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AUSTRIAN PRODUCTIVITY BOARD

PRODUCTIVITY REPORT 2025: Structural change as an opportunity for competitiveness and employment

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Productivity Report 2025: Structural change as an opportunity for competitiveness and employment

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Foreword

Chairman of the Austrian Productivity Board
Professor Dr. Christoph Badelt

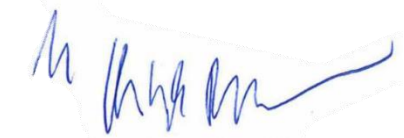
Dear Readers,

Despite the first tentative signs of recovery, the economic situation in Austria remains challenging. As an export-oriented country, Austria is facing geopolitical tensions, while structural weaknesses continue to weigh on its competitiveness. The latest developments in the labor market and the deterioration of key industrial indicators, such as the decline in investment, are warning signs that the current momentum is not sufficient to emerge stronger from the crisis. The signs of incipient deindustrialization are raising justified concerns about value creation and jobs in Austria as an industrial location. At the same time, this opens up the opportunity to renew economic structures, expand technological excellence, and establish new forms of industrial value creation. Austria has good prerequisites for this: innovative firms, highly skilled employees and the ability to shape change productively. It is now up to policymakers to leverage this potential with clear and comprehensible economic policy objectives and a willingness to reform and actively shape the economy.

This year, the first part of the productivity report is once again dedicated to monitoring indicators across the economic, social and environmental pillars of sustainable competitiveness. Over 80 indicators provide a detailed overview of Austria's strengths and weaknesses. The second part focuses on the challenges facing the industrial location. The in-depth analyses indicate an acceleration of structural change: Value creation and employment are shifting from material goods production to knowledge-intensive services and technology-driven activities, while unfavorable cost dynamics and increasing international competition are further intensifying the change. In the third part, the Austrian Productivity Board outlines guidelines for a future-oriented location policy and presents recommendations for necessary reforms in key areas of economic policy.

I would like to thank all members of the Austrian Productivity Board for their constructive and productive cooperation. The editorial preparation of the report and the underlying analyses were carried out by the staff of the Austrian Productivity Board's office. I would like to thank the team for their excellent and highly dedicated work. The members of the expert pool have made a significant contribution to ensuring the scientific quality of the Austrian Productivity Board's work. Additional insights from a workshop and background discussions with experts from public authorities, interest groups, funding agencies, research institutions, and advisory bodies have also been incorporated into the recommendations.[1]

The productivity report provides the foundation for evidence-based, forward-looking economic policy. I hope you find it stimulating and informative!



Professor Dr. Christoph Badelt

[1] My special thanks go to Franz Angerer (AEA), Julia Bock-Schappelwein (WIFO), Christoph Dolna-Gruber (AEA), Johannes Fraiss (WKÖ), Christian Furtwängler (AEA), Luca Marcolin (OECD), Johannes Mayer (E-Control), Alexandra Mazak-Huemer (FORWIT), Leonhard Jörg (FFG), Luisa Kunze (Bertelsmann Stiftung), Katharina Luger (AMS), Bernard Moshammer (Ministry of Social Affairs), Martin Schmidhuber (Chamber of Labor), Eduard Storm (IHS), Sylvia Vana (BMWET), Roman Wink (Bertelsmann Stiftung) and Sonja Muckenhuber (BILL Institute for Educational Development). I would also like to thank the approximately 300 industrial firms that took part in the WIFO industry survey. Thanks to their participation, the Austrian Productivity Board was able to gain an overview of the current situation. My special thanks go to Werner Hölzl, who conducted the survey at the WIFO.

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Productivity Report 2025: Executive Summary

This Productivity Report 2025 by the Austrian Productivity Board fulfils the Boards's legal mandate under the Fiscal Advisory Council and Productivity Board Act of 2021 *(Fiskalrat- und Produktivitätsratgesetz 2021* (FPRG 2021)*)* to provide an annual report on Austria's competitiveness. The Board's task is to present the Nationalrat (the lower house of the Austrian Parliament) with an analysis of the long-term drivers of – and prerequisites for – productivity and competitiveness, based on transparent and comparable indicators. Aspects such as legal certainty, demographic structure, environmental and climate protection, and the quality of life of the population are also to be included in the assessment of productivity and competitiveness. The analytical focus of the Austrian Productivity Board is on medium to long-term challenges for Austria's sustainable competitiveness.

The Productivity Report 2025 examines the key factors influencing the competitiveness of the manufacturing sector, with a focus on structural change. In-depth analyses shed light in particular on the effects of international trade developments and changes in energy prices on competitiveness and location decisions in manufacturing.

Despite the long recession, Austria's economy remained robust in many areas. However, important indicators such as investment and productivity declined. The industry is losing competitiveness due to high costs and structural deficits. At the same time, structural change is accelerating. Value creation is shifting from production to knowledge- and technology-intensive activities. Automation, digitalization and international competition are driving this process and are therefore challenging the world of work. The welfare state remains efficient, but is under pressure. Progress in energy efficiency and renewables is visible, but the ecological transformation requires more comprehensive measures to ensure competitiveness and social balance.

Macroeconomic development

Economy: Loss of competitiveness due to cost increases and structural weaknesses

Austria continues to have a high economic output per capita, but as a result of the 2023/24 recession, it is now below the 2019 level. Labor productivity fell again in 2024, but is still above the 2019 level. Industry is under growing competitive pressure due to high energy prices, increasing protectionism in global trade and China's strong industrial expansion. Unit labor costs have deteriorated compared with the main trading partners, primarily as a result of falling productivity. In addition, Austria recorded the strongest increase in collectively agreed wages in the OECD. Together with high energy costs, these developments have weakened price competitiveness. In 2025, Austria is expected to have the highest tax ratio in the EU.

The global market share of Austrian goods exports has fallen sharply in 2024. The appreciation of the euro since the beginning of 2025 and weak foreign demand have intensified competitive pressure. The decline in net operating surpluses has also accelerated.

At the same time, demographic change and the decline in working hours per person in employment are increasingly limiting the supply of labor. Corporate dynamism is at the lower end of the EU.

Despite economic weakness and a high level of uncertainty, investment activity remains an important pillar of overall economic development. However, Austrian companies are increasingly confronted with restrictions when it comes to financing investments. While debt financing via bank loans continues to be widely used, Austria is still at the lower end of the EU when it comes to the use of equity and venture capital for corporate financing.

In the field of education, Austria's PISA results are in the middle range among EU countries. Despite rising tertiary spending, the number of STEM graduates is stagnating, which is a problem for achieving progress in terms of digitalization and new technologies. Although Austria is considered a strong

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innovator in the European Innovation Scoreboard, it is losing ground to the innovation-leading BENESCAND countries[2] despite high R&D expenditure, contrary to the objectives of the national RTI strategy. Austria also only ranks in the middle of the EU in terms of digital skills, infrastructure and the digital transformation of enterprises. The goal of catching up with the innovation leaders by 2030 is likely to be missed.

Although trust in public institutions remains high, according to the indicators presented, political stability and corruption control have recently declined noticeably.

Social: Sustainable welfare state with structural weaknesses and growing risks

The Austrian welfare state remains efficient but is under increasing pressure due to demographic change and the associated rise in expenditure on pensions, health and care. Despite the recession in 2023/24, the unemployment rate remained stable for a long time but has been rising since 2024. Employment in full-time equivalents has stagnated since 2022, meaning that Austria's performance has been weaker than the EU average. On the other hand, there was a positive development in the reduction of the NEET rate among young people, which almost reached the level of the BENESCAND countries.

Net equivalized household income ranks second in the EU and has recently been supported by tax relief and anti-inflationary measures. By contrast, the number of people affected by material and social deprivation increased significantly in 2023 and remained at a higher level in 2024. Income inequality remains low compared to the rest of the EU. Wealth inequality remains above the EU average.

The childcare rate for children under three remains below the level of comparable countries but has reached the Barcelona target since 2023. Child care for children from three up to the compulsory school age slightly exceeds the EU average but is lower than in the BENESCAND states; only around 40% of child care places are full-time compatible. The proportion of people with education beyond compulsory schooling is high but is only growing slowly. Educational inequalities by social background persist.

Life expectancy in good health is falling, while overall life expectancy continues to rise. This reduces the proportion of healthy life years. Austria ranks in the middle of the EU in terms of subjectively perceived health status and chronic illnesses.

Ecological transformation and climate policy: Progress from a low level

Austria has made progress in the expansion of renewable energies and in the intensity of energy use. In addition, dependence on natural gas imports is decreasing. However, Austria is in the top third of the EU27 in terms of emissions intensity (CO_2 per GDP). Accordingly, greenhouse gas emissions per capita fell in 2023, but remained above the EU and BENESCAND average. The transport sector has recorded the strongest increase since 1990. Net emissions have recently increased due to climate-related forest damage, as forests are increasingly becoming sources of CO_2.

The potential of the circular economy has so far only been exploited to a limited extent: Material consumption is high, and resource productivity is only in the middle of the EU range. At the same time, the economic importance of the environmental sector is constantly growing. Austria is one of the leading EU countries for patents in the field of environmental technologies.

Revenues from environmental taxes remain below the EU average, while climate-damaging subsidies persist and thwart climate targets. In addition, the continued high per capita land consumption requires increased efforts by the federal states to achieve the goal of net zero land consumption.

The de-fossilization of emission-intensive sectors remains a key challenge - especially in the area of conflict between ecological responsibility and competitiveness.

[2] BENESCAND: Comparator countries Belgium, the Netherlands, Denmark, Sweden and Finland.

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Productivity development

Between 2012 and 2024, the average annual productivity growth rate in Austria was 0.7%, slightly below the average annual productivity growth rate of 0.8% for the EU27 countries. This is primarily driven by the negative growth rates in the years 2023-2024. During this period, labor productivity in Austria fell by an average of around 1.1% per year. This was mainly due to declines in labor productivity in the manufacture of goods. This sector made the strongest negative contribution to growth in overall labor productivity. Other sectors that contributed significantly to the decline in Austria were the construction sector as well as the service sectors of trade, transportation, accommodation and food services and economic services. One positive outlier in Austria was the information and communication sector, which made an above-average positive contribution to labor productivity growth compared to the EU27 countries. The decline in labor productivity in 2023 and 2024 can be attributed to the recession and companies' labor hoarding until 2024. The emerging improvement in the economy should shift productivity growth back into positive territory.

Despite the recent negative contributions, manufacturing remains the most important sectoral driver of productivity growth in the long term. Strengthening innovation, digital transformation and automation in industry as well as the expansion of knowledge-intensive business-related services with high value creation potential are key starting points for a future-oriented structural policy. These developments are usually accompanied by a stronger build-up of intangible capital - i.e. non-physical assets such as intellectual property rights, brands or corporate logistics - which in Austria has so far been restrained in international comparison.

Structural change and deindustrialization

International competition and distortions in global trade

Developments in international trade have a decisive influence on the competitiveness of Austrian industry. As a strongly export-oriented economy, Austria is particularly susceptible to changes in global trade relations. The introduction of tariffs and other protectionist measures by important trading partners such as the USA and increasing competition from emerging economies such as China pose considerable challenges.

US customs policy

The new US import tariffs introduced in 2025 mark a significant intensification of protectionist tendencies in global trade. In contrast to the measures during the "Trump I" tariffs in 2018, almost all EU exports are now affected. For Austrian companies, more than 3% of whose value creation depends on US final demand, this will have a noticeable impact, particularly on the automotive, mechanical engineering and pharmaceutical industries.

Empirical analyses show that the 2018 tariffs did not result in a significant decline in the export volumes of Austrian companies to the USA, but did reduce export values (volume x price) by around 10%. Affected companies compensated for losses in demand by adjusting prices and diversifying their export markets more strongly. Investment activity fell temporarily, without any lasting effects on employment or productivity.

The tariffs introduced in 2025 will be significantly more extensive and higher, especially for steel and aluminum. At the same time, the uncertain trade policy situation is increasing the reluctance to invest. In a survey, 41% of industrial companies stated that they were reducing planned investments due to the increased uncertainty. Overall, the evidence suggests that the latest US tariffs are likely to have a greater and longer-term impact on Austria's export-oriented industrial sectors.

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Competition with China

China's strong export growth since 2001, supported by industrial policy, has shaped competitive conditions in Europe. Against this backdrop, the EU adapted its China strategy in 2019 (competitor/systemic rival) and created instruments such as anti-subsidy procedures, IPI and, most recently, tariffs on e-vehicles. For Austria, 2007-2023 will see a broad increase in Chinese competition, particularly in the manufacture of data processing equipment and the manufacture of electrical equipment.

In the period 2013-2022, increasing competition from China did not yet have any impact on employment or value added. However, the analysis of the reactions of Austrian companies points to a decrease in R&D expenditure with stronger growth in Chinese competition on the domestic market, while increasing Chinese competition in export markets triggered low but positive productivity effects. The companies concerned tended to diversify their sales markets more strongly (more export destinations), but without expanding their portfolio of exported products. There is no evidence of systematic offshoring for the observation period up to 2022.

However, data from the WIFO industry survey shows an increased tendency towards relocations (+15%) and job cuts (+16%) among Austrian industrial companies that are under strong competitive pressure from Chinese suppliers over the next five years. In addition to production activities, high value-added areas such as design, research and development or product-oriented IT are also affected by job reduction plans, which indicates an increasing risk of the outflow of high-quality employment and skills. However, this trend is most pronounced regarding production activities. Increasing competitive pressure from Chinese competitors is therefore likely to accelerate structural change in the industry.

Developments in foreign trade require a targeted economic policy response to maintain and improve the competitiveness of Austrian industry. Against this backdrop, the strengthening of research, technology and innovation, a reorientation of funding policy, the deepening of the European single market and the strengthening of trade relations with international growth regions are becoming increasingly important. At European level, further development of measures is also required to address distortions of competition in international trade and ensure fair framework conditions.

Energy costs as a driver of structural change in Austrian industry

Reducing energy costs and making rapid progress in the energy transition are crucial for the competitiveness of Austrian industry. High energy prices weaken the international position of energy-intensive industries and increase the risk of production relocations and job losses. At the same time, rising energy costs and climate policy act as accelerators of structural change, as they influence the cost structure in favor of more energy-efficient and lower-CO_2 industries and economic activities. The future of energy-intensive industries in Austria therefore depends largely on whether it is possible to provide sufficient low-cost, climate-neutral energy and leverage the energy efficiency potential of companies. However, turning away from the energy and climate targets would be a strategic mistake: It would only provide limited relief in the short term, but would exacerbate deindustrialization in the long term and consolidate technological deficits compared to competitors from the USA and, above all, China. An accelerated energy transition that is as efficient as possible with a focus on grid expansion, storage and infrastructure is therefore a prerequisite for securing the industrial base in Austria in the long term.

Impact of energy costs on companies

Energy prices have stabilized at a high level following the massive increases in 2021 and 2022. As a result of the energy crisis, energy costs in the corporate sector initially rose by an average of 15% (2021) and 38% (2022), and in energy-intensive industries by as much as 28% and 46% respectively. Companies in the emissions trading system recorded increases of up to 59%, while individual companies saw their energy costs more than double. Although support measures have partially alleviated the burden, electricity prices for Austrian companies will remain in the top third of the EU-wide distribution in 2024 and

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probably beyond and therefore represent a structural competitive risk. The development of electricity prices has significantly worsened the cost position of Austrian industrial companies in a European comparison. In a survey, around three quarters of energy-intensive companies rate energy prices as a significant risk; outside of these sectors, almost half of all industrial companies also rate the high energy costs accordingly. This assessment often goes hand in hand with an increased willingness to reduce production activities in Austria or relocate them abroad. The high personnel and energy costs are cited as the most important reasons for this.

Adaptation potential through energy efficiency improvements

Companies can hardly compensate for the persistently high energy prices by switching energy sources. Reducing energy intensity through efficiency measures therefore remains the key short-term adaptation strategy. An analysis of energy consumption at company level shows that energy intensity - measured as the share of energy costs in real production value - has improved cumulatively by around 4.8% or an average of 0.35% per year since 2009. This development is primarily due to improved capacity utilization and the modernization of technical processes. Efficiency measures in the narrower sense - i.e. organizational and operational optimizations without the use of new technologies - have also contributed to the improvement, albeit to a lesser extent.

Estimates show that simple, in-house improvements in energy efficiency, considering so-called rebound effects, could result in savings of around 7 to 8% of average gross energy consumption according to companies' goods usage statistics. In energy-intensive sectors, the potential savings are somewhat higher, at around 8 to 10%. Even if some of the savings resulting from efficiency improvements are offset by higher production - the rebound effect is between 15 and 40% depending on the sector, with an average of around 24% in energy-intensive sectors - there is still considerable net savings potential.

Overall, efficiency measures cannot compensate for the burden of high energy prices, but they do strengthen the competitiveness and resilience of companies. Improved energy utilization not only reduces costs and emissions but also boosts productivity. Energy efficiency measures are therefore a central, short-term lever for adapting companies to a permanently more demanding energy environment. They should therefore receive consistent political support and be combined with investments in new energy technologies. However, various studies point to a significant increase in energy consumption in the event of complete de-fossilization.

Energy-intensive industries only have limited short-term options to react to the sharp rise in energy prices; structural adjustments require high investments and time. Since the energy crisis, high energy and personnel costs have had a considerable negative impact on competitiveness, especially in international comparison with the USA or China, where energy is significantly cheaper. Austrian companies have so far been able to partially compensate for this disadvantage through high energy efficiency and technological strength, but this lead is in danger of dwindling. Permanently higher energy prices in Europe and uncertainties regarding the expansion of renewable energies are increasing the pressure on the industry.

In terms of economic policy, it is important to stabilize the cost base in a targeted manner - for example by restructuring the grid fee regulations, reducing tax burdens and accelerating the provision of carbon-neutral energy. However, these measures cannot secure competitiveness in the long term. In the medium and long term, transformation policy should focus on innovation, in-house energy generation, efficiency improvements and the full integration of the European internal energy market and actively support structural change to secure industrial core competencies and strengthen the competitiveness of energy-intensive sectors in the long term.

Long-term trends in the development of companies and employment in the Austrian economy

The discussion about a possible deindustrialization of Europe has taken on new urgency due to rising energy prices and geopolitical tensions. In Austria, as in other industrialized countries, there is an

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accelerated structural change from industry to service activities. Energy-intensive sectors are experiencing a decline in production, while knowledge-intensive services are gaining in importance. Relocations, a shortage of skilled workers and ecological requirements are reinforcing this trend. At the same time, the shift in value creation towards innovation-driven services opens up opportunities for productivity gains. Against this backdrop, it is important to support structural change in terms of economic policy and to secure industrial skills for the future.

Changes in industry and activity structure at sectoral, regional and functional level

From a long-term perspective (1995-2023), structural change in Austria shows complex sectoral, regional and functional dynamics. In a comparison of economic sectors, the share of value added and employment accounted for by the manufacturing sector is declining in the long term, while knowledge-intensive services - particularly economic, scientific and information technology areas - are gaining in importance. Within manufacturing, structural change is heterogeneous: Consumer goods sectors are experiencing employment losses, while the mechanical engineering and chemical/pharmaceutical industries are expanding. From a regional perspective, the federal states are developing differently: While Vienna and Salzburg recorded declines in the share of employment in the manufacturing sector, export-oriented regions such as Upper Austria and Vorarlberg were able to strengthen their industrial base. A skilled workforce is proving to be a key factor for adaptability and growth. In functional terms, the change in the 2011-2024 period under review is increasingly taking place within the companies themselves: Production processes are supplemented or replaced by research, development and service-oriented activities, resulting in hybrid business models. Overall, these developments illustrate the far-reaching transformation of the economic structure towards knowledge-based, service-oriented forms of value creation.

Structural change and employment

The structural change in Austria between 2013 and 2022 led to significant shifts in employment, wages and employment histories. Following job losses in the manufacturing sector, 69% of those affected found employment again, mostly by switching sectors to market services (31.9%), while 22% became unemployed and 9% left the labor market. Wage trends depended heavily on the target sector: A change within the industry increased wages by an average of 4.5%, while transitions to non-market services were associated with wage losses of around 3.4%. On average, the switch to market services did not lead to any wage losses. Although older employees (50+) lost their jobs less frequently, they were unemployed more often (+13.6%) than 25-49-year-olds when they lost their jobs. Women had a higher risk of unemployment (+3.5%) and labor inactivity (+3.8%) than men as a result of being released from manufacturing. The level of education proved to be a decisive adjustment factor: As qualifications increased, the risks of unemployment and inactivity decreased and the likelihood of switching to knowledge-intensive services increased significantly. Younger and less qualified employees were less likely to benefit from this upward mobility. In terms of labor market policy, this requires targeted further training offers, retraining and regional adaptation strategies to support vulnerable groups in structural change and promote transitions to productive, knowledge-intensive activities.

Current developments on the labor market

Since the beginning of 2023, there has been a significant decline in industrial production in Austria, which is having an increasing impact on the labor market. By mid-2025, the overall economic unemployment rate will have risen by around one percentage point, most strongly in the manufacturing of goods and in market services. Particularly affected are people with compulsory schooling, whose unemployment rate rose at an above-average rate and who accounted for almost half of the total increase in unemployment. There were also gender-specific differences: Unemployment among women has risen faster than among men since 2024 In terms of age, unemployment increased primarily among younger people (under 25), while the increase among older people (50+) was delayed. Evaluations of the data

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from the WIFO industry survey indicate that a reduction in employment is planned over the next five years, particularly in industrial production, while growth is expected in knowledge-intensive areas such as research, development and product IT. The labor market thus reflects the accelerated structural change: Jobs are increasingly shifting away from manufacturing and towards technology and service-oriented activities.

The ongoing structural change and recent developments on the labor market require a targeted economic policy response. In addition to measures to secure industrial competitiveness - for example through stable energy prices and innovation-friendly framework conditions - labor market policy instruments are coming to the fore. Priority is given to supporting low-skilled and older people who are particularly affected by job loss and wage risks. Further training and job-related qualifications should start at an early stage and facilitate the transition to knowledge-intensive services. Evidence-based, sectoral labor market programs with a clear evaluation of success can reduce wage polarization, meet the demand for skilled workers in a targeted manner and improve employment opportunities. Regionally differentiated strategies are necessary in order to take account of differences in the adaptability of local labor markets, to do justice to the limited geographical mobility of workers and to secure sustainable employment prospects in the course of structural change.

Recommendations of the Productivity Council

A future-oriented location strategy must actively shape structural change by strengthening existing industrial and technological competencies, enabling new comparative advantages and anchoring productivity growth as the overarching goal of all economic and structural policy measures. Productivity arises from the efficient allocation of resources, rapid technological diffusion and technical change, which together drive structural change as a process of renewal. It is therefore the task of policymakers to facilitate structural change through reliable, innovation-friendly and socially balanced framework conditions, to promote key technologies and to take equal account of economic, environmental and social consequences. This results in four priority starting points for a modern location and industrial policy: (i) A future-oriented RTI policy should specifically promote fields of technology according to their degree of maturity and potential, accelerate the diffusion of innovation and strengthen qualifications to expand key technologies and develop new ones. (ii) A strategy for skilled workers must strengthen qualification, labor market integration and longer labor market participation in order to avoid bottlenecks in technical and digital professions and to cushion the social impact of structural change. It contributes to the further development of human capital. (iii) Accelerating the expansion of renewable energies requires clear expansion paths, planning and investment security as well as progress with the ElWG and EABG in order to ensure the energy transition and competitive energy prices. (iv) Coordination at European level should drive forward the deepening of the internal market, value chains in key technologies, energy policy and regulatory reforms in order to strengthen Europe's competitiveness and innovative strength.

In its reports from 2023 and 2024, the Productivity Council has already formulated recommendations that address both the various dimensions of productivity development and the four central starting points of a future-oriented location strategy. The dimensions of productivity development include the production factors capital (investment, capital formation) and labor (labor supply, human capital development) as well as the corresponding factor costs on the one hand, and the framework conditions that are decisive for productivity progress (technological progress, business start-ups, efficiency and government performance) on the other. In the appendix to this year's recommendations, the Productivity Report 2025 provides a compact overview of the previous recommendations in the main text. For the most part, these recommendations remain valid. This year's recommendations of the Productivity Council supplement the previous recommendations with dimensions that have emerged as priority areas of political action that have not yet been fully addressed, particularly on the basis of the in-depth analyses of the Productivity Report 2025.

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Shaping structural change, boosting productivity growth: Recommendations of the Austrian Productivity Board 2025

► Reorientation of research and technology policy (RTI) through future-oriented priorities and consistent funding approaches

Recommendation 1: **The federal government should focus innovation funding on areas of strength and key technologies with high location potential and promote both the market penetration of innovative solutions and the operational application of new technologies.**

- **Setting priorities in research funding**: Public funds should increasingly be directed towards areas that contribute to the deepening and diversification of existing areas of strength and the development of technologies that are strategically relevant for the location. In the medium to long term, the development of key technology fields should be promoted in which Austria has the opportunity to achieve technological leadership on the basis of existing scientific expertise or existing domain knowledge and thus build up new comparative advantages in international trade. The thematic focus should support transformation processes - in particular the digital and ecological transformation - and be reflected in the new RTI pact. The funding programs should be designed to be open to all technologies and offer the funding recipients sufficient flexibility in terms of content to be able to adapt to a dynamically changing technological environment within the framework of the funding. Furthermore, output and impact indicators should be given greater consideration in the allocation of R&D funding (e.g. to avoid deadweight effects) and sufficiently long funding periods should be ensured.
- **Set up key technology cluster**: The thematic focus on key technologies is intended to promote the creation of scientific and industrial communities that also cover different stages of integrated value chains by establishing key technology clusters. It should be possible to combine separate funding pillars (FWF, FFG, aws) flexibly and unbureaucratically along ambitious development concepts. Regulatory sandboxes that provide simplifications for innovative companies for limited periods of time can support the development of such clusters.
- **Strengthen technology diffusion and targeted application of modern key technologies**: The strengths of the Austrian location should be used strategically and developed further in a targeted manner. By linking these with modern key technologies - especially in areas where there are currently technological backlogs - existing locational advantages such as industrial skills, domain knowledge and qualified specialists can be expanded and strengthened by rapidly integrating technological developments into existing technologies and products.
- **Enable flexible combination of funding instruments across the innovation process**: To improve innovation performance, flexible funding instruments should be developed that cover the entire innovation process - from the idea to the market - and are geared towards measurable milestones, e.g. on the basis of competitive stage-gate approaches that accompany innovators through different innovation phases and also flexibly combine instruments from different funding institutions.
- **Ensure greater scalability through coordination with European initiatives**: Improving support for companies and close coordination with European initiatives, such as the EIC Accelerator, should ensure increased scalability, visibility and impact, especially for disruptive innovations.
- **Strengthen cooperation programs through longer financing periods**: Established and successful cooperation programs between university research and industry (Christian Doppler Research Association, FFG Comet) should be strengthened through extended funding guarantee periods (performance and funding agreements).
- **Promote the adoption of innovative technologies through incentives and training**: Specific qualification measures should support companies in building up the skills and necessary expertise to accelerate the adoption of innovative and productivity-enhancing key technologies (e.g. artificial intelligence). In addition, specific incentives for investments in innovative technologies (e.g. special depreciation rules) should be created.
- **Promoting innovation through public procurement**: Public procurement is a largely untapped lever and should be used strategically to promote innovation, especially in the context of mission-oriented policy approaches.

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► Increasing the labor supply and developing human capital by improving basic qualifications, apprenticeship training and an active labor market policy in structural change

Increase labor supply, establish basic qualifications

Recommendation 2: **In view of technological and demographic change, there is an urgent need for a comprehensive strategy to strengthen the supply of labor (skilled labor strategy) in terms of quantity and quality. In order to meet the complex and heterogeneous needs of people with a lack of basic qualifications, the federal government should adopt a comprehensive approach. Existing education and labor market policy instruments for different age groups should be integrated, coordinated and expanded where necessary.**

- **Ensure target group-oriented teaching of basic qualifications**: It must be ensured that the target groups of existing measures are actually reached and that they are informed about the opportunities for acquiring and the benefits of basic qualifications. The needs of those who have at most a compulsory school leaving certificate should be specifically addressed. Individual obstacles to acquiring further educational qualifications must also be taken into account.
- **Avoid deficits at an early stage**: Findings from the school entry screening, the "IKM Plus" and the deficits identified by the AMS should be analyzed and processed holistically with regard to the acquisition of basic qualifications and the associated costs. The effectiveness of early childhood education and upbringing must also be taken into account. The education system must ensure that sufficient basic qualifications are available at the end of compulsory schooling. With this in mind, appropriate resources must also be made available for the effective and sustainable acquisition of basic qualifications.

Promoting apprenticeship training

Recommendation 3: **The federal government should expand the existing AMS support measures for access to apprenticeship training in a targeted manner and take additional initiatives to increase the attractiveness of apprenticeships in the long term.**

- **Promoting access to apprenticeship training**: For people who do not complete further education after compulsory schooling, access to apprenticeship training should be comprehensively promoted, among other things by establishing the required qualifications for apprenticeship training.
- **Target group-oriented information**: A comprehensive program to reach the target group and provide relevant information on possible training paths and directions should be developed.
- **Increase the attractiveness of apprenticeship training**: The attractiveness of apprenticeship training should be increased through quality assurance of the training content and good working conditions.
- **Strengthening the link between apprenticeship training and higher qualifications**: The link between apprenticeship training and higher qualifications should be improved. This should be achieved both by increasing the transfer of people with a university entrance qualification/matura to apprenticeship training and by increasing the permeability of apprenticeship training to higher education.
- **Strengthen the range of apprenticeships**: Incentives need to be created for companies to provide more apprenticeships.

Strengthening active labor market policy in structural change

Recommendation 4: **Together with the AMS, the federal government should coordinate qualification measures of active labor market policy with regional and professional needs. In addition to direct placement, qualification and the achievement of permanently higher wages should be emphasized in the target orientation.**

- **Close cooperation between the AMS and employers:** Close cooperation between the AMS and employers for the initial and further training and (re)qualification of workers - while ensuring that skilled workers can be deployed throughout the industry - is a prerequisite for the targeted reduction and prevention of skills shortages and the development of the qualifications required in the future. The existing instruments of labor foundations (*Arbeitsstiftungen*) and job-related qualification already represent adequate approaches for the requalification of workers for certain sectors and regions and should be provided with the necessary resources for further strengthening.
- **Promote opportunities for advancement:** Up-skilling should not be given lower priority than (immediate) job placement. Qualifications should be geared towards occupations that will be in demand in the future and in the long term and that will enable higher wages. By upgrading up-skilling, AMS measures could be

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geared more towards occupations in demand and meeting the need for skilled workers, especially in the areas of digital skills, STEM and green skills, and achieve longer-term, positive wage effects for the people receiving support (AMS, 2025). A focus on immediate job placement can hinder these goals. The federal government should set a priority in the labor market policy targets (AMSG §59 para. 2) that promotes the qualification measures of the AMS.

- **Social security**: The federal government should take measures to provide social security for people in the phase of structural change. In addition to the proven instruments of the welfare state, the focus should be placed more on activation and qualification measures. The aim is to combine structural change with opportunities for advancement and social mobility instead of slowing it down through passive transfer payments.
- **Conduct impact analyses**: When implementing the measures, suitable data should be collected using high-quality designs, ideally including randomized controlled trials (RCTs), and impact analyses should be carried out.
- **Improve understanding of the need for skilled workers**: In order to improve the understanding of the demand for skilled workers, it is necessary to administratively collect data on occupations from employers. This could be done by reporting this data to the social security authorities when registering.

► Accelerating the expansion of renewable energies through forward-looking and consistent energy planning, measures to secure cost-effective energy and an increase in energy efficiency

Implement future-oriented and consistent energy planning to secure the industrial and technology location

Recommendation 5: **The federal government should develop an adaptive and integrated overall system plan for the energy transition involving all levels of government. This plan should be aligned with clearly defined expansion targets and implementation steps beyond 2040 and be implemented consistently.**

- **Integrate regional energy infrastructure with supra-regional and national systems**: The overall planning objective should primarily be to ensure the coordinated, integrated provision of energy infrastructure across all levels of government.
- **Align renewable expansion paths with expected demand:** The expansion of renewables must be adapted to the expected consumption and harmonized across technologies.
- **Standardize spatial energy planning:** Spatial energy planning should be standardized nationwide, made legally binding and harmonized with the expansion paths.
- **Monitoring the implementation of the EABG:** The implementation of the EABG should be ensured by coordination and monitoring the generation benchmarks of the federal states.
- **Align generation benchmarks in the EABG with expansion pathways:** Under the EABG, the prescribed generation benchmarks of the federal states should be aligned with the overall economic expansion paths.
- **Evidence-based adaptation and adaptive management at project level:** Regular, evidence-based adjustment and adaptive management at project level can prevent the development of both overcapacity and undersupply and at the same time respond flexibly to the dynamics of different locations - for example, by also taking the energy requirements of data centers into account in planning.
- **Expand storage technologies:** The expansion of storage technologies should be accelerated, and grid-friendly use should be promoted through monetary incentives.

Setting the course for a sustainable gas supply

Recommendation 6: **The federal government should further accelerate the expansion of renewable gases and hydrogen and prioritize their use in industrial processes.**

- **Rapidly implement the Renewable Gas Act (EGG) and develop a long-term strategy for the demand, production and use of renewable gases**: Clear regulatory and infrastructural framework conditions are required - in particular the establishment of a hydrogen start-up network, connection to storage facilities and integration into the EU network. The rapid implementation of the EU hydrogen and gas market package in the Natural Gas Act (GWG) is crucial in order to create investment security and planning clarity.
- **Promoting the ramp-up of the hydrogen economy**: In addition to investment subsidies, the current state of technology also requires operating cost subsidies to ensure long-term investment security. In view of the currently still limited economic viability of many applications, funding instruments should be specifically geared towards pilot and scaling projects.

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- **Assess biomethane potential realistically and from a macroeconomic perspective**: It must be considered that various economic sectors are competing for limited biomass resources and that forests are increasingly turning from CO_2 sinks into CO_2 sources.
- **Promote CO_2 capture and utilization (CCU/CCS)**: Corresponding products should be bound for as long as possible or recycled - for example by using them in plastics production or in other durable materials.
- **Own generation of natural gas to bridge the transition phase**: In both the European and Austrian context, in-house production of natural gas should be promoted to bridge the transition phase in the energy transition in order to dampen the volatility and uncertainty of the LNG markets to which Austria and other EU countries have turned as a result of the Ukraine conflict.

Secure cost-effective energy, increase efficiency

Recommendation 7: **The federal government should take structural measures to reduce industry's energy costs and stabilize price paths.**

- **Combine short-term relief with structural measures to reduce costs**: Short-term relief for energy-intensive companies should be combined with measures that make a structural contribution to reducing costs - for example by accelerating the expansion of the domestic grid infrastructure and storage capacities.
- **Expand transmission grids:** The accelerated expansion of the transmission grids in Austria and at the European borders is a key prerequisite for the efficient use of renewable surpluses, reducing price differences between bidding zones and lowering system costs.
- **Strengthen competition in the end customer market:** The competitive distortions identified by BWB and E-Control due to cross-shareholdings and market structures require targeted intervention to ensure fair pricing and market transparency.
- **Strategically linking efficiency and innovation policy**: Energy efficiency measures - including low-threshold measures - must be continued but should be linked to technological modernization and competitiveness. Subsidies must steer innovation towards productivity and technological renewal, not just focus on reducing greenhouse gases.
- **Develop new financing instruments for grid expansion:** The sole allocation of grid costs to consumers places a disproportionate burden on SMEs and households. Green bonds or similar capital market-oriented instruments should be used to mobilize more private and institutional funds for grid expansion.
- **Coordinate European climate and industrial policy:** In view of unequal climate policies outside Europe and the limited impact of CBAM, greater coordination is needed to eliminate the undesirable effects of the EU's cap-and-trade system in international competition.

► Intensify coordination at European level for the rapid implementation of reforms and measures to strengthen competitiveness

Supporting companies in opening up new sales markets and strengthening competitiveness through coordination with EU partners

Recommendation 8: **The Austrian federal government and the Austrian members of the European Parliament should support and promote efforts at EU level to increase integration and use of the EU internal market as well as the negotiation and ratification of additional trade agreements with third countries.**

- **Support the harmonization of national legislation within the framework of the EU internal market strategy**: Austria should support efforts to harmonize national legislation within the framework of the EU internal market strategy. This includes explicit consideration of the goal of harmonizing the legal framework within Europe when transposing EU law into national law. Individual additions to the national implementation of EU directives lead to regulatory fragmentation and thus create additional obstacles to cross-border business activities within the EU.
- **Simplify national administrative and bureaucratic processes**: In the course of harmonizing and simplifying national administrative and bureaucratic processes, Austria should focus more on best practice approaches and follow the recommendations of the Single Market Enforcement Taskforce. The reduction of restrictive and divergent regulations is particularly important for the strengthening of trade in services (licensing and certification regulations) as part of the EU internal market strategy.
- **Proactive trade policy and ratification of already negotiated trade agreements:** The Austrian Federal Government should approve the ratification of trade agreements already negotiated in the European Council. These include, in particular, the Mercosur Agreement, the modernized agreement with Mexico and the

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first agreement with Indonesia. In addition, Austria should work to ensure that ongoing negotiations with important growth regions such as India, the Philippines and Malaysia are driven forward intensively.

- **Reduce dependencies on raw materials**: In order to free ourselves from strategic dependencies, we need a long-term, consistently implemented overall European strategy that focuses on diversification, in-house production and recycling.
- **Push ahead with a strategic European industrial policy**: A strategic European industrial policy should be based on coordination, complementary strengths and common goals, thereby strengthening the European industrial location and its competitiveness. A minimum proportion of European added value ("Made in Europe") for public tenders as well as the use of European funding instruments including an opt-out option for reasons that do not relate to price (e.g. availability) and options for increases, for example if economic security is at risk, support this objective. A common funding basis for projects of strategic importance (e.g. research, defense) is also required by pooling funds from European programs and anchoring central initiatives in the EU budget. National industrial policy should be coordinated with the European Competitiveness Fund, be sensibly and coherently integrated into the European strategy and make targeted use of the advantages of the internal market.

Effectively countering market distortions in international competition at EU level

Recommendation 9: **At the EU level, the federal government should advocate an evaluation and subsequent further development of the EU's trade and competition policy instruments to combat competition-distorting practices in international trade.**

- **Resumption of negotiations with China with a view to the Comprehensive Agreement on Investment**: The Austrian Members of the European Parliament should advocate a resumption of negotiations with China with regard to the Comprehensive Agreement on Investment. As part of any negotiations, the lifting of Chinese sanctions against members of the European Parliament should also be sought.
- **Strengthen EU measures against distortions of competition in international trade**: Austria should advocate examining the necessity and possibility of additional EU measures to counter distortions of competition that are not comprehensively addressed by the existing EU trade policy instruments. To this end, the existing portfolio of measures should first be evaluated on a scientific basis.

Driving forward energy market integration and climate policy coordination in the EU

Recommendation 10: **The federal government should push for greater market integration at European level by expanding the European transmission grids and strengthening interconnectivity.**

- **Structural integration of the energy markets:** The European internal energy market should be more closely integrated. Due to the long negotiation periods, the political process for the European market design after 2030 should be initiated now. The federal government should work at European level to further develop the system so that it is less one-sidedly based on price signals and is better protected against extreme fluctuations in electricity prices.
- **Cross-border network expansion and interconnectivity:** The expansion of transmission grids at European borders is a key prerequisite for the efficient use of renewable surpluses, reducing price differences between bidding zones and lowering system costs. The federal government should work at European level to further develop the system so that it is less one-sidedly based on price signals and is better protected against extreme fluctuations in electricity prices.

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The Austrian Productivity Board

The Austrian Productivity Board is an independent body made up of five independent economists and their respective representatives. The members are delegated by the federal government, the Austrian Federal Economic Chamber and the Federal Chamber of Labor for a period of six years (see Fiscal and Productivity Board Act 2021, Federal Law Gazette BGBl. I No. 226/2021). In addition, the Oesterreichische Nationalbank (OeNB) and the Parliamentary Budget Service participate in the regular meetings of the Board in an advisory capacity. An office located at the OeNB with four employees supports the Austrian Productivity Board in its tasks.

Members		Substitute members	
Dispatched by the Federal Government			
	Emeritus Professor Dr. Christoph Badelt Chairman of the Austrian Productivity Board President of the Fiscal Council *© OeNB*		**Mag. Dr. Wolfgang Schwarzbauer** Head of Regional Economic Policy and Foreign Trade, EcoAustria *© Weinwurm*
	Prof. Dr. Tobias Thomas Deputy Chairman of the Austrian Productivity Board Professor of Economic Policy, University of Graz, Schumpeter Center *© OeNB*		**Dr. Alfred Katterl** Head of the General Economic Policy Division, Federal Ministry of Finance
	Julia Bachtrögler-Unger, PhD Research Group Regional Economics and Spatial Analysis, Austrian Institute of Economic Research *© OeNB*		**Dr. Silvia Rocha-Akis** Research Group Labor Economics, Income and Social Security, Austrian Institute of Economic Research *© Alexander Mueller*
Delegated by the Austrian Federal Economic Chamber			
	MMag.a Claudia Huber Head of the Economic Policy Department of the Austrian Federal Economic Chamber *© OeNB*		**Dr. Ulrike Oschischnig** Head of the Statistics Department of the Austrian Federal Economic Chamber
Delegated by the Federal Chamber of Labor			
	Dr. Helene Schuberth Head of the Economics Department, Austrian Trade Union Federation *© OeNB*		**Mag. Sepp Zuckerstätter** Department of Economics and Statistics, Vienna Chamber of Labor

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Consulting institutions

Representatives of the Parliamentary Budget Service

Mag. Paul Eckerstorfer, PhD
Deputy Head of the Budget Service of the Parliament

Kristina Fuchs, MPA
Head of the Budget Service of the Parliament

Representatives of the Oesterreichische Nationalbank

Dr. Gerhard Fenz
Head of Business Cycle Analysis, Oesterreichische Nationalbank

Expert pool

The experts advise the Austrian Productivity Board on specialist issues during the term of office from 29.4.2022-28.4.2028. In this way, they contribute to scientific quality assurance.

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Department of Management, Technology and Economics, ETH Zurich

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Priv.-Doz. Mag. Dr. **Michael Peneder**
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Mag. **Wolfgang Polt**
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Comparative Economic Research, LMU Munich; Chairwoman of the German Council of Economic Experts for the Assessment of Macroeconomic Developments

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The Board's legal mandate

1 With the adoption of the Fiscal and Productivity Board Act 2021 (FPRG 2021) at the end of 2021, Austria complied with the EU Council Recommendation 2016/C 349/01 on the establishment of national productivity committees in the member states. The aim of these councils is to identify and promote measures and reforms to strengthen the competitiveness and productivity of the respective member state. This is intended to improve the coordination of economic policy within the eurozone. Productivity Boards are independent bodies and are therefore not subject to any instructions. The FPRG 2021 defines the following areas of responsibility for the Austrian Productivity Board:

- Diagnosis and analysis of competitiveness and productivity
- Comparisons with global competitors
- Analysis of political challenges and evaluation of policy options (with reference to conflicting objectives between policy areas)
- Annual reporting on analyses and investigation results to the National Council
- Active participation in national and international forums
- Participation in the formation of public opinion

2 In line with the EU Council Recommendation, the FPRG 2021 provides for the Austrian Productivity Board to draw up analyses of the long-term drivers and prerequisites for productivity and competitiveness on the basis of transparent and comparable indicators. The following criteria must be taken into account: i) innovation, ii) increasing attractiveness for investment, business and human capital, and iii) cost and non-cost factors that can have an impact on the prices and quality of goods and services. These criteria of the EU Council Recommendation are expanded in the FPRG 2021 to include aspects of legal certainty, the level of education, the demographic structure, environmental and climate protection and the quality of life of the population.

3 In the explanatory notes to the legal text, this extension is justified by developments within the European framework, such as the European Green Deal. The European Union's growth strategy from 2019 is based on the four complementary pillars of i) environmental sustainability, ii) productivity gains, iii) fairness and iv) macroeconomic stability. With regard to these pillars, the explanatory text of the FPRG 2021 emphasizes that productivity should not only be seen as an indicator of the performance of the Austrian economy, but should also be interpreted on the basis of aspects of ecological transformation and social responsibility.

4 The references in the law to the Federal Budget Act 2013 §2(3) (BHG 2013) and the Federal Constitutional Act §13(3) (B-VG) are also important for the interpretation of the legal mandate to the Austrian Productivity Board. Both laws implicitly describe the relevant dimensions of a high standard of living in Austria. In the quoted passages of the BHG 2013, the legislator makes it clear that a macroeconomic balance in federal budget management should be in line with the following objectives: i) balanced economic growth, ii) price stability, iii) a competitive social market economy, iv) full employment, v) social progress and vi) a high level of environmental protection and improvement of environmental quality. The relevant sections of the B-VG also emphasize that the federal government, federal states and municipalities must strive for the actual equality of women and men in their budget management. Due to the legal mandate, the thematic scope to be covered by the Austrian Productivity Board is much broader than in other national productivity boards, whose analyses focus more on the determinants and performance indicators of productivity growth (see Pilat, 2023).

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Part 1:
Austria's sustainable competitiveness in international comparison

Chapter 1: **Introduction**
Chapter 2: **Economy**
Chapter 3: **Social**
Chapter 4: **Environment**

Online dashboard: https://www.produktivitaetsrat.at/en/dashboard

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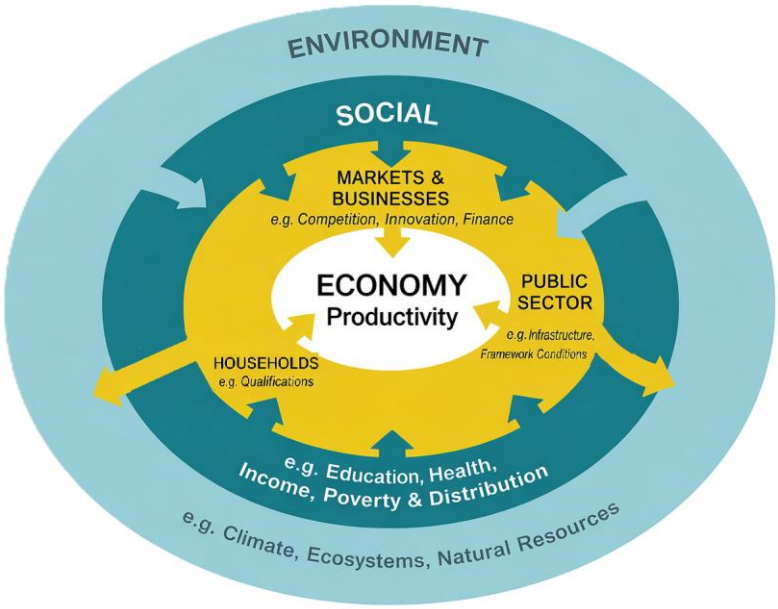
1. Introduction

1.1 Sustainable competitiveness

5 In line with its broad mandate, the Austrian Productivity Board is guided by the Beyond-GDP approach (see Stiglitz et al., 2009). The focus here is on empowering people to lead a meaningful life now and in the future (►Figure 1.1). This depends on the opportunities for realization offered to the members of a society. These opportunities are primarily influenced by three individual factors: i) the material standard of living (income, consumption and wealth), ii) health and iii) education. These individual factors are influenced by the economic, social and ecological environment (Sen, 1985, 1999). These three dimensions are in turn in constant interaction with each other. They must therefore be considered together in order to achieve sustainable development.

