment n.e.c. until mid-2023, but has suffered more severe losses since then.

Figure 2: Development of the five most important divisions in manufacturing since 2017

Production index, seasonally and working day adjusted



Source: Eurostat, Statistics Austria, WIFO calculations, Macrobond. C10 . . . manufacture of food products, C20 . . . manufacture of chemicals and chemical products, C21 . . . manufacture of basic pharmaceutical products and pharmaceutical preparations, C24 . . . manufacture of basic metals, C25 . . . manufacture of fabricated metal products, except machinery and equipment, C26 . . . manufacture of computer, electronic and optical products, C27 . . . manufacture of electrical equipment, C28 . . . manufacture of machinery and equipment n.e.c., C29 . . . manufacture of motor vehicles trailers and semi-trailers, C32 . . . other manufacturing. The indices with base year 2021 were rebased to 2017 = 100 for better comparability.

In Germany, the indices for the five most important industrial sectors were recently at a similar level, significantly lower than in 2017, despite varying dynamics. Manufacture of motor vehicles, trailers and semi-trailers (C29) suffered the most significant drop in production during the COVID-19 pandemic, but was able to recover quickly. However, the recovery was followed by another decline in production, with the sector being overtaken by manufacture of machinery and equipment n.e.c. (C28) as the most important industrial sector in the 2021 production index. After a brief upturn at the end of 2022 and beginning of 2023, production fell again and stagnated in 2024 at a level far below that of 2017.

The development of the five most important industrial sectors in Denmark was surprisingly heterogeneous. Manufacture of machinery and equipment n.e.c. (C28), the second most important sector, manufacture of food products (C10, third most important sector) and manufacture of fabricated metal products (C25, fifth most important sector) have not seen any progress in production since 2017 and development has been relatively uniform. The increase in the industrial production index is driven by only two sectors: manufacture of basic pharmaceutical products and pharmaceutical preparations (C21), Denmark's most important industry, and, since the end of 2023, other manufacturing (C32).

The development of the Danish pharmaceutical industry is clearly dominated by one company. Novo Nordisk received marketing authorisation for its semaglutide-based diabetes drugs Ozempic and Wegovy in 2018. Since 2021, the industrial production index for the manufacture of basic pharmaceutical products and pharmaceutical preparations has risen three and a half times, significantly increasing Denmark's overall economic growth. Denmark's third-largest industrial sector, other manufacturing, has also seen lively growth recently. This branch includes the production of goods that cannot be allocated to any other sector, e.g. sports goods, games and toys, musical instruments, jewellery and medical and dental instruments and supplies. Production in this industry developed fairly unremarkable until mid-2020. Subsequently it followed the dynamic upward trend of the pharmaceutical industry for two years. However, the upturn came to an abrupt end in spring 2022; production contracted until the end of 2022, followed by stagnation in 2023. At the beginning of 2024, there was a resurgence in production, and output subsequently grew by more than two

thirds. It is unclear whether this growth is concentrated on a specific company or product, as no detailed breakdown of other manufacturing is publicly available.

In Switzerland, the pharmaceutical industry (C21) has an even higher share of total industrial value added (around 29 percent) than in Denmark (just under 21 percent). There too, it has been responsible for the strong expansion of industrial production in recent years, doubling its output since 2017 and making it the most dynamic of the largest industrial sectors⁴. The second-largest sector, manufacture of computer, electronic and optical products (C26), which also includes the production of watches, also recovered quickly from the pandemic and expanded strongly until 2022. Since then, however, production appears to have stagnated. Manufacture of machinery and equipment (C28), on the other hand, developed similarly unfavourably like in Germany and Denmark; in September 2024, the corresponding production index was 14.4 percent below the 2017 level in Germany, 4.6 percent in Denmark and 7.9 percent in Switzerland. Austria was the only country to see an increase of 16.9 percent in this period.

As the development of the pharmaceutical industry is not subject to the typical cyclical regularities and this sector does not play a major role in Austria, where it accounts for only 3.5 percent of industrial value added, it is excluded from the analysis below (see also Scheiblecker, 2023).

Figure 3 shows the industrial production of the four countries without the pharmaceutical industry, which changes the picture significantly. While the trend in Austria and Germany hardly changes, Switzerland's industrial production index is now almost identical to that of Austria. The trend is almost identical both in the years before the pandemic and from 2020 onwards. The slump in the international business cycle from 2023 is also reflected to the same extent in both indices.

Without the impetus from the pharmaceutical industry, the trend in Denmark would have been even weaker than in Austria from mid-2022, although production activity there rose sharply from the beginning of 2024. This jump can be attributed to the high growth in other manufacturing (C32; Figure 2). If this sector were also adjusted for, Denmark's output would have lagged significantly behind that of Austria both since 2017 and since the economic slump at the beginning of 2023 (Figure 4)⁵.

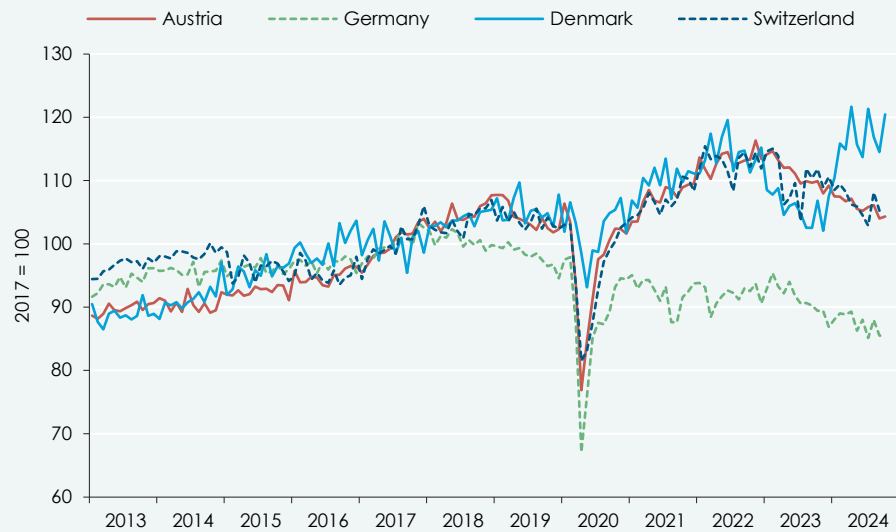
⁴ No industrial production indices are available for the divisions manufacture of chemicals and chemical products (C20, fourth most important industry) and

manufacture of food products (C10, fifth most important industry) in the case of Switzerland.

⁵ No comparison with Switzerland is made in this case, as this economic sector is not reported separately.

Figure 3: Industrial production excluding manufacture of basic pharmaceutical products and pharmaceutical preparations

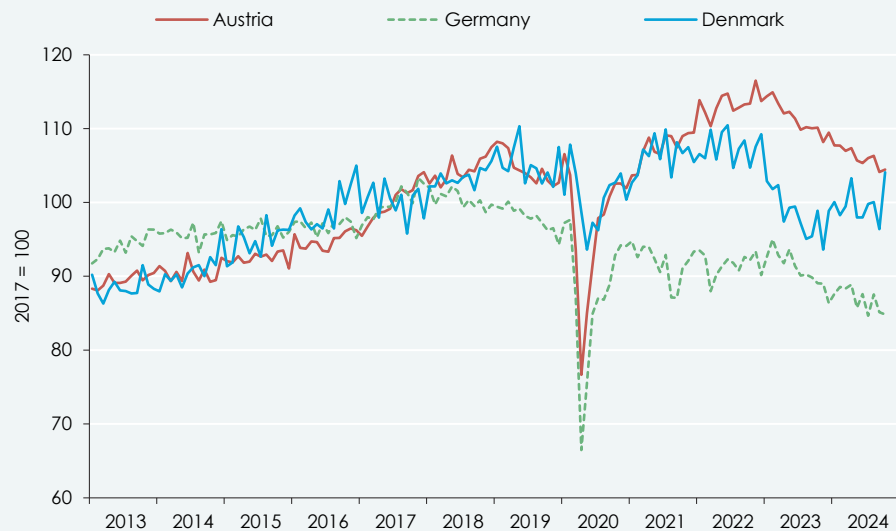
Seasonally and working day adjusted



Source: Eurostat, WIFO calculations, Macrobond. The weighted production index for the manufacture of basic pharmaceutical products and pharmaceutical preparations (NACE 2008, division C21) was subtracted from the production index for manufacturing (NACE 2008, section C). The calculated index was rebased to 2017 = 100. Weights according to Table 2.