Figure 1.1: **Schematic representation of the Beyond-GDP approach**



Source: Austrian Productivity Board.

6 In the Beyond GDP approach, permanently available household income and the choice between tangible and intangible goods and services are key determinants of quality of life and well-being. Measuring economic performance on the basis of gross domestic product (GDP) per capita and productivity development remains important. However, it is seen as a means of promoting a high quality of life, which is also characterized by economic and social participation. This participation in turn depends on social conditions that enable the acquisition and promotion of the necessary skills.

7 There is currently no consensus on how to measure competitiveness according to the Beyond GDP targets.[3] International organizations and statistical offices have developed various approaches to measuring economic and social progress based on the Beyond GDP approach. The UN Agenda 2030 was adopted by the UN General Assembly in 2015 and currently represents an important political framework for achieving economic, environmental and social sustainability through its Sustainable Development Goals (SDGs). Other initiatives like How's Life? (OECD), Green Growth (OECD) or the EU Agenda 2030 focus on similar approaches and advocate a broader measurement of prosperity and social progress

[3] Fleurbaey (2009), Vladimirov et al. (2023).

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that goes beyond GDP and encompasses economic, environmental and social developments. With the Human Development Index (HDI) (UN), an indicator has been available since 1990 that summarizes the factors of prosperity mentioned in ►item 5 in a single figure. The European Commission addressed the issue of measuring prosperity as early as 2007 under the title "Beyond-GDP" and presented the Transition Performance Index in 2021, an indicator based on the Beyond-GDP approach. The OECD has been developing the Better Life Index since 2015. In Austria, Statistics Austria has calculated a dashboard for 2021 with "How is Austria doing?" in line with the Beyond GDP concept. Since then, Statistics Austria has been offering comprehensive monitoring of the 17 UN SDGs on its website based on around 260 indicators.

8 Building on the WIFO Competitiveness Radar , the Austrian Productivity Board (Produktivitätsrat, 2023) has set up an extended monitoring system that enables a comprehensive assessment of the development of Austria's sustainable competitiveness[4]. Accordingly, sustainable competitiveness reflects the "ability of an economic system" to "create sustainably high real incomes and improve social and ecological living conditions while continuously changing and shaping the framework conditions". Monitoring is continuously adapted to requirements.

9 The monitoring of the Austrian Productivity Board is also made available in an online dashboard . This enables country comparisons and trend analyses as well as the download of graphics and all data included in the monitoring. Brief descriptions and interpretations of the indicators are provided. In addition to the data status at the editorial deadline of the annual productivity report, the dashboard also provides access to the latest available data. It was revised and adapted again in the current reporting year.

10 Many of the monitoring indicators are structural in nature, i.e. they change only slowly over time and relative to the comparison countries. Meaningful changes in these indicators can therefore only be seen in the medium to long term. The Austrian Productivity Board therefore follows a **three-year cycle** in the presentation of the monitoring. In the first year of a cycle, the productivity report provides a comprehensive analysis of all dimensions and individual indicators of the monitoring. The 2023 Productivity Report marked the start of the current cycle. In the following two years, monitoring will be presented in shorter form in the productivity report. The focus is then on in-depth analyses of topics that are particularly relevant to Austria's sustainable competitiveness.

1.2 Conceptual remarks on the monitoring

11 The Productivity Board's monitoring defines **sustainable competitiveness** as the set of institutions, policies and factors that ensure that an economy remains productive in the long term while ensuring social and environmental sustainability (Bilbao-Osorio et al., 2013). **Social sustainability** means that all people have access to health, participation, and security, and can contribute to and benefit from the country's economic prosperity in the best possible way. It also contributes to fulfilling the Copenhagen criteria of Art. 2 of the Treaty on European Union (EU) in the long term. **Environmental sustainability** requires careful management of natural resources within fixed biophysical limits to enable prosperity in the present and the future.

12 Following these definitions, the monitoring is based on key indicators from **three broad policy areas** or pillars: **economy**, **social** and **environment**. These are dealt with ►Figure 1.1 accordingly from the inside out in the following ►chapters 2, 3 and 4 . The "Economy" policy area covers those factors that are associated with sustainably high incomes and material prosperity. They therefore determine the performance of the Austrian economy. The "Social" policy area comprises the factors that contribute to

[4] A detailed discussion of the indicators, their advantages and possible disadvantages compared to alternatives as well as any limitations in terms of informative value or comparability can be found in the Productivity Report 2023 (Productivity Council, 2023) and in the study on which the monitoring is based (Peneder et al., 2023) and takes place again in the first year of each three-year cycle.

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ensuring a high quality of life and that enable members of society to achieve a high standard of living and well-being. The "Environment" policy area reflects those factors that determine the ability to ensure security of supply and quality of life for generations to come through the efficient and sustainable use of natural resources. ►Figure 1.2 provides an overview of the three pillars, their thematic breakdown and the indicators (groups) selected for each thematic area.

13 For the economic policy assessment of the empirical findings in accordance with the FPRG 2021, it is necessary to distinguish between performance indicators and determining factors for each policy area. Therefore, all indicators of the three pillars were classified as input or output in the tables at the beginning of chapters 2 to 4 . At an aggregated level, this classification can vary depending on the topic and context of analysis due to the many different interactions.

14 Competitiveness usually involves comparing economic units in order to analyze the achievement of targets and identify potential for improvement. The Austrian Productivity Board therefore refrains from calculating aggregated indices per policy area. The chosen presentation of the indicators over time and in international comparison enables a differentiated analysis of the developments of individual indicators and specific topics within the broad policy areas. To condense the information, aggregated indices are used in some areas of the "Economy" policy area.

15 The units of comparison in the monitoring comprise the 27 EU countries (**EU27** or **EU**), the average of the 20 euro countries (**EA20** or **EA**) and the **BENESCAND** group of countries (Belgium, the Netherlands, Sweden, Finland, Denmark). **EA**) and the **BENESCAND** group of countries (Belgium, Netherlands, Sweden, Finland, Denmark)[5]. This selection is primarily based on the good comparability of the geo-economic and institutional framework conditions. Comparisons with non-European economies would only be possible in a few areas due to limited data availability and could lead to inconsistent representations. The European comparison also offers methodological advantages due to the broad availability of harmonized data. Where possible, weighted averages of the country groups are used. The country abbreviations correspond to the ISO-3166 classification and are listed in the ►Appendix.

16 This year, the monitoring was expanded to include indicators in the **production costs** dimension within the "Economy" pillar. In addition to an indicator for the development of unit labor costs, these are indicators for the energy costs for companies (see ►Text Box 1.1).

Text Box 1.1: **Changes to monitoring in the 2025 Productivity Report compared to 2024**

Nominal unit labor costs (NLSK)

The development of production costs per unit produced is of central importance for the pricing of companies and thus their price competitiveness. Labor costs play an important role as a significant cost item. Unit labor costs are therefore considered a key indicator of the **price competitiveness** of a company or an economy in an international comparison, both at company and macroeconomic level. The monitoring uses data on nominal unit labor costs (NLSK) from Eurostat (series *nama_10_lp_ulc*). This data series is an index of the overall economic ratio of labor costs to labor productivity.

The **labor costs** are defined as the quotient of employee compensation (at current prices) and hours worked. The **labor productivity** results from the ratio of the chain-indexed gross domestic product (GDP, base year 2015) at market prices (in millions of euros) to the total number of hours worked. By

[5] The BENESCAND countries were selected because, like Austria, they are small open economies in the EU with a high level of economic development and, in some cases, similar economic policy frameworks. These countries overlap strongly with the group of so-called innovation leaders, which are regularly listed in the European Innovation Scoreboard as the most innovative economies in Europe.

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using the GDP volume index, the actual production volume of goods and services is taken into account.

This indicator is also part of the **Scoreboard in the Macroeconomic Imbalances Procedure** of the European Commission (MIP Scoreboard). This shows the percentage change in NLSK over a period of three years. The NLSK is used together with other indicators such as the real effective exchange rate, export performance, the current account balance and the international investment position to assess the international competitiveness of the euro area.

Although the NLSK are a meaningful measure of price competitiveness at company level, various limitations must be taken into account when applying them at macroeconomic level:

- International comparability: The development of the NLSK must be considered in relation to the most important international competitors (see e.g. Bittschi and Meyer, 2024). As the necessary data is often available with a delay, statements on current developments are only possible to a limited extent.
- Influence of inflation: The development of inflation has a significant impact on the development of the NLSK. The monetary policy strategy of central banks, which usually aims for a low but positive inflation rate, is a determinant of inflation trends. Accordingly, a continuous increase in NLSK is to be expected and stable NLSK are not realistic.
- Sectoral differences: The NLSK vary greatly between individual economic sectors (e.g. manufacturing of goods vs. service sectors). An aggregated value calculated on the basis of value added in all sectors may therefore incorrectly reflect sector-specific competitive margins.
- Economic fluctuations: Productivity trends are subject to cyclical influences, which can result in short-term fluctuations in NLSK.
- Tradability of the output: Both sectors with tradable and non-tradable output are included in the calculation. This can distort the competitiveness of export-oriented sectors.
- Different reference values: Labor costs are based on the wage bill of employees, while productivity is based on the working hours of all employees (including the self-employed). The two variables are therefore not directly comparable. International comparisons are distorted due to differences in the employment structure.

Although the NLSK based on aggregated data are related to company-specific unit labor costs, they can provide a distorted picture due to structural factors. The NLSK should therefore always be interpreted in the context of other indicators of price and non-price competitiveness and in conjunction with sector-specific analyses.

Energy costs for companies

Due to geopolitical events and the energy transition, the development of energy costs has become increasingly important in recent years. Energy is an **indispensable production factor in almost all industrial processes**. Rising energy costs have a direct impact on the cost structure of companies and influence their pricing, profit margins and investment decisions. Energy-intensive sectors such as the chemical industry, metal processing and paper manufacturing are particularly affected, as energy accounts for a significant proportion of total costs in these sectors.

Energy costs also play a key role in location decisions and the attractiveness of investments. Energy costs are closely linked to economic and climate policy objectives. They influence the incentives for efficiency improvements, technological innovations and investments in renewable energies.

Continuous monitoring of energy costs makes it possible to recognize risks from high or strongly fluctuating energy prices at an early stage. It provides important information for energy and industrial policy measures. In monitoring, the **focus is on natural gas and electricity prices**, which represent the central energy cost component for most companies.

The Eurostat data series *nrg_pc_203_c* (natural gas) and *nrg_pc_205_c* (electricity) contain information on end consumer prices for non-households, differentiated by consumption bandwidths.

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The companies' total energy costs are made up of all energy sources used and correspond to a weighted average price. However, Eurostat only provides data on natural gas and electricity. For sectors with a high use of other energy sources such as oil, coal or district heating, the informative value is therefore limited. However, analyses of recent years show that natural gas and electricity dominate in the majority of industrial sectors.

The two data series therefore form a valuable basis for monitoring international price competitiveness. For a complete picture, however, they should be supplemented with sector-specific information on other energy sources.

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Figure 1.2: **Overview of the indicators used to monitor Austria's competitiveness**

Austria's competitiveness		
Economy	**Social**	**Environment**
GDP per capita and productivity GDP per capita Labor productivity Multifactor productivity **Factors of production capital and labor** Gross fixed capital formation Work volume **Production costs** Tax ratio Unit labor costs Energy costs **Foreign trade** Logistics Performance Index (LPI) Globalization index Global supply chains World market shares in goods exports Complexity of goods exports **Competition** Enterprise birth rate Net operating surpluses **Innovation and technological change** R&D expenditure Share of innovating enterprises (Triadic) patents & their quality **Skills and human capital** Public education expenditure STEM graduates PISA scores **Financing of companies** Market capitalization Venture capital Financing constraints **Digitalization** Digital infrastructure Digital skills Digital transformation of companies Digitalization of public services **Public institutions** Voice and accountability Political stability, absence of violence Government effectiveness Regulatory quality Rule of law Control of corruption	**Expenditure on social protection** Social expenditure ratio **Health** Healthy life years at birth (Very) good state of health Chronic diseases Occupational accidents **Education and qualifications** Qualification beyond compulsory schooling Participation in continuing education **Labor market** Unemployment rate NEET rate Employment rate (FTE) Labor force participation rate of 55–64-year-olds Gender gap in the employment rate Low-wage earners **Reconciling family and employment** Childcare coverage rate **Income, poverty and distribution** Equivalised disposable household income Absolute poverty (Severe material and social deprivation) Relative poverty (At-risk-of-poverty rate) Income quintile ratio Distribution of net wealth	**Climate and greenhouse gases** Greenhouse gas emissions CO2 intensity per GDP CO2 intensity per GDC Share of rail in freight transport Share of public passenger transport **Energy: Intensity and use** Energy imports as % of energy consumption Energy intensity per GDP Renewable energy sources in % of energy consumption Prices for energy imports **Circular economy and Material consumption** Material footprint Domestic material consumption Resource productivity Use of reusable materials **Ecosystem and biodiversity** Estimated soil erosion by water Settlement area per capita For organic farming area used Sealed area per capita **Environmental instruments and Innovation performance** Environmental patents Environmental taxes

Note: In ►Tables 2.1, 3.1 and 4.1 and the respective sections of the report, some of the indicator groups are presented in further disaggregated form.

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2. Policy area "Economy"

2.1 The most important facts at a glance

GDP per capita and productivity

Austria's **economic output per capita** is high, but declining at the current margin due to the recession in 2023 and 2024 and lower than in 2019. **Labor productivity** in Austria declined again in 2024. Austria's industry is under increasing pressure, partly as a result of the energy crisis, protectionist tendencies in global trade and China's growing industrial dominance.

Production factors capital and labor

The brisk **investment activity** in Austria - despite the subdued development at the current margin due to the weak economy and the pronounced uncertainty - is a pillar of the continued above-average labor productivity in Austria. In addition to demographic change, the decline in working hours per person employed is increasingly becoming a limiting factor for the development of the labor supply.

Production costs

The above-average dynamics of **unit labor costs** as a result of the decline in productivity and the high inflation phase, which led to the highest increase in collectively agreed wages in the OECD, as well as the high **energy costs** worsened the price competitiveness of domestic companies. In 2025, Austria will have the highest **tax ratio** in the EU.

Corporate finances

Austrian companies are increasingly confronted with **financing restrictions** on investments. External financing via bank loans remains high, whereas the use of equity and venture capital for corporate financing in Austria is still underdeveloped.

Competition

The downward trend in **net operating surpluses** accelerated. **Business dynamics** - and consequently the opportunity for accelerated structural change and an increase in productivity growth - was once again comparatively sluggish in Austria.

Foreign trade

The **world market share** of Austrian goods exports fell sharply in 2024. Sharp increases in energy and unit labor costs, the strong appreciation of the euro against the US dollar since the beginning of 2025 and weak external demand are creating additional pressure.

Skills and human capital

The Austrian **PISA scores** in secondary education are only in the middle of the EU range despite comparatively small drops due to the COVID-19 pandemic. Expenditure per student in the tertiary sector has increased significantly since 2019 Nevertheless, the number of STEM graduates, who are urgently needed in the context of digitalization and new technologies, stagnated.

Innovation and technological change

Although Austria is considered a **strong innovator**, it is increasingly losing ground to the most innovative BENESCAND countries despite high **R&D expenditure**. This development is not in line with the objectives of the Austrian RTI strategy.

Digitization

The digital **skills** of the Austrian population, the digital **infrastructure** and the **digitization of companies and public services** are rather mediocre across the EU. The target of catching up with the innovation leaders in the field of digitalization by 2030 is likely to be clearly missed.

Public institutions

Trust in public institutions is traditionally high in Austria, but in the areas of **political stability** and **corruption control**, Austria has fallen significantly behind in recent years.

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Table 2.1: **Overview of the indicators of the "Economy" pillar**[6]

Dimension/ Indicator	1. rank in EU27: Value	Austria: Value (vs. previous year)	Austria: Rank in EU27 (vs. 2010)	Austria compared to EU27	Austria compared to BENE-SCAND	Trend since 2010*
GDP per capita and productivity						
Output indicators						
GDP per capita, 2024 real (base year 2020), adjusted for purchasing power, thous. EUR	Luxembourg: 76,9	39,2 (-1,7%)	6 (-3)	🟢	🟡	
Labor productivity, 2024 GDP (real, base year 2020, adjusted for purchasing power) per hour	Ireland: 83,9	50 (-0,2%)	8 (+0)	🟢	🟡	
Multifactor productivity, 2024 Index (2010 = 100)	Ireland: 166,9	105 (-0,9 PP)	20 (.)	🟡	🟢	
Production factors capital and labor						
Input indicators						
Gross fixed capital formation, 2024 as % of GDP (adjusted for purchasing power)	Estonia: 27,9	25,1 (-0,1 PP)	4 (+12)	🟢	🟢	
Labor volume, 2024 in hours per capita	Luxembourg: 1108,3	783,7 (-1,5%)	19 (-11)	🟢	🟢	
Labor volume, 2024 in hours per employed person	Greece: 2002,5	1522,7 (-1,1%)	22 (-4)	🟡	🟢	
Labor force, 2024 as % of the population	Malta: 58,5	52,7 (-0,2PP)	16 (-7)	🟢	🟡	
Employed persons, 2024 as % of the labor force	Czechia: 97,5	95 (-0,1 PP)	13 (-11)	🟢	🟢	
Production costs						
Input indicators						
Tax ratio, 2024 as % of GDP	Ireland: 45,1	44,5 (+1,4 PP)	26 (-3)	🟠	🟡	
Nominal unit labor costs, 2024 Index (2015 = 100)	Ireland: 106	136,6 (+10,1 PP)	14 (-6)	🟡	🟠	
Natural gas prices for businesses, 2024 EUR per MWh relative to EU27 — *excluding CY, MT, SE*	Bulgaria: 47,4	92 (+5,2 PP)	15 (-8)	🟢	🟢	
Electricity prices for businesses, 2024 EUR per MWh relative to EU27	Sweden: 45,2	98,4 (-10,2 PP)	18 (-1)	🟢	🔴	
Foreign trade						
Input indicators						
Logistics Performance Index, 2023 Scale (0–5)	Finland: 4,2	4 (-0 points)	5 (+5)	🟢	🟡	
Output indicators						
Globalization index, 2022 0–100	Netherlands: 89,7	87,6 (-0,1 PP)	5 (+0)	🟢	🟡	
International supply chains, 2022 Share of production in %	Luxembourg: 66,7	30,6 (+2,8 PP)	15 (-3)	🟠	🟡	
World market share of goods exports, 2024 Index (2010 = 100)	Cyprus: 199,3	88,9 (-6,1 PP)	19 (.)	🟡	🟡	
Complexity of goods exports, 2022 Scale — *excluding LU*	Germany: 2	1,7 (-1,8%)	4 (+1)	🟢	🟢	
Competition						
Input indicators						
Enterprise birth rate, 2023 as % of active enterprises	Lithuania: 19,6	6,2 (+0 PP)	27 (-13)	🔴	🔴	
Output indicators						
Net operating surpluses, 2024 as % of GDP	Ireland: 42,9	17,2 (-2,2 PP)	25 (-5)	-	-	
Innovation and technological change						
Input indicators						
R&D intensity, 2023 as % of GDP	Sweden: 3,6	3,3 (+0,1 PP)	3 (+1)	🟢	🟢	
R&D financed from abroad, 2023 as % of GDP	Ireland: 0,7	0,6 (+0 PP)	4 (-3)	-	-	
Business R&D intensity, 2023 as % of GDP	Belgium: 2	1,7 (+0,1 PP)	4 (+0)	🟢	🟢	
Output indicators						
Share of innovative firms[1], 2022 as % of firms with innovation activities	Belgium: 70,3	56,7 (-3,3 PP)	8 (+0)	🟢	🟡	
Triadic patents, 2019 per million inhabitants	Sweden: 73,1	43,3 (+3,1%)	7 (-2)	🟢	🟠	
Patent quality index, 2019 Percentile rank	Luxembourg: 81	63 (-7 PP)	5 (+4)	🟢	🟢	

[6] The revision of the national accounts (NA) dated September 30, 2025 was taken into account exclusively in unit labor costs. The revised data for all other national accounts series was not yet available at the editorial deadline, as the corresponding data source (AMECO) will not be updated until the next update in mid-November 2025.

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Continued: Overview of the indicators in the "Economy" pillar

Dimension/ Indicator	1. rank in EU27: Value	Austria: Value (vs. previous year)	Austria: Rank in EU27 (vs. 2010)	Austria compared to EU27	Austria compared to BENE-SCAND	Trend since 2010*
Qualifications and human capital						
Input indicators						
Public education expenditure: primary level[1], 2022 as % of GDP — *excluding HR*	Sweden: 1,9	0,9 (-0 PP)	19 (+0)	🟠	🔴	
Public education expenditure: secondary level[1], 2022 as % of GDP — *excluding IE*	Belgium: 2,4	1,9 (-0,1 PP)	11 (-4)	🟡	🟠	
Public education expenditure: tertiary level[1], 2022 thousand EUR per student — *excluding IE*	Luxembourg: 45,3	18,3 (+6,2%)	5 (+0)	🟢	🟡	
Output indicators						
STEM graduates, ISCED 5–8[2], 2023 per 1,000 20–29-year-olds	Ireland: 39,5	24,6 (+1,2%)	5 (-3)	🟢	🟢	
STEM graduates, ISCED 6–8[2], 2023 per 1,000 20–29-year-olds	Ireland: 34,1	15,7 (+1,3%)	19 (-2)	🟠	🟠	
PISA score reading[1], 2022 *excluding LU*	Ireland: 516	480,4 (-4 points)	9 (+3)	🟢	🟡	
PISA score mathematics[1], 2022 *excluding LU*	Estonia: 509,9	487,3 (-12 points)	7 (+0)	🟢	🟡	
PISA score science[1], 2022 *excluding LU*	Estonia: 525,8	491,3 (+1,5 points)	11 (-2)	🟢	🟡	
Corporate finances						
Input indicators						
Market capitalization, 2023 as % of GDP — *excluding IE, IT, LU*	Czechia: 244,8	26,3 (-0,2 PP)	14 (+1)	🔴	🔴	
Venture capital intensity (market statistics), 2024 as % of GDP — *excluding CY, MT*	Denmark: 0,1	0,027 (+0 PP)	15 (-3)	🔴	🔴	
Venture capital supply (industry statistics), 2024 as % of GDP — *excluding CY, MT*	Luxembourg: 0,2	0,013 (-0 PP)	19 (-6)	🔴	🔴	
Output indicators						
Financing constraints on investment[3], 2024 in %	Netherlands: 2	20,7 (+7,2 PP)	22 (-15)	🔴	🔴	
Credit constraints[3], 2024 in %	Czechia: 1,5	2,5 (-0,8 PP)	3 (+8)	🟢	🟢	
Digitalization						
Input indicators						
Digital infrastructure[4], 2024 Index (0–100)	Malta: 98	58,1 (+4,5 points)	21 (-1)	🟡	🟠	
Output indicators						
Digital skills[5], 2024 Index (0–100)	Finland: 76,2	56,2 (-0 points)	12 (-3)	🟢	🟠	
Digital transformation of enterprises[5], 2024 Index (0–100)	Denmark: 63,6	47,8 (+5,6 points)	10 (-3)	🟢	🟠	
Digitalization of public services[5], 2024 Index (0–100)	Estonia: 94,5	80 (+1,4 points)	13 (-6)	🟢	🟡	
Public institutions						
Output indicators						
Voice and accountability, 2023 Percentile ranks (0–100)	Denmark: 98,5	93,6 (-0,6 PP)	8 (-2)	🟢	🟡	
Political stability and absence of violence, 2023 Percentile ranks (0–100)	Luxembourg: 87,7	71,6 (+2,7 PP)	10 (-6)	🟢	🟡	
Government effectiveness, 2023 Percentile ranks (0–100)	Denmark: 98,6	89,6 (-1,9 PP)	7 (-3)	🟢	🟡	
Regulatory quality, 2023 Percentile ranks (0–100)	Luxembourg: 99,1	90,1 (+2,8 PP)	9 (-1)	🟢	🟡	
Rule of law, 2023 Percentile ranks (0–100)	Finland: 100	97,2 (+1,4 PP)	4 (+2)	🟢	🟢	
Control of corruption, 2023 Percentile ranks (0–100)	Denmark: 100	83,5 (-1,4 PP)	11 (-3)	🟢	🟠	

Sources: AMECO, Eurostat, World Bank, CEPII, OECD, KOF, CEIC, Invest Europe, EIB. For details see www.produktivitaetsrat.at/en/dashboard.
Notes: Preliminary classification into input/output indicators within the framework of the dimensions presented. An overall assessment requires further analysis. - The color coding shows how much Austria differs from the peer group. Whether a higher or lower deviation is considered "better" depends on the relation to competitiveness: Positive reference (+): higher = better; negative reference (-): lower = better; without clear reference: Color coding is not applicable. 🟢/🔴...+/- >30%, 🟢/🟠...+/- 10–30%, 🟢/🟡...+/- <10%. - The classification of an indicator as input or output only applies within the respective dimension. The assignment may change in a different context.
* Or since the first available year - [1] First available year: 2012. -[2] First available year: 2013. - [3] First available year: 2016. - [4] First available year: 2018. - [5] First available year: 2017. - R&D... research and development, STEM... mathematics, information technology, natural sciences and technology, ISCED... educational classification. Editorial deadline for data updates: 30.09.2025.

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2.2 Development of key performance factors and determinants of economic sustainability

17 The **economic performance** of a country determines the economic prosperity of its population. It also influences many aspects of social development and well-being. Economic development should be considered in the context of a broad definition of competitiveness that encompasses a society's ability to improve the quality of life in a sustainable and inclusive way. Interactions with social and ecological performance must be taken into account. Economic performance depends on various factors and framework conditions that influence both the production factors used and their productivity.

18 To assess the ability of the Austrian economy to create and improve income and material prosperity in the long term, the policy area was divided into **ten dimensions**. These include the following key performance indicators:

- Economic performance
  - GDP per capita and productivity
  - Production factors capital and labor
  - Production costs
  - Foreign trade
- Determinants of economic development
  - Competition
  - Innovation and technological change
  - Skills and human capital
  - Corporate finances
  - Digitalization
  - Public institutions

19 ►Table 2.1 provides an **overview** of the evaluation of the indicators for the individual topic areas in the Economy pillar. It shows Austria's position relative to the peer country groups and changes over time. The classification of indicators as input or output only applies within the respective dimension. The assignment may change in a different context.

20 GDP per capita, productivity and production factors are important economic indicators that describe the **economic performance** at an aggregated level. Production costs result from the combination of production factor prices and their productivity and can be interpreted both as a determining factor and as a performance indicator. The foreign trade indicators are also among the performance indicators and illustrate Austria's high level of integration in international trade.

21 Structural **determining factors**, such as the economic structure, innovation and technology, digitalization and human capital, are decisive for the current and future development of productivity and economic performance. Institutional framework conditions shape the economic environment, among other things through their impact on competition, financing options for companies and infrastructure. Austria's high economic performance and productivity are traditionally based on high levels of investment (including R&D investment) and the high quality of public institutions. Nevertheless, there is potential for improvement in the areas of corporate financing, entrepreneurial environment, digitalization and human capital.

22 **GDP per capita and productivity:** In 2023 and 2024, Austria - like Germany, Estonia and Finland - was in recession. In particular, Austrian industry suffered from the international economic downturn, which also affected Germany, an important trading partner. In addition, the uncertainty caused by the multiple crises led to consumer restraint and a decline in investment activity. In a European comparison, the above-average importance of material goods production for the Austrian economy comes to the fore. It was particularly affected by weak international demand in 2023 and 2024. Market service sectors are generally less sensitive to economic cycles. In Austria, however, they make a smaller contribution to value creation. Although real GDP per capita (adjusted for purchasing power) fell accordingly during this

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phase, Austria was still in sixth place among EU countries in 2024 and 16% above the EU average (►Figure 2.1).[7] Following the prolonged recession, the latest forecasts by the Austrian National Bank, WIFO and IHS predict a tentative upturn as early as 2025 (Bonin et al., 2025; Fenz et al., 2025; Schiman-Vukan and Ederer, 2025). In the medium term, however, trade conflicts, austerity pressures and structural problems are hampering economic growth in Austria (Baumgartner and Kaniovski, 2025).

23 Labor productivity in Austria also fell for the second time in a row in 2024. Nevertheless, Austria remained in eighth place in the EU and its productivity level was 15% above the EU average. The decline was due in particular to manufacturing and construction, but also to some service sectors (►chapter 5). Although the high contributions of financial and insurance services to productivity growth in an international comparison had a counteracting effect, they were only able to dampen the overall economic decline. Since the financial and economic crisis of 2008/09, productivity growth in Austria has slowed - as in many other industrialized nations. Due to the effective decline in productivity in Austria at the current margin, domestic development decoupled from the trend in the EU27 and the BENESCAND countries. This is partly due to an unfavorable economic structure: Dynamic sectors such as the information and communications industry are less important in Austria. In contrast, the accommodation and food services sector, which is associated with low productivity growth, has a higher share of value added in an international comparison. The recession in 2023 and 2024 and the labor hoarding by companies observed during this period are also likely to have contributed to this development. While labor productivity in Austria remained clearly above the EU average despite its decline, multifactor productivity was below it. The major crises of recent years have led to high volatility in the international economic environment, which puts small shifts in rankings between countries into perspective. However, Austria is below the average of the BENESCAND countries in terms of labor productivity over the entire period under review, and since 2020 also in terms of real GDP per capita.

24 The extent to which the crises since 2020 will affect the performance of the Austrian economy in the long term will become clear in the coming years. Bereits jetzt steht die österreichische Industrie jedoch unter wachsendem Druck. The reasons for this include the energy crisis (►chapter 7), sharply rising unit labor costs (►Text Box 2.1) as well as protectionist tendencies in global trade and China's increasing industrial dominance (►chapter 6). At the same time, the digital and ecological transformation continues to pose a significant challenge for the business location. The current government programme therefore provides for an industrial strategy that should include a vision for the location, the definition of industrial priorities and the prioritization of measures to strengthen the business location.

[7] When interpreting the rankings, it should be noted that GDP in the two top-ranked countries, Luxembourg and Ireland, is strongly inflated by profit transfers from multinational companies.

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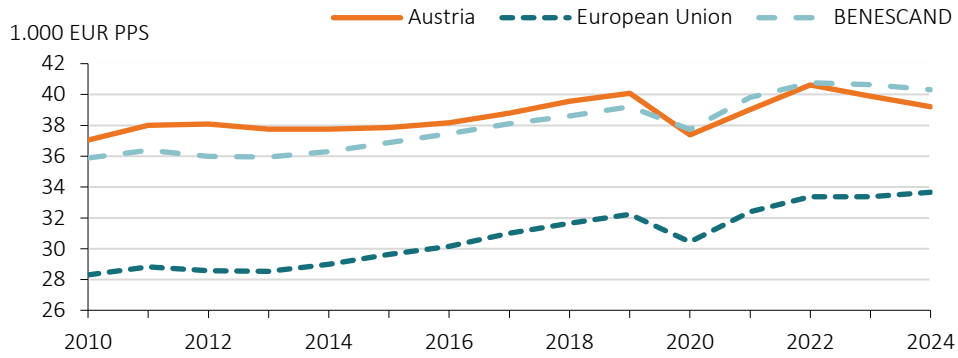
Figure 2.1: **Development of real GDP per capita**

Constant prices in EUR 1,000 (adjusted for purchasing power, EU27 prices, base year 2020)



Source: AMECO [Label: RVGDP].

25 **Production factors:** The above-average labor productivity in Austria compared to the rest of Europe is partly due to the traditionally strong investment activity. Investment activity in Austria is currently subdued as a result of the ongoing uncertainty regarding economic development. Nevertheless, gross fixed capital formation remained at a high level of 25.1% of GDP in 2024[8]. This figure once again significantly exceeded the average values for the EU27 (21.7%) and the BENESCAND countries (22.7%).

26 The increase in the volume of work contributed significantly to economic growth in Austria between 2015 and 2019. Dieser Trend wird sich jedoch aufgrund der demografischen Entwicklung in Zukunft umkehren. The number of hours worked per capita in Austria fell in 2024. It was only less than 1% above the EU average, while the average gap in the pre-crisis years (2010-2019) was still over 10%. The volume of work per employee also declined and remained well below the pre-crisis level following the sharp slump in 2020. The part-time rate has been rising for both men and women since 2020. In particular, the employment rate of older people is significantly below the average of the peer country groups (►item 54), although the gradual increase in the statutory retirement age for women has recently led to an increase in the employment rate of older people and is likely to continue to rise. Overall, these developments contributed to the emergence and worsening of labor shortages in many sectors. As a result of demographic trends, the labor supply is also expected to become an increasingly limiting factor for economic growth in the coming years (Produktivitätsrat, 2024).

27 **Production costs:** Austria's unit labor cost position deteriorated significantly due to above-average inflation compared to the EU in 2023 and 2024 and the simultaneous decline in productivity. Austria's unit labor costs rose by an average of 1.2 percentage points more per year during the pandemic and in the following years (2020-2024) than those of its most important trading partner, Germany. At 21.8%, the 3-year growth was also significantly above the threshold value of the MIP scoreboard (9%), but also significantly higher than in the peer country groups (EU average: 15.8%; BENESCAND: 12.6%), which led to a corresponding deterioration in the price competitiveness of domestic companies. This development was driven by the increases in collectively agreed wages in Austria over the past two years, which were the highest in an OECD comparison (OECD, 2025, p. 58). In view of the persistently higher price momentum compared to the EU average, above-average growth in nominal unit labor costs can also be expected in Austria in 2025. Even if the situation should equalize in the medium term, Austria will not be able to reverse the recent losses in competitiveness (see ►Text Box 2.1 for details).

[8] See Friesenbichler and Hölzl (2025).

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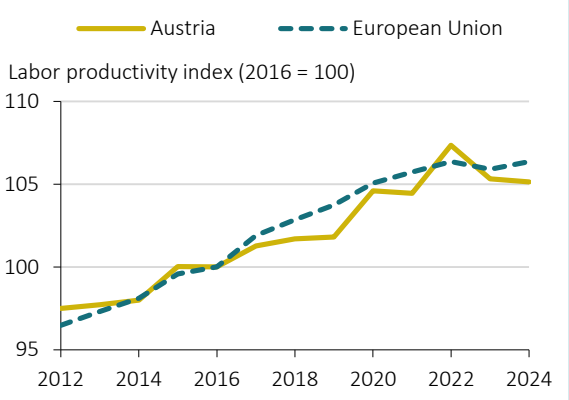
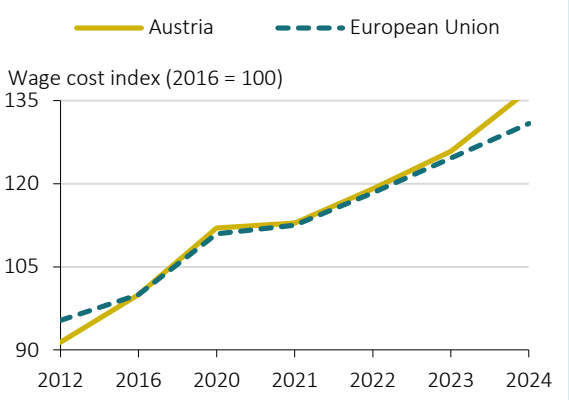
Text Box 2.1: **Development of unit labor costs in an international comparison**

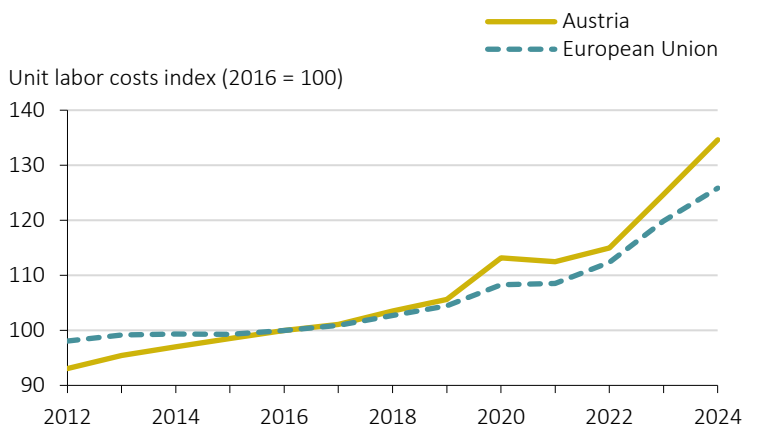
As a quotient of average compensation per hour worked and real gross domestic product per hour worked, nominal unit labor costs are influenced both by the development of labor costs (in the numerator of the quotient) and by the development of labor productivity (in the denominator).





Source: Eurostat (lc_lci_lev), AMECO (OVGD/NLHT).

In terms of the international competitiveness of Austrian companies, labor productivity and wage costs have developed unfavorably since 2022 in an EU comparison. As a result, unit labor costs in Austria have risen significantly faster than the EU average since 2022. In terms of the growth rate of unit labor costs, Austria deteriorated in the EU comparison from 13th place (out of 27) in the 2016-2020 period to 14th place in the 2020-2024 period.[9]



Source: Eurostat (nama_10_lp_ulc).

Contributing to this development is the high inflation compared to the EU (17th place in HICP growth 2020-2024) and the common practice in Austria of compensating for rolling inflation in collective bargaining agreements (Schneider and Stiglbauer, 2022).[10] This practice also led to the average purchasing power of collectively agreed wages in Austria returning to its mid-2021 level at the beginning of 2024 after the high inflation phase of recent years (Office of the Fiscal Advisory Council, 2023). As a result, the purchasing power of wage income in Austria increased significantly more than the EU average from 2023 onwards.

[9] With regard to the growth rates of wage costs and labor productivity, Austria's ranking remained quite stable (labor productivity: 2020-2024: Rank 11/27, 2016-2020: Rank 12/27, labor costs: 2020-2024: Rank 14/27, 2016-2020: Rank 13/27).

[10] Fenz et al. (2025) point out that less than half of the difference in Austria's hourly wage development compared to the eurozone average since 2019 is due to higher inflation compared to the eurozone average.

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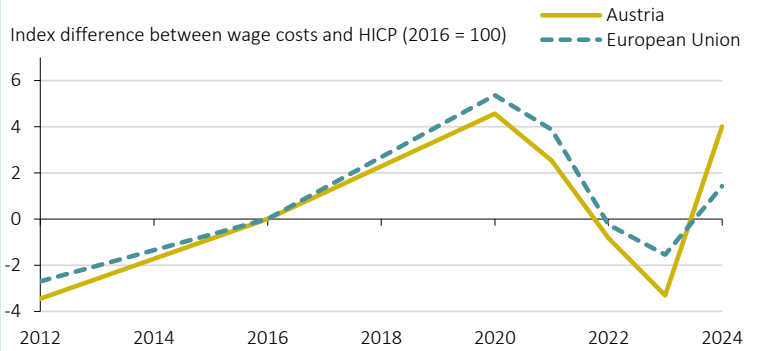
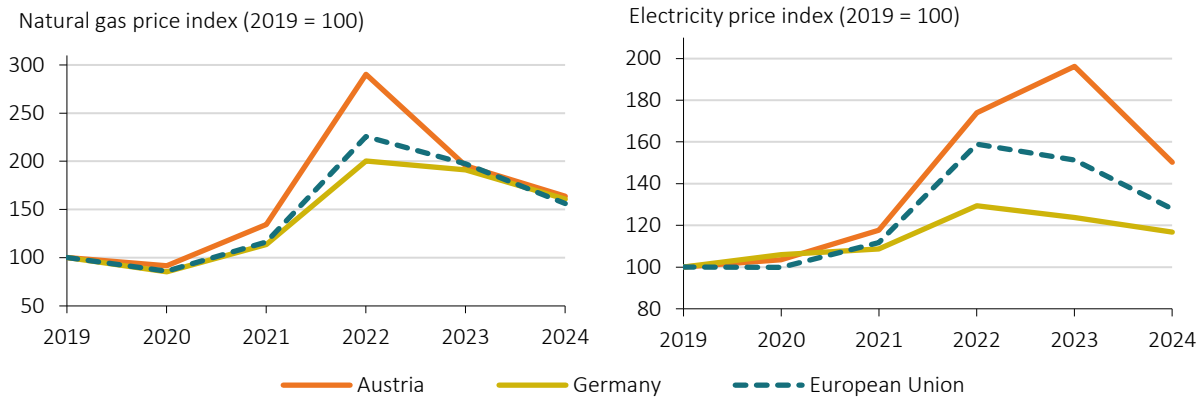


Note: The difference between the wage cost index (Eurostat: lc_lci_lev) and the Harmonized Index of Consumer Prices (Eurostat: prc_hicp_aind) approximates the development of the average purchasing power of wages.

A comparison of the OeNB Wage Tracker with the ECB Wage Tracker shows that the more dynamic growth in collectively agreed wages in Austria compared to other EU countries will continue in 2025. Such increases in income typically support consumption in the short term and thus promote growth.[11] Without counteracting increases in labor productivity, however, they will lead to a decline in price competitiveness and higher inflation ("second-round effects") in the medium term. This expected loss of price competitiveness is dampening current Austrian economic forecasts (Baumgartner et al., 2024[12]; Bonin et al., 2025).

28 The recent increases in electricity and gas costs for companies in Austria were also higher in an EU comparison (►Figure 2.2). In 2019, the price level (final price less VAT) was below the weighted EU average - by 13 percentage points for natural gas and 16 percentage points for electricity. Between 2019 and 2024, prices rose by 4.4 percentage points for natural gas and 14.7 percentage points for electricity compared to the weighted EU average. This means that the development of electricity prices in Austria was more decoupled from developments at EU level than was the case for natural gas prices (see Produktivitätsrat, 2024; Reinstaller and Sellner 2025a). This is likely due to both competitive factors and bottlenecks in the supra-regional electricity grids (►item 180ff). Despite this, Austria's cost position within the EU only deteriorated by one place for electricity compared to 2019, but by nine places for natural gas.

Figure 2.2: **Natural gas and electricity prices for companies**



Source: Eurostat [nrg_pc_203_c, nrg_pc_205_c].
Note: Excluding VAT and other taxes and fees; including taxes on renewable energies, taxes on generation capacity, taxes on nuclear power plants and environmental taxes. For natural gas prices: EU without CY, MT, 2024 without SE.

[11] The recent income growth only had a limited effect on consumption, as the savings rate increased significantly (see e.g. Glocker and Ederer, 2025).
[12] See also Bittschi and Meyer (2024).

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29 Energy costs in Austria remained below the EU27 average in 2024. However, the comparatively sharp increase led to a noticeable deterioration in price competitiveness, particularly for energy-intensive companies in Austria. The impact of energy costs on price competitiveness was further intensified by the indexation of, among other things, rents and insurance as well as collectively agreed wages.[13] Compared to competitors outside the EU (e.g. the USA), the relative increase in energy prices and thus the loss of price competitiveness - particularly in industries with high energy consumption - was even more pronounced. For this reason, the Compass for a Competitive EU includes an Action Plan for Affordable Energy. This includes measures aimed at lowering energy costs within the EU and reducing their volatility. These include, for example, the expansion of the European energy transmission and distribution network or measures to promote EU energy market integration. ►Chapter 7 analyzes the potential for improving energy efficiency in Austrian companies and thus a possible contribution to reducing energy use and costs.

30 Taxes and duties are another important factor that influences production costs and consequently the attractiveness of a location. With a tax ratio of 44.5% of GDP (ratio of taxes and social security contributions to GDP), Austria was in second place in the EU (►Figure 2.3) after Denmark (45.1% of GDP) in 2024, just under 5 percentage points above the EU27 average.[14] Since 2018, the tax rate in Austria has also been above the BENESCAND average. According to the European Commission's current spring forecast, Austria will have the highest tax ratio in the EU from 2025. Although other location factors such as infrastructure, investment incentives or the supply of skilled labor are offset by the high tax rate, the dynamics of the tax rate in Austria are likely to send a negative signal.

31 The compliance costs of regulations in Austria are in the middle of the EU range and are lower than in the USA[15], for example. Nevertheless, various studies point to a high cost burden and increasing dissatisfaction among companies with bureaucratic requirements (see Enichlmair et al., 2024; Hölzl et al., 2025). The German Council of Economic Experts' Spring Report 2025 (2025) refers to direct costs due to lengthy administrative processes and indirect costs incurred by the economy due to false incentives for investment or market entry, for example.

[13] See Moser et al. (2025).

[14] The consideration of mandatory benefits to non-governmental organizations (e.g. healthcare, pension provision) changes this picture (Reiss and Bernhofer, 2022). In an international comparison of these supplemented tax ratios, Austria was on a par with Germany and Switzerland.

[15] Measured by the proportion of employees in a company who are employed to comply with regulatory requirements, see Investment Survey 2024 of the European Investment Bank.

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Figure 2.3: **Tax rate**

2024 (left), index (2010 = 100) (right)

Source: AMECO [UTAT/UVGD].

32 **Foreign trade:** As a small, open economy, Austria is heavily involved in international trade and is therefore exposed to competition from abroad. The global market share of Austrian goods exports has fallen noticeably since 2010, although it has fluctuated considerably over time. Compared to the EU27 countries, Austria lost significantly more, and compared to the BENESCAND countries, slightly more of its global market share in goods exports.[16] In 2024, Austria recorded a sharp deterioration of over 6 index points (►Figure 2.4). In the past, the high complexity of Austrian exports was seen as a guarantee for robust export development despite declining price competitiveness. It reflects the unique selling points and the knowledge intensity of exports, which contribute to competitiveness in the broader sense. However, current trends such as increasing global protectionism and growing competition from China in sectors that are important for Austria (►chapter 6 on the role of these two aspects) are making it more difficult to maintain global market shares. There are also other risk factors: the sharp rise in energy and unit labor costs (►items 27 and 28) in Austria, the sharp appreciation of the euro against the US dollar of over 9% since the start of 2025 and weak import demand from major trading partners - particularly due to the recession in Germany. These factors are putting additional pressure on Austria's global market share.

[16] A considerable part of the larger reduction of the Austrian world market share compared to the development of the EU world market share is due to the favorable development of the world market shares of the CEEC11 countries. The EU global market share excluding the CEEC11 countries has developed similarly to that of the BENESCAND countries since 2010.