Figure 4: Industrial production excluding manufacture of basic pharmaceutical products and pharmaceutical preparations and other manufacturing

Seasonally and working day adjusted



Source: Eurostat, WIFO calculations, Macrobond. The weighted production indices for the manufacture of basic pharmaceutical products and pharmaceutical preparations (NACE 2008, division C21) and for other manufacturing (C32) were subtracted from the production index for manufacturing (NACE 2008, section C). The calculated index was rebased to 2017 = 100. Weights according to Table 2.

The industrial success of Denmark and Switzerland is based on the boom in the pharmaceutical industry.

If we only look at the period from January 2023 onwards in order to focus on the most recent economic phase and exclude the pharmaceutical industry, the trends in Austria (-8.6 percent), Germany (-8.2 percent) and Switzerland (-8.2 percent) are very

similar. Only Denmark (+11 percent) defied the European industrial recession due to the considerable expansion in the C32 division. Excluding this other goods sector, Denmark

has only seen slight growth of +1.1 percent since the start of 2023⁶.

Another way of comparing countries is to re-weight their sectoral production indices on the basis of the Austrian industrial structure (Figure 5). No sectors are excluded from the comparison, but they are given the same weight as they have in Austria. The result is a similar picture as above: in the case of

Germany, the application of the Austrian industrial structure makes little difference to the index trend. Compared to Denmark, Austrian industry performed better in 2022 and 2023. However, Denmark caught up again in 2024. No comparison is made for Switzerland, as the short-term business statistics are not available in the required level of detail.

If Austria's industrial structure is applied to the development of the individual branches in Denmark, there is no evidence of Austrian industry lagging behind over the last decade.

Figure 5: **Reweighted production indices for Germany and Denmark**
NACE 2008, section C



Source: Eurostat, WIFO calculations, Macrobond. The weighted indices were calculated using the Austrian value added shares according to Table 2 and rebased to 2017 = 100. Denmark: excluding manufacture of leather and related products (NACE 2008, division C15) and excluding coke and refined petroleum products (C19).

5. Comparison of labour productivity

Two databases can be used to compare labour productivity. Firstly, the price-adjusted value added according to national accounts can be compared with the volume of labour also reported in the National Accounts. Secondly, the monthly short-term business statistics also report labour input in hours worked. The left-hand graph in Figure 6 shows the development of gross value added per hour worked (employed persons) for manufacturing to National Accounts, while the right-hand graph shows the hourly productivity of employees based on the short-term statistics. Switzerland could only be included in the variant based on short-term statistics due to a lack of data on the volume of labour according to National Accounts. For the other three countries, the two calculation variants show similar trends.

Thus, hourly productivity in industry in Switzerland and Denmark is likely to have risen significantly stronger than in Germany and Austria since 2013. In Austria, however, it has developed slightly better than in Germany from 2017 onwards.

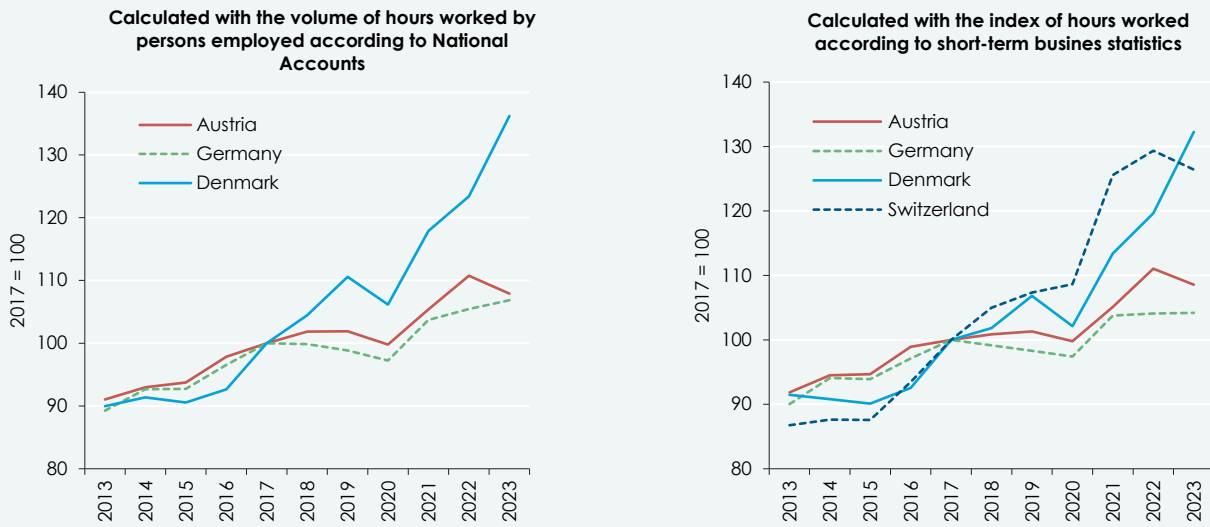
If the pharmaceutical industry is again excluded from the analysis, productivity growth in Austria is similar to that in Denmark (Figure 7). Based on the short-term business statistics, labour productivity in Switzerland appears to have grown slightly faster than in the other three countries. Germany is again lagging behind.

Excluding the pharmaceutical sector, labour productivity in the Austrian industry has increased at a similar rate to Denmark since 2013, slower than in Switzerland and significantly stronger than in Germany.

⁶ However, this is due to the sharp rise in October 2024. A comparison of the September 2024 level with that of January 2023 shows a decline of 6.3 percent.

Figure 6: Labour productivity in manufacturing

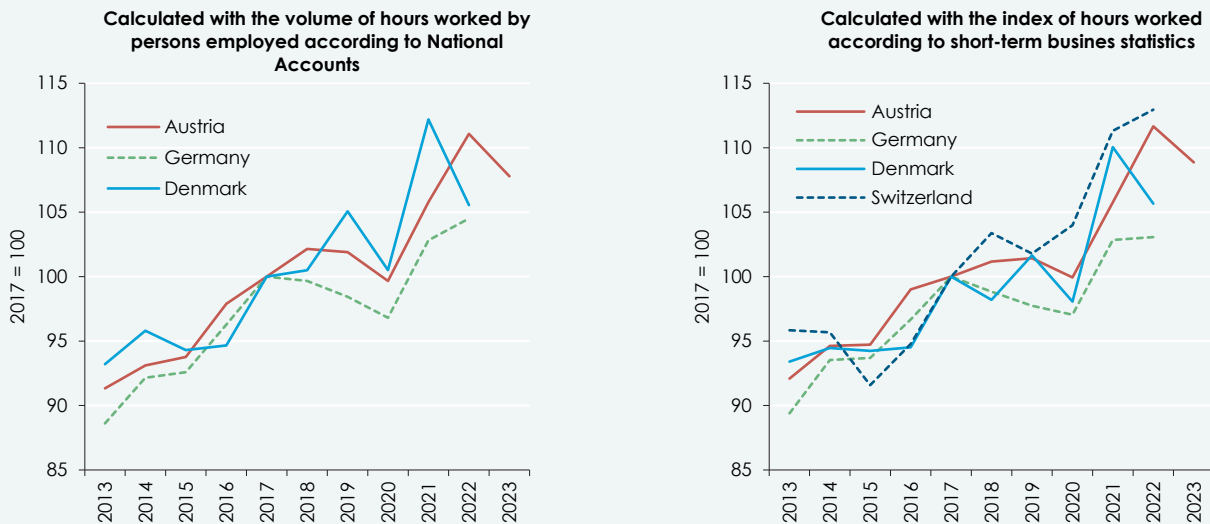
Gross value added per hour worked



Source: Eurostat, WIFO calculations, Macrobond. The indices with base year 2021 and the national accounts time series were rebased to 2017 = 100 for better comparability.

Figure 7: Labour productivity in the manufacturing of goods excluding manufacture of basic pharmaceutical products and pharmaceutical preparations

Gross value added per hour worked



Source: Eurostat, WIFO calculations, Macrobond. Manufacturing (NACE 2008, section C) excluding manufacture of basic pharmaceutical products and pharmaceutical preparations (NACE 2008, division C21): the gross value added was calculated according to the chain-linking method and the volume of labour according to the national accounts by difference. The index of hours worked according to short-term business statistics was subtracted on a weighted basis and the result was rebased to 2017 = 100 (weights according to Table 2).