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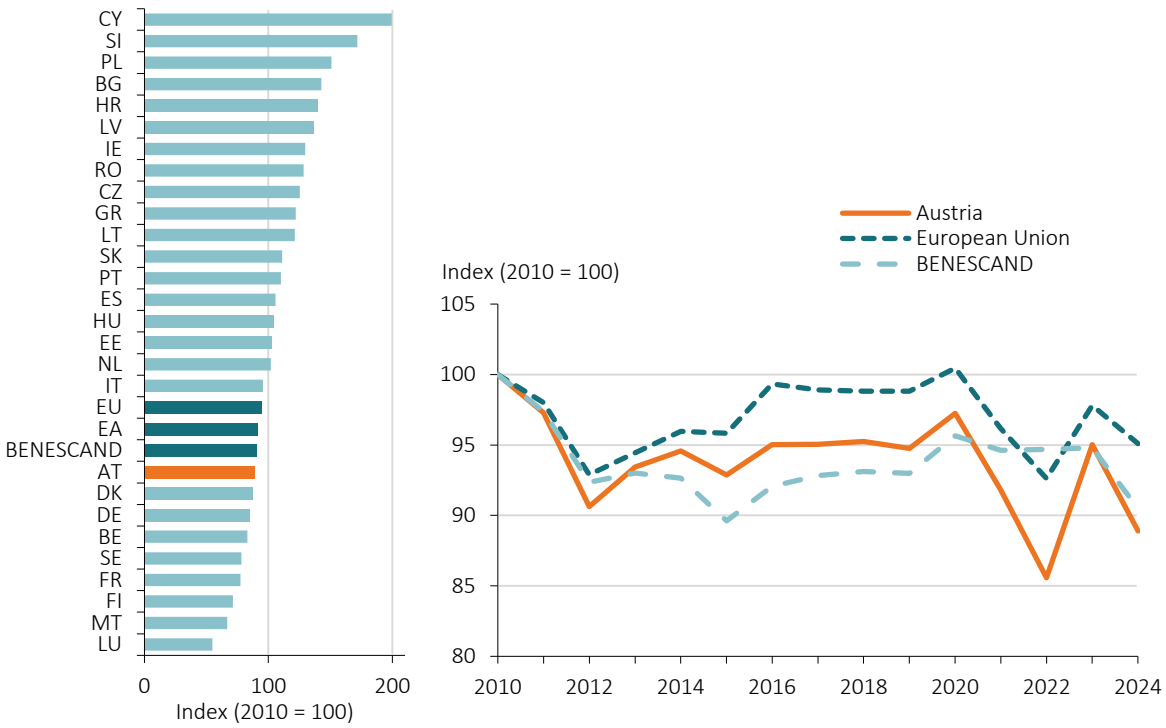
Figure 2.4: **Change in world market share of goods exports**

2024 (left), index (2010 = 100) (right)



Source: AMECO [AXGT].

33 The World Bank's Logistics Performance Index maps key aspects of the infrastructure that underpins the movement of goods and thus influences (foreign) trade performance. The index is based on a global survey of international logistics companies, although this is not carried out every year. Austria achieved a good rating in 2023 and was in 5th place in the EU comparison.

34 **Competition:** The net operating surpluses of companies (revenue less wages, salaries and depreciation) are a measure of the ability of companies to push through higher prices. High net operating surpluses therefore indicate either entrepreneurial success in innovation and quality competition or a lack of competition or possible market distortions[17] Furthermore, they are subject to economic fluctuations. The downward trend in net operating surpluses continued in Austria in the second year of the recession in 2024. While they proved to be very robust on average in the EU27 and BENESCAND countries, especially in the years 2022 to 2024, the downward trend in Austria accelerated at the current margin. At 17.2% of GDP, net operating surpluses in Austria were noticeably lower in 2024 compared to the country groups.[18]

35 In the medium and long term, **company dynamics** and in particular the **start-up rate of companies** is import for the development of the competitive environment and structural change (▶chapter 8 examines structural change in Austria, in particular shifts between the manufacturing and the service sector). Corporate growth in Austria is comparatively sluggish. Although there was a slight increase in the start-up rate compared to the low in 2020, at 6.2% it was still well below the average for the peer country groups. In 2023, it remained at this low level and was therefore still well below the average start-up rate of 7.9% in Austria in the pre-crisis years 2010-2019. The EU start-up and scale-up strategy is therefore

[17] The net operating surpluses calculated in the national accounts only represent the development of company profits to a limited extent, as they do not take valuation gains or losses into account.

[18] See Friesenbichler et al. (2025).

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potentially of particular importance for Austria. It aims to increase the start-up rate and expansion of innovative companies in the EU.

36 **Innovation and technological change:** Total expenditure on research and development (R&D) relative to GDP is one of the highest in the EU. In 2023, Austria is in third place with 3.3%; according to Statistics Austria's global estimate for 2024, the trend is slightly upwards at 3.35% (see also ►item 168). However, this is reflected somewhat less strongly in the corresponding earnings indicators. R&D expenditure financed by companies is also very high, with an above-average proportion being financed from abroad.

37 The proportion of companies with innovation activities in Austria is still in 8th place and therefore above the EU average. The latest available data is from 2022, as the data is only collected every two years and is available with a time delay. Although Austria is also following the downward trend of the comparative country groups at the current margin, in Austria's case the decline already began in 2020. Austria's lead over the BENESCAND countries also widened. This development runs counter to Austria's RTI strategy , which aims to catch up with the leading group of innovating countries by 2030. These trends are confirmed with reference to the recently published European Innovation Scoreboard 2025 (European Commission, 2025): Austria is considered a strong innovator, ranking eighth in the EU, but lost four percentage points in the Innovation Index in 2025 compared to the EU27 average. In an evaluation of the RTI Strategy 2030 halfway through its term, the Austrian Institute of Economic Research (Janger et al., 2025) assumes that, based on current trends, only around half of the 20 numerically achievable targets will be reached by 2030.[19] Although spending on new products and services rose at an above-average rate in 2023, Austrian companies were reluctant to introduce new products (Hofmann et al., 2024).

38 If innovation performance is measured using patent indicators, a differentiated picture emerges: In terms of the number of patents registered (per capita), Austria is well behind the BENESCAND countries, which are traditionally regarded as the frontrunners. In contrast, it was able to position itself above the average of the BENESCAND countries in terms of patent quality[20]. The propensity to patent varies from sector to sector and therefore also depends on the economic structure of a country, which makes international comparisons difficult. The RTI Monitoring of the Council for Research, Science, Innovation and Technology Development (FORWIT) also shows different developments: In some innovation dimensions (circular economy, international integration), the average of the innovation leaders was clearly exceeded for the first time in 2025, while Austria lost some ground in other dimensions (e.g. efficiency or tertiary education). Austria performed comparatively poorly in the new dimensions of artificial intelligence and competitiveness in RTI in 2025.

39 **Qualifications and human capital:** According to the PISA survey, the skills of Austrian pupils are in the middle range among the EU27 countries in the long term. The latest available survey from 2022 showed that the COVID-19 pandemic has had a significant negative impact on the skills and abilities of young people in many countries. Austria performed relatively well, with a smaller decline in performance compared to 2018 in mathematics and reading and a slight improvement in science. Austria's position has thus improved relatively in all three areas compared to the last survey. Nevertheless, further efforts are needed to catch up with the frontrunners. According to the OECD's Education at a Glance 2025 , education expenditure per pupil in Austria is high by international standards, although it is low or average as a proportion of GDP at primary and secondary level. In the tertiary sector, expenditure per student in 2022 was well above the EU27 average. Expenditure in the tertiary sector has approached the high level of the BENESCAND countries due to faster growth in recent years. While the difference was still 25% in 2019, it had fallen to 7% by 2022. Nevertheless, Austria continues to produce comparatively few graduates with at least a Bachelor's degree (ISCED level 6-8) in the natural sciences and technology

[19] Against this background, Janger et al. (2025) identify the existing system of university funding, the lack of evaluation of the impact of public funding and the low availability of venture capital as key obstacles to research and innovation performance in Austria.

[20] To compare patent quality, the OECD Patent Quality Indicator is used, which is based on four dimensions of the underlying patents: Forward citations, size of the patent family, number of claims, generality index.

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(STEM). If qualifications at ISCED level 5 are included in the analysis, Austria ranks fifth within the EU.[21] Stagnation is particularly important in the context of digitalization and new technologies.

40 **Financing of the companies:** The external financing of companies in Austria is heavily concentrated on bank loans. Despite the persistently high market interest rate environment, only a few companies report credit restrictions (2024: 2,5%). According to the European Investment Bank's investment survey, the proportion of companies experiencing financing bottlenecks for investments is significantly higher. While 13.5% of the companies surveyed were faced with financing restrictions in 2023, the proportion rose to 20.7% in 2024, well above the average figures for the peer country groups. Difficulties in financing investments may also be related to the minor role of equity in external financing compared to other countries. In 2023, the market capitalization of domestic companies listed on the Austrian stock exchange was only 26.3%, well below the EU and BENESCAND average. Furthermore, venture capital financing in Austria remains weak. This inhibits the establishment and, above all, the growth of innovative and technology-intensive companies. In stark contrast, both equity and venture capital financing are very high in BENESCAND countries. As part of its Competitiveness Compass, the EU intends to drive forward the integration of the intra-European capital market (Savings and Investment Union - SIU) in order to open up additional sources of financing for companies.

41 **Digitalization:** According to the corresponding index based on the DESI survey, the digital skills of the Austrian population were slightly above average compared to the EU27 countries. However, in 2024, Austria fell a few ranks back into the midfield. Austria performed significantly weaker than the EU27 average in terms of digital infrastructure. In terms of the digitalization of companies and public services, Austria was slightly above the EU27 average. However, there was once again a considerable gap to the comparison group of BENESCAND countries, which also stand out in the area of digitalization. The performance monitoring of FORWIT emphasizes that the goal of the federal government's RTI strategy to reach the average of the countries with innovation leadership in the field of digitalization by 2030 is clearly not being achieved from a current perspective. Consequently, additional measures are necessary in order not to lose touch with the EU partners.

42 With the Data Access Act (*Datenzugangsgesetz*, DZG), an important step towards implementing the European Data Governance Act (DGA) was taken in July 2025. This framework for strengthening and facilitating the voluntary exchange of data is intended to make better use of the economic and social potential of data. The National Data Strategy, which provides a structured framework for leveraging data potential in Austria, was adopted in October 2024. Deficits in data management and in the ability of the public sector to link data mean, among other things, that funding and support measures cannot be targeted precisely. For example, the Fiscal Council has repeatedly recommended creating a database for household income in order to increase the accuracy of future measures and at the same time reduce the budgetary burden (Fiscal Council, 2024).

43 **Public institutions:** Similar to the BENESCAND group of countries, the population's trust in public institutions in Austria is traditionally high and significantly above the average values of the EU27 countries in all categories of the World Bank's Worldwide Governance Indicators (WGI). Accordingly, the perception of public institutions even improved in some areas at the current margin (e.g. rule of law, state regulatory policy). In contrast, Austria has dropped significantly in the country rankings in the areas of political stability, absence of violence and control of corruption in recent years.

44 **Conclusion:** Austria's performance is strong and robust in numerous indicators of economic performance and competitiveness. For example, per capita economic output and investment activity are high compared to the rest of the EU, despite the ongoing recession. However, Austria is also losing ground to the leaders in important areas, above all in terms of price competitiveness due to comparatively high and dynamic wage (unit) and energy costs, but also due to the high tax and duty burden. Pressure is

[21] In the Austrian context, the important degrees from higher technical colleges (HTL) play an important role here.

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also increasing due to protectionist measures and growing competition from China in key export markets, which is causing domestic companies to lose global market share. After all, Austria is facing major challenges with regard to the green and digital transformation. Compared to many other European countries, the starting position and framework conditions in Austria for mastering the requirements of this transformation are disadvantageous. This is due to the specific characteristics of the domestic economy and economic structure, including the unfavorable industry structure in terms of cyclicality and productivity, energy intensity, shortage of skilled workers, financing restrictions, low digitalization expertise and sluggish corporate dynamics.

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3. Policy area "Social"

3.1 The most important facts at a glance

Expenditure on social protection

The **social protection expenditure ratio** in Austria is very high compared to other European countries. This is not only a reflection of a strongly developed welfare state; Austria has also recorded a persistently higher gap to the EU27 average since the historic peak in the wake of the COVID-19 pandemic.

Labor market

The **unemployment rate** rose only slightly in 2023 and 2024 despite the recession. The **employment rate in full-time equivalents** has stagnated in Austria since 2022, meaning that Austria's employment growth after the coronavirus year 2020 was significantly more subdued than the EU average. The EU-wide below-average proportion of young people who are not in employment, education or training (**NEET rate**) fell again slightly in 2024 and thus approached the low average value of the BENESCAND countries.

Health

The **life expectancy in good health** is declining in Austria, which means that Austria has decoupled from the slight increase in the EU at the current margin. Life expectancy at birth, on the other hand, has risen in line with the EU-wide trend, which is why the proportion of healthy life years in Austria is shrinking. In terms of **subjective** perception of **health** and the proportion of people with chronic illnesses, Austria was in the middle of the EU27 in 2024.

Education and qualification

The proportion of people with **educational qualifications that go beyond compulsory schooling** is high in Austria, but is only growing slowly. In addition, the reduction of educational barriers due to the socio-economic background remains a major challenge for the Austrian education system.

Compatibility of family and employment

The **childcare rate** for under-three-year-olds in Austria remained well below the average for the peer country groups in 2024, but has reached the Barcelona target since 2023. The proportion of children from the age of three until the start of compulsory schooling in formal care slightly exceeded the EU27 average in 2024, but remained well below the average for the BENESCAND countries. 40% of all childcare places are not compatible with full-time employment for parents.

Qualifications and human capital

The Austrian **PISA scores** are only in the middle of the EU range despite comparatively small drops due to the COVID-19 pandemic. Expenditure per student in the tertiary sector has increased significantly since 2019 Nevertheless, the number of STEM graduates, who are urgently needed in the context of digitalization and new technologies, stagnated.

Income, poverty and distribution

The **net equivalized household income** is very high in Austria and has recently been supported by economic policy measures (eco-social tax reform and anti-inflation measures, which were primarily aimed at strengthening purchasing power). **Income inequality** was below average in a European comparison. However, a growing number of people were no longer able to meet their basic needs, which is why the level of **substantial material and social deprivation** in Austria rose significantly in 2023, but still remained well below the average values of the peer country groups in some cases. **Wealth inequality** rose in Austria recently and was once again well above the EU average.

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Table 3.1: Overview of the indicators in the "Social" pillar

Dimension/ Indicator	1. rank in EU27: Value	Austria: Value (vs. previous year)	Rank in EU27 (vs. 2010)	compared to EU27	compared to BENE-SCAND	Trend since 2010*
Expenditure on social protection						
Input indicators						
Social expenditure ratio, 2023 in % of GDP — *excluding GR*	France: 31,3	30 (+0,4 pp)	3 (+0)	🟢	🟢	
Health						
Output indicators						
Healthy life years at birth, 2023 *excluding LU*	Malta: 71,4	60,4 (-0,8%)	18 (-3)	🟡	🟡	
(Very) good health status, 2024 in % of those aged 16 and over	Ireland: 79,9	67,7 (-1,5 pp)	12 (-2)	🟡	🟡	
Input indicators						
Chronic illnesses, 2024 in % of those aged 16 and over	Italy: 17	36,1 (+1,3 pp)	16 (+3)	🟡	🟢	
Work accidents, 2022 per 100,000 employed persons	Romania: 57,6	1527 (-6,2%)	19 (-1)	🟢	🟠	
Education and qualifications						
Input indicators						
Participation in continuing education, 2024 in % of 25- to 64-year-olds	Sweden: 37,5	17,6 (+0,2 pp)	8 (-2)	🟢	🔴	
Output indicators						
Qualification above compulsory schooling, 2024 in % of 25- to 64-year-olds	Poland: 94,8	86,2 (+0,5 pp)	14 (-4)	🟢	🟢	
Labor market						
Output indicators						
Unemployment rate, 2024 in % of 15- to 64-year-olds	Czechia: 2,7	5,2 (+0 pp)	12 (-10)	🟢	🟢	
NEET rate, 2024 in % of 15- to 29-year-olds	Netherlands: 4,9	9,2 (-0,2 pp)	10 (-5)	🟢	🟠	
Employment rate (FTE), 2024 in % of 15- to 64-year-olds	Malta: 75,9	63,8 (-0,3 pp)	22 (-14)	🟡	🟡	
Labor force participation rate of 55–64-year-olds, 2024 in %	Sweden: 83	61,1 (+1,3 pp)	21 (-3)	🟠	🟠	
Gender gap in the employment rate, 2024 25- to 44-year-olds, FTE, gap in percentage points	Finland: 4,9	18,7 (-0,2 pp)	23 (-3)	🟠	🔴	
Low-wage earners, 2022 in % of employees	Portugal: 1,8	14 (-0,7 pp)	12 (-2)	🟢	🟠	
Reconciling family and employment						
Input indicators						
Child care rate: under-3-year-olds, 2024 in %	Netherlands: 78,9	30,2 (+6,1 pp)	16 (+4)	🟠	🔴	
Child care rate: 3 years to compulsory school age, 2024 in %	Hungary, Denmark: 100	90 (-0,4 pp)	19 (-7)	🟢	🟡	
Income, poverty and distribution						
Output indicators						
Net equivalised household income, 2024 median, real (base year 2015), purchasing power adjusted, thous. EUR	Luxembourg: 30,3	22,2 (+0,8%)	2 (+0)	🟢	🟢	
Absolute poverty[1], 2024 severe material and social deprivation, in %	Slovenia: 1,8	3,7 (0 pp)	10 (-6)	🟢	🟢	
Relative poverty, 2024 at-risk-of-poverty rate, in %	Czechia: 9,5	14,3 (-0,6 pp)	9 (+2)	🟢	🟠	
Income quintile ratio, 2024 S80/S20 in multiples	Bulgaria: 7	4,3 (+0,1 points)	16 (+0)	-	-	
Distribution of net wealth, 2021 P80/P20 in multiples — *excluding BG, DK, PL, RO, SE*	Slovakia: 4,2	41,5 (+2,9 points)	18 (-7)	🔴	🟢	

Sources: Eurostat, HFCS OeNB. For details see www.produktivitaetsrat.at/dashboard.
Notes: Preliminary classification into input/output indicators within the framework of the dimensions presented. An overall assessment requires further analysis. - The color coding shows how much Austria differs from the peer group. Whether a higher or lower deviation is considered "better" depends on the relation to competitiveness: Positive reference (+): higher = better; negative reference (): lower = better; without clear reference: Color coding is not applicable. 🟢/🔴...+/- >30%, 🟢/🟡...+/- 10–30%, 🟡/🟡...+/- <10%. - The classification of an indicator as input or output only applies within the respective dimension. The assignment may change in a different context.
[1] First available year: 2015. - NEET... Not in Employment, Education or Training, FTE... Full-time equivalents.
Editorial deadline for data updates: 30.09.2025.

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3.2 Development of key performance factors and determinants of social sustainability

45 **Social sustainability** is achieved through institutions and measures that maximize health, participation and security for all members of society. These also increase the opportunities for people in a country to contribute to the country's economic prosperity and benefit from it themselves.

46 The most important basis of social sustainability is a **self-determined lifestyle** (►item 6). This leads to the satisfaction of basic material needs, the opportunity to participate in lifelong learning processes and to physical and mental health. It depends on gainful employment, personal development opportunities and active participation in social life. Furthermore, it requires infrastructure and institutions that ensure or create and promote the ability to develop and equal opportunities for all members of society, especially disadvantaged population groups. Accordingly, the analysis of Austria's social sustainability in this chapter is divided into the following subject areas:

- Expenditure on social protection
- Health
- Education and qualification
- Labor market
- Compatibility of family and employment
- Income, poverty and distribution

47 ►Table 3.1 provides an overview of the evaluation of the indicators for the individual topic areas in the social pillar. It shows Austria's position relative to the peer country groups and changes over time. The classification of an indicator as input or output only applies within the respective dimension. The assignment may change in a different context.

48 **Expenditure on social protection:** At 30%, the social expenditure ratio (social expenditure in relation to GDP) in Austria is very high compared to both the EU27 and the BENESCAND countries - Austria ranks third in the EU. This is above all an expression of a strongly developed welfare state, which includes far-reaching measures for old age and healthcare, family and child benefits as well as unemployment benefits.[22] International comparability of the level of the social rate is made more difficult by significant differences in national social security systems (Adema and Whiteford, 2021).

49 Another important aspect of the quotient presentation of social expenditure is the different indexation of numerator and denominator: The price increase of goods produced in Austria (GDP deflator) is decisive for the development of nominal GDP (the denominator). Inflation-indexed monetary social benefits (the numerator), on the other hand, are generally adjusted using the consumer price index (CPI) and thus in line with the price development of goods consumed in Austria. Due to the particular nature of a predominantly "imported price shock" in the wake of the energy crisis, the CPI has risen much more sharply than the GDP deflator in recent years. According to the Fiscal Council (2025b), cumulative CPI growth from 2020 to 2024 amounted to 25.7%, while the GDP deflator increased by 20.4% in the same period. This GDP denominator effect is currently also being reinforced by the ongoing phase of recession in Austria, which already began in 2023. While the core of social spending is characterized by real persistence, unemployment benefits develop countercyclically via the effect of automatic stabilizers.

50 The significant increase in the social ratio in the wake of the COVID-19 pandemic to an all-time high of 33.3% of GDP was only a temporary phenomenon (mainly due to increases in healthcare expenditure and short-time working as well as the nominal GDP effect). Since then, however, a persistently higher gap to the EU27 average of one percentage point of GDP has emerged. Until 2019, the quota gap was two percentage points; since 2022, it has been three percentage points. Regardless of this, the demographic trend is leading to dynamic growth in age-related government spending, particularly on

[22] Statistics Austria, Social benefit expenditure by function 1990 to 2023, annual total in million euros, accessed on 11.8.2025.

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healthcare, long-term care and pension benefits (Fiscal Council, 2025a): Based on 2023, these will increase by a total of 6.2% of GDP by 2070. This increase is largely made up of the areas of healthcare (+2.6% of GDP), pensions (+1.9% of GDP) and care (+1.8% of GDP).

51 **Health:** Life expectancy in good health (healthy life years at birth) was 60.4 years in 2023. The value has been declining since the historic high in 2021 (61.8 years), as a result of which Austria decoupled from the slight growth of the EU27 and the BENESCAND countries at the current margin and thus moved further away from the average values of the peer group. In comparison, life expectancy at birth (Eurostat, demo_mlifetable) in Austria rose from 81.4 years (2022) to 81.9 years (2023) in line with the trend in the EU27 and the BENESCAND countries. As a consequence, Austria is confronted with the fact that the proportion of healthy life years is shrinking: In 2021, the average person in Austria still spent 76.0% of their life in good health; just two years later, this figure had fallen to 73.7% (2023). Based on the survey results, Austria was in the middle of the EU27 in terms of subjectively perceived health status and the proportion of people with chronic illnesses in 2024. Accidents at work were slightly below the EU27 average at the current margin, but significantly higher than in the BENESCAND countries. For the important topic of occupational diseases, there is a lack of comparable data in terms of time and geography.

52 **Education and qualification:** The proportion of people with educational qualifications beyond compulsory schooling has increased steadily in Austria in recent years - albeit only slowly. In comparison, the proportion of this group of people increased faster on average in the EU27 and the BENESCAND countries, with the result that Austria slipped into the EU midfield over time. Nevertheless, Austria was still significantly or slightly above the average for the EU27 and the BENESCAND countries. A further increase in the already high proportion of people with educational qualifications beyond compulsory schooling is likely to require comprehensive or specific educational policy efforts. In addition, according to the PISA survey, the skills of Austrian pupils are only in the middle of the EU average despite high education expenditure per pupil (►item 39). Improving these results and increasing the efficiency of the use of funds are therefore key challenges for education policy. Another major challenge for the Austrian education system remains the reduction of barriers to education due to socio-economic background (see e.g. OECD, 2023). Participation in further training measures among adults is above average compared to the EU27 countries, but is significantly lower than in the BENESCAND countries.

53 **Labor market:** Despite the ongoing recession, Austria's unemployment rate in 2024 remained at the previous year's level of 5.2%, while that of the EU27 improved slightly and that of the BENESCAND countries worsened by half a percentage point. The unemployment rate in 2024 was therefore once again in the European midfield, but well below the averages for the EU27 and the BENESCAND countries.[23] The Austrian labor market is proving to be relatively robust, above all because the labor supply is growing more slowly than in the past due to demographic aging. However, factors such as the increasing proportion of older people with health problems (►item 51) and migrants in the workforce, the increase in the retirement age for women and economic and technological change are making it more difficult to reduce unemployment (Bock-Schappelwein and Eppel, 2025). The rate of young people who are neither in education, training or employment ("NEET rate"; NEET: Not in Employment, Education, or Training), decreased slightly to 9.2% in 2024. Compared to the EU27 countries (average 2024: 11.0%), Austria's NEET rate was once again low. However, the gap between the rates narrowed significantly: While the average value for the EU27 has fallen significantly since 2010 from over 15% (2010) to 11%, Austria's NEET rate has remained at the same level as its initial value (2010: +0.5/-1.0 percentage points): 9,1%). In the BENESCAND countries, the NEET rate was below that of Austria, but the gap narrowed from 1.8 percentage points in the years 2021 to 2023 to 1.4 percentage points at the current margin. This

[23] Current economic forecasts for Austria (Bonin et al., 2025; Fenz et al., 2025; Schiman-Vukan and Ederer, 2025) assume a slight increase in the unemployment rate in 2025 and a gradual decline in the following years.

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particular aspect of youth unemployment is an urgent challenge for labor market policy due to the associated personal and social opportunity costs.

54 The employment rate in full-time equivalents in Austria has stagnated at around 64% since 2022. This is due to a flattening of the growth in the employment rate on the one hand and a reduction in average working hours per person employed on the other. Austria's employment rate in full-time equivalents will therefore be lower than the EU27 and BENESCAND average in 2024 - a situation that first occurred in 2021 and has continued to deteriorate since then. Accordingly, Austria's employment growth after the coronavirus year 2020 was significantly more subdued than the average for the EU27 and the BENESCAND countries. The employment rate for 55-64-year-olds continued its steady rise over many years in 2024, reaching 61.1%. Nevertheless, the gap between Austria and the peer country groups in this age group is considerable.[24] In 2024, the employment rate was more than 7 and 14 percentage points below the EU27 and BENESCAND country averages respectively. The difference in employment between men and women of prime working age fell again slightly in 2024, but Austria still performed very poorly in this indicator across the EU. This is largely due to the persistently high proportion of women working part-time, which reached a historic high of 51.1% in 2024 according to Statistik Austria.

55 **Compatibility of family and employment:** The compatibility of family and career as well as the quality of early childhood and school care and education play a key role in children's development and equal opportunities. Pre-school childcare in Austria presents a very heterogeneous picture depending on the age of the children. The proportion of children aged three to the start of compulsory schooling in formal care in 2024 was 90%, slightly above the EU27 average, but well below the average for the BENESCAND countries, where almost all children in this age group are in formal care. The second compulsory year of kindergarten for all children in Austria, already announced in the current government program, is to be introduced by 2027 at the latest. The aim is to improve German language skills, promote integration and ensure early education. It can therefore be assumed that the proportion of over-3-year-olds in formal care will increase somewhat further in the near future. In comparison, the proportion of children under the age of 3 in formal care in Austria in 2024 is 30%, well below both the EU27 average (39%) and that of the BENESCAND countries (60%). However, these two indicators do not take into account the actual amount of childcare provided per week, which is why the country comparison should be put into perspective.

56 In the "Barcelona targets", the European Council recommended a rate of 33% for childcare for under-3s in 2002. Important motives are the removal of barriers to women's employment and the promotion of children's social, linguistic and cognitive development. The target was raised to a childcare rate of 45% in 2022 in an EU Council recommendation . However, the recommended target is lower if a country has not yet reached the original target. It is now around 32% for Austria by 2030.

57 The measurement of the childcare rate in the internationally comparable EU-SILC statistics, which is also relevant for the data on childcare in ►Table 3.1, differs from Statistics Austria's approach. The data from Statistics Austria is a complete survey, while EU-SILC is a sample (see Statistics Austria, 2015), which means that the EU-SILC data has a higher fluctuation and is less reliable with better international comparability. Due to these differences, the reported levels of the childcare rate differ significantly depending on the data source used (►Figure 3.1 for under-3-year-olds). In a more differentiated approach, the childcare rate also depends on whether childminders are taken into account. The attendance rate for under-3-year-olds is 2024 according to the definition by Statistics Austria 34.8%, the extended attendance rate (including childminding) 36.9%. 60% of children in care are accommodated in facilities that are compatible with parents working full-time (Statistics Austria, 2025). As part of the 2024 financial equalization agreement, the federal government, federal states and municipalities agreed to use

[24] The rate depends on the composition of the 55-64 age group and thus on the retirement age, which has a strong influence due to the size of the cohort.

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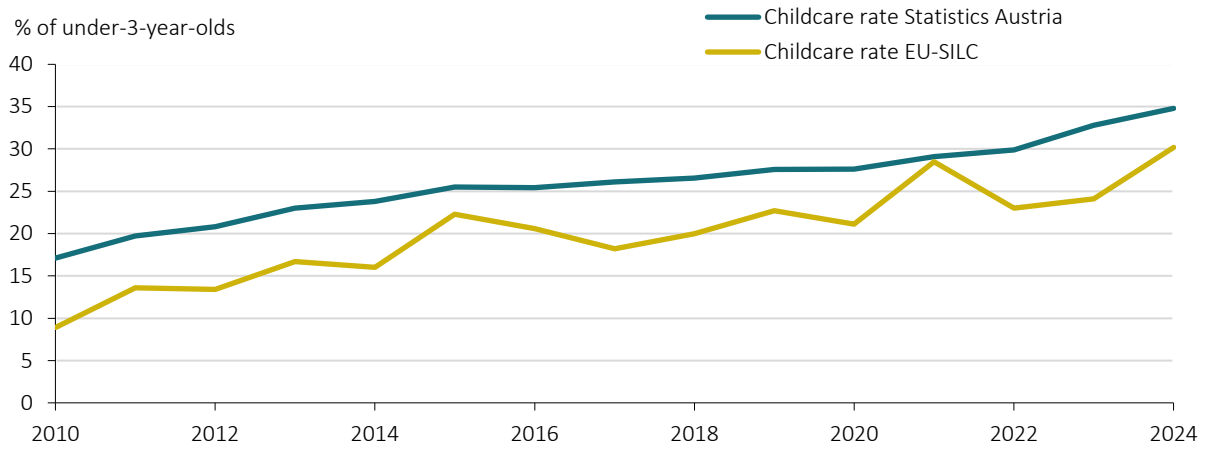
resources from the Future Fund to achieve a childcare rate (including childminders) of at least 38% for under-3-year-olds by the end of the financial equalization period (31.12.2028).

Figure 3.1: **Childcare rate for under-3-year-olds**



Source: Eurostat [Label: ILC_CAINDFORMAL], Statistics Austria.

58 **Income, poverty and distribution:** In Austria, the available (purchasing power-adjusted) median net equivalized household income is very high by international standards - Austria ranked second in the EU in 2024. Austria's disposable household income remained below the historic high of 2016. After a marked decline in 2022, which was also observed in other EU countries, as a result of the hyperinflation phase, the median disposable household income in Austria increased again from 2023. Economic policy measures effective from 2022 onwards, which mainly served to increase purchasing power, in particular the eco-social tax reform (especially the reduction of income tax brackets) and various anti-inflationary measures, also contributed to this.

59 Reducing poverty and inequality strengthens social participation and has a positive impact on the educational participation of the children's generation and on health. Poverty is described on the basis of absolute and relative measures. Absolute poverty measures are based on the definition of basic needs. Significant material and social deprivation is given if at least seven out of thirteen concrete basic needs are financially unaffordable. Examples of these basic needs are Paying rent, utility bills or loans on time; keeping the home reasonably warm; replacing worn-out clothes; owning two pairs of suitable shoes; spending one week's vacation a year away from home. The current crises, especially the high inflation, have worsened the situation of people affected by poverty in Austria. A growing number of people are no longer able to meet their basic needs. In Austria, those affected by severe material and social deprivation rose from 2.3% (2022) to 3.7% (2023) - an increase only surpassed by Denmark - and stagnated at the current level. The significant material and social deprivation in Austria thus remained at its highest level since the indicator first became available (2015). However, in 2024 Austria was still well below the EU27 average (6.4%) and slightly below that of the BENESCAND countries (4.0%).

60 In the EU, the risk of poverty is determined by the ratio of equivalized household incomes and is therefore a relative measure of poverty that describes the relationship between incomes.[25] A household is at risk of poverty if its equivalent household income is less than 60% of the median income. In Austria, the relative poverty indicator fell by 0.6 percentage points to 14.3% in 2024 compared to the previous year, while the average value for the EU27 remained unchanged at a higher level (16.2%).[26]

[25] For a discussion of measuring poverty using suitable indicators, see Badelt and Heitzmann (2023).

[26] Both the indicator for severe material and social deprivation and the at-risk-of-poverty rate are based on EU-SILC survey data. Accordingly, these indicators are subject to estimation uncertainty.

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61 The unequal distribution of income is less pronounced in Austria than on average in the EU27 and more pronounced than on average in the BENESCAND countries. As an indicator of the unequal distribution of income, the disposable income after taxes and transfers of the highest 20% is expressed as a multiple of the income of the lowest 20% ("income quintile ratio"). Since the increase in 2022, Austria has a factor of 4.3 and is therefore back at the 2010 level. The unequal distribution of net wealth (multiple of the wealthiest 20% compared to the least wealthy 20% according to Household Finance and Consumption)[27] increased in Austria from 39 (2017) to 42 (2021). By contrast, the average of the 22 EU countries with available data on this indicator fell from 29 (2017) to 24 (2021). In contrast, the share of total net assets owned by the wealthiest 10% of the population in Austria fell from 56% in 2017 to 52% in 2021, meaning that Austria is still well above the EU average for this indicator in 2021 (48%).

62 Conclusion: Austria's well-developed welfare state is reflected, for example, in the high welfare rate compared to the rest of the EU. However, this high social benefit ratio also reflects the comparatively slow reduction in healthcare expenditure following the coronavirus pandemic in Austria and the significant divergence in recent years between the CPI index, which is relevant for indexing monetary social benefits, and the gross domestic product deflator. At the same time, the proportion of years lived in good health is declining, which increases the pressure to reform the healthcare system (e.g. prevention and integrated healthcare). Regardless of this, the demographic pressure on age-related government spending has already begun to increase. Despite the current recession, Austria's labor market is robust, even if employment has developed much more cautiously than in the EU since the coronavirus year 2020. The income of private households in Austria is very high and has been additionally strengthened by economic policy measures (eco-social tax reform and anti-inflation measures). However, the increase in considerable material and social deprivation shows that not all population groups have benefited equally from the development in income. The increasing inequality of wealth distribution also shows that certain population groups are at a severe disadvantage. Childcare facilities are the key to a better work-life balance. Although Austria has achieved the Barcelona target for the childcare rate for children under the age of three since 2023, the capacity for formal childcare was still significantly below the EU average.

[27] "The Household Finance and Consumption Survey" is conducted every five years. The next wave will be published in 2028 and will show data for 2025.

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4. Policy area "Environment"

4.1 The most important facts at a glance

Climate and greenhouse gases

Achieving the climate targets poses major challenges for Austria. In terms of emissions intensity (CO_2 emissions per GDP), Austria is in the top terzile of the EU27. Greenhouse gas emissions per capita decreased in 2023, but were above both the EU27 average and the average for the BENESCAND countries. The transport sector has recorded the strongest absolute increase in emissions since 1990. The **net emissions** have **increased** as Austria's forests are increasingly turning into a source of CO_2 due to the effects of climate change.

Circular economy and material consumption

The **potential of the circular economy has not yet been fully exploited**. Despite many improvements, domestic material consumption remains high and Austria is only in the middle of the EU27 in terms of resource productivity.

Environmental instruments and innovation performance

The importance of the **environmental sector** in the Austrian economy continued to increase in 2024. Inventive activity in the field of environmental technologies is very high compared to the EU27. This helps to strengthen this sector of the economy in the course of the ecological transformation.

The **revenues from environmental taxes** in Austria are permanently **below the EU27 average**, while climate-counterproductive subsidies are maintained and counteract efforts to reduce greenhouse gas emissions.

Energy intensity and use

Energy intensity has improved steadily. The **share of renewable energy sources** in final energy consumption has risen sharply, while energy import dependency has fallen. Despite these manifold improvements, the defossilization of emission-intensive sectors remains a major challenge—especially given the tension between environmental responsibility and **long-term competitiveness**.

Ecosystems and biodiversity

The federal states in particular are called upon to contribute to the European Commission's goal of net zero soil consumption. The high **per capita land consumption** continues to require ambitious targets and measures.

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Table 4.1: **Overview of the "Environment" pillar**

Dimension/ Indicator	1. rank in EU27: value	Austria: Value (vs. previous year)	Austria: Rank in EU27 (vs. 2010)	Austria: Compared to EU27	Austria: Compared to BENE-SCAND	Austria: Trend since 2010*
Climate and greenhouse gases						
Output indicators						
Greenhouse gases excluding LULUCF, 2023 Tonnes of CO2 equivalent per capita	Malta: 4,1	7,5 (-7,8%)	18 (-3)	●	●	
Greenhouse gases including LULUCF, 2023 Tonnes of CO2 equivalent per capita	Sweden: 1,3	8,4 (+2,5%)	19 (-4)	●	●	
Input indicators						
CO2 intensity per real GDP, 2023 Kilotonnes of CO2 per billion EUR	Sweden: 69,9	136,9 (-6,5%)	9 (-5)	●	●	
CO2 intensity per GDC, 2023 Kilotonnes of CO2 per petajoule	Sweden: 18,8	43 (-4,5%)	11 (-3)	●	●	
Share of rail in freight transport, 2023 in % — *excluding CY, MT*	Latvia: 44	29,3 (-0,9 pp)	6 (0)	●	●	
Share of public transport, 2023 in %	Hungary: 24,5	23,1 (+1 pp)	2 (+3)	●	●	
Energy: intensity and use						
Output indicators						
Energy imports, 2023 as a % of total energy consumption	Estonia: 3,5	61,1 (-13,2 pp)	14 (+3)	●	●	
Input indicators						
Energy intensity per real GDP, 2023 Petajoules per billion EUR	Ireland: 1,1	2,4 (-2,9%)	9 (-1)	●	●	
Renewable energy sources, 2023 as a % of gross final energy consumption	Sweden: 66,4	40,8 (+6,8 pp)	6 (-3)	●	●	
Prices for energy imports, 2023 million EUR per petajoule	Austria: 8,5	8,5 (-21,8%)	1 (+0)	●	●	
Circular economy and material consumption						
Input indicators						
Material footprint, 2024 Tonnes per capita	Spain: 9,8	19,6 (-8,8%)	18 (+5)	●	●	
Domestic material consumption, 2024 Tonnes per capita	Netherlands: 7,7	15,7 (-4,4%)	16 (+3)	●	●	
Resource productivity, 2024 EUR (real, base year 2015) per kg	Netherlands: 6	2,6 (+3,2%)	10 (-1)	●	●	
Use of reusable materials, 2023 in %	Netherlands: 30,6	14,3 (+1,9 pp)	7 (+6)	●	●	
Ecosystems and biodiversity						
Output indicators						
Soil erosion by water, 2016 in % — *excluding DK, EE*	Latvia/Netherlands/Finland: 0,0	15,5 (-0,1 pp)	23 (+2)	●	●	
Settlement area[1], 2022 Square metres per capita	Finland: 2234,9	722,7 (-2,4%)	12 (-2)	-	-	
Input indicators						
Organic farming, 2023 as a % of the utilized area — *excluding GR*	Austria: 27,4	27,4 (-0,3 pp)	1 (+0)	●	●	
Sealed area[1], 2018 Square metres per capita	Malta: 117,9	296,2 (-1,8%)	19 (+1)	●	●	
Environmental instruments and innovation performance						
Input indicators						
Environmental patents, Ø 2018-2020 Share of all patent applications in %	Denmark: 28,9	14,6 (+1,4 pp)	6 (+13)	●	●	
Environmental taxes, 2023 in %	Bulgaria: 11,2	4,6 (+0,3 pp)	21 (+3)	-	-	

Sources: Eurostat, IEA, OECD. For details see www.produktivitaetsrat.at/dashboard.
Notes: Preliminary classification into input/output indicators within the framework of the dimensions presented. An overall assessment requires further analysis. - The color coding shows how much Austria differs from the peer group. Whether a higher or lower deviation is considered "better" depends on the relation to competitiveness: Positive reference (+): higher = better; negative reference (-): lower = better; without clear reference: Color coding is not applicable. ●/●...+/- >30%, ●/●...+/- 10–30%, ●/●...+/- <10%. - The classification of an indicator as input or output only applies within the respective dimension. The assignment may change in a different context.
[1] First available year: 2012. LULUCF... Land use, land-use change, and forestry.
Editorial deadline for data updates: 30.09.2025.

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4.2 Development of key performance factors and determinants of environmental sustainability

63 Ecological **sustainability** reflects the ability of the Austrian economy to ensure security of supply and quality of life across generations through the efficient and sustainable use of natural resources.

64 To diagnose the development of environmental sustainability in Austria, the field of action is divided into the following **subject areas**:

- Climate and greenhouse gases
- Energy: Intensity and use
- Circular economy and material consumption
- Ecosystems and biodiversity
- Environmental instruments and innovation performance

65 ►Table 4.1 provides an overview of the indicators in the environment pillar. It shows Austria's position relative to the peer country groups and changes over time. The classification of an indicator as input or output only applies within the respective dimension. The assignment may change in a different context. As in previous reporting periods, Austria is in the EU27 midfield in many areas and in some cases falls significantly behind the BENESCAND countries.

66 **Climate and greenhouse gases:** GHG emissions per capita fell by 7.8% in 2023 compared to the previous year, but at 7.5 tons of CO_2-equivalent (CO_2e) per capita were above both the EU average (6.9) and the average for the BENESCAND countries (7.1) (►Figure 4.1). Net emissions refer to gross emissions minus the amount of greenhouse gases that are removed from the atmosphere by carbon sinks such as forests. They deteriorated and rose by 2.5% in 2023 compared to the previous year. This is due to the fact that Austria's forests have increasingly transformed from a CO_2 sink into a CO_2 source in recent years. This is due to the high unplanned use of damaged wood (e.g. due to bark beetle infestation, drought or storm effects), climate-related slumps in growth and the increased temperature-related release of CO_2 from the forest floor (see Federal Environment Agency, 2025). Current analyses by the Wegener Center at the University of Graz also show a further decline in GHG emissions for 2024, which, as in 2023, was due to economic factors and the warm winter (Eibinger et al., 2025).

67 Austria also deteriorated compared to the EU in terms of emission intensity indicators (CO_2emissions per GDP and CO_2 emissions per gross domestic consumption BIV) despite a further decline in 2023. The European Climate Law provides for a 55% reduction in annual net greenhouse gas (GHG) emissions by 2030 compared to 1990 levels. The Effort Sharing Regulation translates this target for the member states into a reduction pathway for sectors outside emissions trading and envisages a 48% reduction in GHG emissions for Austria by 2030 compared to 2005 levels. Although the economic development and milder winters are making it easier to achieve the targets of the European Climate Law and the stricter Effort Sharing Regulation of 2023, the negative trend in sinks and the slow progress in energy intensity are making it more difficult to meet them.

68 The main sources of Austrian greenhouse gas emissions in 2023 (including emissions trading) were the energy and industry sectors with a share of 43.5 % - 8.0 % of which was attributable to installations outside of emissions trading - followed by transport (28.9 %), agriculture (12.2 %) and the building sector (9.2 %). Together, these sectors were responsible for 93.8 % of total greenhouse gas emissions (Environment Agency Austria, 2025, p. 95).

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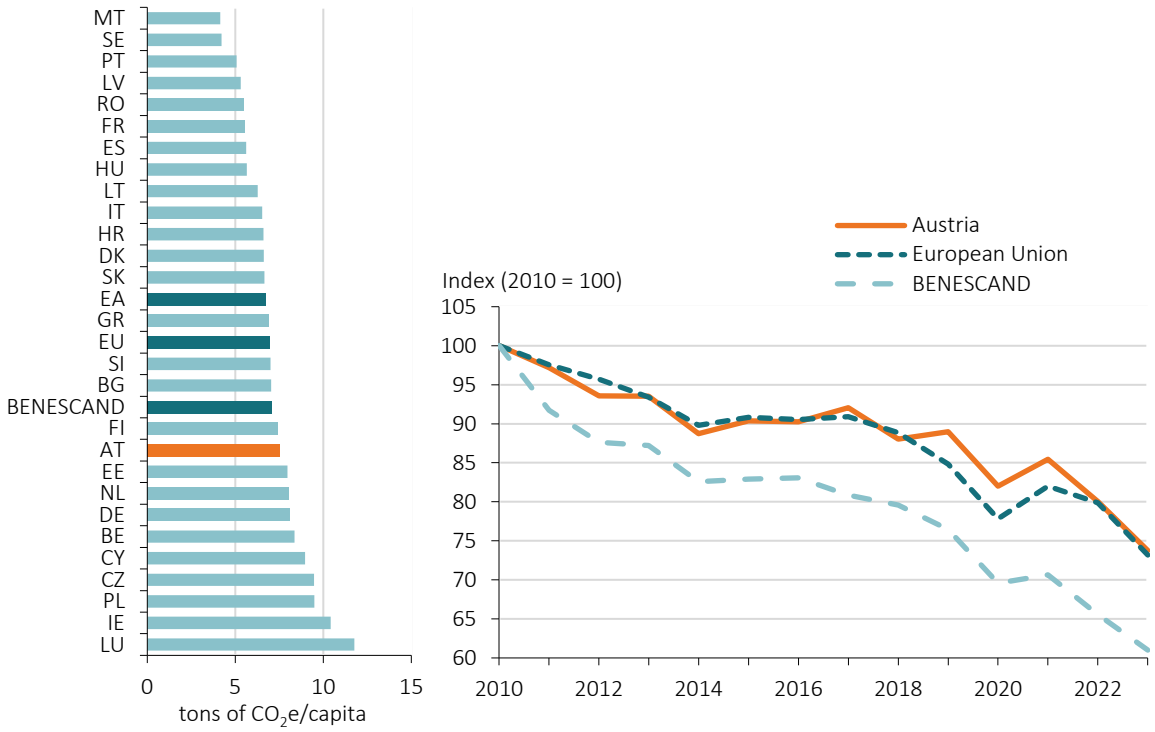
Figure 4.1: **Development of greenhouse gas emissions per capita**
2023 (left), index (2010 = 100) (right)



Source: Eurostat [Label: ENV_AIR_GGE].

69 The transport sector has recorded the strongest absolute increase in emissions since 1990: +6.1 million tons of CO_2 equivalent or +44.2%. Emissions of fluorinated gases also increased in the same period (+0.3 million tons of CO_2 equivalent or +17.3 %), albeit at a much lower level. The modal split in freight transport deteriorated further in 2023 and the rail share fell from 33% in 2010 to 29.3% in 2023, but was comparatively high in the EU. In passenger transport, the share of public transport rose to 23.1% in 2023 (+4.5% compared to 2022). Austria ranked second in this indicator, an improvement of three places since 2010.

70 **Energy:** Reducing energy intensity by increasing efficiency is a central starting point of the EU Energy Efficiency Directive. This directive sets a binding target for the European Union to reduce final energy consumption by 11.7% by 2030 compared to 2020. As an approximate value for overall economic energy efficiency, this indicator shows how much energy is required to produce a certain economic output. Energy intensity has fallen steadily in recent years. A decrease in this key figure is necessary to ensure that the corresponding target can be met while maintaining the same level of prosperity. Between 2022 and 2023, the overall energy intensity of the Austrian economy fell by 2.9%. In addition to these energy saving targets, increasing energy efficiency is a key challenge, especially for energy-intensive industries.

71 The permanently higher energy costs in Europe and especially in Austria compared to major international competitors make it essential to use energy as efficiently as possible. In connection with the requirements of the energy transition - above all the replacement of fossil fuels - continuous improvements in the use of energy are necessary to ensure long-term competitiveness. For this reason, improving energy efficiency is also a pillar of the Action Plan for Affordable Energy as part of the Clean Industry Deal. This aspect is examined in more detail in ►chapter 7 .