6. Comparison of energy-intensive manufacturing industries

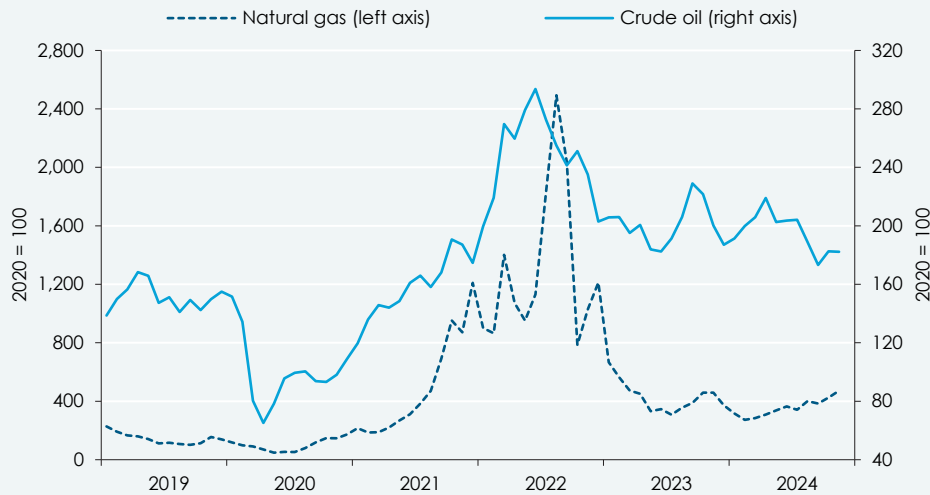
European wholesale prices for natural gas and crude oil had already risen before the war in Ukraine – not least due to increased demand in the wake of the recovery from the COVID-19 crisis. However, the war accelerated the rise in energy prices considerably (Figure 8). This drove inflation rates to new highs according to the consumer price

index. From 2023 onwards, fossil fuels and electricity became cheaper again, which led to a fall of inflation. However, energy prices are still above the pre-crisis level of 2019, at least in Austria (see Baumgartner et al., 2024). For this reason, the final focus will be on energy-intensive industries. These include manufacture of paper and paper

products (C17), manufacture of coke and refined petroleum products (C19), manufacture of chemicals and chemical products (C20), manufacture of rubber and plastic products (C22) manufacture of other non-metallic mineral products ((C23), and manufacture of basic metals (C24). At 26 percent,

the share of these sectors in total goods production is higher in Austria than in the three countries of comparison (Germany: 22 percent, Switzerland: 13¼ percent, Denmark (excluding C19): 14 percent; Table 2).

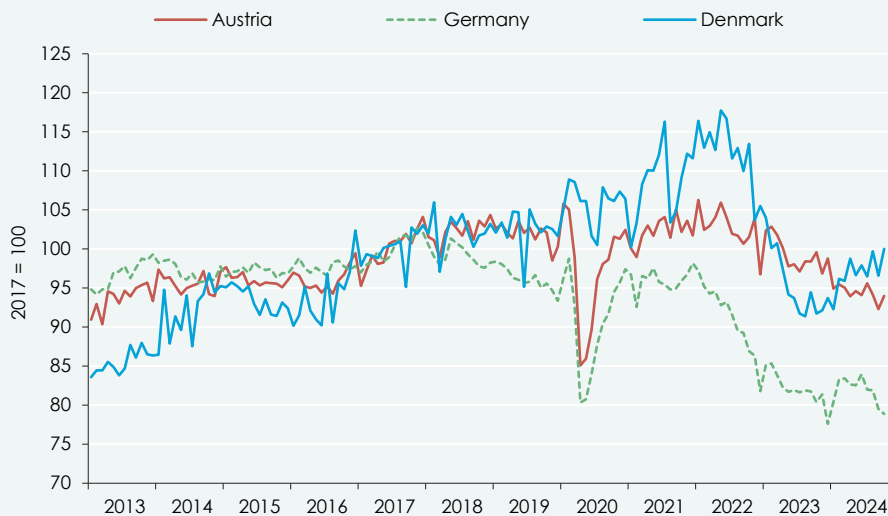
Figure 8: Energy prices in the euro area



Source: HWWI, Macrobond. Weighting period 2017 to 2019, euro basis.

Figure 9: Industrial production in energy-intensive sectors

Seasonally and working day adjusted



Source: Eurostat, WIFO calculations, Macrobond. Energy-intensive sectors: manufacture of paper and paper products (NACE 2008, division C17), manufacture of coke and refined petroleum products (C19), manufacture of chemicals and chemical products (C20), manufacture of rubber and plastics products (C22), manufacture of other non-metallic mineral products (C23) and manufacture of basic metals (C24). The weighted indices were calculated using the respective value added shares according to Table 2 and rebased to 2017 = 100. Denmark: excluding coking and petroleum refining (C19).

The rise in energy prices on the international markets did not affect the comparative countries equally, as they implemented different economic policy measures to curb

prices. As these were temporary interventions, they are unlikely to have had much impact on long-term competitiveness, although they have potentially affected

In Austria, energy-intensive manufacturing sectors account for a comparatively high proportion of industrial value added. Their output has shrunk since 2022, but not more than in Denmark or Germany.

production since 2021. Due to the lack of detail in the short-term business statistics, it is not possible to break down Switzerland's energy-intensive production. In the other three countries, energy-intensive industrial production has shrunk significantly since the beginning of 2022 (Figure 9).

Since then, it has fallen by 11.6 percent in Austria and 18.9 percent in Germany. In

7. Summary and conclusions

As the above international comparison shows, industrial production and value added in Switzerland and Denmark have developed more favourably than in Austria and Germany over the last decade. However, both countries are highly focussed on the production of pharmaceuticals. Demand for pharmaceutical products has risen rapidly in recent years and is not subject to the usual cyclical fluctuations. In Germany and Austria, the pharmaceutical industry is comparatively insignificant, accounting for less than 4 percent of industrial value added in either country. If this sector is excluded from the analysis, it can be observed that Austria has been able to keep pace with Denmark and Switzerland in terms of the development of industrial production and hourly productivity. There, too, the European industrial recession has left similarly strong traces as in Austria from 2023.

Germany, on the other hand, has been lagging far behind since 2018. It has suffered similar production losses as the other three countries during the current industrial recession. As a result of the crisis in the automotive sector, the manufacture of machinery and equipment n.e.c. replaced vehicle construction as the most important industrial sector in Germany. However, a transfer of the Austrian industrial structure to the German production index shows that the weak performance of German industry is not solely due to the concentration on vehicle construction. Rather, the loss in production volume appears to extend across all industrial sectors.

When assessing the Swiss industrial production, it should be borne in mind that the Swiss franc appreciated significantly during the period under review. While around 1.1 Swiss franc had to be paid for 1 € in mid-2017 and even up to 1.2 Swiss franc in mid-2018, the exchange rate has gradually fallen since. At

Denmark, there was an even sharper decline of 21.5 percent by the summer of 2023. However, an increase has been observed again in Denmark since then, narrowing the gap to 14.1 percent by October 2024. On a cumulative basis, Austria's energy-intensive industry was therefore not hit harder by the rise in energy prices than those in Germany or Denmark.

the beginning of December 2024, 1 € cost just 0.93 Swiss francs⁷. This corresponds to an appreciation of around 15 percent since 2017 and underlines the strength of competitiveness of Swiss industry.

This analysis does not claim to cover the various aspects of international competitiveness. Analysing the development of production volume and hourly productivity based on this does not allow any statements to be made about profitability, which is important in the competition between locations. If it is assumed that domestic industrial companies have low independent price setting power on international markets due to fierce competition, this does not reduce the volume of industrial output, but it does reduce profitability. Reduced profitability as a result of higher labour costs and energy prices would only have a delayed impact in the form of a decline in investment, relocation of companies abroad and a loss of attractiveness as a business location.

Austria has the most diversified industrial structure of the four countries analysed, followed by Germany, while pharmaceutical products account for more than a fifth of industrial production in Switzerland and Denmark. A high degree of diversification may increase the robustness of individual industrial sectors to shocks. Conversely, however, a high concentration on flourishing sectors such as the pharmaceutical industry promises growth advantages.

Due to the extraordinary rise in energy prices in 2022, the production of energy-intensive industrial goods was also included in the comparison. Energy-intensive industries account for a relatively high proportion of value added in Austria. The quantities of energy-intensive goods sold by Austrian industrial companies have declined since 2022, but not more than in Denmark or Germany.

⁷ In contrast, the exchange rate of the Danish krone against the euro remained largely unchanged during the period under review.

8. References

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