72 The expansion of renewable energy plays an important role in the comprehensive electrification of industry. According to the EU's revised Renewable Energy Directive, the share of renewable energy sources in gross final energy consumption is to increase to 42.5% by 2030. The Renewable Energies

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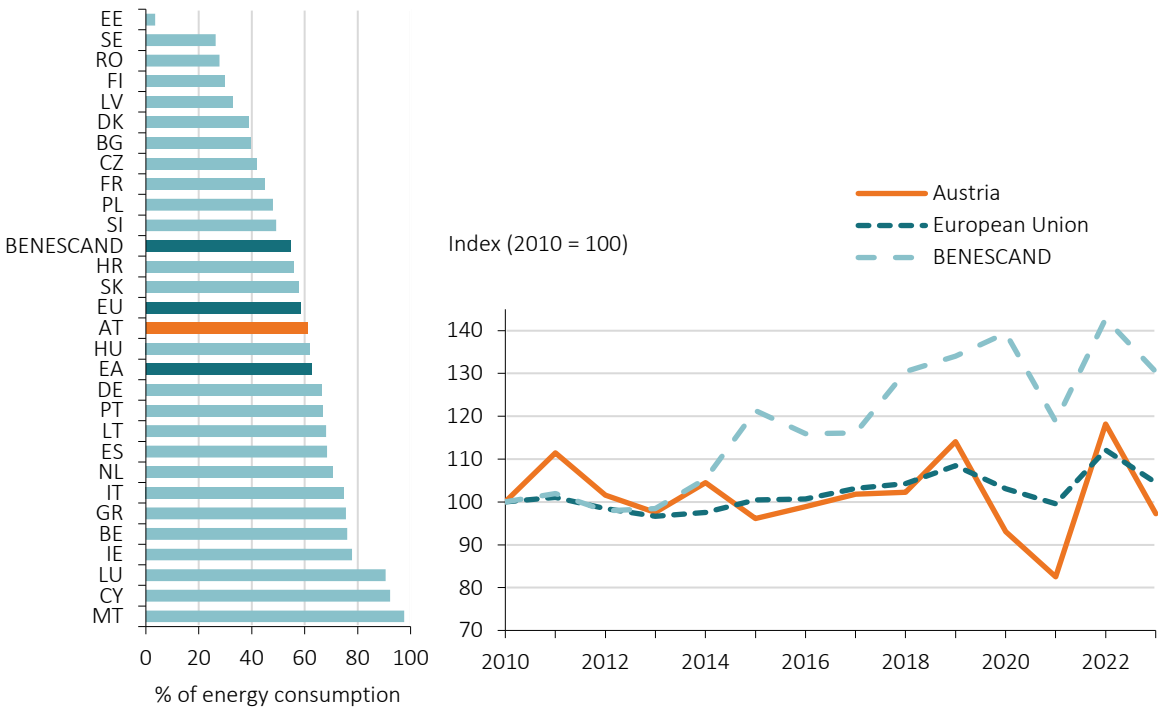
Expansion Act (EAG) defines ambitious targets in this context: By 2030, 27 TWh of additional energy is to be generated from renewable sources, primarily wind turbines and photovoltaics, and electricity consumption is to be fully covered by renewable energies. In 2023, the share in Austria was 40.8%, putting it in sixth place in the EU, a drop of three places since 2010. The expansion was primarily driven by the expansion of photovoltaic energy generation. The annual average share of renewable energies in electricity generation was 92% in 2023, putting it at the top of the EU27. Achieving the 27 TWh target in the EAG would require an additional annual expansion of around 1,000 GWh each for photovoltaics and wind power as well as 500 GWh of hydropower and 100 GWh of biomass (E-Control, 2024). For further expansion, however, there is uncertainty regarding available areas for transmission lines and generation plants (Rechnungshof, 2025).

73 Despite the high proportion of renewable energies in electricity generation, Austria is still heavily dependent on energy imports. Around 61% of total energy consumption in 2023 came from energy imports (▶Figure 4.2). Compared to 2022, however, this corresponds to a decrease of 17.7%. Austria was ranked 14th in the EU and improved by three places compared to 2010. This has reduced foreign dependency in this critical area.

Figure 4.2: **Development of energy imports**

Share of energy consumption in % covered by imports; 2023 (left), index (2010 = 100) (right)



Source: Eurostat, Simplified energy balances [Label: NRG_BAL_S].

74 **Circular economy and material consumption:** Strengthening the circular economy is also part of the European Commission's Deal for a Clean Industry, which provides for the adoption of legislation on the circular economy in 2026. This legislation will aim to accelerate the transition to a circular economy and make effective use of rare raw materials. The federal government's program, on the other hand, provides for the further development of Austria's circular economy strategy. In its current version, it provides for a reduction in domestic material consumption (DMC) to 14 tons per capita per year between 2022 and 2030, a 50% increase in resource productivity and an increase in the circularity rate to 18%.

75 At 15.7 tons per capita, domestic material consumption in 2024 was above the EU27 average (13.4). Resource productivity, which measures GDP in relation to material input, improved by 3.2% in 2024

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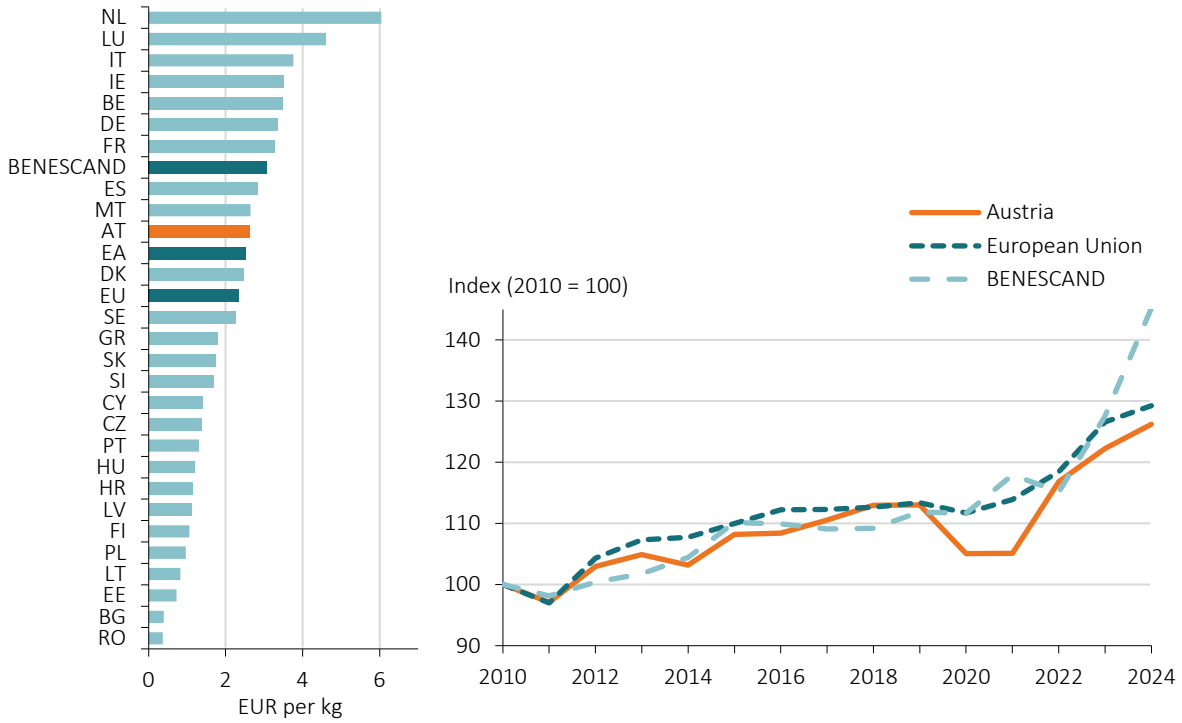
compared to the previous year. Austria ranks eleventh in the EU for this indicator. Resource productivity has improved steadily since 2021 (▶Figure 4.3), but an annual improvement of over 4% per year would be required to achieve the corresponding target in the circular economy strategy. In view of past rates of change, the target therefore seems difficult to achieve. The proportion of recycled materials in total material use (circularity rate) was 14.3% in 2023. As with all other indicators in the area of circular economy and material consumption, an improvement was also observed here compared to the previous year's figures, but there is still a large gap to the target value of 18% for 2030. However, this should be within reach if the circularity rate improves by around 3-3.5% annually, which would correspond to the long-term observable improvement rate in this area. The material footprint represents the sum of all resources used domestically, including the material inputs of imports and exports in the respective country of manufacture. The target of the circular economy strategy is 7 tons per capita per year by 2050. The value measured for 2024, on the other hand, was 19.6 tons per capita (EU: 14,1). Although the material footprint has improved by 5.1% since 2010, achieving this target appears to be a major challenge that will require additional efforts, even with a time horizon up to 2050.

Figure 4.3: **Development of resource productivity**

Euro (chained volumes, base year 2015) per kilogram; 2024 (left), index (2010 = 100) (right)



Source: Eurostat [Label: env_ac_rp].

76 **Ecosystems and biodiversity:** The condition of ecosystems and biodiversity are valuable resources for the economy and also influence the well-being of the people living in Austria. Austria has the highest proportion of organically farmed agricultural land in the EU, but there are still high environmental risks due to soil erosion, land sealing and declining biodiversity. Soil quality plays a key role in combating climate change and curbing soil erosion. In the past, however, Austria was one of the EU countries with the highest proportion of land at risk from water erosion. Although current data from Eurostat on the extent of this problem is not available, it can be assumed that the increase in extreme weather conditions (see Climate Change Center Austria, 2025) will exacerbate this development. This is a factor that will continue to challenge environmental and agricultural policy. Increasing land sealing also poses considerable environmental risks: It prevents rainwater from seeping away, increases the risk of flooding

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and impairs soil fertility. According to the Federal Environment Agency and the Austrian Spatial Planning Conference 2022 , sealed surfaces in Austria amount to around 330 m^2 per inhabitant. Although EU-wide comparisons are currently not very meaningful due to outdated data, Austria is likely to remain at the back of the pack within the Union. The European Commission is pursuing the goal of net-zero land consumptionby 2050, which is to be achieved primarily through the development and use of brownfield sites. As responsibility for land use planning lies with the federal states, they are particularly called upon to minimize the negative consequences of land sealing through sustainable spatial planning and to actively contribute to achieving the net zero target.

77 **Environmental instruments:** The ecological transformation offers considerable opportunities for the environmental economy. Inventive activity in the environmental sector is among the best in the EU. In the period 2018-2020[28] , around 14.6% of all patent applications at the European Patent Office were for inventions in environmental technologies. Around 230,000 people were employed in the environmental economy in Austria, generating gross value added of almost EUR 22.9 billion and exporting goods worth EUR 19.9 billion. This means that the environmental economy plays an important role in Austria, which is becoming increasingly important in the course of the ecological transformation and can also open up new market opportunities through inventive activity.

78 Although the variety of measures to combat the inflation caused by the energy crisis (see Prammer and Reiss, 2022) makes a comparison difficult, the corresponding indicator suggests a low level of environmental levies in an EU comparison. Only 4.6% of total revenue from taxes and social security contributions came from environmental levies in 2023. Despite an increase of 6.2% compared to 2022, Austria was in the bottom third of the EU in this respect. However, revenue will increase with the introduction of national emissions certificate trading. Conversely, climate-counterproductive subsidies, such as the diesel or company car privilege, continue to play a significant role. In recent years, no measures have been taken to reform subsidies for fossil fuels or climate-damaging activities.

79 **Conclusion:** The latest developments in greenhouse gas emissions and energy intensity show positive trends, but the transformation of emission-intensive sectors while maintaining their long-term competitiveness remains a key challenge. The reduction targets for greenhouse gas emissions - particularly with regard to the EU's stricter climate targets - can only be achieved with greater efforts. Significant improvements were achieved in terms of dependence on energy imports, the use of renewable energy sources and the prices of energy imports. Despite improvements in all indicators, Austria still has high domestic material consumption and is in the middle of the EU in terms of resource productivity. The potential of the circular economy has not yet been fully exploited. At the same time, it is necessary to contain environmental risks arising from soil erosion and land sealing. In order to ensure Austria's appropriate contribution to overcoming the climate crisis, further-reaching measures are required - especially those that maintain the competitiveness of the economy and enable a just transition for all social groups.

[28] Patent data has a high delay.

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Literature

Adema W., Whiteford P. (2021). Public and Private Social Welfare. In: Béland D., Morgan K.J., Obinger H., Pierson C. (eds.): The Oxford Handbook of the Welfare State (2nd edition). Oxford University Press, Oxford, 153-172.

Badelt C., Heitzmann K. (2023). Armutsmessung in Zeiten von Vielfachkrisen: Eignen sich die klassischen Armutsmaße zur Erfassung und Adressierung der Armutsbetroffenen? Economy and Society 49(3), 17-48.

Baumgartner J., Kaniovski S., Pitlik H., Sommer M. (2024). Competitive disadvantages are slowing down the growth of the Austrian economy: Medium-term forecast 2025 to 2029. WIFO Monthly Reports, 97(10), 551-570.

Baumgartner J., Kaniovski S. (2025). Trade conflicts, austerity pressure and structural problems are hampering economic growth in Austria: Update of the medium-term forecast 2025 to 2029. WIFO Monthly Reports, 98(4), 179-190.

Bilbao-Osorio B., Blanke J., Campanella E., Crotti R., Drzeniek-Hanouz M., Serin C. (2013). Assessing the sustainable competitiveness of nations. Chapter 1.2 in: The Global Competitiveness Report 2013-2014. World Economic Forum, Davos.

Bittschi B., Meyer B. (2024). Significant increase in relative unit labor costs in 2023. WIFO Monthly Reports, 97(10), 571-585.

Bock-Schappelwein, J., Eppel R. (2025). Persistent economic weakness weighs on the labor market. WIFO Monthly Reports, 98(5), 257-268.

Bonin H, Ertl M., Fortin I., Grozea-Helmenstein D., Hlouskova J., Hofer H., Koch S.P., Kunst R. M., Reiter M., Schröter F., Weyerstraß K. (2025). Autumn forecast for the Austrian economy 2025-2026: Recession overcome, but inflation remains high. IHS Economic Forecast, 139.

Office of the Fiscal Council (2023). Temporary real income losses of Austrian households due to the rise in inflation significantly mitigated by measures. Fiscal Council - Brief analyses and information.

Climate Change Center Austria (2025). Climate Status Report 2024. Vienna

Eibinger T., Manner H., Steininger K.W (2025). The development of Austrian greenhouse gas emissions up to 2024. Memo of the Wegener Center for Climate and Global Change, University of Graz.

E-Control (2024). EAG-Monitoringbericht 2024. Vienna

Enichlmair C., Dorr A., Pröll S. (2024). Bureaucracy burden on the commercial economy in Lower Austria. Study conducted by KMU Forschung Austria on behalf of the Lower Austrian Chamber of Commerce.

European Commission (2025). European Innovation Scoreboard 2025.

Fenz G., Graf B., Prammer D., Reiss L., Stiglbauer A., Vondra K. (2025). Economic forecast for Austria. June 2025. Tentative upturn after prolonged recession - pressure to reform increases. OeNB Reports, 2025/11.

Fenz G., Moser M., Prammer D., Schneider M., Sellner R., Stiglbauer A. (2025). Subdued growth with stubborn inflation. OeNB interim forecast September 2025. OeNB Reports, 2025/15.

Fiscal Council (2024). Report on public finances 2023-2028, Vienna.

Fiscal Council (2025a). Report on fiscal sustainability 2025. Vienna.

Fiscal Council (2025b). Bericht über die Einhaltung der Fiskalregeln 2024–2029. Vienna.

Fleurbaey M. (2009). Beyond GDP: The Quest for a Measure of Social Welfare. Journal of Economic Literature 47(4), 1029-1075.

Friesenbichler K., Hölzl W. (2025). Investment momentum remains subdued in 2025: Results of the WIFO investment survey from spring 2025. WIFO Monthly Reports, 98(7), 365-372.

Friesenbichler K., Kügler A., Schmidt-Padickakudy N., Robubi A. (2025). Earnings power of the Austrian manufacturing industry remained in decline in 2024 WIFO Monthly Reports, 98(8), 433-444.

Glocker C., Ederer S. (2025). Austria is slowly returning to growth: Forecast for 2025 and 2026. WIFO Monthly Reports, 98(7), 347-363.

This machine translation was created on November 27, 2025, using DeepL.

Hofmann K., Kügler A., Schmidt-Padickakudy N. (2024). Corporate spending on new products is likely to grow only weakly in 2024 WIFO Monthly Reports 97(3), 151-163.

Hölzl W., Friesenbichler K., Kügler A., Meyer B. (2025). Challenges and determinants of competitiveness in times of global uncertainty. WIFO monthly reports 7/2025, 373-382.

Janger J., Bock-Schappelwein J., Hölzl W., Kügler A., Dachs B., Lamprecht K., Reiter C., Leitner K.-H. (2025). Evaluation of the RTI Strategy 2030 halfway through its term. Austrian Institute of Economic Research (WIFO).

Moser M., Prammer D., Stiglbauer A. (2025, September 5). High inflation: It is not the indexing (alone). OeNB Blog.

OECD (2023). Sozioökonomische Benachteiligung in der Kindheit in Österreich: Wesentliche Herausforderungen im aktuellen Überblick. OECD Publishing, Paris.

OECD (2025), OECD Employment Outlook 2025: Can We Get Through the Demographic Crunch?, OECD Publishing, Paris, https://doi.org/10.1787/194a947b-en.

Peneder M., Bittschi B., Köppl A., Mayerhofer P., Url T., Bärenthaler-Sieber S., Böheim M. (2023). Competitiveness and sustainable development of the Austrian economy. WIFO, Vienna.

Pilat D. (2023). The Rise of Pro-Productivity Institutions: A Review of Analysis and Policy Recommendations. Productivity Insight Paper 015. The Productivity Institute, Manchester.

Prammer D., Reiss L. (2022), Fighting (the effects of) inflation: government measures in Austria and the EU. Monetary Policy & the Economy Q4/22-Q1/23, pp. 95-106.

Produktivitätsrat (2023). Produktivitätsbericht 2023: Austria's sustainable competitiveness. Vienna.

Produktivitätsrat (2024). Produktivitätsbericht 2024: Strategies for sustainable growth, competitiveness and resilience in times of transformation and recession. Vienna.

Court of Auditors (2025). Areas for electricity from renewable energy sources. Vienna

Reiss L., Bernhofer D. (2022). On the international (non-)comparability of tax ratios. Tax and economic register 31/2022, 1220-1225.

Schneider M., Stiglbauer A. (2022). Inflation and wage negotiations. Austrian National Bank, retrieved on 25.08.2025.

Sen A. (1985). The Standard of Living. Cambridge University Press, Cambridge.

Sen A. (1999). Commodities and Capabilities. Cambridge University Press, Cambridge.

Schiman-Vukan S., Ederer S. (2025). Austria is dragging itself out of the recession: Forecast for 2025 and 2026. WIFO Economic Forecast 3/2025.

Statistics Austria (2015). Standard-Dokumentation zur Kindertagesheimstatistik.

Statistics Austria (2025). Statistics on elementary education 2024/25. Monitoring report. Vienna.

Stiglitz J., Sen A., Fitoussi, J.-P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress.

Federal Environment Agency (2025). Hintergrundinformation: Land Use, Land-Use Change and Forest (LULUCF) sector, Greenhouse Gas Inventory 2025. Vienna

Vladimirov M., Gerganov A., Petrova V., Koeppen M. (2023). Developing alternative visions for assessing progress to sustainable development 'Beyond GDP': constructing new measurement indicator sets. European Commission, Publications Office of the European Union, Luxembourg.

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Part 2:
In-depth analyses

Chapter 5: Development of labor productivity in Austria
Chapter 6: International competition, protectionist measures and their impact on Austrian firms
Chapter 7: Energy costs as a driver of structural change in Austria
Chapter 8: Structural change of firms and of the workforce

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5. Development of labor productivity in Austria

The most important facts at a glance

- Austria had slightly lower annual average labor productivity growth of 0.7% in the years 2012-2024 than the EU27 with 0.8%. In the last two years, 2023-2024, labor productivity in Austria fell by an average of 1.1% per year. On average in the EU27, however, it has risen slightly.
- The largest sectoral contribution to labor productivity growth in 1995-2024 was made by the manufacturing sector (NACE C). In the EU27, the largest contribution to growth came from trade, transport, accommodation and food service activities (NACE G-I) and professional, scientific, technical and other business service activities (NACE M-N).
- The decline in labor productivity 2023-2024 in Austria was driven most strongly by the manufacturing sector. In the EU27, manufacturing also contributed the most to the reduction in growth, albeit to a lesser extent. The next largest declines in labor productivity in Austria in 2023-2024 were recorded in the construction sector (NACE F), and in the service sector in the trade, transport, accommodation and food services and business services industry groups. In the EU27, there were smaller declines in these areas and even a positive contribution to growth in economic services. The information and communication sector (NACE J) made a stronger positive contribution to labor productivity growth in Austria in 2023-2024 compared to the EU27.
- The sharp decline in labor productivity in the manufacturing sector in Austria and the European peer groups indicates that a major structural change is still to come within this sector. The European comparison also shows that Austria has potential through increased structural change towards services - especially IT and business services. There is also potential for development within economic services compared to the EU27 average. The reallocation of capital and labor as well as investments in intangible capital, particularly in the area of ICT, are of particular importance.

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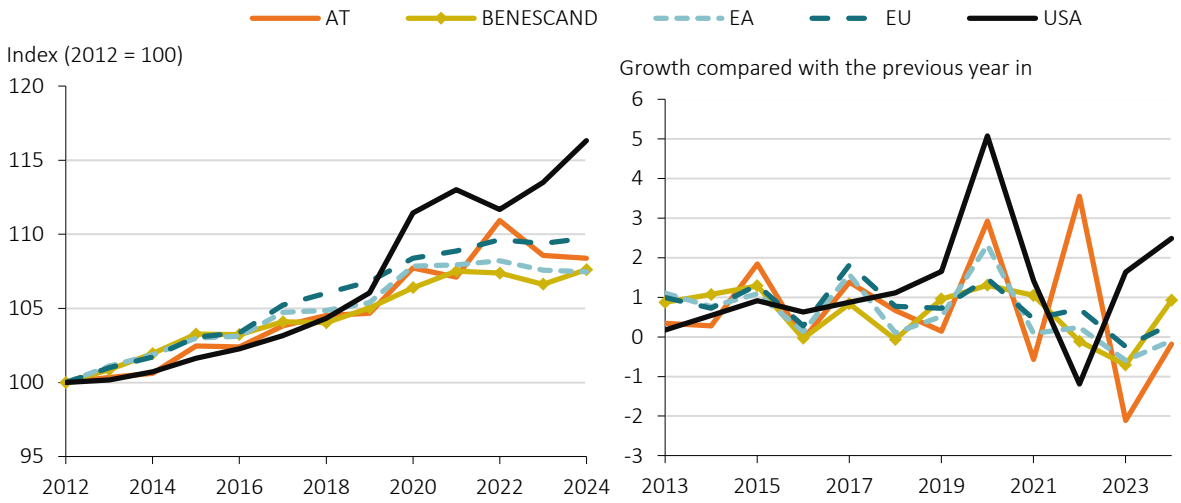
5.1 Introduction

80 Austria's **labor productivity** fell more sharply in the years 2023-2024 (▶item 23) than in the peer country groups of the EU27, euro area and BENESCAND countries. In 2022, the level of labor productivity was 51,100 euros per 1,000 working hours (base year 2020, adjusted for purchasing power), putting it in 8th place within the EU27. This rank remained unchanged in 2024. However, the gap to the average productivity of the EU27 narrowed from 123.1% to 121.1%.

81 This chapter first compares the longer-term development in Austria with the international development. The contributions of the sectors to labor productivity over time are then examined. In Austria, the manufacturing sector contributed the most, both in terms of the increase before 2023 and the decrease in 2023-2024. In the peer country groups, the contribution of high-growth service sectors was more important for overall productivity growth in the longer term and the decline in 2023-2024 was smaller. The service sector **information and communication** also made a significant contribution to growth in labor productivity in Austria in 2023-2024.

82 In the period 2012-2024, **labor productivity** (gross value added per hour worked) grew by 0.7% p.a., which was below the EU27 average of 0.8% (▶Figure 5.1). The BENESCAND and eurozone countries (EA20) recorded average annual growth of 0.6%. Looking only at the period 2012-2022, growth in Austria was higher than in the peer country groups at an average of 1.0% p.a. The USA recorded average growth of 1.1% p. a. in 2012-2024. In 2023-2024, labor productivity declined in Austria and on average in the eurozone countries. In Austria, this decline averaged -1.1% p.a., in the euro area -0.3% p.a. In contrast, it rose conspicuously in the USA during this period, averaging 2.1% p.a. (▶Figure 5.1, right panel).

Figure 5.1: **Development of labor productivity per hour**



Source: Eurostat. USA: OECD Productivity Database.
Remark: Gross value added in chain linked volumes. Work measured in hours worked. All sectors.

5.2 Sector contributions to productivity growth 1995-2024

83 The majority of the change in labor productivity 1995-2024 was caused by **growth within the sectors** (0.92 percentage points of 1.08% p.a.) (▶Table 5.1). This does not initially take into account whether a sector is growing or shrinking and therefore contributes differently to overall productivity. Changes in the sectoral structure contributed significantly less: 0.20 percentage points resulted from the fact that above-average productive sectors gained employment shares (measured in working hours) ("**static reallocation**" of employment). The reduction of sectors with growing labor productivity or the expansion of sectors with declining labor productivity reduced labor productivity by 0.04 percentage points ("**dynamic reallocation**" of employment). In the peer country groups, too, most of the growth came from

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productivity growth within the sectors. The highest contribution from the reallocation of employment was seen in the EU27 at 0.28 percentage points with annual productivity growth averaging 1.14%.

Table 5.1: **Growth of labor productivity within and shift between sectors, 1995-2024**

	Inside	Static reallocation	Dynamic reallocation	Total
	Percentage points			In %
Austria	0,92	0,20	-0,04	1,08
EU27	0,87	0,28	-0,01	1,14
EA20	0,72	0,16	-0,01	0,87
BENESCAND	0,99	-0,04	-0,01	0,93

Source: Eurostat.
Note: Calculation of sector contributions according to the methodology used in de Vries et al. (2021) ("shift-share aggregation method"). The percentage points in the first three columns add up to the growth in labor productivity in % in the last column. Gross value added in chain linked volumes. Work measured in hours worked.

84 In the **comparison of sectors** , the agricultural sector[29] (NACE A) illustrates that the high growth in labor productivity of 3.7% (►Figure 5.2, left panel) had only a minor impact on the average growth in total labor productivity due to its low share in total economic working hours: only 0.008 percentage points from 1.08% (1995-2024) (►Figure 5.2, right panel). The largest contribution to growth in labor productivity was made by the manufacturing sub-sector (NACE C) - despite the decline at the end of the period under review - with 0.30 percentage points of 1.08%. Productivity growth within the manufacturing of goods sector amounted to 2.4% and was between the peer groups EU27 (2.4%), EA20 (2.2%) and BENESCAND (2.9%).

85 In the peer country groups, three service sectors made the highest contributions to overall labor productivity growth (►Figure 5.2): Trade, transportation and accommodation and food service activities (NACE G-I),[30] information and communication (NACE J) and professional, scientific and other business activities (NACE M-N). In the two areas of trade, transportation and accommodation and food service activities and information and communication, the contribution in Austria was below the comparison groups, while in the case of professional, scientific, professional and other economic services it was in between.

86 The second-highest growth in labor productivity within a sector in Austria was in the financial services sector (NACE K) at around 3.7%. However, the contribution to overall growth (0.10 percentage points), i.e. taking into account the size of the sector relative to total employment, was the smallest of all market services (NACE Sections G-N). In the construction sector (NACE F), labor productivity fell by -1.4% in Austria, by -0.60% in the EU27 and by -0.65% in the EA20. In BENESCAND, it rose by 0.22%. The construction sector's contribution to growth in labor productivity was also negative at -0.10 percentage points per year.

87 A **decline in labor productivity in the construction sector** is being observed in many countries, but there is as yet no conclusive explanation for this. An analysis of **multifactor productivity** (MFP), as carried out in Peneder and Unterlass (2024) for the period 2013-2019, also takes capital, materials and energy into account in addition to labor. It shows how much of the growth in labor productivity is due to a more efficient use of all inputs. While labor productivity fell by -2.15% annually, the decline in MFP was only -0.22%. The gap between the construction sector and the manufacturing sector is also reduced when MFP is taken into account. In the manufacturing sector, the growth in labor productivity is 1.42% per year, while the growth in MFP is 0.72% per year. The gap in labor productivity between the construction

[29] For an overview of the ÖNACE classification of economic activities, see ►Appendix.

[30] In the past, accommodation and food services made one of the strongest negative contributions to productivity growth, while retail made one of the strongest positive contributions (Productivity Report 2024, p. 60). These two sections were aggregated here, with the more positive contribution from retail outweighing the more negative contribution from accommodation and gastronomy. At the time of preparing this report, the data for 2024 was not available at a more detailed level than shown.

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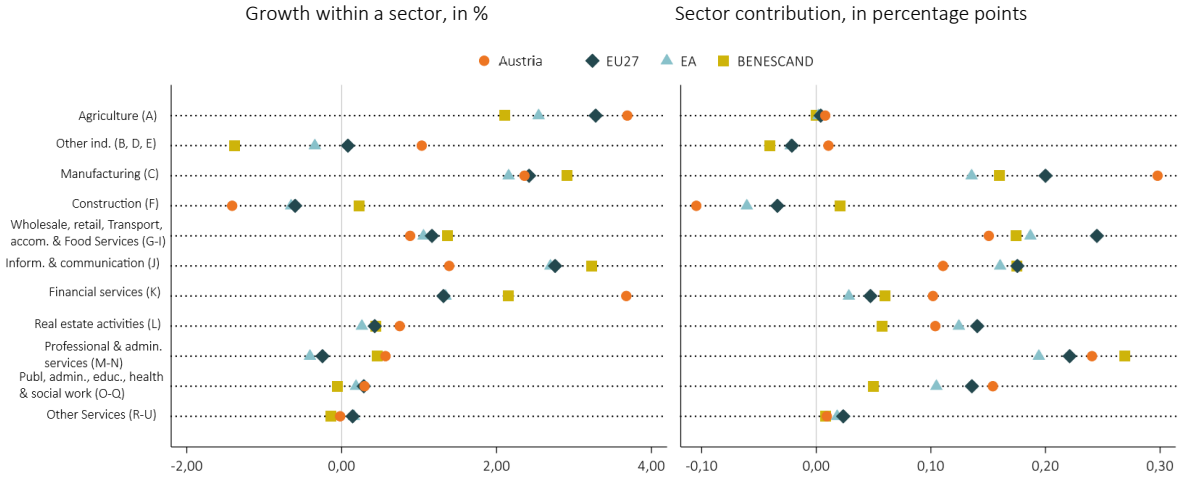
sector and manufacturing is therefore 3.67 percentage points, but only 0.95 percentage points for MFP (see Figure 2 in Peneder and Unterlass, 2024).

Figure 5.2: **Growth of labor productivity per hour by sector, average 1995-2024**



Source: Eurostat.
Note: Calculation of sector contributions according to the methodology used in de Vries et al. (2021) ("shift-share aggregation method"). Gross value added in chain linked volumes. Work measured in hours worked. Classification of sectors according to ÖNACE 2008 (see ▶Appendix).

5.3 Decline 2023-2024

88 In the years **2023-2024**, the **decline in total labor productivity** in Austria and the EU27 was most strongly influenced by the negative contribution of the manufacturing sector (▶Figure 5.3, right panel). The recession and the associated labor hoarding by companies are likely to have made a relevant contribution to this development. Trade, transport, accommodation and gastronomy were responsible for the second largest negative contribution. The service sector professional, scientific, professional and other economic services, which made the largest contribution to services in the period 1995-2024 (▶Figure 5.3, right-hand panel), had a *negative* contribution in Austria in 2023-2024. In the information and communication sector, labor productivity fell (-0.09%), but the positive effect of the increase in the share of this sector due to its higher productivity level (static reallocation) outweighed the positive effect on the contribution to overall growth. The administration, education and health services sector (NACE O-Q) stands out in 2023-2024 due to its high contribution to productivity growth, but is more difficult to interpret due to output measurement problems.

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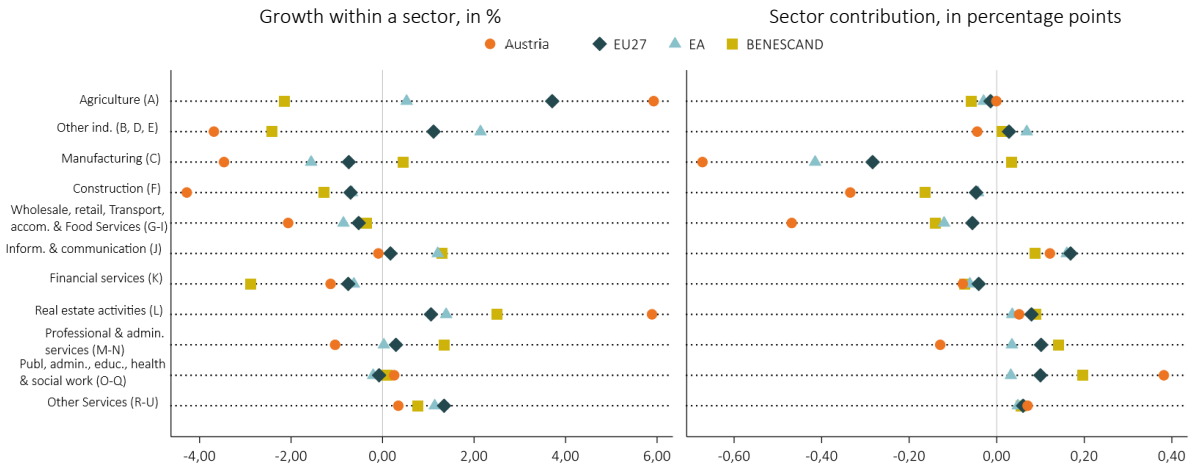
Figure 5.3: **Growth in labor productivity per hour in the sectors, average 2023-2024**



Source: Eurostat.
Remark: Calculation of sector contributions according to the methodology used in de Vries et al. (2021) ("shift-share aggregation method"). Gross value added in chain linked volumes. Work measured in hours worked.

89 In the peer country groups, the three most important **service sectors** already contributed at least as much or more to the growth in overall economic labor productivity as the manufacturing sector in the period 1995-2022. In Austria, on the other hand, goods manufacturing was the key driver until 2022 and its contribution to labor productivity growth was higher than in the peer country groups (►Figure 5.4). In 2012-2022, Austria had a lower contribution to growth in all three of the service sectors. The decline in labor productivity in 2023-2024 is mainly due to the manufacturing sector. As in previous periods, the **information and communication** sector continued to make a robustly positive contribution to productivity growth both in Austria and in the comparison groups. In the other two service sectors - trade, transport, accommodation and food services, and economic services - the contribution was already lower in 2012-2022 and fell more sharply in 2023-2024.

90 An increasing **importance of the service sectors** for overall productivity growth can also be observed when comparing the EU with the USA. Average productivity growth in the US has been higher than in the EU in recent decades (Nikolov et al., 2024). Between 2000 and 2019, the largest difference in growth contributions was in **IT services** (NACE J62-J63) and **professional services** (NACE M). In the manufacturing of goods, the US stood out in the manufacture of computers and electronics (NACE C26-C27) with higher productivity growth than the EU, but the overall contribution of the sector is of minor importance.[31] However, it is possible that productivity growth could be boosted by an interaction between the computer/electronics sector and IT services (Goldin et al., 2024; Nikolov et al., 2024). While the EU lagged behind the US in the two service sectors with high productivity growth, in Austria the growth deficit in labor productivity in key service sectors was in some cases even greater than in the EU, particularly in the period 2012-2024 (►Figure 5.4).

[31] There were also marked differences in productivity growth in various production and service sectors in the period 1980-2005, with similar patterns as described above. In this earlier period, the contribution of ICT production to overall labor productivity growth in the US was more significant. In the EU, there were higher growth contributions from the non-ICT industry and the production of non-industrial goods. The contributions to growth from trade, financial and economic services were generally lower and even lower in the EU than in the USA (Jorgenson and Timmer, 2011).

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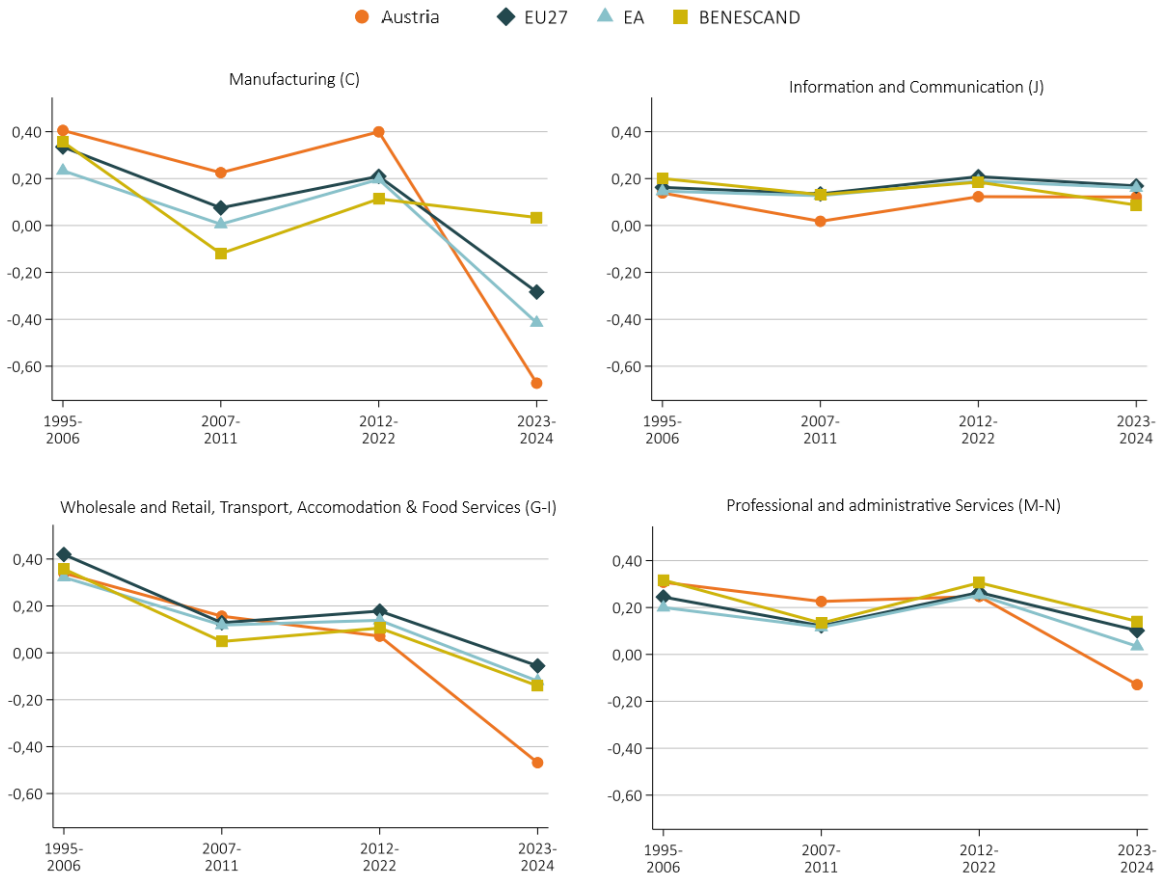
Figure 5.4: **Growth contributions from manufacturing of goods and services**

Sector contributions in percentage points



Source: Eurostat.
Remark: Calculation of sector contributions according to the methodology used in de Vries et al. (2021) ("shift-share aggregation method"). Gross value added in chain linked volumes. Work measured in hours worked.

91 Higher contributions of the service sectors to productivity growth in the US go hand in hand with higher **growth rates of intangible capital** (Nikolov et al., 2024). A significant contribution to the slowdown in productivity is attributed to the decline in the growth of intangible capital (Goldin et al., 2024). Intangible capital includes patents, trademark rights, software, databases, marketing activities to build reputation, employee training financed by the employer, as well as the organizational and operational structure. Austria is experiencing a greater slowdown in the growth of intangible capital than other countries (Produktivitätsrat, 2024). The lower growth of intangible capital in the EU and in Austria may be related to the lower **reallocation to service sectors** with high productivity growth.

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92 The **transformation from manufacturing to services** could be subject to greater difficulties in the EU than in the US.[32] The removal of barriers to the reallocation of labor and capital could then be beneficial (Nikolov et al., 2024).[33] In view of the contributions to growth described above, Austria could have even greater difficulties than other EU countries in making the transition from manufacturing goods to service sectors with high contributions to productivity growth (see ►chapter 8).

5.4 Outlook

93 The decline in labor productivity in 2023 and 2024 is likely to have been driven to a relevant extent by the **recession** and **labor hoarding** by companies. The comparison of unemployment figures and hours worked per person employed since 2021 suggests this conclusion. In times of labor shortages, companies affected by the recession have largely tried to keep their employees on. The emerging improvement in the economy could therefore shift productivity growth back into positive territory.

94 The long-term development pattern of labor productivity, which was analyzed in the Productivity Report 2024 and shows a long-term downward trend, remains largely unchanged. The strengthening of innovation performance and digitalization and automation, the development of the labor supply and the targeted strengthening of knowledge-intensive service sectors with high value-added potential are central starting points for a long-term structural policy to strengthen productivity development. Overcoming the **weakness in investment** that has been observed for several years could contribute to improving productivity dynamics.

Literature

Andrews D., Criscuolo C., Gal P. N. (2015). Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries, OECD Productivity Working Papers, 2015-02, OECD Publishing, Paris.

de Vries K., Erumban A., van Ark B. (2021). Productivity and the pandemic: short-term disruptions and long-term implications: The impact of the COVID-19 pandemic on productivity dynamics by industry, International Economics and Economic Policy, 18(3), 541-570.

Goldin I., Koutroumpis P., Lafond F., Winkler J. (2024). Why is productivity slowing down? Journal of Economic Literature, 62(1), 196-268.

Jorgenson D. W., Timmer M. P. (2011). Structural change in advanced nations: a new set of stylized facts. Scandinavian Journal of Economics, 113(1), 1-29.

Nikolov P., Simons W., Turrini A., Voigt P. (2024). Mid-Tech Europe? A Sectoral Account on Total Factor Productivity Growth from the Latest Vintage of the EU-KLEMs Database. European Economy - Discussion Papers 208, Directorate General Economic and Financial Affairs (DG ECFIN), European Commission. Publications Office of the European Union.

Peneder M., Unterlass F. (2024). The productivity development of Austrian companies in the years 2013 to 2020, Monatsberichte 1/2024, 43-56.

Produktivitätsrat (2024). Produktivitätsbericht 2024: Strategien für nachhaltiges Wachstum, Wettbewerbsfähigkeit und Resilienz in Zeiten von Transformation und Rezession. Vienna.

[32] One reason for a lower transition to services could be the frequent role of Austrian companies in the supplier industry. End products may require a higher level of industry-related services, whereas this is the case to a lesser extent for intermediate products.

[33] Evidence on productivity dispersion at company level also points to reallocation difficulties within the sectors. For the period 2001-2009, productivity growth in service companies is comparable or higher than in the manufacturing sector, if one considers the 5-10% of the most productive companies (Andrews et al., 2015, for OECD countries).

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6. International competition, protectionist measures and their impact on Austrian firms

The most important facts at a glance

- As a small economy heavily involved in global trade, Austria is particularly exposed to developments abroad. Current developments that pose a particular challenge for Austrian companies include the increase in Chinese competition in technology-intensive product markets and the introduction of import duties by the United States.
- The reaction of Austrian exporters to the US import duties introduced in 2018 differed significantly from that of other exporters. While the quantity of exports of affected products from Austrian companies to the United States did not decrease, the value (= quantity x price) of exports fell. Austrian exporters appear to have prevented sharp falls in US demand by cutting prices. However, Austrian companies affected by the tariffs tended to refrain from major investments.
- The US import tariffs of 2025 differ significantly from the trade barriers introduced in 2018. With the exception of a few goods, all Austrian exports will be affected by US import duties in 2025. The goods already affected in 2018, aluminum (10% → 50%) and iron and steel (25% → 50%), will be subject to higher tariffs in 2025. In addition, the level of economic policy uncertainty is much more pronounced than in 2018, which in turn has a negative impact on corporate investment.
- The USA is one of the most important export markets for Austrian companies. Final US demand accounted for 3.3% of Austria's total value added in 2019. This means that the Austrian location is heavily exposed to US import duties in 2025. The industries most dependent on US demand and therefore most affected by import duties include the manufacture of motor vehicles (parts), mechanical engineering and the pharmaceutical industry.
- The US government's trade policy since 2018 is in part directly linked to the massive increase in Chinese competition and its effects on US industry. No negative effects of increasing Chinese competition on performance indicators such as employment or labor productivity were observed for Austrian companies in the period 2013-2022. However, Austrian companies are taking measures to escape potential competition. These include changes in company specialization and a diversification of sales markets. However, companies particularly affected by increasing Chinese competition reduced their research and development expenditure.
- The reduction of investment expenditure or research and development expenditure in Austrian companies that were affected by the US tariffs or particularly strong increases in Chinese competition could impair the international competitiveness of these companies in the medium and long term. In addition, current survey results indicate that Austrian companies are coming under increasing pressure from Chinese competition: Companies more affected by Chinese competition are planning to relocate divisions abroad and reduce employment at Austrian locations more frequently in the period 2025-2030.

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6.1 Introduction

95 The Draghi Report (European Commission, 2024) identifies the global **trade interdependencies of the European economy as a source of significant challenges** for the development of EU competitiveness. As a small, open economy, Austria is particularly exposed to developments abroad. In 2019, the value added exported abroad and thus directly dependent on foreign demand corresponded to 36.2% of total Austrian value added (OECD Trade in Value Added (TiVa) indicators).

96 The challenges identified by the Draghi report include, in particular, geopolitical tensions and, against this backdrop, problematic dependencies in key areas of technology and with regard to the procurement of energy and raw materials. Europe's strategic dependencies are particularly pronounced vis-à-vis China - for example with regard to rare earths and microchips (European Court of Auditors, 2025).

97 At the same time, **competition by Chinese companies** has become increasingly important for European companies since China's admission to the World Trade Organization (WTO). After joining the WTO in 2001, China initially specialized in labor-intensive but low-tech goods. However, the State Council of the People's Republic of China's "Draft National Medium and Long-Term Plan for the Development of Science and Technology (2006-2020)" marked the beginning of a change in industrial policy objectives. For the first time, the importance of domestic innovation and a technological upgrading of the industry was emphasized. This strategic realignment is also reflected in the current "Made in China 2025" strategy. It also explicitly identifies key industries in which China is striving for global technology leadership. These industries largely correspond to industrial segments in which European industry has specialized, including computer-controlled machine tools, energy-saving vehicles and electrical equipment.

98 The increasing focus of China's industrial policy agenda on technology-intensive product markets was accompanied and supported by intensive Chinese industrial policy. The instruments used include generous state subsidies, the strategic use of state-owned companies and the appropriation of intellectual property. Outside China, this industrial policy approach is usually perceived as distorting competition. The resulting undermined **level playing field**[34] is increasingly seen as a threat to Europe as a business location in light of the convergence of China's industrial specialization with that of European industry (De Soyres et al., 2025; Tordoir and Setser, 2025).

99 The global shift in trade policy objectives that has been increasingly evident since 2018 represents another significant challenge for Austria as a business location. The change is also partly related to China's industrial policy. The investigation by the Office of the US Trade Representative into "China's actions, policies and practices related to technology transfer, intellectual property and innovation" led to the introduction of broad-based US import tariffs on Chinese imports by US President Trump in 2017.

100 However, the import tariffs introduced by US President Trump in 2018 and 2025 were not limited exclusively to China. They therefore also pursue objectives that go beyond combating distortions of competition. Rather, US tariff policy serves the broader purpose of slowing down or reversing the progress of structural change in the United States, which is accompanied by a decline in the importance of industry ("deindustrialization"). For foreign exporters, US import tariffs mean a decline in price competitiveness on the US market and thus potentially reinforce existing **deindustrialization trends** in affected economies. For example, the US import tariffs of 2018 led to a considerable decline in US imports (Amiti et al., 2019; Fajgelbaum et al., 2020) and significant substitution by imports from unaffected export destinations (Alfaro and Chor, 2023; Freund et al., 2024; Fajgelbaum et al., 2024).

101 This report chapter analyzes how key challenges arising from Austria's integration into global trade have influenced the development of Austrian companies in the period 2013-2022. These include increasing protectionist measures by major trading partners, illustrated by the example of the US tariffs in 2018, and increasing Chinese competition. The results of the analyses are supplemented by findings from the

[34] Implementing Regulation (EU) 2024/2754, recital 76.

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WIFO industry survey (►Text Box 6.2) which provides an outlook on potential future effects of these foreign trade-related challenges.

102 ►Section 6.2 of this chapter analyzes the impact of the US import tariffs introduced in 2018 on Austrian companies and discusses possible conclusions regarding the effects of the new US import tariffs of 2025. In ►section 6.3 the influence of Chinese competition on key figures of entrepreneurial activity since 2013 is presented. ►Section 6.4 discusses the empirical results with a view to current economic policy measures and strategies. ►Section 6.5 derives potential areas of economic policy action from this.

Text Box 6.1: **Data basis**

The analyses in this chapter are based on data on Austrian companies from various sources, which are compiled in the Austrian Micro Data Center (AMDC)[35] : Indicators of entrepreneurial activity were taken from the performance and structural statistics, data on research and development activities were taken from the R&D survey. Data on the export activities of Austrian companies within the European Union are contained in the Intrastat. In addition, export data from Extrastat was used, which records trade flows between Austrian companies and non-EU countries. In addition, the OFATS (foreign affiliates statistics on foreign subsidiaries of Austrian companies) was used to analyze the development of foreign affiliates under domestic control as indicators for relocation activities of Austrian companies.

A time series of bilateral tariff rates at product level is required to analyze the effects of US import tariffs in 2018. Fajgelbaum et al. (2020) provide such a database of US import duties covering the period up to mid-2019. This time series was completed by the Office of the Austrian Productivity Board based on the Harmonized Tariff Schedules of the United States International Trade Commission for the period 2013-2022. The resulting database contains the relevant ad-valorem duty rates for Harmonized System (HS) 10-digit products. However, the trade data of Austrian companies in Intrastat and Extrastat are recorded according to the Combined Nomenclature (CN). In order to link the tariff rates with the export portfolios of Austrian companies, the trade data in the AMDC had to be aggregated from eight-digit CN products to six-digit HS product categories. This was done using correspondence tables provided by Statistics Austria. In addition, the duty rates had to be aggregated to HS 6 digits for this purpose. The share of the respective HS 10-digit product in Austria's total exports of the corresponding HS 6-digit product to the USA in 2017 was used as the product-specific weight.

The harmonized BACI foreign trade data from CEPII was used to calculate the indicators for the intensity of Chinese competition (Gaulier and Zignago, 2010). The indicators of Chinese competitors were calculated on the basis of six-digit HS product line codes. The aim of the analysis is to examine the effects of increasing Chinese competition at company level. This requires company-specific measures of Chinese competitive intensity. The indicators determined at product level on the basis of the BACI trade data must therefore be assigned to individual companies. For this purpose, product-specific weights were calculated for each company on the basis of Intra- and Extrastat on the basis of the respective export portfolio (share by value) in a base year. The linking of the export portfolios with the product-related competition indicators in turn required an aggregation of the trade data in the AMDC from eight-digit CN products to six-digit HS product categories.

[35] The AMDC is a research data infrastructure facility of Statistics Austria that enables research on microdata prepared in accordance with data protection regulations (Fuchs et al., 2023).

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Text Box 6.2: **WIFO Industry Survey 2025**

The WIFO Industry Survey[36] is a survey conducted every three years among the thousand or so largest Austrian industrial companies. In this survey, industrial companies are asked about their competitive strategy and their assessment of the development of the respective market and their position in it. Some questions are dedicated to product strategies and core competencies as well as the companies' global value chains. The survey also contains questions on the assessment of the institutional framework conditions of Austria as an industrial location. The sum of this information allows conclusions to be drawn about planned adjustments to the strategic orientation and business activities of the companies surveyed and about long-term objectives in the context of current economic developments.

Each survey wave contains a special survey section in which selected topics on current issues relevant to economic policy are surveyed. The special question section for the survey wave in the first half of 2025 was developed in cooperation with the office of the Austrian Productivity Board. The current special survey section is dedicated to the planned development of employment at the companies surveyed in Austria, as well as the reasons for planned increases and decreases in employment. In addition, problems and strategies of companies with regard to the procurement of suitable employees are discussed.

The response rate to the industry survey in 2025 (survey period March-April 2025) was around 28% (293 companies). This means that the return comprises around 16.5% of the total turnover of NACE-C in 2022 (performance and structural statistics).[37]

Among other things, the industry survey allows conclusions to be drawn about the impact of Chinese competition on the strategic decisions of Austrian companies and their assessments of their future development. On the one hand, the survey data allow cross-evaluations of the responses with indicators of Chinese competition at the level of NACE economic sectors (▶Figure 6.8). On the other hand, companies are asked in the industry survey about the country of origin of their three most important competitors. This allows the derivation of a subjective, company-specific indicator for the significance of Chinese competition: Around 25% of the companies in the net sample consider at least one Chinese company to be one of their three most important competitors.

In addition, the WIFO industry survey also allows evaluations of companies' exposure to trade policy distortions and rising energy prices. This is made possible by a question that documents the companies' assessment of the relevance of various economic policy risks for their own company.

When interpreting the results of the industry survey, it should be noted that the survey sample (large, goods-producing companies) is not a representative sample of Austrian companies and the survey data only reflects the subjective assessment of the respondents.

6.2 Effects of import duties imposed by major trading partners on Austrian companies

6.2.1 The current wave of protectionist measures

103 The trade conflict between the United States and China began in 2018. At that time, US President Trump imposed far-reaching import duties on Chinese imports on the basis of an investigation into China's industrial policy by the Office of the US Trade Representative. In addition, the US government also imposed import duties on **washing machines** (up to 50%), **solar panels** (initially 30%), **steel** (25%) and **aluminum** (10%) in 2018, which were levied on imports from all exporters with a few exceptions.[38]

[36] See Hölzl et al. (2025).

[37] The turnover of the NACE C companies in the gross sample corresponded to 52.4% of the total turnover of NACE C 2022.

[38] See Bown and Kolb (2025).

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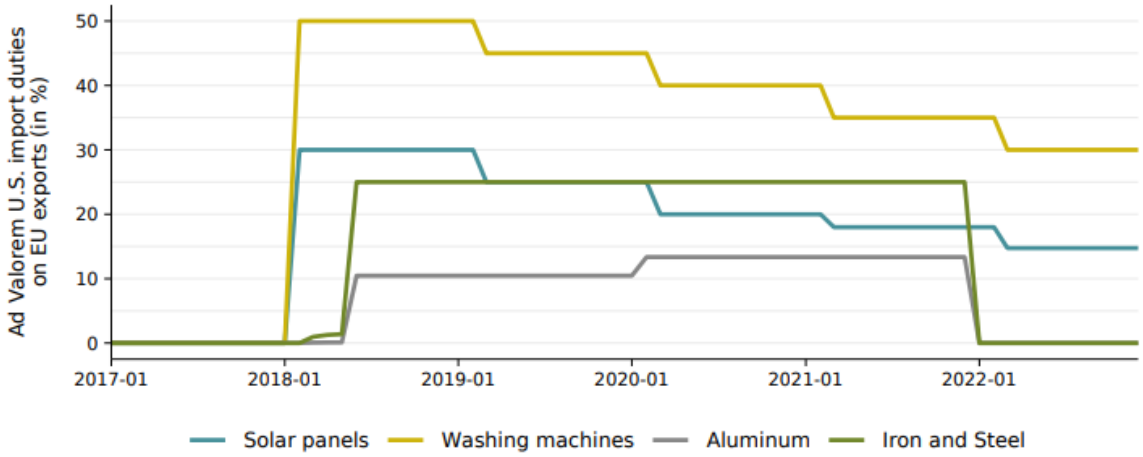
104 These trade policy measures resulted in **countermeasures** by China, Canada, the European Union and other trading partners of the United States. The European Union responded to the US import tariffs in June 2018 with counter-tariffs on steel, aluminum, agricultural products and exports of other food and consumer goods such as whiskey, motorcycles, peanut butter and jeans.[39]

105 In total, the US import duties introduced in 2018 accounted for 5.4% of Austrian exports to the US in 2017 (►Figure 6.1). Apart from minor adjustments, these tariffs will remain in force until the end of 2021. At the end of 2021, the US and the EU reached an agreement to replace the tariffs on EU exports of steel and aluminum with a **tariff rate quota** (TRQ) from the beginning of 2022. According to data from the United States Customs and Border Protection, the quotas defined in this agreement were - with a few exceptions - not binding for Austria during the period of validity. As a result of this agreement, the European Union suspended the retaliatory tariffs introduced in June 2018.

Figure 6.1: **US import duties on EU exports introduced in 2018-2020**



Source: PROD calculations based on data provided by Fajgelbaum, Goldberg, Kennedy and Khandelwal (2020) and data from the US International Trade Commission (USITC).
Note: Development of average US import tariffs on EU exports of those goods that were subject to additional tariffs during US President Trump's first term in office.

106 During his 2024 presidential election campaign, US President Trump repeatedly expressed plans to introduce new protectionist measures. In line with these announcements, the first new tariffs were announced in February 2025. These tariffs were initially directed exclusively against Canada, Mexico and China and were justified with national emergencies due to illegal immigration and drug trafficking from these countries.[40]

107 The first new, universally applicable tariffs (25 percent tariffs on **aluminum and steel imports**) came into force on 12 March 2025. This was followed by import duties on **motor vehicles and motor vehicle components**, which were levied from April 3 and May 3 respectively.[41]

108 On April 2, commonly referred to as Liberation Day, Trump announced a 10% across-the-board tariff on US imports of all origins and significantly higher tariffs on a large number of countries. The intention of these additional country-specific tariffs (referred to as "reciprocal tariffs" by the Trump administration) was to correct the US's bilateral trade deficits. While the general tariff came into force on April 5, the

[39] See Gaál et al. (2023).

[40] This overview of trade policy measures was prepared using the daily timeline of the Peterson Institute for International Economics.

[41] On June 3, 2025, US President Trump signed a proclamation to increase tariffs on aluminum and steel imports to 50%, effective June 4.

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reciprocal tariffs - with the exception of those for China - were suspended for 90 days only a few days after their announcement. The European Union then suspended the countermeasures announced at the beginning of April for 90 days.

109 The minimum tariff for Chinese imports was temporarily increased to up to 145%, which led to the announcement of retaliatory tariffs of 125% on US shipments to China. On May 12, China and the USA finally agreed to reduce these tariffs to 30% for Chinese exports to the USA and 10% for US exports to China for an initial period of 90 days.

110 After US President Trump had threatened to impose significantly higher tariffs on EU imports into the US, the US government and the European Commission agreed on a **framework agreement** on July 27, 2025. This provides for all EU exports to the USA to be subject to a **15% tariff** in future, with a few exceptions (e.g. aircraft and aircraft parts). This regulation also covers EU exports of motor vehicles and motor vehicle parts. For these product groups, the agreement represents a reduction in the duty rate compared to the duty rate of 25% in force since April and May. EU exports of steel and aluminum, on the other hand, are exempt from this agreement and continue to be subject to the tariff rate of 50%[42]that has been in force since June 2025. The agreement does not provide for any counter tariffs by the European Union.

111 As the USA is one of Austria's most important export destinations, a considerable proportion of Austrian value added is affected by US tariffs. In 2019, around 3.3% of total Austrian value added was included in final demand in the USA (OECD TiVa indicators). However, different Austrian economic sectors differ significantly in the share of their domestic value added exposed to US demand (►Figure 6.2).

112 A large proportion of the economic sectors that are heavily exposed to US demand can be attributed to the manufacturing sector (NACE C). However, some service sectors, such as aviation (NACE H51: 21.9% of value added in 2019) and shipping (NACE H50: 9.2%), is largely dependent on US demand. Among the goods-producing industries, US demand is particularly strong for the manufacture of motor vehicles and parts (NACE C29: 15.9%), mechanical engineering (NACE C28: 9.2%) and the pharmaceutical industry (NACE C21: 9.0%) are of great importance.

113 Various prospective estimates therefore assume that the US tariffs of 2025 will have relevant growth-inhibiting effects on the Austrian economy (e.g. Schneider and Sellner, 2025; Naqvi, 2025).

[42] However, the introduction of duty-free import quotas was announced.

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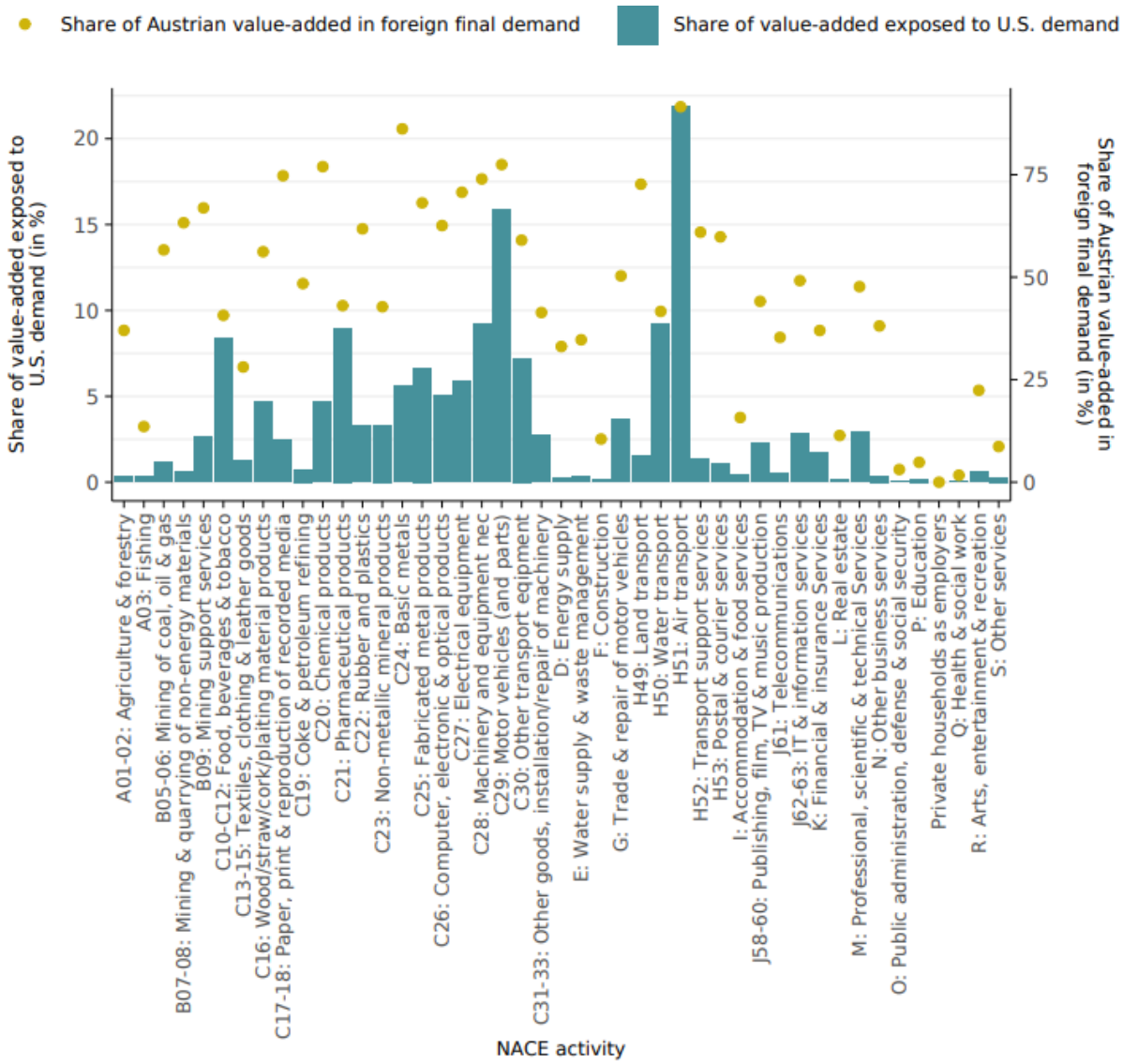
Figure 6.2: **Exposure to US demand by NACE economic sector**



Source: PROD calculations based on the OECD Inter-Country Input-Output Tables (2019).
Note: The share of value added exposed to US demand per NACE industry includes sectoral value added in US final demand as well as Austrian value added in US gross exports , which is ultimately not consumed by US consumers. Both variables were calculated according to Guilhoto et al. (2022). In order to correct for re-imports of US exports to the USA, the Austrian sectoral value added in the inputs of US industries, which is included in the US final demand for non-US products, was also determined.

114 Due to the short period of time between the US import tariffs introduced in 2025 coming into force and the editorial deadline for this report, it is not yet possible to make a well-founded assessment of the effects of these tariff measures on Austrian companies. Accordingly, ►section 6.2.2 presents empirical evidence on the effects of the US import tariffs introduced during US President Trump's first term (Trump I). ►Section 6.2.3 discusses the extent to which these findings on the Trump I tariffs allow conclusions to be drawn about the potential effects of the new US import tariffs in 2025.

6.2.2 Effects of the US import duties introduced in 2018 on Austrian companies[43]

115 Studies on the effects of US trade policy since 2018 unanimously conclude that the trade conflict has led to a significant decline in US imports in the affected product lines and economic sectors (Amiti et al.,

[43] The results presented are based on the background studies by Gruber-Német (2025) and Gruber-Német, Reinstaller, Hölzl (2025). Technical details, if not mentioned in the text, can be found in these works.

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2019; Fajgelbaum et al., 2020). Estimates of the decline in imported volumes per percentage point of additional US import duties range between 1.3% (Amiti et al., 2019) and 1.5% (Fajgelbaum et al., 2020). For the tariffs on aluminum (10%) and iron and steel (25%) introduced in 2018, this would mean import declines of 13-15% and 33-38% respectively.

116 The study by Amiti et. (2019) and Fajgelbaum et al. (2020) refer to all export destinations that were affected by the US import tariffs introduced in 2018. For Austrian companies, the Trump-I tariffs led to **no statistically significant decline in export volumes** of affected compared to non-affected product lines to the United States (►Figure 6.3 or ►Text Box 6.3 for an explanation of the empirical methodology). However, the export volumes of affected product lines to EU trading partners fell by around 10% (left-hand panel of ►Figure 6.3). One possible interpretation of these results is that there was a reduction in exports from other EU countries to the USA that use the Austrian products in question as inputs. The increase in export volumes to destinations outside the EU and the USA allows several possible interpretations. On the one hand, this could be an indication of diversion effects of Austrian exports. On the other hand, this increase could also be due to a diversification of sales markets by the companies concerned.

Text Box 6.3: **Methodology for quantifying the effects of import duties**

The following empirical specification is used to quantify the effects of the US import tariffs introduced in 2018 on exports by Austrian companies:

$$X_{p,\mathrm{i},t} = \beta \mathrm{Tariffs}_{p,t}^{US} + \eta_{i,t} + \gamma_{\mathrm{p}} + \varepsilon_{p,i,t}$$

In this specification, $X_{p,\mathrm{i},t}$ denotes the exports of product p by company i in year t. These estimates at product level allow for fixed effects for each product (γ_{p}) and each company-year combination ($\eta_{i,t}$) so that the effects of tariffs are only identified on the basis of different developments between affected and non-affected products within a company. The estimates (►Figure 6.3 and ►Figure 6.4) were carried out with two different measures $\mathrm{Tariffs}_{p,t}^{US}$ for customs duties. On the one hand, the weighted duty rate per Harmonized System 6-digit product line was used. In addition, event study specifications in the sense of Fajgelbaum et al. (2020) were estimated, in which a dummy variable was used for affected product groups (=1 for affected products in the validity period of the tariffs).
In order to estimate the impact of US tariffs on business indicators, company-specific measures of the impact of import tariffs are required. To quantify the individual impact on companies, the latest available export data from Intrastat and Extrastat before the introduction of US tariffs is used. Based on this information, the average applicable duty rate for the company's export portfolio before the introduction of US import duties is calculated for each company and year. As a further measure of the impact at company level, the proportion of the value of the export portfolio that is subject to Trump tariffs in the relevant year is calculated for each company-year cell.

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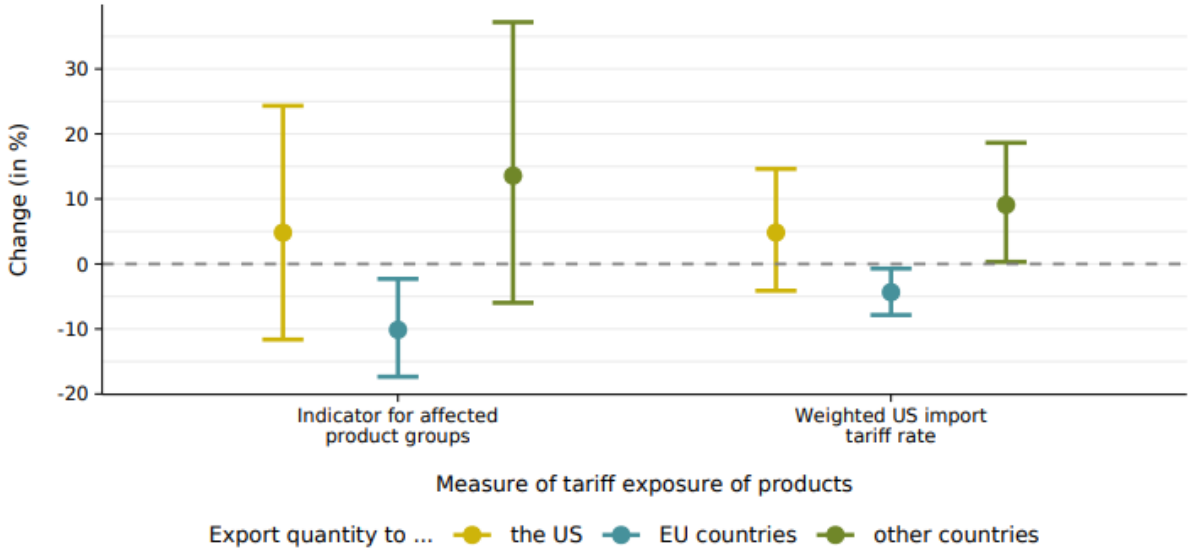
Figure 6.3: **Effects of Trump I tariffs on export volumes of Austrian companies**



Source: PROD calculations based on the Current Account and Structure Survey, Intra- and Extrastat and US import customs data from the United States International Trade Commission.
Note: The coefficients shown are derived from Poisson Pseudo Maximum Likelihood estimates (Gourieroux et al., 1984 and Santos Silva and Tenreyro, 2006) with fixed effects for each company-year combination and each product. The left panel corresponds to an event study specification and uses a dummy variable (=1 if the product was subject to Trump tariffs in the respective year) as the explanatory variable. The right-hand panel uses the applicable US import duty rate for the respective product and year as the explanatory variable. The effects shown in the right-hand panel correspond to the effects of a 10 percent increase in the tariff rate. The extent of the estimated effect is shown as a dot in each case. The figure also shows the 5% confidence intervals of the point estimates based on clustered standard errors. The estimated effects are statistically significantly different from zero if the limits of the confidence interval are both above or below zero. Otherwise, there is no statistically significant correlation between the customs impact and the change in export volume.

117 However, the value of Austrian exports (= quantity x price) of affected products decreased not only vis-à-vis EU trading partners, but also vis-à-vis US importers (►Figure 6.4). At around 10% (left panel in ►Figure 6.4), the **decrease in the export value** of affected products to the US even exceeds the decrease in the value of exports within the EU (around 8%). This means that the effects of US tariffs on the export values of Austrian companies are still significantly lower than the average for all affected exporters (►item 115).

118 A comparison of the effects of US import tariffs on export volumes and export values of Austrian companies suggests that Austrian exporters have reacted to the US tariffs by **reducing the sales prices** of affected products in order to minimize increases in end customer prices for US customers and the resulting expected decline in US demand.

119 These findings differ significantly from the evidence based on all export destinations affected by the US tariffs. Amiti et al. (2019), Fajgelbaum et al. (2020) and Cavallo et al. (2021) show that the unit prices of the affected products for end consumers in the USA increased on average to a similar extent as the duties levied. These results mean that customs duties were almost entirely passed on to prices after taxes and customs duties. Consumers in the USA therefore had to bear the lion's share of the cost increases caused by the tariffs. The strategy of Austrian exporters in dealing with the Trump-I import tariffs therefore appears to have differed significantly from the approach of exporters from other economies, such as China.

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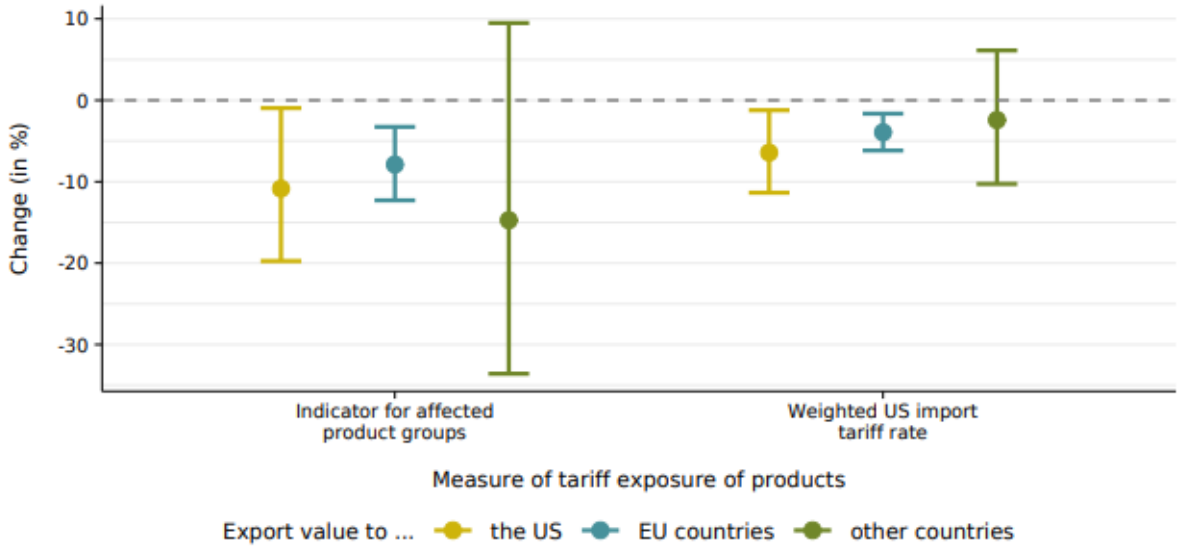
Figure 6.4: **Effects of Trump I tariffs on nominal export values of Austrian companies**



Source: PROD calculations based on the Current Account and Structure Survey, Intra- and Extrastat and US import customs data from the United States International Trade Commission.
Note: The coefficients shown are derived from Poisson Pseudo Maximum Likelihood estimates (Gourieroux et al., 1984 and Santos Silva and Tenreyro, 2006) with fixed effects for each company-year combination and each product. The left panel corresponds to an event study specification and uses a dummy variable (=1 if the product was subject to Trump tariffs in the respective year) as the explanatory variable. The right-hand panel uses the applicable US import duty rate for the respective product and year as the explanatory variable. The effects shown in the right-hand panel correspond to the effects of a 10 percent increase in the tariff rate. The extent of the estimated effect is shown as a dot in each case. The figure also shows the 5% confidence intervals of the point estimates based on clustered standard errors. The estimated effects are statistically significantly different from zero if the limits of the confidence interval are both above or below zero. Otherwise, there is no statistically significant correlation between the customs impact and the change in export values.

120 The US import duties introduced in 2018 also had an impact on the **investment activities** of Austrian companies. On average, a company whose entire product portfolio was affected by Trump tariffs reduced its capital expenditure by 50% compared to a company that was not affected (see Effect on raw data on capital expenditure in the left-hand panel of ▶Figure 6.5).

121 However, this effect is almost entirely driven by a decline in particularly large investments. This finding results from an investigation of the influence of outliers on the results using winsorization and trimming.[44] If the influence of extreme values (and thus particularly large investment expenditure) is reduced or eliminated using these methods, the US import tariffs had no effect on the investment expenditure of affected companies (▶Figure 6.5).[45]

122 Apart from their impact on corporate investment activity, US import tariffs have not had a significant impact on Austrian business indicators since 2018. The companies concerned did not show any deviating trends in terms of employment, gross value added and labor productivity during the period of validity of the duties. However, affected companies tended to **open up new export markets more frequently** or increase the number of their export destinations. In particularly affected economic sectors (NACE C24: Metal production, NACE C25: Metal products, NACE C27: Electrical equipment, NACE C28: Mechanical

[44] Winsorizing is one way of dealing with outliers. Extreme values are limited to a certain percentile - in this case capital expenditure above the 99th percentile. percentile to the 99th percentile. percentile - set. The advantage over trimming (the removal of extreme values from the sample) is that no observations are lost through winsorization.

[45] In a restricted sample of companies in particularly affected sectors (NACE C24: Metal production, NACE C25: Metal products, NACE C27: Electrical equipment, NACE C28: Mechanical engineering, NACE C29: Motor vehicles (parts), NACE C30: Other vehicle construction), the effects based on winsorized investment data are significantly negative. Accordingly, the US import duties at least reduced the investment activity of companies in particularly affected sectors of the economy (Gruber-Német, 2025).

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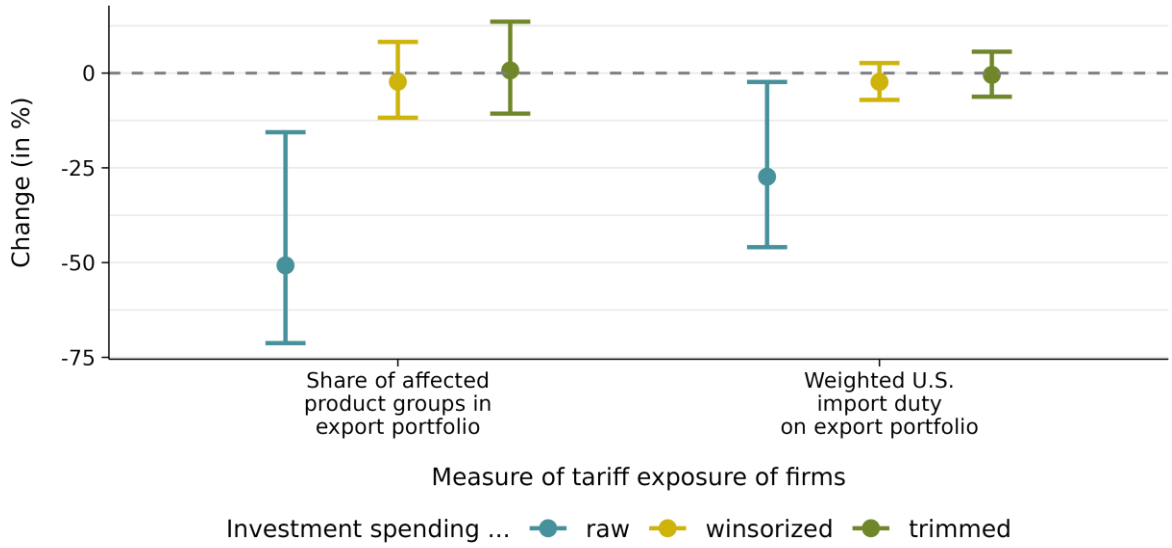
engineering, NACE C29: Motor vehicles (parts), NACE C30: Other vehicle construction), this diversification of export markets was particularly pronounced.

Figure 6.5: **Impact of Trump tariffs on investments by Austrian companies**



Source: PROD calculations based on the Current Account and Structure Survey, Intra- and Extrastat and US import customs data from the United States International Trade Commission.
Note: The coefficients shown are derived from Poisson Pseudo Maximum Likelihood estimates (Gourieroux et al., 1984 and Santos Silva and Tenreyro, 2006) with fixed effects for each NACE 2-digit year combination and each company. The left-hand panel uses the share of the company's ex-ante export portfolio (before 2018) that was affected by Trump tariffs in the respective year as the explanatory variable. Instead, the right-hand panel uses the export-weighted average US import tariff rate for the export portfolio of the respective company. The effects shown in the right-hand panel correspond to the effects of a 10% increase in the average tariff rate applicable to the export portfolio. The dependent variables used were the raw data on capital expenditure, winsorized data on capital expenditure (values above the 99th percentile) and the data from the capital expenditure index. percentile to the value of the 99th percentile. percentile) and trimmed data on capital expenditure (observations above the 99th percentile). percentile removed from sample) was used. The extent of the estimated effect is shown as a dot in each case. The figure also shows the 10% confidence intervals of the point estimates based on clustered standard errors. The estimated effects are statistically significantly different from zero if the limits of the confidence interval are both above or below zero. Otherwise, there is no statistically significant correlation between the extent to which customs duties are applied and the change in investment expenditure.

6.2.3 Indications of the impact of US tariffs introduced in 2025 on Austrian companies

123 The import tariffs on EU exports introduced by US President Trump in 2018 only covered a few product groups (iron and steel, aluminum, washing machines and solar panels). In contrast, **all EU exports** are affected by the US tariffs in 2025, with a few exceptions. Accordingly, it is questionable whether Austrian companies in sectors that were not affected by the 2018 import tariffs will also be able to prevent or mitigate reductions in sales volumes on the US market by lowering prices (Gruber-Német, 2025). In addition, the tariffs applicable to aluminum, steel and iron exports in 2025 will be significantly higher at 50% than the 2018-2021 rates of 10% on aluminum and 25% on iron and steel. It can therefore be assumed that these sectors will also see greater effects on sales volumes in 2025 that exceed the announced import quotas.

124 Trade policy in 2025 is characterized by frequent announcements and threats of measures, many of which have been postponed and adapted as a result. This manifests itself in a high degree of **economic policy uncertainty** (►Figure 6.6). Uncertainty typically leads to declines in business investment (Bloom et al., 2007; Kumar et al., 2023). The results of the WIFO industry survey underline this correlation. 41% of Austrian companies surveyed state that they are reducing investment in equipment as a result of

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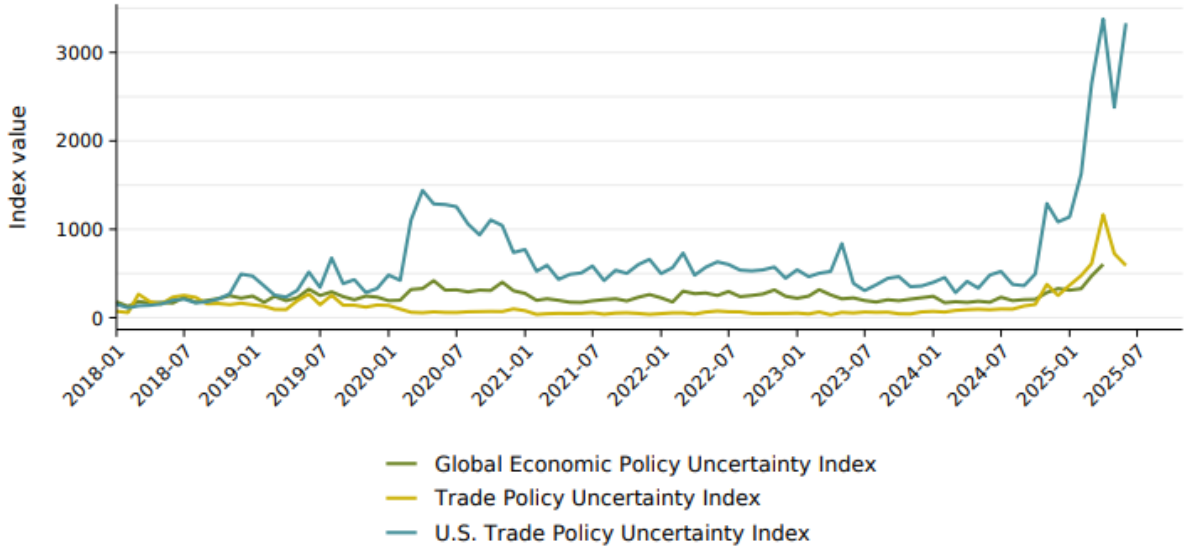
increasing uncertainty.[46] At the same time, 71% of the companies surveyed consider the risk associated with trade policy distortions to be difficult to assess at present. This evidence suggests that the impact of trade policy on investments by Austrian companies in 2025 could potentially be greater than the effects of US import tariffs in 2018.

Figure 6.6: **Indicators of economic policy uncertainty**



Source: Global Economic Policy Uncertainty Index by Davis (2016), US Trade Policy Uncertainty Index by Baker et al. (2016), Trade Policy Uncertainty Index by Caldara et al. (2019).

125 The trade barriers resulting from the trade war between the US and China led to changes in the supply chains of affected companies (Grossman et al., 2024; Luo and Wang, 2025). One way to avoid or reduce import duties is to relocate production steps to the sales market in which import duties are levied. Accordingly, a correlation between the exposure of companies to trade policy measures and relocation intentions is conceivable. The WIFO industry survey provides an indication of the extent to which such a correlation exists for Austrian companies in the period 2025-2030.

126 Among those companies that consider the relevance of trade policy for their own company to be low, only 16% **express intentions to relocate** (►Figure 6.7). In contrast, the proportion of companies with relocation intentions is significantly higher if the relevance of trade policy for their own company is rated as medium (27%) or high (48%).[47] However, the proportion of companies that consider trade policy distortions to be a reason for planned relocations is low (7%) even among those companies that consider trade policy to be very important for their own company (►item 173,Figure 6.7). For companies present on the US market and companies included in the industry survey, this share is just as low (7%).[48,49] Accordingly, the import duties introduced in 2025 only appear to result in relocation trends in isolated cases.

[46] In line with these results, 46% of the companies surveyed as part of the WKÖ Economic Barometer (Bernleithner, 2025) in May 2025 with no current investment plans cited general economic uncertainty as the main reason for their reluctance to invest.

[47] The proportion of companies with relocation intentions and interest in a possible relocation to the USA ranges from 0% where trade policy is of low relevance to 13% where trade policy is of high relevance to their own company. However, even among those few companies that are planning to relocate and consider the USA to be an interesting destination, only 23% cite trade policy distortions as a reason for the planned relocation.

[48] None of the companies in the WIFO Industry Survey 2025 that are either not present on the US market or consider the importance of trade policy for their own company to be low are planning to relocate due to trade policy distortions.

[49] The majority of companies present on the US market also assume that the US market will become more important for their company in the next five years (46%) or remain of constant importance (44%).

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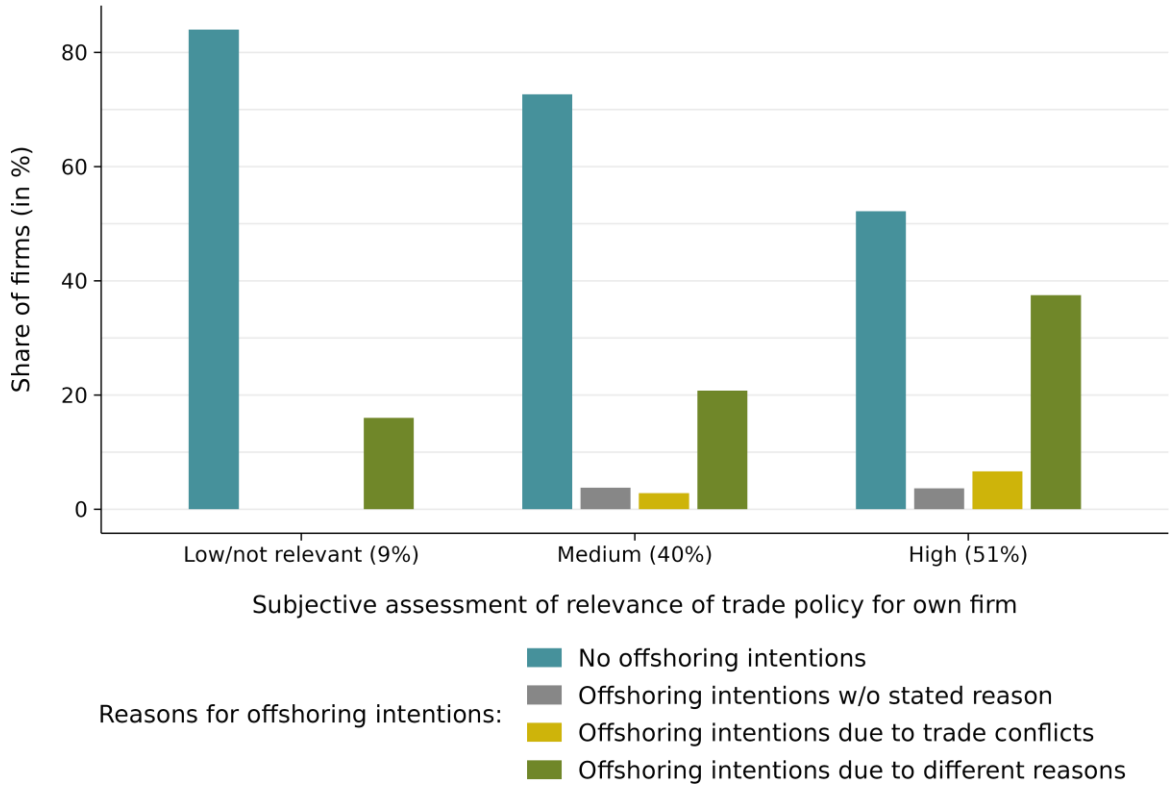
Figure 6.7: **Intentions to relocate and reasons for doing so according to subjective assessment of the relevance of trade policy for their own company**



Source: PROD calculations based on the WIFO Industry Survey 2025.

6.3 Effects of increasing Chinese competition on Austrian companies

6.3.1 Existing evidence and economic policy context

127 The massive growth in Chinese goods exports after 2001, accompanied by intensive industrial policy, led to the emergence of a new strand within the foreign trade literature. This "China shock" literature documents fundamental effects on the industrial development of industrialized economies, especially the United States. Various studies (e.g. Autor et al., 2013; Acemoglu et al., 2016; Asquith et al., 2019; Bloom et al., 2016; Utar, 2018) document significant **decreases in employment and increased probabilities of market exit** among industrial companies particularly affected by increasing Chinese competition in the first decade after China's accession to the World Trade Organization. In addition, the literature identified a large number of other impact channels of Chinese competition, such as effects on companies' investment and innovation activities (Autor et al., 2020; Bloom et al., 2016; Pierce and Schott, 2018).

128 With a few exceptions (e.g. Friesenbichler and Reinstaller, 2023; Friesenbichler et al., 2024; Milberg and Johnston, 2025), the empirical evidence on the impact of Chinese competition since the global financial crisis is limited. Thus, few studies document the effects of Chinese competition in the phase in which the upgrading of Chinese industry progressed significantly. The few analyses that look at a more recent period (e.g. Friesenbichler et al., 2024; Milberg and Johnston, 2025) provide indications that the effects of Chinese competition have changed against the backdrop of China's changed industrial policy objectives (►Table 6.1).

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Table 6.1: **Summary of empirical results on the effects of Chinese competition**

Effects of Chinese competition domestic competition	Until 2012		2013 to 2022			From 2025
	USA	EU		EU	AUT	AUT
Employment	– [1]	– [6]			0 [10]	– [12]
Market exit	+ [2]	+ [6]			0 to + [10]	
Relocation abroad		+ [7]			0 [10]	+ [12]
Industry → Services	+ [3]	+ [7]			+ [10]	
Productivity		+ [6]		0 to - [9]	0 [10, a]	
Innovation, R&D activities	– [4]	+ [6]			– [10]	+ [12]
Investments	– [5]				0 [10]	
Diversification of markets		+ [8]			+ [10, 11]	

Source: own presentation.
Selected sources for the empirical results: [1] Author et al (2013). - [2] Asquith et al (2019). - [3] Bloom et al. (2024). - [4] Author et al. (2020). - [5] Pierce, Schott (2018). - [6] Bloom et al. (2016). - [7] Gu et al. (2021). - [8] Caselli, Schiavo (2020). - [9] Friesenbichler et al. (2024). - [10] Gruber-Német (2025). - [11] Friesenbichler and Reinstaller (2023). - [12] Gruber-Német et al. (2025).
Notes: "-": negative effect of Chinese competition, "0": no statistically significant effect, "+": positive effect of Chinese competition.
[a] However, the results of Gruber-Német (2025) point to positive effects of increasing Chinese competition in export markets.

129 The extensive use of industrial policy instruments (despite limited recent evidence) contributed significantly to the European Union significantly revising its China Strategy in 2019. While the European China strategy until 2019 primarily emphasized cooperation and economic integration, China was also described as a competitor and systemic rival for the first time in 2019 (García-Herrero and Vasselier, 2024). In its current China strategy, the European Commission formulates the specific goal of creating more balanced and reciprocal conditions for economic relations, among other things. Competition-distorting subsidies, selective market opening, investment restrictions and insufficient protection of intellectual property in China were identified as concrete obstacles.

130 This change in strategy was followed by various political measures with the aim of countering politically induced discrimination against European companies. This included the drafting of an investment agreement ("Comprehensive Agreement on Investment - CAI"). This should allow European companies access to and fair treatment on the Chinese market. Despite a political agreement in principle at the end of 2020, the CAI has still not been ratified. Furthermore, an instrument was created with regard to international procurement (IPI). This allows the European Commission to prevent companies from non-EU countries from gaining access to public tenders if European companies are faced with similar restrictions in the company's country of origin. In addition, instruments have been created with which the European Commission can take action against distortions of competition caused by third-party subsidies or the exercise of economic constraints .[50] These measures complement the existing anti-dumping and anti-subsidy instruments of the EU.

131 The recent investigation by the European Commission into state subsidies for Chinese manufacturers of electric vehicles and the resulting introduction of import duties on electric vehicles of Chinese origin is an example of the use of this **economic policy instrument**.

[50] In addition, the European Union is pursuing a diversification and de-risking strategy in its industrial strategy in order to reduce its dependence on China in critical areas. Such efforts include, for example, the Regulation establishing a framework to ensure a secure and sustainable supply of critical raw materials within the framework of the European Strategy for Economic Security.

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6.3.2 Impact of Chinese competition on Austrian companies since 2013[51]

132 The extent of Chinese competition on the Austrian market (see ▶Text Box 6.4 for explanations on the calculation of the competition indicators) increased in almost all goods-producing NACE industries in the period 2007-2023 (▶Figure 6.8)[52]. This increase was particularly pronounced for the production of data processing equipment and electronic and optical products (NACE C26) and the production of electrical equipment (NACE C27). Imports from China attributable to these industries increased by more than three times the value of Austria's imports from China in 2007 between 2007 and 2023.

Text Box 6.4: **Indicators of Chinese competition**

Following the "China shock" literature, the product-related intensity of Chinese competition in Austria in year t is measured as the quotient of the value of Chinese imports to Austria ($M_{p,t}^{CHN \to AUT}$) and the total imports of the product in a base year t_0 . C_{-AUT} denotes the quantity of all countries excluding Austria.

$$IC_{p,t}^{CHN \to AUT} = \frac{M_{p,t}^{CHN \to AUT}}{M_{p,t_0}^{C_{-AUT} \to AUT}}$$

Most of the "China shock" literature measures the trade shock solely on the basis of the change in Chinese domestic market penetration. However, this approach falls short when analyzing a small open economy such as Austria, as the domestic market is small and the industry is heavily export-oriented. As Austria exports a significant proportion of its value added, it is to be expected that increasing Chinese competition in export markets will be important for Austrian companies even if market penetration in Austria itself remains low. For this reason - following Friesenbichler and Reinstaller (2023) - a measure of Chinese market penetration in Austrian export markets is also taken into account.

$$\mathrm{IC}_{p,t}^{CHN \to C_{-\{AUT,CHN\}}} = \sum_{c \in C_{-\{AUT,CHN\}}} \frac{X_{p,t_0}^{AUT \to c}}{X_{p,t_0}^{AUT \to C_{-\{AUT,CHN\}}}} \cdot \frac{M_{p,t}^{CHN \to c}}{M_{p,t_0}^{C_{-c} \to c}}$$

This measure of Chinese competition in export markets weights the country-specific measure of Chinese competition with the share of the respective export destinations in the total exports of the respective product by Austrian companies.

[51] The results presented are based on the background studies by Gruber-Német (2025) and Gruber-Német et al (2025). Technical details, if not mentioned in the text, can be found in these works.

[52] Company data from 2013-2022 was available in the AMDC for the microdata analyses, which therefore determined the period under investigation. Data from the performance and structural statistics for the period 2007-2023 is available at the aggregated level of NACE economic sectors. In each presentation in this chapter, the largest possible time period available was selected.

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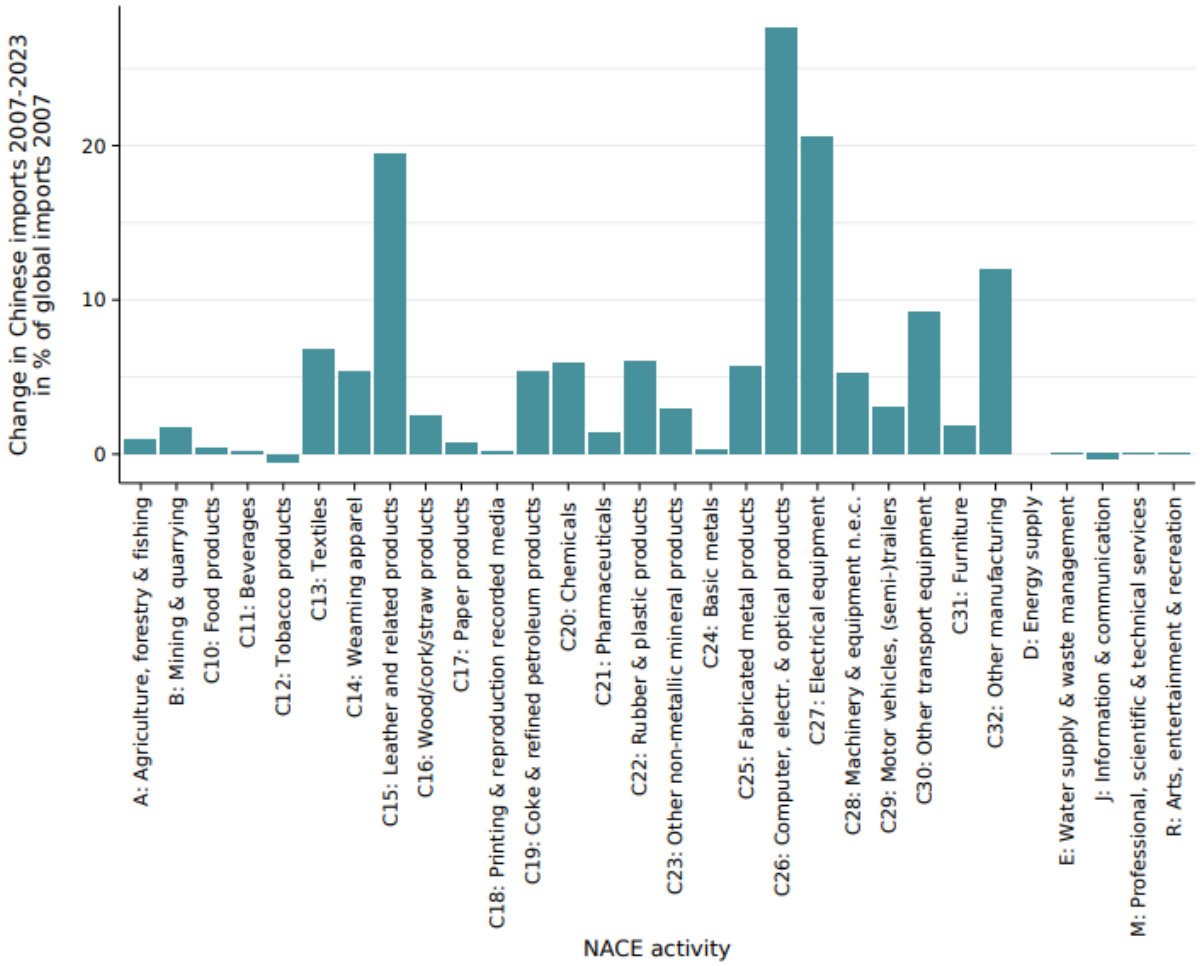
Figure 6.8: Increase in Chinese domestic competition by NACE economic sector, 2007-2023



Source: Harmonized BACI foreign trade data.
Remark: To calculate the indicators of Chinese competition in Austria presented here at NACE industry level, Eurostat correspondence tables were used to match the trade data at product level to NACE industries. The indicators for NACE sections were calculated as unweighted averages of the indicators of the corresponding NACE 2 digits.

133 The development of the industry-specific indicators of Chinese competition on the Austrian market essentially followed the development of competition measures in Austrian export markets. However, there are significant differences at product level. For example, the change in the number of Chinese competitors on the Austrian market and in export markets between 2007-2023 only has the same sign for around 71% of the six-digit HS product lines. This observation underlines the importance of separately quantifying the effects of Chinese competition in the domestic market and in export markets.

134 The effects of increasing Chinese competition on Austrian companies in the period 2013-2022 (Gruber-Német, 2025) differ significantly from the effects on European economies before 2013 documented in the literature (see ►Text Box 6.5 for explanations of the empirical approach). However, it remains unclear whether this is due to a change in the effects of Chinese competition or whether the effects on Austrian companies differed from other EU countries even before the global financial crisis. Although some "China shock" studies have considered Austria (Bloom et al., 2016; Friesenbichler et al., 2024), there are no studies that focus exclusively on the effects of Chinese competition on Austrian companies before the global financial crisis. ►Table 6.1 compares the correlations documented in Gruber-Német (2025) and Gruber-Német et al. (2025) with the results of the existing literature.

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Text Box 6.5: **Methodology for quantifying the effects of Chinese competition**

The product-related measures of Chinese competition described in ►Text Box 6.4 are assigned to Austrian companies in the Austrian Micro Data Center by means of the companies' respective export portfolios. To calculate a company-specific indicator, the product-specific indicators were then weighted by the value share of the respective product in the company's exports.

The company-specific effects of Chinese competition are then quantified on the basis of empirical specifications (see e.g. Bloom et al., 2016) in the following form:

$$\Delta Y_{i,j,t} = \beta_1 \Delta IC^d_{i,j,t} + \beta_2 \Delta IC^f_{i,j,t} + \beta_3 \Delta IC^f_{i,j,t} * \Delta IC^d_{i,j,t} + \eta_{j,t} + \Delta\varepsilon_{i,j,t}$$

In this specification, Δ denotes the change in a variable over a five-year observation period. $Y_{i,j,t}$ is the company-related indicator for which the effect of a change in the intensity of Chinese competition is estimated. The above specification contains both the indicator of Chinese competition in the domestic market IC^d and the indicator of Chinese competition in export markets IC^f (as well as an interaction of the two) as explanatory variables. $\eta_{j,t}$ are fixed effects for each combination of time period and NACE industry. Accordingly, the effects of the indicators of Chinese competition are identified exclusively on the basis of variation between companies within industries. For a detailed discussion of the limitations of the methodology used and additional estimates to analyze the robustness of the chosen measures of Chinese competition, see Gruber-Német (2025).

Effects of Chinese competition on employment in Austrian companies

135 Before the global financial crisis, Chinese competition led to declining employment in European industry (Balsvik et al., 2015; Bloom et al., 2016; Utar, 2018). No such effects were observed for Austrian companies in the period 2013-2022 (►Figure 6.9).

136 However, the WIFO industry survey indicates that Austrian industrial companies that are more affected by Chinese competition are more likely to plan **employment cuts** in the period 2025-2030. Companies that consider at least one Chinese company to be one of their three most important competitors are significantly more likely to state that they intend to reduce employment in Austria over the next five years (42% compared to 25%).

137 This correlation is statistically significant even after taking various control variables into account (Gruber-Német et al., 2025). The probability of a planned **reduction in employment in the period 2025-2030** is around 15.5% higher among companies with at least one significant Chinese competitor than for the rest of the companies included in the industry survey. The effect of Chinese competition on the probability of planned job cuts is even more pronounced in production (►Figure 6.10) (18.3%).

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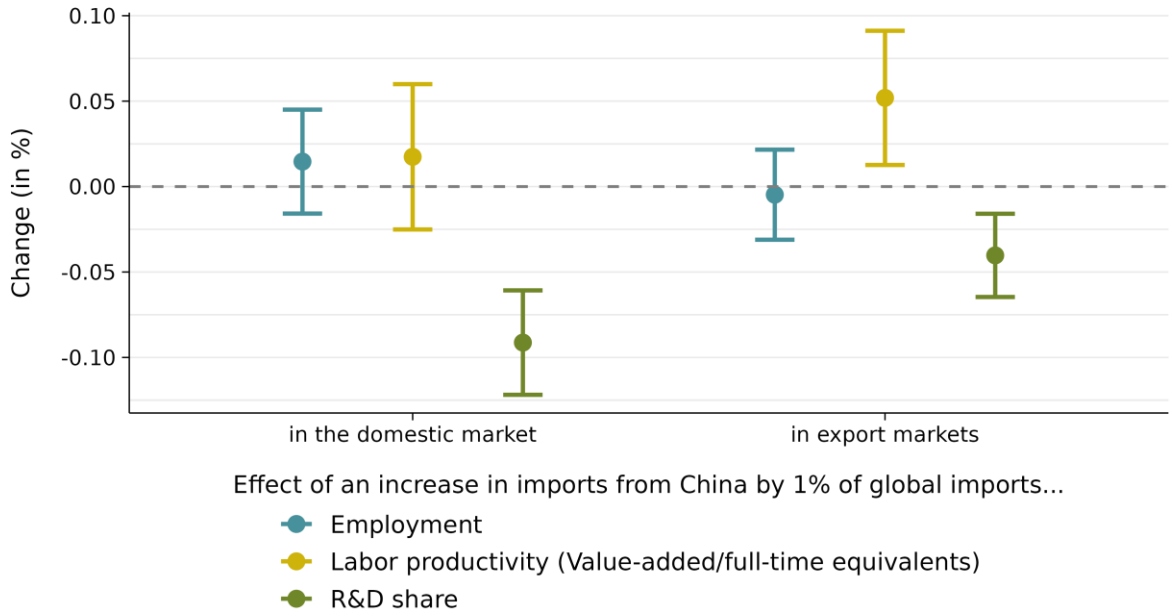
Figure 6.9: **Effects of Chinese competition on indicators of entrepreneurial activity**



Source: PROD calculations based on the Output and Structure Survey, the R&D Survey, Intra- and Extrastat and Harmonized BACI Foreign Trade Data.

Note: The coefficients[53] shown are derived from pooled OLS specifications with time-NACE-4-digit fixed effects, in which only the indicator of Chinese competition in the domestic market (left panel) or the indicator of Chinese competition in export markets (right panel) was used as an explanatory variable. The extent of the estimated effect is shown as a dot in each case. The figure also shows the 5% confidence intervals of the point estimates based on robust standard errors. The estimated effects are statistically significantly different from zero if the limits of the confidence interval are both above or below zero. Otherwise, there is no statistically significant correlation between the increase in Chinese competition and the respective company indicator.

Effects of Chinese competition on the labor productivity of Austrian companies

138 The increase in Chinese competition had a negative impact on patent applications and the innovation activity of US companies (Autor et al., 2020). In contrast, the early China shock (before the global financial crisis) had an innovation-inducing and productivity-boosting effect on European companies (Bloom et al., 2016; Caselli et al., 2021). However, this productivity-enhancing effect gradually decreased and eventually reversed (Friesenbichler et al., 2024). For the sample of Austrian companies between 2013-2022, Chinese domestic competition also had **no productivity-enhancing effect** (left-hand panel of ►Figure 6.9). In contrast to Friesenbichler et al. (2024), however, there is no reversal of the effect documented by Bloom et al. (2016).

139 However, increasing Chinese **competition in export markets** seems to **create incentives for productivity increases** for Austrian companies (right-hand panel in ►Figure 6.9).[54] An increase in Chinese imports of a company's products to Austria's export destinations by one percent of global imports of these products to this group of countries is associated with an increase in the company's labor productivity of

[53] The effects presented in ►Figure 6.9 were subjected to a series of robustness checks. The documented significant effects on research and development expenditure and labor productivity are retained in these additional specifications (Gruber-Német, 2025).

[54] None of the studies that examined the effects of Chinese competition on the productivity of companies analyzed both the effects of Chinese competition at home and in export markets. The existing literature therefore provides no evidence with which to compare the documented effects of increasing Chinese competition in export markets.

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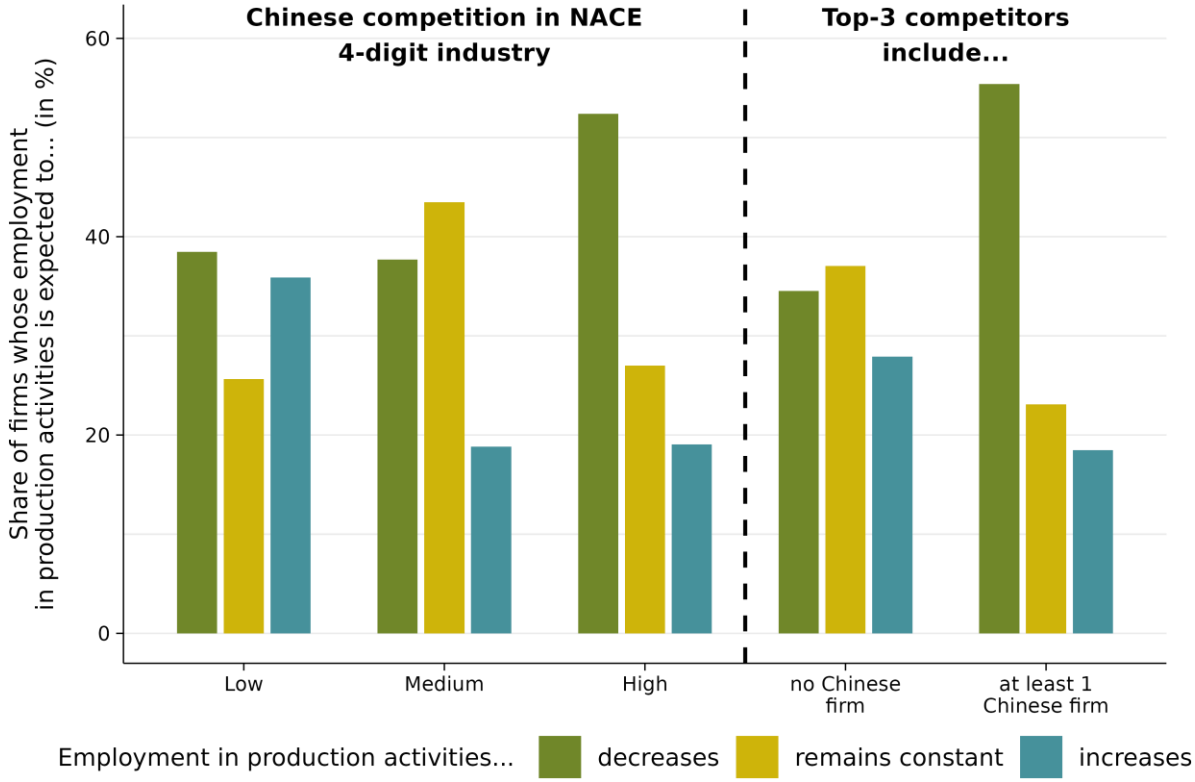
around 0.05%. Such an increase in Chinese imports corresponds approximately to the median (0.85%) of the change in the Chinese competition indicator in the sample of Austrian companies.[55]

Figure 6.10: **Chinese competition and plans for employment development in production activities in Austrian industry 2025-2030**



Source: WIFO Industry Survey 2025, Harmonized BACI Foreign Trade Data, own calculations.
Note: The indicator of Chinese domestic competition refers to the last available year of BACI foreign trade data (2023) and was calculated as a quotient of Chinese imports as a share of global imports of HS 6-digit products attributable to the respective NACE 4-digit code.

Effects of Chinese competition on R&D activities of Austrian companies

140 Austrian companies that were affected by a stronger increase in Chinese domestic competition in the period 2013-2022 reduced their **spending on research and development** relative to less affected companies (▶Figure 6.9). This result offers a possible explanation as to why the initial productivity-increasing effect of Chinese domestic competition (Bloom et al., 2016) is no longer observable in recent samples.

141 An increase in Austrian imports from China by one percent of the global imports of a company's products to Austria led to a decrease in the research and development ratio of around 0.1%.[56] Aghion et al. (2009) refer to this effect as the discouragement effect of increasing competition. Cusolito et al. (2023) document similar reactions of Chilean companies to increasing Chinese competition.

142 The results of Friesenbichler and Reinstaller (2023) allow a classification of these results on the effect of Chinese competition on R&D expenditure by Austrian companies. Based on the 2016 WIFO Industry Survey, the study shows that Austrian companies affected by stronger growth in Chinese competition made changes to their product portfolio and business areas less frequently than less exposed companies

[55] The mean value of the change in the indicator of Chinese domestic competition (increase in Chinese imports as a percentage of global imports in the base year) over a five-year period in the sample of Austrian companies is around 3.5%.
[56] This significant negative effect can also be observed when R&D expenditure is used as the dependent variable.

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in the period 2011-2016. In addition, increasing Chinese competition in this sample reduced the development of new skills. Together, these results indicate that exposed Austrian companies **have tended** to pursue a **defensive strategy** of focusing on core competencies when dealing with Chinese competition.

143 In contrast, companies with significant Chinese competitors are more likely to plan to broaden (63% compared to 55%) or upgrade (57% compared to 43%) their product portfolio in the next five years, according to the current industry survey (for details, see Gruber-Német et al., 2025). Austrian companies heavily affected by Chinese competition therefore appear to be **increasingly pursuing a more offensive strategy** in order to maintain or strengthen their market position.

Effects of Chinese competition on structural change within and between companies

144 Structural change between sectors can occur in various forms (►sections 8.2, 8.4). Structural change can take place between companies, with companies in one sector (e.g. industry) reducing employment or exiting the market, while companies in another sector (e.g. the service sector) increase employment.

145 Before the global financial crisis, the intensification of Chinese competition caused this form of structural change through the market exit of particularly exposed companies, both in the US and in the EU (e.g. Bloom et al., 2016, Bloom et al., 2024). The cross-section of all companies in the Austrian sample does not show an increased **probability of market exit** among companies particularly exposed to growth from Chinese competition (►Figure 6.11). If the sample is limited to the period 2013-2018, Chinese competition caused a statistically significant reduction in the probability of survival of Austrian companies in this sub-sample. For the **most unproductive companies**[57] , however, Chinese competition caused a significant, albeit small, increase in their probability of market exit over the entire period from 2013-2022 (see Gruber-Német, 2025 for details).

146 However, structural change can also take place within existing companies by reducing employment in one sector while increasing employment in another sector. This form of structural change within companies can either take the form of existing sites changing their specialization or main activity - and consequently their sectoral classification. Alternatively, this internal structural change - for example, from manufacturing to services - can also consist of companies closing goods-producing facilities and simultaneously opening non-goods-producing facilities.

147 Recent studies by Bernard et al. (2017) and Ding et al. (2022) have shown that a significant part of the decline in employment in the manufacturing of goods in relation to the service sector in Denmark and the United States is due to **changes in the sectoral allocation** of companies or permanent establishments. Such changes reduce the employment of companies classified as industrial, whereas non-industrial employment increases. Similar changes in sectoral classification can also be observed for Austrian companies. However, these are rare (►item 256).[58]

148 Bloom et al. (2024) have examined the significance of this phenomenon in the context of the job losses in the USA caused by the "China shock". They document that in the USA around 40% of the decline in employment in the manufacturing sector due to increasing Chinese competition is attributable to sector changes. A change in corporate specialization thus represented a strategy for dealing with increasing Chinese competition in the United States.

[57] This refers to those companies in the lowest quintile of the distribution of average labor productivity 2011-2013 of the companies in the sample.

[58] Such a change took place for only 1.3% of the observations in the Gruber-Német company sample (2025).

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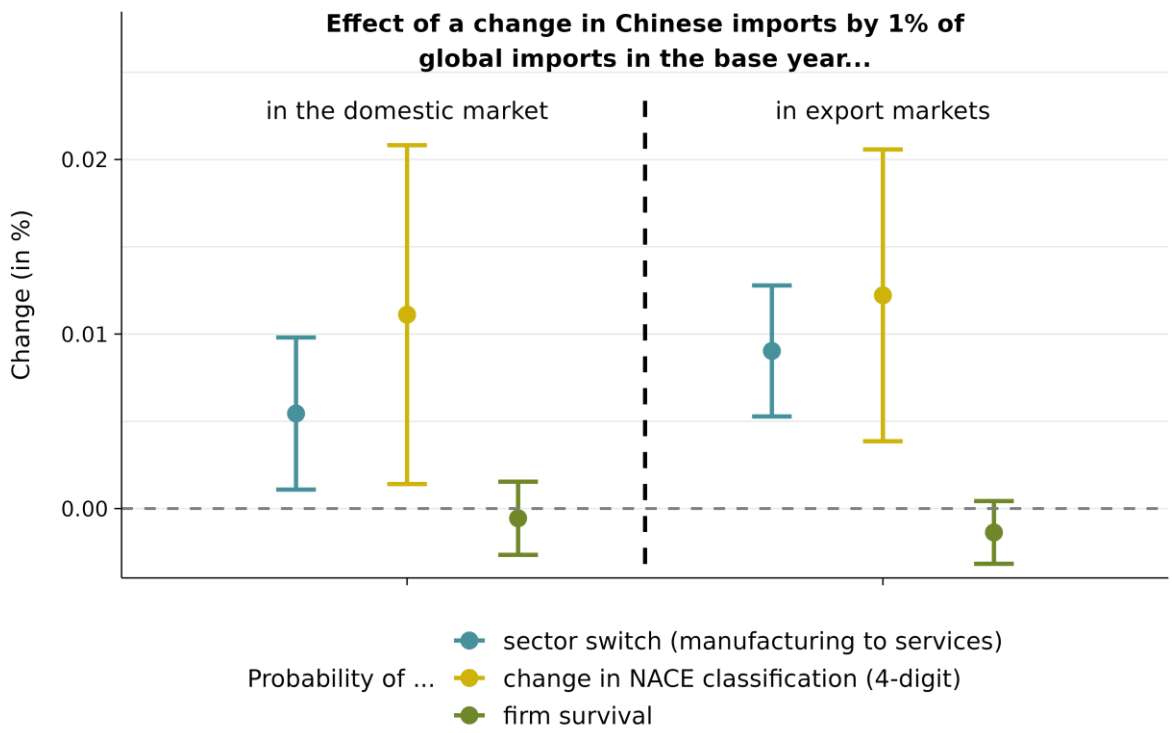
Figure 6.11: **Effects of Chinese competition on indicators of structural change within and between companies**



Source: PROD calculations based on the performance and structural survey, the statistical business register, Intra- and Extrastat and harmonized BACI foreign trade data.
Note: The coefficients shown are derived from pooled OLS specifications (linear probability models) with time-NACE 4-digit fixed effects, in each of which only the indicator of Chinese domestic competition or the indicator of Chinese competition in export markets was used as an explanatory variable. [59]Dummy variables were used as dependent variables: I(Market retention) =1 if the company has not exited the market at the end of the observation period; I(ΔNACE classification) =1 if the NACE 4-digit classification of the company has changed during the observation period; I(Sector change) =1 if the NACE classification of the company has changed from a NACE C industry to a market services sector (NACE G-N) during the observation period and the sector classification does not change subsequently. The extent of the estimated effect is shown as a dot in each case. The figure also shows the 5% confidence intervals of the point estimates based on robust standard errors. The estimated effects are statistically significantly different from zero if the limits of the confidence interval are both above or below zero. Otherwise, there is no statistically significant correlation between the increase in Chinese competition and the respective company indicator.

149 Such a correlation between Chinese competition and changes in specialization can also be observed for Austrian companies in the period 2013-2022. Increasing Chinese competition increased the likelihood of a change in specialization, which resulted in a reclassification of the company from the manufacturing sector (NACE C) to market services (NACE G-N) (▶Figure 6.11).[60] An increase in Chinese imports by one percent of global imports (both domestically and in export destinations) increased the probability of sectoral reclassification by around 0.005-0.009%. Accordingly, Chinese competition had a statistically significant but only very minor impact on structural change within existing companies between 2013-2022.

150 Chinese competition also had an impact on the probability of changes in the four-digit NACE code - and thus on the probability of minor changes in the main entrepreneurial activity - between 2013-2022. This

[59] Switching definitions that take into account temporary reclassifications and switches to non-market services (NACE O-R) were also used as a robustness check. The qualitative results remained unchanged in these additional specifications compared to permanent changes in market services (Gruber-Német, 2025).

[60] Sector reclassifications were only recorded as such for the specifications presented in ▶Figure 6.11 if there was no subsequent return to the original classification ("permanent switchers").

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form of changed specialization is also significantly more common among Austrian companies that were exposed to stronger growth from Chinese competition between 2013 and 2022 (▶Figure 6.11).

Effects of Chinese competition on export and relocation activities

151 The **diversification of sales markets** serves as a strategy for dealing with increasing Chinese competition. Companies that are exposed to greater growth from Chinese competition are more likely to become exporters (Caselli and Schiavo, 2020) and export more frequently to new markets (Friesenbichler and Reinstaller, 2023). In the Austrian sample from 2013-2022, particularly exposed companies also tended to **diversify their export markets** (increase the number of export destinations).[61] However, they did not show any increased tendency to diversify the export portfolio.

152 The literature on the effects of Chinese competition on European companies before the global financial crisis documents a positive correlation between Chinese competition and the offshoring of production activities (Gu et al., 2021). In the period 2013-2022, there was no correlation for Austrian companies between increases in Chinese competition and **relocation activities abroad**.[62]

153 However, in the latest WIFO industry survey, Austrian companies that are more affected by Chinese competition more frequently expressed the intention to relocate at least one business unit abroad between 2025-2030 (▶Table 6.2). This correlation between the intensity of Chinese competition and the **intention to relocate** expressed in the WIFO industry survey is statistically significant.[63] The probability of planned relocation intentions in the period 2025-2030 is around 14.7% higher among companies with at least one significant Chinese competitor than for the group of other companies (Gruber-Német et al., 2025).

Table 6.2: **Indicators of Chinese competition and relocation intentions 2025-2030**

Extent of Chinese competition	Intention to relocate	
	No	Yes
	In %	
Chinese company among top 3 competitors		
No	67	33
Yes	46	54
Indicator of Chinese domestic competition (NACE 2-digit)		
Low	70	30
Medium	67	33
High	55	45
Indicator of Chinese competition in export markets (NACE 2-digit)		
Low	74	26
Medium	65	35
High	53	47

Source: PROD calculations based on the WIFO Industry Survey 2025 and BACI foreign trade data.
Note: The indicators of Chinese competition at the level of NACE 2-digit industries refer to the last available year 2023 of the BACI foreign trade data. The companies included in the WIFO industry survey were divided into terciles based on the indicators of Chinese competition in their respective NACE 2-digit economic sectors in 2023 (1st tercile: low intensity of Chinese competition, 2nd tercile: medium intensity, 3rd tercile: high intensity).

[61] However, this effect is not significantly positive in all robustness analyses (see Gruber-Német, 2025).

[62] Activities or production steps can be outsourced abroad by involving a supplier outside the company ("offshore outsourcing"), by the company acquiring a stake in a foreign supplier or by establishing a subsidiary abroad. The latter two forms of outsourcing are recorded in the Foreign Affiliates Statistics (FATS) if the companies abroad are controlled by the domestic company. The number of domestically controlled subsidiaries of an Austrian company and the number of employees of these subsidiaries can therefore be used as indicators for some of the relocation activities of companies.

[63] The significance of this correlation is maintained even if the NACE 2 digit of the companies, the subjective assessment of the companies regarding their exposure to trade policy distortions and the export intensity of the companies are taken into account as control variables in a linear probability model.

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154 **In summary, this part of the analysis** shows that Austrian companies developed robustly on average between 2013 and 2022 in the face of growth from Chinese competitors (►Table 6.1). Adjustments, for example with regard to entrepreneurial specialization or research and development expenditure, were observed among more severely affected companies. However, key performance indicators of Austrian companies, such as gross operating surpluses, value added or employment, were not significantly influenced by Chinese competition.[64] However, in the latest WIFO industry survey, companies particularly affected by Chinese competition were significantly more likely to reveal plans to relocate and reduce staff by 2030. These findings indicate that Austrian companies are coming under increasing pressure from Chinese competitors or that competitors from China are taking on a special role for Austrian companies (►items 136, 137 and 153).

6.4 Discussion of the results

155 The results of the WIFO industry survey reveal widespread **relocation intentions and plans to reduce employment in production activities at domestic locations** of large Austrian industrial companies (Gruber-Német et al., 2025). Relocation intentions are particularly widespread among companies with significant Chinese competition (►Table 6.2). These results underline the importance of the international division of labor and foreign competition as drivers of structural change (see also e.g. Bloom et al., 2024; Fort et al., 2018). This correlation is also illustrated by the documented effects of Chinese competition on changes in entrepreneurial specialization (►Figure 6.11). Protectionist measures and the associated sharp deterioration in price competitiveness in the relevant sales markets have the potential to accelerate such structural transformation processes.

156 The migration of certain business areas (especially production) is not necessarily a negative factor in terms of the **competitiveness of the business location**, provided that value-added-intensive areas of activity remain domestic or are expanded (Bernard et al., 2017). However, the employment reduction plans of the companies included in the industry survey with **relocation intentions are not limited to production**. These companies also state more frequently that they plan to reduce employment in the next 5 years for all other company divisions. For example, 19% of companies with relocation intentions are planning to reduce their workforce in the area of design and product customization, while only 4% of companies without relocation intentions are doing so. Similarly significant differences can be observed with regard to research & development (11% compared to 1%) and product-oriented IT including software as a product (14% compared to 2%). There is therefore a risk that a considerable amount of value creation and employment will be relocated abroad - especially by companies under strong international competitive pressure.

157 The results of the industry survey also confirm the importance of efforts at EU level to create **fair and balanced framework conditions for European companies in competition** with foreign - and in particular Chinese - competitors.

158 As part of these efforts, the EU has recently created a number of new instruments to combat distortions of competition. This includes the regulation of third-party subsidies (**Foreign Subsidies Regulation** - "FSR"). This stipulates that companies planning mergers or participating in public procurement procedures within the EU must report any foreign subsidies received. On the basis of these reports, the European Commission may open an in-depth investigation into the matter. This instrument also enables the European Commission to open investigation proceedings on its own initiative in other market

[64] In addition, no robust correlations were identified between the intensity of Chinese competition and the investment activity of companies (Gruber-Német, 2025).

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situations.[65] The announcement of the opening of a corresponding investigation has already led to the withdrawal of bids in public procurement processes in some cases.[66]

159 In addition, the instrument for protection against economic coercion or extortion by third countries (**Anti-Coercion Instrument** - "ACI") came into force in 2023. This allows the European Commission to take countermeasures such as import duties, restrictions with regard to the protection of intellectual property or restrictions on access to the European financial market if an investigation proves the exercise of economic constraints by third countries. However, this instrument has so far (as of August 2025) has not yet been used. Initial use was considered for the introduction of countermeasures in response to the US government's reciprocal tariffs before the US and EU reached a trade policy framework agreement on July 27, 2025.

160 The FSR and the ACI thus complement the European Union's portfolio of trade defense measures. This also includes the regulations on protection against subsidized and dumped imports from non-EU countries (**Anti-Subsidy Regulation** and **Anti-Dumping Regulation**[67]), which were last revised in 2018. These regulations enable the EU to take measures such as import duties if goods are imported into the EU at artificially low prices, for example due to distorting subsidies.[68]

161 However, the results of the WIFO industry survey suggest that Austrian companies perceive Chinese competition as a particular threat despite the existing economic policy instruments. However, it remains unclear to what extent this perception is due to inadequately addressed distortions of competition. Alternatively, the perceived threat could be due to advantages of Chinese competitors in terms of technology, production costs or availability of raw materials that are not attributable to distortions of competition.

162 The increase in protectionist tendencies is one facet of the so-called "Great Reallocation" of global trade relations as a result of increasing geopolitical tensions in the recent past (Alfaro and Chor, 2023; Gopinath et al., 2025; Grover and Vézina, 2025). This major reallocation is characterized by shifts in trade flows to trading partners with similar geopolitical interests ("friendshoring") and decreasing interdependencies between geopolitically more distant blocs. This decoupling - like the introduction of tariffs - is associated with costs for all economies. However, Fontagné and Yotov (2024) point out that even a moderate strengthening of the integration of the European single market can compensate for the costs of decoupling from geopolitically more distant blocs. Strengthening relations with European trading partners therefore also offers a promising strategy for dealing with protectionist measures by other trading partners.

163 The European Commission recently published an updated Strategy to improve the European Single Market based on the findings of the annual Report on the European Single Market and its Competitiveness. The objectives formulated therein address significant hurdles to cross-border business activities within the EU that emerge from company surveys. This includes the standardization and simplification of legal framework conditions, for example with regard to the establishment and scale-up of companies as well as product packaging, product labeling and waste treatment. Other problem areas include the administrative hurdles for the cross-border deployment of workers, the restricted cross-border access to many service professions (Dorn et al., 2024; Jungmittag and Marschinski, 2023) and the often differing transposition of EU law into national law.

164 In view of the investment-inhibiting effect of import tariffs (►item 120) and economic policy uncertainty (►item 124), an **agreement in the trade conflict with the US** would actually be welcome, to end the

[65] https://ec.europa.eu/commission/presscorner/detail/en/mex_24_2247 and https://ec.europa.eu/commission/presscorner/detail/en/speech_24_1927.

[66] https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_24_1729.

[67] Regulation (EU) 2016/1036, June 8, 2016 and Regulation (EU) 2016/1037 as amended by Regulation (EU) 2017/2321 , December 12, 2017.

[68] The Federal Ministry for Economic Affairs, Energy and Tourism provides lists of sanctioned products and countries.

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phase of pronounced uncertainty for EU exporters with regard to the future conditions for exports to the United States. However, the **agreement reached between US President Trump and the EU Commission** on July 27, 2025 (►item 110) only reduced uncertainty to a limited extent. On the one hand, this is due to the lack of a standstill clause, which allows the US government to deviate from the framework agreement at any time. In addition, in August 2025 - in contradiction to the agreement - the US government imposed higher tariffs of 50% on a large number of products made partly from steel and aluminum, such as machinery (Kawlath, 2025). In view of the continuing pronounced uncertainty for Austrian exporters and the expected reluctance to invest, the recent announcement by the federal government to double the investment allowance is potentially significant.[69]

165 In contrast to the EU's reaction to the US tariffs in 2018, the 2025 framework agreement does not provide for any counter-tariffs on US exports to the EU. This should prevent domestic producers from experiencing price increases on imported intermediate products from the US, which would potentially lead to even greater declines in economic output in the EU (ASCII, 2025).[70] At the same time, the agreement on 15 percent US tariffs without corresponding counter-tariffs represents a significant concession by the EU and is therefore likely to contradict the WHO's basic principle of **reciprocity** .

6.5 Fields of action

166 While the EU's trade and competition policy instruments attempt to address competition-distorting subsidies and their effects, they offer only limited scope for other forms of competition-distorting Chinese industrial policy. Despite relevant improvements in **intellectual property protection** in China, the European Commission (2023) continues to identify problematic practices, for example in connection with forced technology transfer. The competitive advantages that Chinese companies gain from such practices are not sufficiently addressed by the existing trade policy instruments. The Comprehensive Agreement on Investment provided for regulations that were intended to prevent forced technology transfer by means of investment requirements. However, this has not yet been ratified.

167 The European Commission generally intends to evaluate the effectiveness of trade policy measures both ex ante and ex post (Ecochard et al., 2023). Despite this intention, the **evidence on the effectiveness** of EU trade policy instruments to ensure a level playing field for European companies (►items 158-160) is limited.[71] The existing evidence (Johem et al., 2021; 2022) indicates that the EU's anti-dumping and anti-subsidy protective tariffs - contrary to the intention of these measures - did not increase the market share of EU companies. Instead, these have so far led to an increase in imports from non-affected export nations. It is therefore unclear whether the EU's seemingly consistent approach to creating a level playing field has so far had the intended effect. Accordingly, comprehensive evaluations are required in order to be able to draw conclusions as to whether the perceived threat from Chinese competition among Austrian companies is due to inadequately addressed distortions of competition and whether the existing EU instruments are therefore not sufficient to ensure fair competitive conditions for European companies.

168 In view of the increasing competitive pressure and the negative correlation established in this chapter between the intensity of Chinese competition and research and development expenditure by Austrian companies (►Figure 6.9), domestic **research and technology policy** is challenged. In an international comparison, Austria has a high level of government support for innovation activities, but also a high proportion of undifferentiated funding (e.g. by means of tax deductions) (OECD R&D Tax Incentives Database). In contrast, the focus in Chinese research and technology policy, particularly through the definition of key industries in the "Made in China 2025" strategy, is very pronounced. Against this backdrop,

[69] Council of Ministers presentation 20/13, September 3, 2025.

[70] This problem was addressed as part of the EU counter tariffs in 2018 by imposing large-scale import duties on final goods, including various luxury goods such as Harley Davidson motorcycles.

[71] See Analysis and assessment - European Commission.

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the weak productivity trend and Austria's budgetary situation, a reorientation and refocusing of government support for innovation activities - a recommendation of the OECD (OECD, 2024) - appears to make sense.

169 The new **EU Single Market Strategy** (►item 163) lists various reform areas to reduce barriers to intra-European trade relations. However, it does not address the obstacles most frequently mentioned by companies - differences with regard to tax regulations, in particular VAT.[72]

170 One obstacle to integration identified in the EU internal market strategy is the legal complexity resulting from the different transpositions of EU directives into national law. From this, the harmonization of existing regulations and the consideration of a **harmonization objective** in future transpositions of EU law into national law can be derived as a task for the governments of the EU member states.

171 The **diversification of sales markets** is also a strategy for dealing with newly erected trade barriers outside the European market. Austrian companies practiced this strategy during US President Trump's first term in office (►item 122). To support companies' diversification efforts, **advice, information and funding programmes** - such as the "go-international" internationalization campaign of the Federal Ministry for Economic Affairs, Energy and Tourism - are important.

172 On the other hand, **trade agreements** also play a special role for entry into new sales markets, as these are accompanied by a reduction in trade barriers and increased legal certainty for exporters (Christen et al., 2025). Various ex-post evaluations by the European Commission confirm the positive effects of EU free trade agreements on bilateral trade flows (e.g. European Commission, 2025[73]). Accordingly, early ratification of negotiated agreements (EU-Mercosur) and rapid progress in ongoing negotiations (e.g. EU-Australia, EU-India, EU-Malaysia) would appear to make sense.

173 Against the backdrop of widespread relocation intentions in Austrian industry (Gruber-Német et al., 2025), economic policy points of reference arise from the responses of companies to the reasons for their relocation intentions. The companies included in the WIFO industry survey cited in particular lower personnel costs (95%) and lower energy costs abroad (60%) as well as the regulatory environment (41%) and the tax and duty burden in Austria (40%) as reasons for relocation efforts.

Literature

Acemoglu D., Autor D., Dorn D., Hanson G. H., Price B. (2016). Import Competition and the Great US Employment Sag of the 2000s. Journal of Labor Economics, 34(1 Pt. 2), 141-198.

Aghion P., Blundell R., Griffith R., Howitt P., Prantl S. (2009). The Effects of Entry on Incumbent Innovation and Productivity. The Review of Economics and Statistics, 91(1), 20-32.

Alfaro L., Chor D. (2023). Global Supply Chains: The Looming "Great Reallocation". NBER Working Papers, No. 31661.

Amiti M., Redding S. J., Weinstein D. E. (2019). The Impact of the 2018 Tariffs on Prices and Welfare. Journal of Economic Perspectives, 33(4), 187-210.

ASCII (2025). Neue US-Zölle bedrohen wirtschaftliche Erholung in Österreich und ganz Europa: Study warns of loss of prosperity and counter tariffs, press release, 12.08.2025.

Asquith B., Gaswami S., Neumark D., Rodriquez-Lopez A. (2019). U.S. Job Flows and the China Shock. Journal of International Economics, 118, 123-137.

Author D. H., Dorn D., Hanson G. H. (2013). The China Syndrome: Local Labor Market Effects of Import Competition in the United States. The American Economic Review, 103(6), 2121-2168.

[72] The 28. Regime is an initiative of the European Union that is currently being developed with the aim of creating an optional legal framework for companies in the EU that deviates from the national legal frameworks and is uniform within the EU. As part of this initiative, the development of harmonized tax regulations for companies that choose this legal framework is also planned (Sanders, 2025).

[73] Siehe auch andere ex-post Evaluierungen der Europäischen Kommission.

This machine translation was created on November 27, 2025, using DeepL.

Author D. H., Dorn D., Hanson G. H., Pisano G., Shu P. (2020). Foreign Competition and Domestic Innovation: Evidence from U.S. Patents. American Economic Review: Insights, 2(3), 357-374.

Baker S. R., Bloom N., Davis S. J. (2016). Measuring Economic Policy Uncertainty. The Quarterly Journal of Economics, 131(4), 1593-1636.

Balsvik R., Jensen S., Salvanes K. G. (2015). Made in China, Sold in Norway: Local Labor Market Effects of an Import Shock. Journal of Public Economics, 127, 137-144.

Bernard A. B., Smeets V., Warzynski F. (2017). Rethinking Deindustrialization. Economic Policy, 32(89), 5-38.

Bernleithner B. (2025). Slight improvement in sentiment despite existing uncertainties: WKÖ Economic Barometer Summer 2025. Austrian Federal Economic Chamber, Vienna.

Bloom N., Bond S., Van Reenen J. (2007). Uncertainty and Investment Dynamics. Review of Economic Studies, 74(2), 391-415.

Bloom N., Draca M., Van Reenen J. (2016). Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity. Review of Economic Studies, 83, 87-117.

Bloom N., Handley K., Kurmann A., Luck P. A. (2024). The China Shock Revisited: Job Reallocation and Industry Switching in U. S. Labor Markets. NBER Working Papers, No. 33098.

Bown C.P., Kolb M. (2025). Trump's Trade War Timeline: An Up-to-Date Guide. Peterson Institute for International Economics.

Caldara D., Iacoviello M., Molligo P., Prestipino A., Raffo A. (2019). Does Trade Policy Uncertainty Affect Global Economic Activity? FEDS Notes. Washington: Board of Governors of the Federal Reserve System, September 4, 2019.

Caselli, M., Nesta L., Schiavo S. (2021). Imports and Labor Market Imperfections: Firm-level Evidence from France. European Economic Review, 131, 103632.

Caselli M, Schiavo S. (2020). Markups, Import Competition and Exporting. The World Economy, 43(5), 1309-1326.

Cavallo A., Gopinath G., Neiman B., Tang J. (2021). Tariff Pass-through at the Border and at the Store: Evidence from US Trade Policy. American Economic Review Insights, 3(1),19-34.

Christen E., Felbermayr G., Mahlkow H., Sandkamp A. (2025). Transatlantic cooperation instead of a tariff war - scenarios, options, solutions. Stiftung Familienunternehmen (ed.), Munich.

Cusolito, A. P., Garcia-Marin A., Maloney W. F. (2023). Proximity to the Frontier, Markups, and the Response of Innovation to Foreign Competition: Evidence from Matched Production-Innovation Surveys in Chile. American Economic Review: Insights, 5(1), 35-54.

Davis, S. J. (2016). An Index of Global Economic Policy Uncertainty. National Bureau of Economic Research Working Papers, No. 22740.

De Soyres F., Fisgin E., Gaillard A., Santacreu A. M., Young H. (2025, February 28). The Sectoral Evolution of China's Trade. FEDS Notes. Washington: Board of Governors of the Federal Reserve System. https://doi.org/10.17016/2380-7172.3713.

Ding X., Fort T. C., Redding S. J., Schott P. K. (2022). Structural change within versus across firms: Evidence from the United States. NBER Working Papers, No. w30127.

Dorn F., Flach L., Gourevich I. (2024). Building a Stronger Single Market: Potential for Deeper Integration of the Services Sector within the EU. IFO Institute EconPol Policy Report, 52/2024.

Ecochard P., Nilsson L., Schmitz J. (2023). Evaluating Trade Policy: The Practice of the European Commission. Chief Economist Note, Issue 5, September 2023.

European Court of Auditors (2025). The EU's Strategy for Microchips - reasonable progress in its implementation but the Chips Act is very unlikely to be sufficient to reach the overly ambitious Digital Decade target. Special report 12/2025. Publications Office of the European Union, Luxembourg.

European Commission (2023). Report on the Protection and Enforcement of Intellectual Property Rights in Third Countries. Commission Staff Working Document. European Commission, Brussels.

This machine translation was created on November 27, 2025, using DeepL.

European Commission (2024). The Future of European Competitiveness - In-depth Analysis and Recommen-dations. European Commission, Brussels.

European Commission (2025). Study in Support of an ex-post Evaluation of the Comprehensive Economic and Trade Agreement (CETA) between the EU and its Member States and Canada. Publications Office of the European Union, Luxembourg.

Fajgelbaum P. D., Goldberg P. K., Kennedy P. J., Khandelwal A. K. (2020). The Return to Protectionism. Quarterly Journal of Economics, 135(1), 1-55.

Fajgelbaum P. D., Goldberg P. K., Kennedy P. J., Khandelwal A. K., Taglioni D. (2024). The US-China Trade War and Global Reallocations. American Economic Review: Insights, 6(2), 295-312.

Fontagné L., Yotov Y. V. (2024). Reassessing the Impact of the Single Market and its Ability to Help Build Strategic Autonomy. Single Market Economics Papers, Working Paper 25. Publications Office of the European Union, Luxembourg.

Fort, T. C., Pierce, J. R., Schott, P. K. (2018), New Perspectives on the Decline of US Manufacturing Employment. Journal of Economic Perspectives, 32(2), 47-72.

Friesenbichler K., Kügler A., Reinstaller A. (2024). The Impact of Import Competition from China on Firm-level Productivity Growth in the European Union. Oxford Bulletin of Economics and Statistics 86(2), 236-256.

Friesenbichler K. S., Reinstaller A. (2023). Small and Internationalized Firms Competing with Chinese Exporters. Eurasian Business Review, 13, 167-192.

Freund C., Mattoo A., Mulabdic A., Ruta M. (2024). Is US Trade Policy Reshaping Global Supply Chains? Journal of International Economics, 152, 104011.

Fuchs R., Göllner T., Hartmann S., Thomas T. (2023). Fostering Excellent Research by the Austrian Micro Data Center (AMDC). Jahrbücher für Nationalökonomie und Statistik, 244(4), 433-445.

Gaál N., Nilsson L., Perea J.R., Tucci A., Velázquez B. (2023). Global Trade Fragmentation. An EU Perspective. European Economy Economic Briefs, 075. Publications Office of the European Union, Luxembourg

García-Herrero A., Vasselier A. (2024). Updating the EU Strategy on China: Co-existence while De-risking through Partnerships. Policy Brief 27/2024, Bruegel.

Gaulier, G., Zignago, S. (2010). BACI: International Trade Database at the Product-Level. The 1994-2007 Version. CEPII Working Paper, No. 2010-23.

Gopinath G., Gourinchas P.-O., Presbitero A. F., Topalova P. (2025). Changing Global Linkages: A New Cold War? Journal of International Economics, 153, 104042.

Gourieroux C., Monfort A., Trognon, A. (1984). Pseudo Maximum Likelihood Methods: Applications to Poisson Models. Econometrica, 52, 701-720.

Grossman G. M., Helpman E., Redding S. J. (2024). When Tariffs Disrupt Global Supply Chains. American Economic Review, 114(4), 988-1029.

Grover A., Vézina, P.-L. (2025). Geopolitical Fragmentation and Friendshoring: Evidence from Project-Level Foreign Investment Data. World Bank Policy Research Working Paper, No. 11149.

Gruber-Német M. (2025). International competition, protectionist measures and their impact on Austrian firms. Report 01/2025, Office of the Austrian Productivity Board, Vienna.

Gruber-Német M., Hölzl W., Reinstaller A. (2025). Veränderte Reaktionen der österreichischen Industrie auf chinesische Konkurrenz. Brief analysis 04/2025, Office of the Austrian Productivity Board, Vienna.

Gu G., Malik S., Pozzoli D., Rocha V. (2020). Chinese Import Competition, Offshoring and Servitization. Economic Inquiry, 60(2), 901-928.

Guilhoto J. M., Webb C., Yamano N. (2022). Guide to OECD TiVA Indicators, 2021 edition. OECD Science, Technology and Industry Working Papers, No. 2022/02.

Handley K, Limão N. (2022). Trade Policy Uncertainty. Annual Review of Economics, 14, 363-395.

Hölzl W., Friesenbichler K. S., Kügler A., Meyer B. (2025). Challenges and determinants of competitiveness in times of global uncertainty: Results of the WIFO Industry Survey 2025. WIFO Monthly Reports, 98(7), 373-382.

This machine translation was created on November 27, 2025, using DeepL.

Johem M., Norell N., Tingvall P. (2021). EU Trade Defense - The Unintended Effects of Anti-Dumping Measures. Kommerskollegium, National Board of Trade Sweden, Stockholm.

Johem M., Norell N., Tingvall P. (2022). The Economics of the EU's Trade Defense Instruments: Winners and losers of anti-dumping policies. Kommerskollegium, National Board of Trade Sweden, Stockholm.

Jungmittag A., Marschinski R. (2023). Service Trade Restrictiveness and Foreign Direct Investment - Evidence from Greenfield FDI in Business Services. The World Economy, 46(6), 1711-1758.

Kawlath B. (2025, August 26). Concerns Regarding Expansion of US Tariffs on Machinery Products. Letter to Ursula von der Leyen, President of the European Commission, Verband Deutscher Maschinen- und Anlagenbau.

Kumar S., Gorodnichenko Y., Coibion O. (2023). The Effect of Macroeconomic Uncertainty on Firm Decisions. Econometrica, 91(4), 1297-1332.

Luo C., Wang N. (2025). U.S.-China Trade Frictions and Supply Chain Reconstruction: Perspective from Indirect Links. Journal of International Money and Finance, 151, 103256.

Milberg W., Johnston L. (2025). The China Shock Then and Now: Imports, Cost Markups and Profits. The New School for Social Research Working Papers, 12/2025.

Naqvi A. (2025). Global Demand and Supply Elasticities and the Impact of Tariff Shocks. WIFO Working Papers, 702/2025.

OECD (2024, September 17). How Do Governments Direct Support for Innovation? Lessons from Recent OECD Measurement and Impact Analysis (mabis) Work. OECD Policy Brief.

Pierce J. R., Schott P. K. (2018). Investment Responses to Trade Liberalization: Evidence from U.S. Industries and Establishments. Journal of International Economics, 115, 203-222.

Rodriguez-Lopez J. A. (2014). What Drives Offshoring Decisions: Selection and Escape-Competition Mechanisms. Technical Report, University of California, Irvine.

Santos Silva J. M. C., Tenreyro, S. (2006). The log of Gravity. The Review of Economics and Statistics, 88, 641-658.

Sanders A. (2025). The Scope of the 28th Regime: A Legal Framework for Innovation the European Way. In-depth analysis commissioned by the Legal Affairs Committee of the European Parliament.

Schneider M., Sellner R. (2025). No Trump against Trump: Effects of the customs agreement between the EU and the USA on Austria. OeNB Blog, 30.07.2025.

Tordoir S., Setser B. (2025). How German Industry Can Survive the Second China Shock. Center for European Reform.

Utar H. (2018). Workers Beneath the Floodgates: Low-Wage Import Competition and Workers' Adjustment. The Review of Economics and Statistics, 100(4), 631-647.

This machine translation was created on November 27, 2025, using DeepL.

7. Energy costs as a driver of structural change in Austria

The most important facts at a glance

- High energy prices continue to pose a relevant risk for many Austrian industrial firms. Final natural gas and electricity prices have stabilized since 2022. However, the continuing high price level, especially for electricity, is contributing to a deterioration in the competitive price position compared to competitors within and outside of Europe and is reducing incentives to electrify industrial processes.
- Industrial companies are increasingly showing tendencies to reduce employment and relocate production. High labor costs and high energy prices are at the heart of strategic considerations in this regard.
- With energy prices remaining high, there is particular pressure to reduce energy consumption and energy intensity, especially for energy-intensive companies.
- Energy intensity at company level has improved continuously. Between 2009 and 2022, it fell by 4.8% cumulatively across all companies. Large companies and companies in energy-intensive sectors have reduced their energy intensity significantly more than other companies.
- Economies of scale make the most important contribution to improving energy intensity. The energy intensity therefore improves with increasing production output. Technological change and pure energy efficiency gains have only contributed to their improvement since the energy crisis.
- Taking rebound effects into account, low-threshold energy efficiency measures could enable lasting savings of around 7-8% of energy consumption. Increases in efficiency can therefore only offset the sharp rise in energy costs to a limited extent.
- Nevertheless, cumulative increases in energy efficiency can make an important contribution to reducing energy consumption in industry. However, this is offset by the need for a sharp increase in energy consumption as part of the energy transition.
- Short-term support for energy-intensive companies seems necessary in view of the existing cost differentials with important competitors. However, this is not a long-term solution.
- In the long term, support measures and investment security are key prerequisites for the ecological transformation of the industry. These should primarily be aimed at technical change, which on the one hand improves energy use, but on the other hand also strengthens the competitiveness of affected companies.
- In view of long-term development prospects, however, the basic question remains open as to how the production of energy-intensive products in Austria can be made both economically and ecologically sustainable.

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7.1 Introduction[74]

174 **Energy-intensive industries in the EU** are facing two key challenges: **high energy prices** and the **energy transition**. Even in the third year after the energy crisis, **energy costs remain high**. In an international comparison, European companies pay significantly higher electricity and gas prices than their competitors in the USA or China - a fact that significantly impairs their global competitiveness (Produktivitätsrat, 2024). Austria is particularly susceptible to the consequences of permanently high energy costs due to the high importance of energy-intensive industries compared to the rest of the EU. In energy-intensive sectors, **company relocations** and **job losses** are a threat in the long term.

175 The future development of energy prices and the availability of CO_2-neutral energy sources are of central importance for investment and location decisions by energy-intensive companies. Structural changes in the Austrian corporate sector therefore depend on the one hand on whether it is possible to provide cost-effective and climate-neutral energy. Success or failure in this area is reflected in the **level and stability of final energy prices** as well as the **availability of renewable energy at the location**. On the other hand, the adaptability and efficiency potential of companies play a decisive role. Measures to increase energy efficiency and reduce energy consumption are considered to be particularly cost-effective. Their success is reflected in the **decreasing energy intensity of companies**.

176 Based on the Draghi Report (Draghi, 2024), the European Commission is planning a series of **measures to simultaneously reduce energy costs for companies and decarbonize industry**.[75] Key elements are the promotion of long-term electricity supply contracts (PPAs), particularly for SMEs and energy-intensive companies, and the reform of the electricity market design to improve price stability and predictability. A legal act is intended to speed up approval procedures for decarbonization projects, facilitate investment in electrification and low-carbon technologies and create lead markets for green industrial products. Together, these measures are intended to create an investment-friendly environment that simultaneously strengthens competitiveness and climate targets. These issues also occupy a **central place** in the federal government's political agenda, whereas in the recent past the political focus has primarily been on mitigating the price shock resulting from the energy crisis.

177 The Productivity Report 2024 (Produktivitätsrat, 2024) has already addressed the development of energy prices, their impact on the international competitiveness of Austrian companies and the institutional framework conditions required for a cost-effective and CO_2-neutral energy supply. Due to the significance of the problem of high energy costs for the industrial location (►item 28), the **focus of this chapter is on the adaptation options and potential of Austrian companies** and the resulting economic policy options.

178 ►Section 7.2 first deals with the possible effects of high energy price risks on the location decisions of Austrian industrial companies and the development of employment in industry in order to identify possible deindustrialization trends).[76] In ►section 7.3 , the focus is then on the adaptation options for Austrian companies, particularly in the energy-intensive industries. First, the development of energy intensity at company level and, in particular, the role of possible improvements in energy efficiency in this process is analyzed. This provides important insights into adaptation mechanisms and possibilities at company level and into the adaptability of individual sectors to external factors such as climate policy

[74] The results presented are based on the background studies by Reinstaller and Sellner (2025b) and Gruber-Német, Reinstaller, Hölzl (2025). Technical details, if not mentioned in the text, can be found in these works. In all analyses, an attempt was made to pull the data to the current margin. In the case of the data from the Austria Micro Data Center, this is the year 2022, for the Eurostat data used the year 2024. The WIFO industry survey was conducted in 2025 and the forward-looking questions relate to the period 2025-2030.

[75] See *Deal for a Clean Industry* (COM(2025) 85 final), *Action Plan for Affordable Energy* (COM(2025) 79 final) and the announcement of the *Act to accelerate the decarbonization of industry* (Ref. Ares(2025)3079152).

[76] According to the European Investment Bank's 2024 Investment Survey, energy costs are the most important obstacle to investment in manufacturing, alongside skills shortages and global uncertainty (EIB, 2025).

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or energy price shocks. This is a prerequisite for targeted and effective industrial and climate policy measures. Subsequently, potential energy savings through energy efficiency measures are evaluated. In ►section 7.5 , the results and economic policy fields of action are discussed.

Text Box 7.1: **Data basis of the chapter**

For the analyses in this section, anonymized company data from the performance and structural statistics (LSE) and the goods input statistics (GES) were used. The company data from Statistics Austria, which are accessible for scientific purposes in the Austria Micro Data Center (AMDC) (Fuchs et al., 2024), were available for the period 2008-2022.

The EU-wide harmonized *performance and structural statistics* provide comprehensive information on the structure, activity, employment, investment and economic performance of companies at national and regional level.

The annual *Goods Input Survey* is used to record and present basic and raw materials, finished intermediate products, auxiliary materials and selected operating materials that were required in the manufacturing sector or the provision of industrial services in the course of a survey year. It also includes the energy used in the production process. The goods usage statistics are the central source of data on the use of energy sources in the manufacturing sector (industry). Companies in the NACE sections B-F that exceed certain thresholds in terms of employment and economic output are surveyed. The survey covers around 2,300 companies. Due to the number of cases and the focus of the analysis on energy consumption, this analysis is limited to the manufacturing sector (NACE C) and construction (NACE F).

Goods use statistics and *Energy balance* of Statistics Austria are based on different definitions and delimitations: While the goods use statistics record the gross use of all energy sources, the energy balances only show the net use for direct production purposes - i.e. the final energy consumption after deducting the conversion processes. The energy consumption determined in the present calculations is therefore higher than that shown in the energy balances of Statistics Austria. Supplementary surveys - for example by the power plant statistics - would have been necessary for an adjustment and methodological harmonization.

In 2025, the Austrian Productivity Board took part in the *WIFO Industry Survey* (Hölzl et al., 2025) with its own question module (see ►Text Box 6.2). This chapter draws on data from the WIFO industry survey that makes it possible to establish a link between the risks posed by high energy prices and location-relevant decisions made by the companies surveyed.

Sector breakdowns

The analyses and evaluations in the sections ►7.2 and ►7.3 place a special focus on energy-intensive industries. The following subdivisions are made:

The *energy-intensive industries in the narrower sense* include the iron and steel industry (C24) and the wood industry (C16), the paper, cardboard and printing industry (C17), followed by the chemical, glass and ceramics industry (C23). The share of energy costs in total costs in these areas averages between 4% and 8%, but can reach values of between 15% and 20% in some cases. This range is reflected in widely differing energy cost shares at company level (see Produktivitätsrat, 2024). In the chemical industry (C20), there is less variation, although there are also individual companies with very high energy intensity. Industries of this type are therefore often the focus of economic policy measures.

Energy-intensive industries in the broader sense are those whose median energy intensity is in the top third (3rd percentile). tercile) of the distribution of all companies recorded in the goods input statistics. In addition to the sectors mentioned above, this also includes the food and beverage industry (C10-11) and the textile industry (C13). Such differentiation within the company sample is necessary due to the high heterogeneity in terms of energy intensity in order to obtain efficiency estimates that are as consistent and meaningful as possible (see Reinstaller and Sellner, 2025b).

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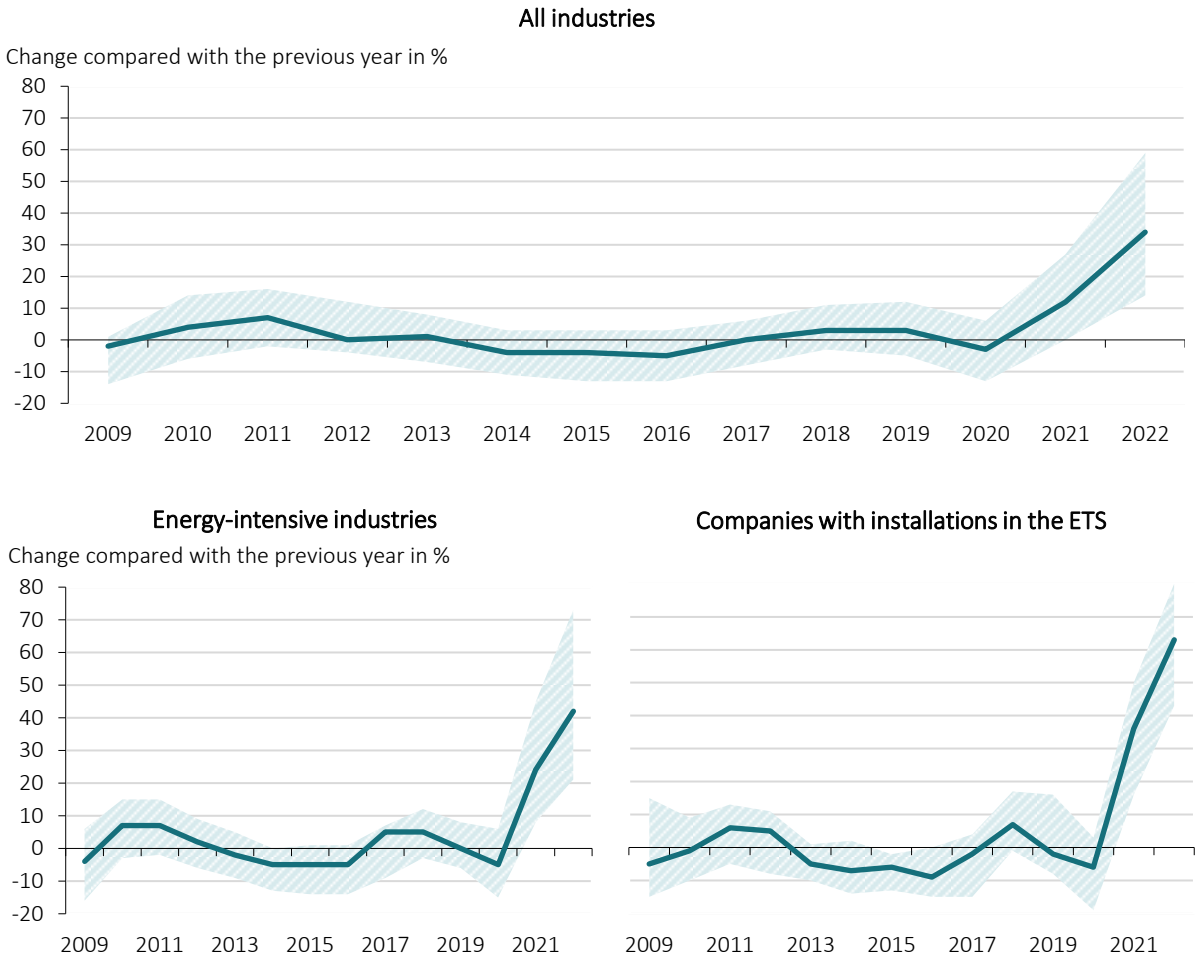
Ideally, a separate efficiency estimate should be carried out for each sector. However, this is not possible due to the small number of cases within individual NACE 2-digit code groups.

7.2 Energy prices and location decisions in Austrian industry

179 In 2021 and 2022, **energy costs** in the Austrian corporate sector rose **sharply** as a result of the energy crisis. At company level, an average cost increase of 15% was already observed in 2021, followed by a further 38% in 2022 (▶Figure 7.1). In energy-intensive industries, the increase was higher at 28% and 46% respectively. Companies with installations in the emissions trading system (ETS) were particularly hard hit, with energy costs rising by an average of 39% in 2021 and 59% in 2022. In some companies, costs have even more than doubled. The increases were partially offset by energy cost subsidies and the Electricity Cost Equalization Act.

Figure 7.1: **Change in energy costs in Austrian companies, 2009-2022**



Source: Statistics Austria Goods Usage Statistics, AMDC. PROD/OeNB calculations.
Note: The chart shows the average and the price dispersion in the 25th-75th percentiles. Percentile across all companies included in the goods usage statistics. For definition of energy-intensive industries, see ▶Text Box 7.1.

180 Although final natural gas and electricity prices for companies have stabilized since 2022 (▶item 28), the price trend for electricity in particular has contributed to a **deterioration in the competitive price position** compared to competitors within and outside of Europe (see Produktivitätsrat, 2024, p. 111ff.; Draghi, 2024, p. 14). As the direct intra-European comparison for the last year available in the data shows, the final price of natural gas in 2024 was close to the EU-wide median across all consumption bands (▶Figure 7.2). However, there are differences in terms of consumption intensity. For consumers in the middle consumption bands, the final price of natural gas was also close to the median. For

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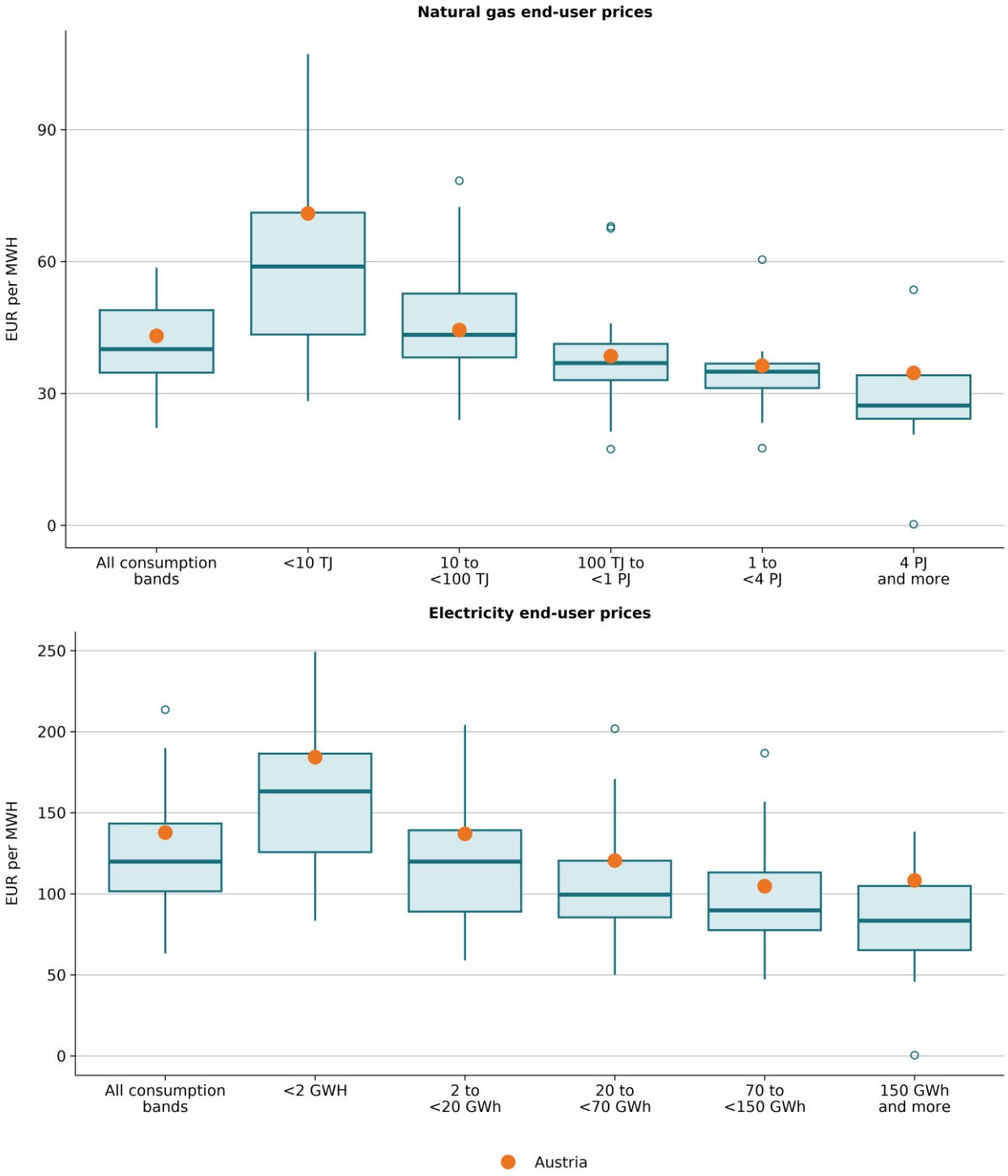
companies with low and high consumption, however, they were close to the 75% quantile and thus in the upper third of the distribution.

Figure 7.2: **Range of real gas and electricity end prices for companies according to the level of annual energy consumption (consumption bands) in the EU, 2024**

EUR per MWH at constant 2015 prices (excluding VAT)



Source: Eurostat, nrg_pc_205_c, nrg_pc_203_c. Natural gas excluding Cyprus and Malta.

181 By contrast, final electricity prices for domestic companies were in the top third of the EU-wide price distribution for all consumption bands in 2024. The **cumulatively higher price increases** (►item 28 and ►Figure 2.2) compared to the EU have thus contributed to a loss of price competitiveness in electricity

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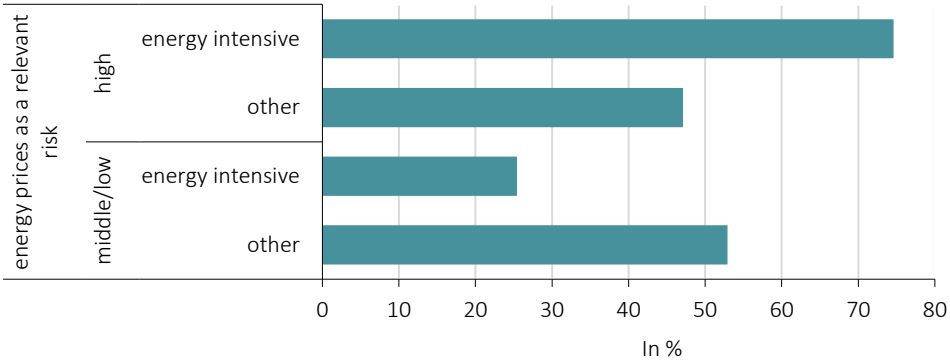
prices. In 2019, the average electricity price in Austria was slightly above the EU-wide median price, but almost twenty percentage points below the weighted EU average price. In 2024, this advantage has shrunk to 1.6 percentage points. The observed price increases are due to **price components** that are related to **energy generation and supply**[77] . After various adjustments in the course of the energy crisis (Produktivitätsrat, 2024), final price components from taxes and levies as well as grid costs hardly played a role in the observed price level for both natural gas and electricity until 2024 (►Figure 7.7). In 2025, however, significant increases in grid costs were again recorded.[78] The decoupling from EU-wide price developments is much more pronounced in the area of electricity prices than for natural gas (►Figure 2.2).[79]

182 Companies can react to permanently increased energy costs and the associated business risks by restricting their economic activities at their location or relocating them to regions with lower costs. Based on data from the WIFO industry survey (Hölzl et al., 2025)[80] , the **relationship between energy price risks and location decisions of Austrian industrial companies** was therefore examined with regard to relocation and job cuts.

183 The analysis pays particular attention to companies that operate in energy-intensive sectors or perceive high **energy prices as a significant risk factor**. Such a risk is particularly high if cost fluctuations are difficult to predict and the scope for adjustments is limited and is accompanied by a relative deterioration in the company's cost position compared to the competition. This focus is important as companies outside of energy-intensive sectors are also affected by energy price risks and not all companies in energy-intensive sectors are also exposed to high energy price risks.[81]

Figure 7.3: **Relevance of energy prices as a business risk within and outside energy-intensive industries**



Source: WIFO Industry Survey 2025. Own calculations; see Hölzl et al. (2025). Answer to the question "How high is the uncertainty in your company regarding the development of energy prices?" Answer option: 'Relevance of the risk for your company' (high/medium/low)".
Note: For a definition of energy-intensive industries, see ►Text Box 7.1.

[77] Costs for generation, aggregation, balancing energy, costs for delivered energy, customer service, after-sales management and other supply costs (Eurostat).

[78] The increases amount to around 19%. According to E-Control this is due to increased investment requirements and reduced delivery volumes (accessed 8.10.2025).

[79] The investigation by the Federal Competition Authority (BWB) and the energy market regulator E-Control has provided indications of a restricted competitive situation (Federal Competition Authority/E-Control, 2025), which could be at least partly responsible for the observed development. The main criticisms are the high regional market concentration and market fragmentation as well as the multiple cross-shareholdings between the energy supply companies. Another important factor contributing to higher electricity prices is the lack of grid transmission capacity, which is associated with expensive congestion management measures.

[80] For details on the WIFO industry survey, see ►Text Box 6.2. A more comprehensive presentation of all the findings presented here can be found in a brief analysis by the Office of the Productivity Council (see Gruber-Német et al., 2025).

[81] The evaluations of the perceived energy price risk do not allow any causal conclusions to be drawn: Companies could see high energy prices and an insecure supply as a disadvantage for their location - regardless of measures already planned such as job cuts or relocation. Conversely, a high energy price risk can very well be the trigger for such measures. For companies with low energy costs, it can be assumed that the energy price risk is only one of several relevant location factors.

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184 In the sample surveyed, around 23% of companies can be assigned to energy-intensive sectors. Of this subgroup, just under 75% rate **energy prices as a particularly relevant risk**. In comparison, the proportion in the overall sample is 53% of the companies surveyed (►Figure 7.3). This means that energy prices are also an important risk factor for companies outside of energy-intensive sectors, even if they are less affected.

185 Companies that rate the development of energy prices as a high risk (►Figure 7.4, top panel) express the **intention to reduce the number of their employees at overall company level in Austria** much more frequently than the overall sample. There is also a strong tendency to reduce employment in the production sector, but this corresponds to that of the overall sample (►Figure 8.18). Companies from energy-intensive sectors follow this pattern (►Figure 7.4, bottom panel). However, the calculated overhangs are significantly lower. In terms of overall employment, there is a trend towards an increase in employment, albeit a weak one. In the industrial companies surveyed, the strongest tendency to cut staff was seen in the areas of finance and controlling as well as production.

186 For companies from **energy-intensive sectors**, the survey results therefore indicate a **more stable employment trend** compared to the overall sample. The further differentiation of companies in energy-intensive sectors according to their risk perception with regard to energy prices shows: Companies that perceive a high risk are much more inclined to reduce employment in production. Companies that rate the risk as medium or low, on the other hand, more frequently express the intention to keep their headcount constant or even increase it at an overall company level over the next five years.

187 Companies in energy-intensive sectors most frequently cite **falling demand** (26.7%), **technological change** (22.2%) and **outsourcing** (20.2%) as **reasons for planned job cuts**. These frequencies largely correspond to the values of the overall sample. However, it is striking that outsourcing hardly plays a role for companies in energy-intensive sectors. Instead, technological changes and other factors such as cost pressure are given greater weight.

188 The **tendency to relocate** corporate functions abroad is pronounced in Austrian industry as a whole and has intensified over the past ten years (Hölzl et al., 2025)[82]. Companies that rate energy prices as a high business risk do not show a significantly different propensity to relocate compared to the overall sample - with a share of 32.4%, they are close to the average. **Companies from energy-intensive sectors are, however, more reluctant to relocate**: Around 24.6% state that they intend to relocate one of their functions abroad. Although this value is high, the difference to the previously mentioned values could indicate stronger location loyalty due to specific location advantages, such as specific competencies at the location or tax benefits (e.g. electricity cost subsidies), higher conversion costs or strategic considerations in dealing with energy-related challenges.

189 High personnel and energy costs are most frequently cited as the main reasons for planned relocations (see Gruber-Német et al., 2025). Energy-intensive companies (83% mention personnel costs, 62% energy costs) and companies that classify energy prices as a high risk do not differ systematically in their response behavior. Both groups mention energy costs slightly more frequently than the overall sample. Overall, **personnel and energy costs are considered to be the key drivers for relocation intentions in Austrian industry across all sectors** (Hölzl et al., 2025).

[82] Companies planning to reduce their total workforce also state more frequently that they intend to relocate certain functions abroad. Conversely, companies with constant or rising employment are less likely to report such plans.

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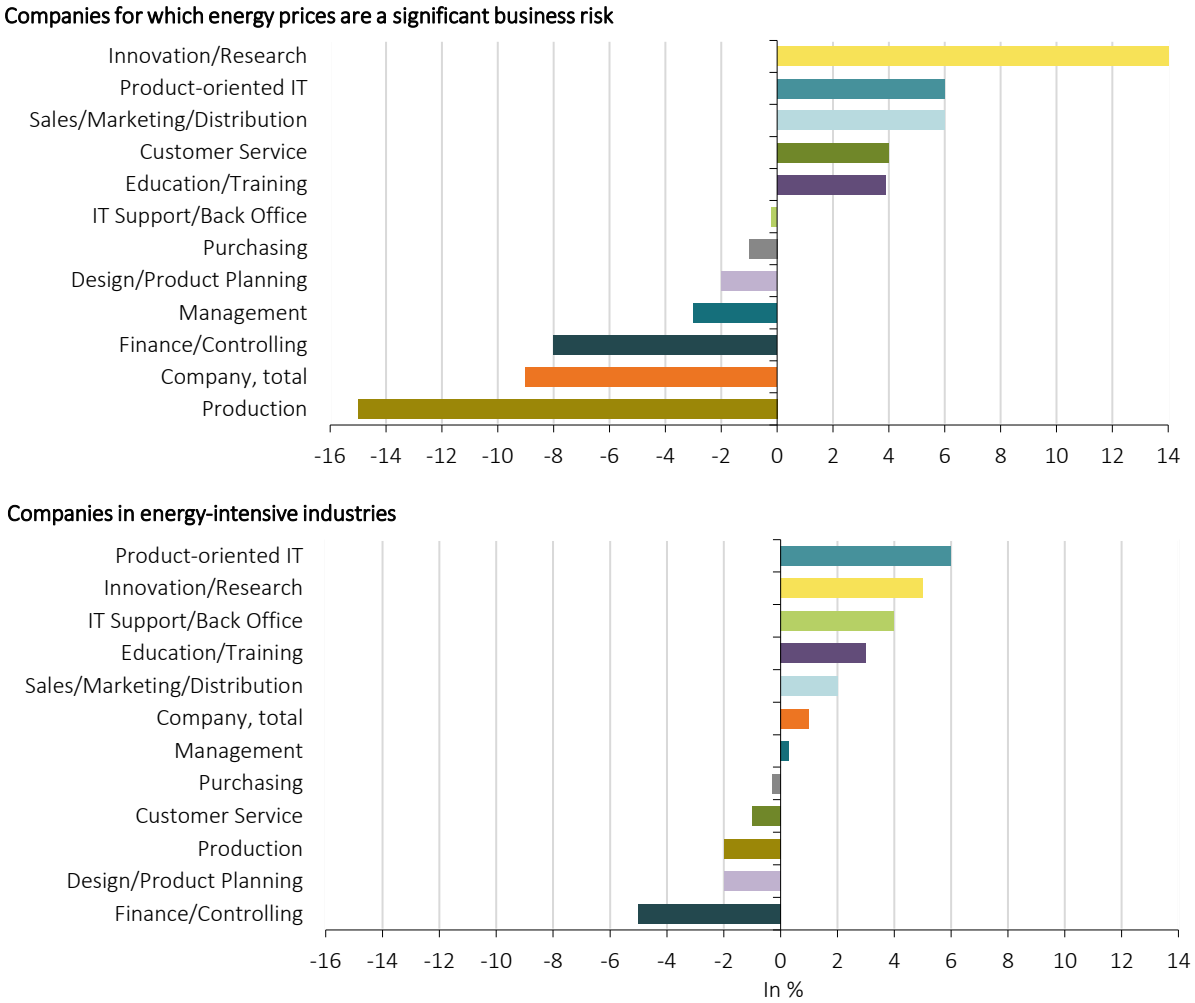
Figure 7.4: **Trend in the planned adjustments to employment. Balance of positive and negative reports**
In % of all reports in a category



Source: WIFO Industry Survey 2025. Own calculations; see Hölzl et al. (2025). Response to the question "In which business areas does your company plan to increase, reduce or keep the number of employees in Austria constant over the next five years?" The surplus of reports results from the difference between "positive" and "negative" reports from the companies surveyed as a percentage of all "positive", "neutral" and "negative" reports in one of the categories shown.
Remark: For a definition of energy-intensive industries, see ►Text Box 7.1.

190 The survey results show that rising energy prices do not affect industry across the board - the decisive factor is whether companies classify them as a relevant risk factor. Companies with corresponding risk exposure show a significantly stronger tendency to reduce employment. These trends are less pronounced in energy-intensive industries. **Relocation intentions are primarily determined by high personnel costs. Higher energy costs are increasingly influencing the choice of location**. Companies in energy-intensive sectors are less inclined to relocate than other companies. Nevertheless, there is a clear trend towards the loss of industrial jobs in connection with the existing cost pressure, to which energy prices contribute. This once again underlines the central role of energy policy measures to secure supply and stabilize energy prices in order to safeguard the industrial location.

7.3 Energy intensity at company level and potential energy savings through improvements in energy efficiency

7.3.1 Energy intensity at company level and its determining factors

191 Companies have little influence on the long-term development of energy prices or the availability of cost-effective renewable energy. With energy prices remaining high, there is **particular pressure to**

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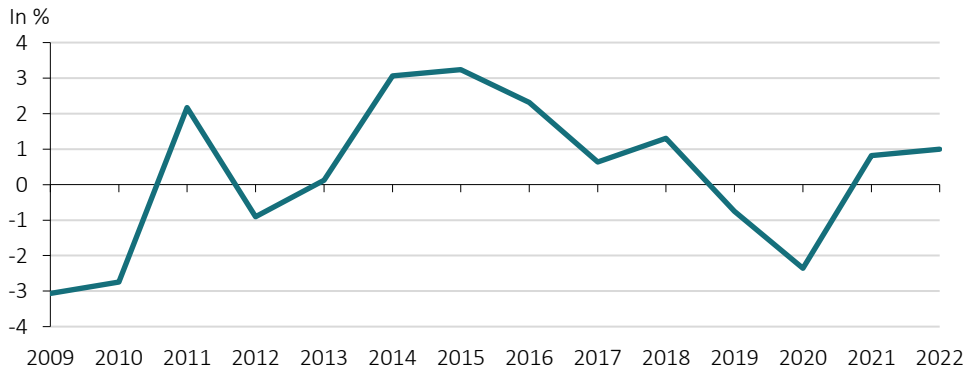
reduce energy consumption and energy intensity, especially for energy-intensive companies. As already shown in last year's Productivity Report, the scope for adjustment by switching to alternative energy sources is very limited (see Produktivitätsrat, 2024; Reinstaller and Sellner, 2025a). For this reason, the possibilities for companies to cushion high energy costs through technical measures were examined.

192 In the following analyses, **energy intensity at company level** is defined as the share of energy costs in real production value.[83] It shows how important energy is as a cost factor in production. Energy intensity at company level decreases when the real production value increases faster than energy consumption. If energy prices remain stable, this can lead to a lower share of energy costs in production costs. In the event of fluctuating energy prices, however, a lower energy intensity can dampen cost increases due to energy price fluctuations. As a rule, it also goes hand in hand with lower CO_2 emissions per production unit, provided the proportion of fossil fuels in the energy mix does not increase.

193 **Improvements in energy intensity** can be due to higher energy efficiency, the use of cheaper energy sources or optimized production processes, among other things. Since it is influenced by many factors, several causes should always be considered when assessing its development. Increases in efficiency are particularly important here: They make it possible to provide the same volume of energy services (such as process heat or mechanical work) using less energy with otherwise the same technology and are therefore to be assessed differently in qualitative terms than other causes of falling energy costs. They represent untapped energy-saving potential that can be leveraged by optimizing processes without additional investment in systems or process innovations.

Figure 7.5: **Change in average energy efficiency at company level**

2009-2022, all companies



Source: Goods input statistics, performance and structural statistics, Statistics Austria (AMDC). Own calculations.
Note: The measured improvement in energy efficiency was determined from the ratio of energy consumption to production value at company level and aggregated across all companies on the basis of a Törnqvist index. An improvement means that energy intensity decreases.

194 Since 2009, the **energy intensity at company level has improved continuously** each year. With the exception of 2010, 2012, 2019 and 2020, the indicator that measures improvements in energy intensity was positive every year (►Figure 7.5). The trend was particularly pronounced between 2014 and 2018, when energy intensity fell by 2-3% per year across all companies. An improvement in energy intensity was also observed in the years of the energy crisis in 2021 and 2022.

[83] At an economic level, energy intensity is generally defined as energy consumption per unit of real value added. It therefore does not measure energy costs, but rather the physical use of energy and serves primarily as a structural indicator, which is also influenced by changes in production structures, industry mix and choice of energy source. The observed decline in energy intensity in Austria was primarily due to a falling share of energy-intensive industries in total value added (Productivity Council, 2024).

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195 Between 2009 and 2022, energy intensity **improved by 4.8% across all companies** (►Table 7.1, column 1).[84] This corresponds to an average annual improvement rate of 0.35% (or 0.25% in the period 2009-2020). Important differences can be observed between groups of companies. The development of energy intensity varies greatly depending on the size of the company and the sector in which it operates. SMEs[85] or companies in sectors with low energy intensity improve their energy intensity more slowly than large or energy-intensive companies, or companies with installations in the European Emissions Trading System (ETS). Energy intensity deteriorated particularly sharply in the construction sector, especially during the crisis years: -27 % in the period 2009-2022 and -8.5 % in 2009-2020.

196 Based on an efficiency estimate using Austrian company data, the **development of energy intensity (EIG) at company level is broken down into five components** (►Text Box 7.2).[86] These components represent **different aspects of corporate decision-making processes and their influence on energy use** in companies. This differentiation enables a deeper understanding of the factors that significantly shape energy intensity at company level.[87]

[84] As the years 2020-2022 were characterized by the consequences of the COVID-19 epidemic on the one hand and the energy crisis on the other, ►Table 7.1 shows averages and cumulative figures for the entire observation period 2009-2022 as well as up to 2020 in order to transparently present the influence of this crisis period on the variables under consideration.

[85] Only a very small number of medium-sized companies and practically no small companies are recorded in the goods usage statistics each year. Statements with regard to company size may therefore not be representative.

[86] These contribute cumulatively over the years to either an improvement or a deterioration in energy intensity at company level. In ►Table 7.1 the calculated contributions are shown as annual averages and cumulated. The balance of all positive and negative contributions then results in the (expected) change in energy intensity (►columns 3-7 of Table 7.1).

[87] The contributions of the individual components fluctuate over time (see appendix in this chapter, ►Figure 7.8). The high discrepancy between the energy efficiency gains calculated from the data (*EIG - actual*) and the expected values calculated from the model (*EIG - expected*) in ►Table 7.1 is mainly due to the year 2022. However, the patterns observed are independent of whether the estimates explicitly control for the crisis years or not. The elasticities on which the component calculations are based also change only slightly and therefore only have a minimal effect on the results. Rather, the decisive factor is the significant increase in the unsystematic volatility of all variables included in the calculations, which reflects the high level of uncertainty in the crisis years. This uncertainty has a direct impact on the accuracy of the estimates in this period.

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Table 7.1: **Improving energy intensity in companies and contributing components**

	Contributions per year in % (average 2009–2020)						
	EIG		AEC	SEC	OIC	TC	EFFC
	actual	expected					
All companies	0,25	0,22	-0,27	0,85	-0,53	0,07	0,10
Energy intensity of the industry							
low	-0,30	-0,16	-0,21	0,88	-0,65	-0,36	0,18
medium	0,34	0,16	-0,21	0,93	-0,73	0,20	-0,03
high	0,70	0,64	-0,37	0,74	-0,23	0,37	0,13
Company size							
medium	-0,07	-0,04	-0,30	0,83	-0,43	-0,02	-0,12
large	1,02	0,86	-0,19	0,94	-0,79	0,27	0,62
Energy intense sectors (narrow def.)	0,87	0,98	-0,43	0,87	-0,11	0,46	0,19
Firms with plants in ETS	0,32	0,46	-0,33	0,61	-0,44	0,17	0,45
Construction sector	-0,71	-0,33	-0,08	0,69	-1,23	0,09	0,20

	Contributions per year in % (average 2009–2022)						
	EIG		AEC	SEC	OIC	TC	EFFC
	actual	expected					
All companies	0,35	0,17	0,21	1,19	-0,55	0,23	-0,91
Energy intensity of the industry							
low	-0,05	0,00	0,08	1,46	-0,64	-1,85	-0,70
medium	0,22	-0,09	0,15	1,23	-0,80	0,40	-1,07
high	0,83	0,54	0,41	0,88	-0,23	0,48	-0,99
Company size							
medium	0,03	-0,05	0,20	1,12	-0,41	0,14	-1,10
large	1,09	0,71	0,26	1,39	-0,88	0,43	-0,48
Energy intense sectors (narrow def.)	0,93	0,74	0,49	1,01	-0,17	0,59	-1,18
Firms with plants in ETS	0,92	0,75	0,39	1,14	-0,42	0,30	-0,66
Construction sector	-1,93	-0,75	-0,10	0,66	-1,31	0,39	-0,38

	Cumulative contribution 2009–2020 in %						
	EIG		AEC	SEC	OIC	TC	EFFC
	actual	expected					
All companies	3,02	2,65	-3,21	10,22	-6,39	0,79	1,24
Energy intensity of the industry							
low	-3,60	-1,91	-2,57	10,62	-7,80	-4,35	2,20
medium	4,05	1,86	-2,48	11,21	-8,80	2,34	-0,40
high	8,44	7,68	-4,49	8,84	-2,75	4,46	1,61
Company size							
medium	-0,82	-0,44	-3,58	9,99	-5,14	-0,25	-1,46
large	12,25	10,21	-2,24	11,33	-9,52	3,22	7,41
Energy intense sectors (narrow def.)	10,48	11,77	-5,13	10,45	-1,33	5,46	2,31
Firms with plants in ETS	3,88	5,49	-3,92	7,30	-5,55	2,08	5,35
Construction sector	-8,48	-3,97	-0,92	8,27	-14,82	1,06	2,44

	Cumulative contribution 2009–2022 in %						
	EIG		AEC	SEC	OIC	TC	EFFC
	actual	expected					
All companies	4,84	2,37	2,99	16,71	-7,73	3,19	-12,79
Energy intensity of the industry							
low	-0,73	0,03	1,09	20,41	-9,02	-2,59	-9,98
medium	3,08	-1,20	2,06	17,29	-11,16	5,64	-15,01
high	11,63	7,59	5,77	12,33	-3,27	6,70	-13,94
Company size							
medium	0,40	-0,73	2,79	15,71	-5,73	1,97	-15,46
large	15,26	9,93	3,60	19,40	-12,35	5,99	-6,69
Energy intense sectors (narrow def.)	13,07	10,40	6,91	14,08	-2,34	8,28	-16,55
Firms with plants in ETS	12,92	10,45	5,42	15,96	-5,90	4,16	-9,19
Construction sector	-27,07	-10,44	-1,36	9,20	-18,36	5,45	-5,38

Source: Goods input statistics, performance and structural statistics, Statistics Austria (AMDC). Own calculations.
Notes: EIG: Improvement in energy intensity as an annual rate of change (actual: calculated; expected: estimated on the basis of the underlying model). Components of the improvement in energy intensity: AEC: Contribution through change in allocation efficiency, SEC: Contribution through economies of scale; OIC: Contribution through changes in the production factors labor and capital; TC: Contribution through technological change; EFFC: contribution through improvements in energy efficiency. The sum of the components gives (approximately) the expected improvement in energy efficiency: $EIG_{expected}$ = AEC + SEC + OIC + TC + EFFC. ETS: European emissions trading system.

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Text Box 7.2: **Breakdown of the change in energy intensity at company level**

Energy costs and energy consumption are determined by energy prices, production output, the use of capital goods, labor and inputs, technological change and energy efficiency improvements. This means that the change in energy intensity (for definition see ►item 192) can be broken down into different components over time (see Adetutu et al., 2020):

1. Contribution through **improvements/deteriorations in allocation efficiency (AEC)**: Allocation efficiency means that companies use energy in such a way that their costs are as low as possible for a given production output. If all (affected) markets were fully efficient and companies could flexibly adjust energy consumption to price changes, the contribution of this component would be zero. However, if there are price distortions, for example due to subsidies or rigid energy supply contracts, these decisions deviate from cost-optimized use. Energy is then used too much or too little compared to the efficient market solution. In this case, the factor makes a positive contribution if the development of energy prices contributes to a reduction in energy intensity. The contribution is negative if energy price changes contribute to their deterioration. This factor is significantly influenced by the institutional framework conditions on the energy markets and by the technical adaptability to changes in energy costs at company level.
2. Contribution due to **scale effects (SEC)**: Economies of scale represent the relationship between changes in production levels, i.e. the quantity of goods and services produced, and changes in energy consumption. Energy consumption per production unit changes for companies depending on production output and is lowest at a certain level. If a company produces exactly this quantity, the economy of scale is zero and therefore has no influence on energy efficiency. If, for example, work is carried out below this optimum production quantity, the energy consumption per unit produced can increase, for example due to inefficient partial load operation or higher energy losses. In this case, an increase in emissions helps to improve energy efficiency. This factor is always positive if a change (increase) in production output (measured in terms of production value) contributes to a reduction in energy consumption per unit. This factor is influenced by the production level and thus by the size of the company and production technology, economic factors, but also by the competitiveness of the companies in the sense of their ability to produce close to their optimum output quantity.
3. Contribution through **changes in the use of the production factors labor and capital (OIC)**: If the intensity or composition of these two production factors changes at company level, e.g. through the use of more capital-intensive production processes, this can have an impact on energy consumption per unit produced. The effect shown in this context is positive if these changes in production processes at company level contribute to improving the company's energy intensity. This factor is influenced by investment decisions, the labor supply, as well as labor and capital costs.
4. Contribution through **technical change at company level (TC)**: Improvements in production technology, for example through improved manufacturing processes, a better trained workforce or general improvements in production processes, increase productivity and efficiency within the company. These changes can help to reduce energy consumption and energy costs. A positive value for this factor shows that technical progress at company level contributes to a reduction in energy intensity. Technical change is significantly influenced by the innovation behavior of companies.
5. Contribution through **changes in energy efficiency (EEFC)**: An improvement in energy efficiency is understood to mean a reduction in energy consumption for a given production output with a given technology and production factors . This means that the energy services required for a certain level of production (e.g. provision of mechanical work, heating in industrial processes, etc.) are provided by using less energy. This factor is a residual that results after all other relevant factors have been taken into account. Therefore, an assumption on the distribution of energy efficiency or inefficiency across all companies is required to calculate energy efficiency, as this cannot be observed directly. In this specific case, an exponential distribution was assumed. This

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assumes that the majority of companies try to use energy efficiently as they try to minimize their energy costs, while only a few companies are very inefficient in their energy use. This factor is influenced by the energy optimization of production processes and procedures.

The energy efficiency gain (EIG) in terms of a reduction in energy consumption per real euro of production value can be represented for each year *t* and company *i* as the sum of these components:

$$EIG_{it} = AEC_{it} + SEC_{it} + OIC_{it} + TC_{it} + EEFC_{it}$$

These factors are aggregated for individual industries or industry groups. This total, which represents a balance of positive and negative contributions, is based on Table 7.1, even though it shows multi-year averages and therefore does not add up exactly to $EIG_{expected}$. The decomposition is based on a so-called Stochastic Frontier True Fixed Effects (SFA-TFE) model for cost functions at company level. The results presented here were estimated on the basis of a translog production function and for individual company subgroups (▶Text Box 7.1). Technical details of this decomposition and the estimation of the underlying elasticities can be found in Reinstaller and Sellner (2025b).

197 The use of energy in production processes is not very flexible, especially when production facilities are designed for continuous operation. Fluctuations in capacity utilization then also cause fluctuations in energy consumption per unit produced. **The economies of scale (SEC)** capture the proportion of changes in a company's energy intensity that are triggered by changes in the quantity of goods and services produced (▶Table 7.1, column 4). Across all companies, the contribution of this component to the improvement in energy intensity averaged 1.19% per year (0.85%, 2009-2020). This corresponded to a cumulative contribution of 16.7% (10.2%) in the period under review. The contribution differs between the various industry groups and is highest for large companies. Economies of scale are by far the most important contribution to improving energy intensity at company level. In contrast, other factors play a subordinate role. **Increases in production thus lead to a reduction in energy intensity through more efficient use of energy.** This means that absolute energy consumption increases when companies reduce their energy intensity.

198 The **technical change (TC)** reflects the impact of technical progress on energy use and energy costs at company level. This component made the **second largest contribution to improving energy intensity at company level** in the period 2009-2022, albeit at a considerable distance from the economies of scale (▶Table 7.1, column 6). However, this only applies to the 2009-2022 observation period. During this period, the average contribution per year was 0.23%, which corresponds to a cumulative contribution to improving energy intensity of just under 3.2%. By contrast, the average contribution of technological change was only just positive until 2020. This indicates that it was primarily from 2020 onwards that technical innovations made a greater contribution to reducing energy consumption. The energy crisis is therefore likely to have increased investment incentives for more efficient and energy-saving technologies. Here too, differences can be seen between the industry groups. The cumulative contribution was negative for companies in sectors with low energy intensity, while it was more than 6% for companies in energy-intensive sectors and more than 8% for companies with installations in the ETS.

199 In the period 2009-2020, **improvements in energy efficiency (EEFC)** and thus rather low-threshold process optimizations contributed more to the reduction in energy intensity than technical change. The average annual contribution was 0.1%, which adds up to a cumulative effect of around 1.2% (▶Table 7.1, column 7). **In particular, large companies and companies with installations in the EU Emissions Trading System (ETS)** - with both groups overlapping to some extent - **achieved significant efficiency gains**. However, the energy crisis in 2022 reversed this picture and the contribution of energy efficiency

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became clearly negative. The rise in energy prices, especially from 2021, is likely to have cushioned some of the impact. In fact, the contribution of allocative efficiency becomes positive in this period.[88]

200 Changes in the use of capital and labor (factor OIC) represents changes in energy intensity caused by changes in the use of labor or capital. This component makes a negative contribution to the development of energy intensity over long stretches (►Table 7.1, column 5).[89] Only the estimated net present value at company level and the volume of work in hours are included in the calculation. The quality of the capital stock or that of the workforce cannot be taken into account. This result therefore primarily reflects the effects of a change in capital intensity on energy intensity. The historical development of energy costs (compared to European competitors) seems to have favored investments in more energy-intensive technologies. One indication of this is that the constant negative contribution of the OIC factor has been reduced to almost zero in 2022.[90]

201 The **development of the contribution of allocative efficiency (AEC) to energy intensity** reflects the inertia of the adjustment of energy consumption to energy price changes at company level, which can have technical or institutional causes. This component **shows a clearly differentiated pattern**, depending on whether one considers the period before or during the energy crisis (►Table 7.1, column 3). Until 2020, this factor had a consistently negative effect on energy intensity, while from 2021 it made such a pronounced positive contribution that the negative effects of previous years were more than offset. By 2020, comparatively low energy prices are likely to have offered companies little incentive to improve their energy intensity. Only with the drastic rise in energy prices from the start of the energy crisis in mid-2021 was there a strong incentive to reduce energy intensity. As the factor has never reached a value close to zero, this indicates existing inefficiencies. One possible reason for this could be the very limited substitution possibilities between different energy sources. On the other hand, pricing and the structure of energy supply contracts could also play a role in this context. More specific statements on the underlying mechanisms cannot be made on the basis of this analysis.

202 An analysis of the factors influencing energy intensity at company level by company group shows that large companies and companies in energy-intensive sectors have reduced their energy intensity significantly more than other companies. By contrast, energy intensity deteriorated in the construction industry and in sectors with low energy intensity in particular. However, their share of the total energy consumption of the companies surveyed is low. The evaluations also show that companies with installations in the EU Emissions Trading System (ETS) have reduced their energy intensity significantly more than other companies over time. These improvements are primarily due to technical progress and efficiency improvements. As evaluations in the following section show, they are also more energy-efficient on average than other companies (►item 207). The evidence thus underlines the importance of the emissions trading system for increasing energy efficiency at company level.

[88] A change in energy efficiency as a result of energy cost subsidies seems unlikely in 2022. As advance notifications and applications for corresponding subsidies could only be submitted towards the end of 2022 and the actual payments were only made once the final energy cost statements were available, no behavioral adjustment due to possible subsidies can be derived for 2022. This is all the more true as the high energy prices had already provided a strong incentive to increase efficiency. See also ►paragraph 201 on the contribution of the AEC factor.

[89] To calculate this contribution, capital stocks must be determined at company level on the basis of company investments. However, in view of the short observation period (for such calculations) and fundamental methodological reservations about such capital stock estimates, it can be assumed that the results are of limited informative value.

[90] Kapital und Energie verhalten sich tendenziell wie Substitute**.** Haller and Hyland (2014) use Irish company data to show that a 1% increase in energy prices increases the ratio of capital to energy by 1.5%. This suggests that rising energy costs during the period under review may have encouraged investments that are associated with higher energy consumption per euro invested. Comparable estimates are currently being prepared by the Office of the Productivity Council in cooperation with the OeNB.

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203 In summary, this part of the analysis shows the widespread use of production technologies that are inefficient in terms of energy consumption given the average production volumes achieved. The central role of economies of scale points to this fact: Higher capacity utilization leads to better energy intensity.[91] Although the contribution of technological change and pure efficiency improvements is positive, it remains low overall over the observed period. In large companies or companies with systems in the ETS, however, improvements in energy efficiency through these components were much more pronounced. This in turn reflects the greater importance of this operational cost component, but also indicates better energy management. Many companies show a limited ability to adapt their energy consumption to price changes. These restrictions result either from technical reasons, such as low flexibility in the use of energy in the production process, or from institutional framework conditions, which are reflected in pricing or supply contracts, for example.

7.3.2 Energy saving potential through energy efficiency improvements in Austrian companies

204 Based on the efficiency analyses carried out, **scenarios for possible energy savings** through measures to improve energy efficiency[92] in companies were created. High energy efficiency strengthens the resilience of companies to fluctuating energy prices (Aterido et al., 2025) and contributes to increasing their performance and productivity (e.g. Montalbano et al., 2022). In addition, more efficient energy use is seen as a key lever for reducing energy consumption and CO_2 emissions (e.g. IEA, 2023). It can also reduce the need for investment in electricity grids and infrastructure, which are necessary for the expansion of renewable energies, and help to stabilize the existing grid structure.

205 Accordingly, policy-makers at EU and national level are increasingly focusing on energy efficiency as a key instrument for strengthening competitiveness and achieving climate and energy targets. With the **revised Energy Efficiency Directive** (EU 2023/1791), the European Union has set binding energy efficiency targets for the buildings, transport, industry and public institutions sectors for the period 2024-2030. At the heart of the directive is the principle **"energy efficiency first"**, which stipulates that in all energy policy, planning and investment decisions, priority should be given to examining and implementing measures to reduce energy consumption before new energy generation or infrastructure capacities are created. Measures to improve energy efficiency are also one of the five pillars of the European Commission's Energy Union.

206 The directive is implemented in Austria by the **Energy Efficiency Act (EEffG 2023)**, which sets out a reduction in final energy consumption from 1,124 PJ (2021) to 920 PJ in 2030 and **cumulative savings of at least 650 PJ**. It does not contain any sectoral savings targets, but focuses on large companies and energy suppliers (obligation to carry out energy audits or eco/energy management systems). The EEffG provides for investments in efficiency measures to be supported through grants, the earmarked use of compensation payments, subsidies under the Environmental Assistance Act and strategic federal programs.

207 The **energy efficiency of companies differs significantly between sectors**.[93] In energy-intensive sectors, companies achieve higher efficiency values on average and the differences within the sector are smaller. This is mainly due to the fact that even the less efficient companies in these sectors have comparatively high energy efficiency (►Figure 7.6, top panel). One reason for this is that energy costs make up a larger proportion of total costs in these sectors - as a result, the incentives to use energy efficiently are particularly strong. Industries that are subject to the EU Emissions Trading System (ETS) also show a very high

[91] If the technologies were scale-efficient in terms of energy consumption, energy consumption and changes in output would develop in step.

[92] On closer inspection, energy efficiency is often equated with energy intensity in economic policy discourse and also in many economic papers. As the analysis in the chapter shows, this is only permissible to a limited extent.

[93] Since the distribution of these efficiency factors is exponential by construction, we observe fewer inefficient companies and more companies with medium or high efficiency. However, our focus is not on the absolute efficiency levels, but on the relative positions, which are generally consistent across models with different assumptions on the distribution of inefficiencies.

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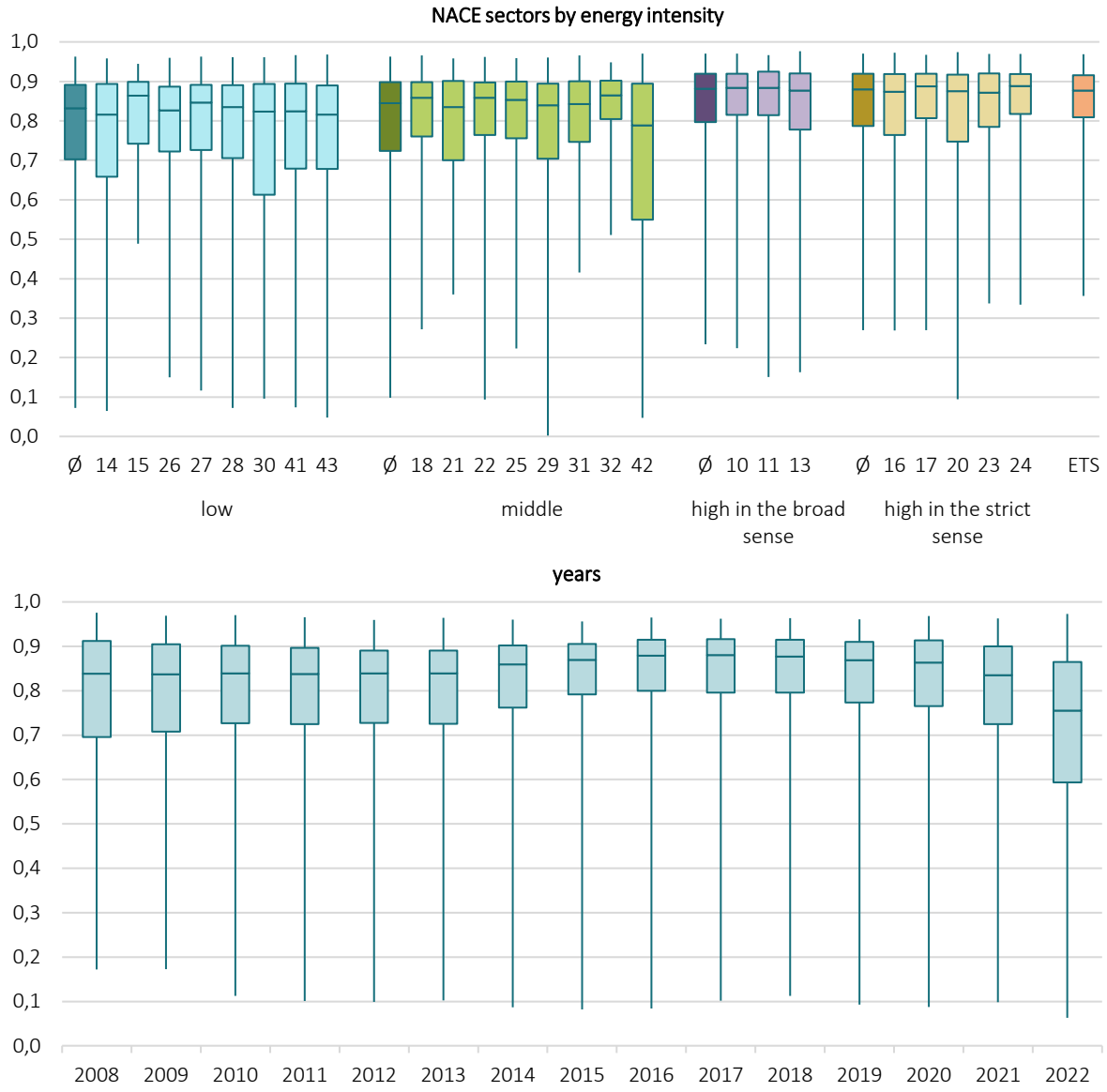
concentration of energy-efficient companies. This is in line with the results of international studies that show a positive incentive effect of carbon pricing for greater energy efficiency (Adetutu et al. 2020). Since 2018, however, an increasing dispersion of energy efficiency values has been observed (►, bottom panel), while the average value is falling. This trend has intensified in the crisis years since 2020.

Figure 7.6: **Calculated efficiency distributions within the economic sectors and over time**



Source: Goods input statistics, performance and structural statistics, Statistics Austria (AMDC). Own calculations.
Note: Efficiency is standardized to a value range between 0 and 1, with the most efficient companies receiving a value of 1. The efficiency values result as a residual value after the effects of changes in production, use of different input factors and general technical change have been taken into account. Classification of economic activities according to ÖNACE 2008 (see ►Appendix).

208 Various savings scenarios were developed to assess the **energy savings potential through efficiency improvements** at company level. They are intended to show the extent to which energy efficiency measures can help mitigate high energy costs and achieve national energy saving targets in the corporate sector. Two scenarios were calculated that quantify **one-off energy savings** that could be achieved under the given assumptions:

- Scenario 1 assumes that low-threshold measures can raise the least efficient companies (lowest quartile of the energy efficiency distribution) to the efficiency level of the median company in the

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respective sectoral breakdown.[94] It is assumed that the median company implements simple, easily comprehensible measures to increase energy efficiency that can also be adopted by other companies without major investment.

- Scenario 2 is more ambitious and assumes that all companies whose efficiency is below the median value of a sector classification can be raised to the level of the median company in the respective sector group.

Table 7.2: **Energy saving scenarios**

		Scenario 1			Scenario 2		
	Energy use ø 2021/2022 in 1000 GJ	estimated use in 1.000 GJ	difference in 1.000 GJ	in %	estimated use in 1.000 GJ	difference in 1.000 GJ	in %
All firms	364 988	322 387	-42 600	-11,7	316 860,1	-48 127,8	-13,2
Energy intensity: Low	17 579	16 382	-1 197	-6,8	16 104,4	-1 474,7	-8,4
Energy intensity: Medium	23 149	20 739	-2 410	-10,4	20 238,2	-2 911,0	-12,5
Energy intensity: High	324 260	285 266	-38 993	-12,0	280 517,5	-43 742,1	-13,5
Firm size: Medium	51 258	43 623	-7 635	-14,8	42 646,6	-8 611,5	-16,8
Firm size: Large	313 730	278 764	-34 966	-11,2	274 213,5	-39 516,3	-12,6
Energy intense sectors (narrow def.)	301 229	267 846	-33 383	-11	262 940,0	-38 289,0	-12,7
Firms with plants in ETS	152 542	145 516	-7 026	-4,6	143 794,1	-8 747,6	-5,8
Construction	9 095	8 511	-584	-6,0	8 460,0	-634,9	-6,6

Source: Goods input statistics, performance and structural statistics, Statistics Austria (AMDC). Own calculations. For deviations in energy consumption compared to the energy balance, see ▶Text Box 7.1.
Note: Due to the uncertainty at the current margin of the data, the average effects for 2021 and 2022 are shown on the basis of the efficiency distribution for the two years. First data column "Energy use": actual energy use (in GJ). Other columns: „Estimated use“: Average use (in GJ) based on the assumptions of the scenarios. "Difference:" resulting net savings (in GJ) and percentage of savings based on actual energy use.

209 For a sound assessment of the savings potential, **rebound effects** must also be taken into account.[95] These describe the fact that energy consumption can increase despite improved energy efficiency. This effect occurs in particular when efficiency increases reduce the energy costs per unit produced and thus encourage an expansion of production.[96] The estimated effects range **between 14.8% in the construction sector and 43.1% in economic sectors with medium energy intensity** (▶Table 7.3). In the energy-intensive sectors in the narrower sense, the estimated effect is around 23.8%. This puts the values between the very low rebound effects estimated by Berner et al. (2022) for Germany and the higher effects determined by Amjadi et al. (2018) for Sweden.[97]

[94] For example, the energy efficiency of the most inefficient companies within the group of companies with low energy intensity is raised to the energy efficiency of the median company in this group. This ensures that the assumed improvement is realistic.
[95] The rebound effect describes the phenomenon that increases in efficiency often do not lead to the expected savings because user behavior changes. Details on the calculation of rebound effects can be found in Reinstaller and Sellner (2025b).
[96] The estimates in Reinstaller and Sellner (2025b) show, for example, that in energy-intensive industries, a 10% improvement in energy efficiency results in an increase in production value of between 4.8% and 6.2%. In economic sectors with low energy efficiency, these elasticities are even higher in some cases.
[97] Die Ergebnisse sind aufgrund unterschiedlicher methodischer Ansätze jedoch nicht direkt vergleichbar.

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Table 7.3: **Estimated rebound effects**

Classification/Sector	Rebound effect* In %
Classification by energy intensity	
Low	27.84
Medium	43.14
High	37.48
Energy intense sectors (narrow definition)	23.76
Building industry	14.76

Source: Goods input statistics, performance and structural statistics, Statistics Austria (AMDC). Own calculations.
Note: For definition of energy-intensive industries, see ►Text Box 7.1. - *... Loss of original energy savings due to efficiency gains in %.

210 Taking into account the rebound effects, the actual energy savings from our scenarios in energy-intensive sectors would be in the order of 8.4% (9.7%), which corresponds to around 25 PJ (29 PJ). For the entire sample of companies included in the estimate and using the results presented in ►Table 7.2 and ►Table 7.3, the potential energy savings achievable through comparatively low-threshold energy efficiency improvements would amount to 26-30 PJ. This corresponds to around 7-8% of the average gross energy consumption in 2021 and 2022 of the companies in the sample of the goods usage statistics.

211 However, compared to the cumulative increase in energy costs in 2021 and 2022 (50% on average for all companies, 75% for energy-intensive companies), the **energy saving potential from the comparatively low-threshold energy efficiency measures** of the two scenarios appears **low**. Low-threshold energy efficiency measures are therefore only suitable to a limited extent - at least in Austria - for buffering sudden (but persistent) increases in energy costs or energy price differentials. With a view to the energy saving targets of the Energy Efficiency Act, they could nevertheless make a significant *cumulative* contribution[98] in terms of scale, provided energy efficiency improvements are implemented quickly.[99]

212 However, this finding must also be evaluated against the background of the so-called NEFI study (Schützenhofer et al., 2023). This study analyzed the investment and energy requirements of Austrian industry in the event of a complete substitution of fossil fuels by 2050 and calculates an increase in **total energy requirements in the corporate sector from around 460 PJ/130 TWh (2021) to over 600 PJ/168 TWh (2050)**.[100] Compared to these changes, low-threshold energy efficiency measures can cushion the projected increase in energy demand in industry, but they would in no way be sufficient to fully offset the additional energy consumption required for the energy transition in industry.[101]

213 Although the potential for energy savings through efficiency improvements cannot make a significant contribution to mitigating the consequences of increased energy costs and the contribution to achieving energy saving targets is small compared to the increasing energy demand, energy efficiency measures can also help to **strengthen productivity growth in companies** (see e.g. Berner et al., 2022; Montalbano et al., 2022; Caragliu, 2021). Our own estimates for Austrian companies in the period 2009-2021 confirm such a positive correlation. A 10% improvement in energy intensity at company level is accompanied by

[98] If efficiency measures initiated as a result of the energy crisis were to realize the savings potential estimated here by the end of 2025, the cumulative contribution could be 100-130 PJ (gross energy) by 2030. Assuming a conversion factor in final energy of approx. 0.85 (ratio between the value of the energy balance and final energy consumption in the manufacturing sector of STAT AT and goods use statistics according to Table 7.2), this corresponds to approx. 85-110 PJ of final energy.

[99] The European Investment Bank's investment survey shows that since 2021, both the proportion of companies that have invested in increasing energy efficiency (38.9% in 2020 → 59.1% in 2024) and the proportion of such investments in total investments (9.5% in 2020 → 11.3% in 2024) have risen sharply (European Investment Bank, 2025).

[100] See Pathway of industry - NEFI.

[101] This projection differs significantly from those of the Federal Environment Agency (Umweltbundesamt, 2024, p. 42). The Federal Environment Agency's scenario, which reflects existing legal regulations (as at 2024), assumes a slight increase in final energy consumption in industry of 13% by 2050 relative to 2022. In the scenario, which also takes into account the measures of the National Energy and Climate Plan (NECP), energy consumption in industry would initially increase slightly until 2040 (+4%) and then fall slightly until 2050 (-4%).

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higher productivity growth of around 3% (1-2% for a 10% improvement in energy efficiency in the actual sense). The mechanism of action is likely to come primarily from the reduction in energy costs.

7.4 Discussion of the results

214 Increased **personnel and energy costs have significantly increased the cost pressure on Austrian companies**. In this context, the results of the WIFO industry survey indicate a pronounced trend towards the relocation of production sites and job cuts in industry - particularly in the production sector.

215 For the majority of companies, the share of energy costs in total costs is in the low single-digit percentage range and therefore does **not represent a direct burden on their economic viability** (see Productivity Report 2024, p. 121). The personnel cost components are much more important here. Nevertheless, the rise in energy costs - in the face of an increasingly challenging international competitive environment - is having a noticeable impact on profitability and the scope for investment. This can have a negative impact on competitiveness in the long term.

216 This makes the high proportion of companies both within and outside of energy-intensive sectors that stated in the WIFO industry survey that they perceive energy prices as a high risk all the more remarkable. With a view to the energy transition, the economically viable operation of energy-intensive production facilities in Austria depends on numerous factors. These include the technical feasibility and economic viability of climate-neutral technologies, investment incentives and funding measures, as well as the question of **whether and at what prices the sometimes drastically increasing energy demand can be met in the future**. Against this backdrop, there is a **broad political consensus** both at national level and within the EU to consistently expand renewable energies and the energy infrastructure, to provide CO_2-neutral energy sources and to provide companies with targeted support through technology policy measures for transformation and increasing their energy efficiency. This necessity was also emphasized in the Productivity Report 2024 through specific recommendations to the federal government. The federal government has taken an important first step by quickly presenting the Energy Industry Act (ElWG). Nevertheless, there is still a high degree of uncertainty in all of the areas mentioned with regard to the feasibility, implementation and financing of the necessary measures. Companies for which energy costs make up a high proportion of total costs are therefore in a more difficult position both in the short and long term.

217 For companies that are significantly affected by high energy costs, **short-term opportunities to reduce energy consumption** without significant investment are only **limited**. Energy-intensive companies in particular already use energy comparatively efficiently. According to the calculations in this chapter, low-threshold energy efficiency measures - taking into account rebound effects - could enable one-off savings of around 7-8% of energy consumption. Increases in efficiency can therefore only support price competitiveness to a limited extent. This makes it all the more important to stabilize overall costs in order to sustainably strengthen competitiveness and contribute to overcoming the industrial recession.

218 From a long-term perspective, it can be assumed that **significant energy price differences** compared to countries such as the USA and China will also **persist**:

- Even with the successful expansion of renewable energies, electricity prices in Europe and Austria are likely to remain above the international level - due to **disadvantages in wind and solar energy compared to countries in more favorable geographical locations**. Austria has a comparative advantage in the area of hydropower, but this is already highly developed. The extent to which this advantage will be impaired by climate change in the medium to long term is uncertain (cf. e.g. Stanzel, 2023).
- The **climate policy in the EU and Austria is more ambitious than in other regions of the world** with which Austrian companies compete. In the EU, the focus is on emissions trading, among other things, which increases the energy costs of using fossil fuels. So far, this mechanism has hardly been used in markets outside the EU. Nor can it be assumed that the border adjustment mechanism can

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compensate for the cost disadvantages arising from fully decarbonized production compared to competitors who do not or only partially do so. For foreign exporters of energy-intensive goods, it may be more cost-effective to pay the border adjustment fee than to convert their production processes to climate-friendly standards.[102]

- The energy transition in industry - throughout Europe - including comprehensive electrification is expected to lead to an increase in demand for electricity in almost all sectors and in all countries. Adaptation and transformation measures in other sectors are also contributing to a further increase in electricity demand. If the expansion of renewable energy sources does not keep pace with this increase in demand, this will put further **upward pressure** on energy prices.
- In addition, there are still **considerable uncertainties** regarding the actual provision of renewable energy, as provided for in the Renewable Energy Expansion Act (EAG), for example. The Court of Audit Austria (2025) recently criticized the lack of transparency regarding the costs of the energy transition and their allocation to private and public financing, coordination between local authorities and securing land. This calls into question whether the expansion of renewable energy generation can actually keep pace with the demand that will arise in the planned transformation paths.

219 Energy-intensive companies in Austria have so far compensated for the competitive disadvantage in energy-intensive goods caused by high energy prices with a technological edge and high energy efficiency. If this lead diminishes - compared to China, for example - the **cost disadvantage becomes increasingly effective**. From a trade theory perspective, it would then make economic sense to relocate the production of green, energy-intensive goods to countries where renewable energies are more readily available. These would not be subject to the border adjustment mechanism and could be produced more cheaply and imported into Europe. However, such a development would require a transformation strategy that favors sectoral and functional structural change (►chapter 8) and goes beyond securing existing industrial locations. Such a transformation strategy could, for example, aim to develop and expand markets in knowledge-intensive value-added segments within affected or related industries in which existing domain knowledge and skills can be used and further developed.[103]

7.5 Fields of action

220 Efficiency increases in energy use can only support price competitiveness to a limited extent. This makes it all the more important to **stabilize total costs** in order to sustainably strengthen competitiveness and contribute to overcoming the industrial recession. In view of the importance of high personnel costs, the social partners are called upon to develop constructive solutions that both secure the location for competitive companies and enable high incomes (►item 27).

221 The **short-term measures that the public sector can take to reduce energy prices** include either direct intervention in pricing, tax cuts or public subsidies for energy costs. Given the current budgetary situation, tax cuts and public subsidies for energy costs are difficult to finance and should be critically scrutinized. They are not a sustainable solution and should only be used until **medium-term structural measures** have a lasting price-reducing effect (►item 225ff).

222 Direct **interventions in price formation**, such as price caps, are the subject of controversial debate.[104] On the one hand, they override the inherent scarcity signals of prices and can thus lead to rising demand

[102] This is also one reason why a clean, energy-intensive industry within the EU is dependent on subsidies.

[103] As Schwarzbauer et al. (2025) show in a new study, CO_2-intensive activities are concentrated in early phases of the value chain, while later phases have a lower emissions intensity.

[104] According to empirical literature, price caps can provide short-term relief for households and companies in energy crises, reduce inflationary pressure and avoid insolvencies - for example, the Iberian gas price cap showed significant electricity cost effects with moderate fiscal costs (see Fabra et al., 2025). At the same time, studies point to considerable disadvantages: Broad price caps are fiscally expensive, often regressive, distort price signals and thus dampen energy savings and investments; temporary, targeted measures with a clear exit strategy are therefore recommended at best (see Ari et al., 2023; IMF 2023; Zachmann and MacWilliams, 2022).

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and lower energy-saving incentives. On the other hand, in an integrated European market this would also be associated with diversion effects, i.e. increased sales to other European markets, which could lead to a shortage of energy in Austria. A price cap would therefore have to be linked to a supply obligation for the Austrian market in order to be effective.

223 A simple measure that is easily compatible with European state aid law would be - for severely affected companies - the **reduction of the electricity levy** from the current EUR 0.015/kWh to the minimum of EUR 0.0005/kWh permitted under EU law. However, the current exemptions for non-energy use and for energy-intensive companies, which provide for remuneration, would not provide any further relief for the latter.[105]

224 The reintroduction of an **electricity price compensation mechanism**, as provided for in the Electricity Price Equalization Act 2025, on the other hand, addresses energy-intensive companies and is compatible with EU law, which allows measures until 2030. The accuracy of such an instrument is guaranteed by the fact that it is based on the EU Emissions Trading Directive, which clearly limits the group of energy-intensive and competition-intensive companies. Fourteen EU countries, first and foremost Germany, have already transposed such compensation mechanisms into law, which would have put domestic companies at a disadvantage if the federal government had not taken appropriate measures.[106] However, as Draghi (2025) has emphasized, these measures can only provide temporary relief. However, they do not address the structural causes of high energy prices in Europe.

225 In addition to the grid expansion requirements already discussed in the Productivity Report 2024, particularly in the area of the transmission grid, **strengthening competition among energy suppliers** is a necessary medium to long-term measure. The horizontal interconnections between the provincial energy suppliers, as determined by the Federal Competition Authority/E-Control (2025), offer strong incentives to prevent competition, as can be seen from the scientific literature (see e.g. Ederer and Pellegrino, 2025). Measures are therefore needed to increase competition between publicly owned energy suppliers. Excessive electricity prices not only affect the purchasing power of consumers, but also damage the industrial location in the long term.

226 Increased **own energy generation** in industrial companies - also within the framework of energy communities - could in turn increase their independence from rising electricity prices and would not be taxed under the current regulations. Generating your own energy can contribute to climate neutrality if renewable energies are used. However, these advantages are offset by high investment costs and the need for energy storage systems. Various funding programs at EU and national level are aimed at accelerating corresponding investments.

227 In view of the various developments and existing uncertainties in connection with the energy transition, **many production sites** - both within and outside of energy-intensive industries - **may not be able to be maintained** in the medium to long term. This is also reflected in the trends towards the relocation of production sites and job cuts in production as revealed by the WIFO industry survey. Structural change is on the horizon and should be shaped with strategic foresight.

228 In view of the high private and public costs of adapting energy-intensive production technologies and the currently still very uncertain results in many areas, the direction of **technology and transformation policy** should be critically examined. Many measures - in particular the transformation fund - are aimed at modernizing existing (flagship) companies in an ecological way and keeping them at the location. However, this not only requires considerable investment and new technologies, but also leads to significantly higher energy requirements. This path only seems to make sense if investments enable both

[105] Energy tax rebate.

[106] Taxes and levies are key factors in end customer energy prices. The European Commission's state aid framework to support clean industry sets out clear guidelines for the promotion of energy-intensive companies. A national implementation that goes beyond the EU requirements weakens the competitiveness of Austrian companies, especially as other member states are consistently making use of the planned scope for relief.

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economic and ecological sustainable development - for example with regard to resilience and strategic independence. Alternatively, strong cluster effects at the location can justify the local production of certain goods.

229 A transformation policy geared towards strengthening the location - as an integral part of an industrial strategy - should in energy-intensive industries focus on maintaining and further developing domain knowledge in important key competencies and areas of strength, such as advanced materials or manufacturing technologies. This know-how forms the basis for the unique competitive advantages of Austrian industry in the global market. Its strategic development can contribute to the diversification of production, products and locations and ensure long-term competitiveness, even beyond energy-intensive product lines.

230 Technology policy measures should also not focus exclusively on improving general energy intensity, decarbonization or energy efficiency. Too narrow a focus on these aspects can cause other decisive factors for sustainable industrial development to be overlooked. A particular risk arises when a significant proportion of a company's innovation resources are tied up in such development projects and are thus taken away from the company's original innovation capability. Transformation funding should therefore combine the strengthening of innovative capacity and productivity with the decarbonization of industrial processes - with the aim of strengthening the economic performance of companies as a whole.

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Literature

Adetutu M., Odusanya K., Weyman-Jones T. (2020). Carbon tax and energy intensity: Assessing the channels of impact using UK microdata. The Energy Journal 41, 143-166.

Amjadi G., Lundgren T., Persson L. (2018). The rebound effect in Swedish heavy industry. Energy Economics, 71, 140-148.

Ari A., Engler P., Li G., Patnam M., Valderrama L. (2023). Energy Support for Firms in Europe. International Monetary Fund Working Paper WP/23/197.

Aterido R., Iootty M., Melecky M. (2025). Energy prices, energy intensity, and firm performance. Worldbank Policy Research Working Paper, (11069).

Berner A., Lange S., Silbersdorff A., 2022. Firm-level energy rebound effects and relative efficiency in the German manufacturing sector. Energy Economics 109, 105903.

Boyd G., Lee J. (2019). Measuring plant-level energy efficiency and technical change in the U.S. metalbased durable manufacturing sector using stochastic frontier analysis. Energy Economics, 81:159-174.

Federal Government (2025). Do the right thing now. For Austria, government program of the federal government. Federal Chancellery of Austria.

Federal Competition Authority/E-Control (2025). Our energy is focused on greater transparency. Final report of the task force of E-Control and the Federal Competition Authority 2023-2025. Vienna.

Caragliu A. (2021). Energy efficiency-enhancing policies and firm performance: Evidence from the paper and glass industries in Italy. Energy Policy, 156: 112415.

Draghi M. (2024). The future of European competitiveness. European Commission, Brussels.

Draghi M. (2025). High Level Conference - One year after the Draghi report: what has been achieved, what has changed.

European Investment Bank (2025). EIB Investment Survey 2024 Country Overview: Austria. Luxembourg.

Ederer F., Pellegrino B. (2025). A Tale of Two Networks: Common Ownership and Product Market Rivalry. Review of Economic Studies, forthcoming.

Fabra N., Leblanc C., Souza M. (2025). Unpacking the Distributional Implications of the Energy Crisis: Lessons from the Iberian Electricity Market, CEPR Discussion Paper No. 20593.

Fleiter T., Haendel M., Klobasa M., Lux B., Khanra M., Männer W., Bussmann S., Kiefer C., Al Dabbas K., Schwotzer C., Kaiser F., Gondorf C., 2024. Flexibilization of electrified industrial processes. Competence Center for Climate Protection in Energy-Intensive Industries, Karlsruhe.

Fuchs R., Göllner T., Hartmann S., Thomas T. (2024). Fostering excellent research by the Austrian Micro Data Center (AMDC). Jahrbücher für Nationalökonomie und Statistik, 244(4), 433-445.

Gruber-Német M., Reinstaller A., Hölzl W. (2025). Energy price risk and location decisions in Austrian industry. Brief analysis 03/2025, Office of the Austrian Productivity Board, Vienna.

Haller S. A., Hyland, M. (2014). Capital-energy substitution: Evidence from a panel of Irish manufacturing firms. Energy Economics, 45, 501-510.

Hölzl W., Friesenbichler K., Kügler A., Meyer B. (2025). Challenges and determinants of competitiveness in times of global uncertainty, value chain. WIFO Monthly Reports 7/2025, p.373-382.

International Energy Agency (2023). Energy Efficiency 2023.

International Monetary Fund (2023). G-20 Background Note on the Macroeconomic Impact on Food and Energy Insecurity. Washington.

Montalbano P., Nenci S., and Vurchio D. (2022). Energy efficiency and productivity: A worldwide firm-level analysis. The Energy Journal, 43(5):93-116.

Produktivitätsrat (2024). Produktivitätsbericht 2024: Strategien für nachhaltiges Wachstum, Wettbewerbsfähigkeit und Resilienz in Zeiten von Transformation und Rezession. Vienna.

Court of Auditors (2025). Areas for electricity from renewable energy sources. Vienna

This machine translation was created on November 27, 2025, using DeepL.

Reinstaller A., Sellner R., (2025a). The deterioration in the competitiveness of Austrian industry during the energy crisis. Wirtschaftspolitische Blätter, 46-55.

Reinstaller A., Sellner R. (2025). Energy efficiency and energy savings potentials in the Austrian manufacturing and construction sectors: firm-level evidence from a stochastic frontier analysis. Report 02/2025, Office of the Austrian Productivity Board, Vienna.

Schützenhofer C. e. al. (2023). Transformation paths and RTI roadmap for a climate-neutral industry 2040 in Austria, accessed on 10.04.2025.

Schwarzbauer W., Bittó V., Koch P., Steininger J. (2025). Mapping CO2 emissions in Global Value Chains: Does a value added smile curve imply an emissions frown curve? Structural Change and Economic Dynamics, preprint.

Stanzel P., Lerche F., Linisch-Lehner C., Kling H. (2023). Effects of climate change on hydropower in Austria- Study for Austrian Energy, Vienna.

Federal Environment Agency (2024). Energy and greenhouse gas scenarios for the National Energy and Climate Plan 2024. Vienna.

Zachmann G., McWilliams, B. (2022). European Energy Price Caps and Compensation Mechanisms. Bruegel Policy Brief, November 2022.

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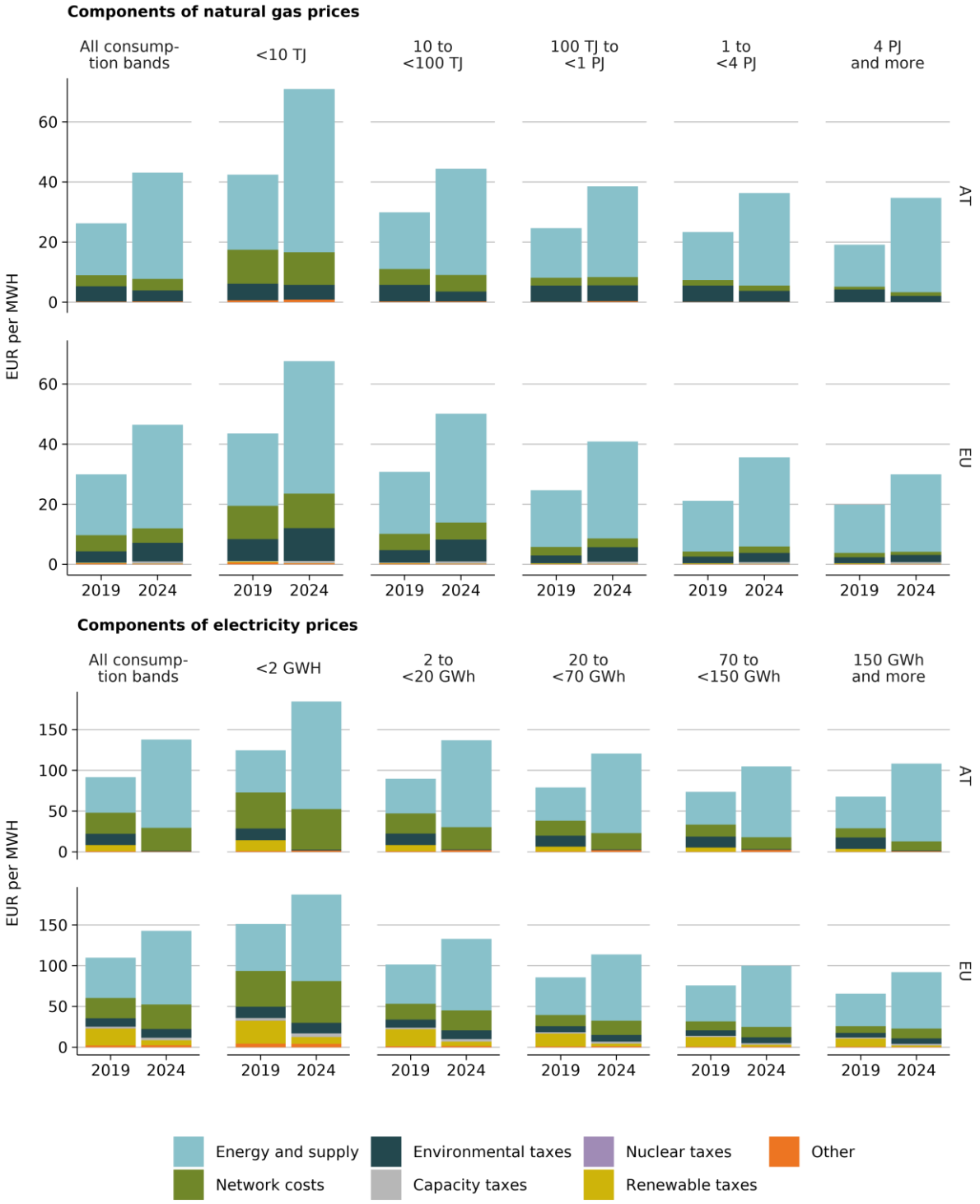
Appendix

Figure 7.7: **Components of the real final price of natural gas and electricity for industry according to the level of annual energy consumption (consumption bands)**

EUR per MWH at constant 2015 prices (excluding VAT)



Source: Eurostat, nrg_pc_205_c, nrg_pc_203_c. "Other" includes (where applicable) renewable energy tax subsidy, capacity tax subsidy, environmental tax subsidy, nuclear tax subsidy and the residual category "Other".

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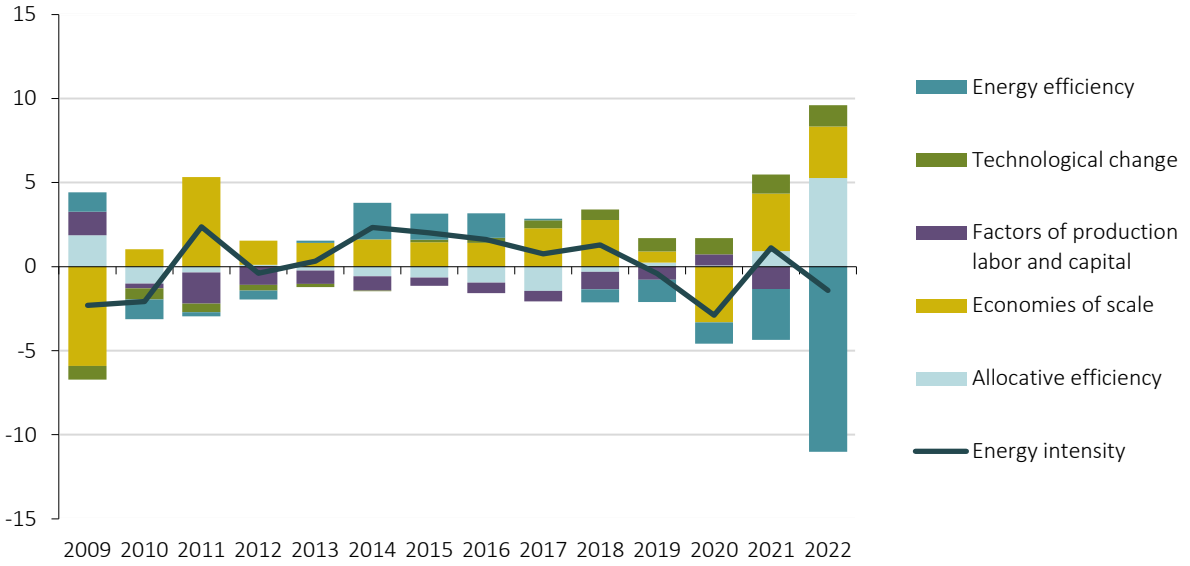
Figure 7.8: **Components of energy intensity gains (EIG) over time, 2009-2022**

All companies; change in energy intensity in %, contributions of components in percentage points



Source: Statistics Austria (AMDC): Goods usage statistics and performance and structure survey. Own calculations. See Reinstaller and Sellner (2025a). Note: expected energy intensity based on the model parameters.

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Table 7.4: **Industry statistics for NACE 2-digit economic activities and industry classifications**

Economic sector or industry classification	Energy intensity MWh per EUR production value	Capital intensity capital stock/ Production value	Share of energy sources in energy consumption of companies, in %				Number of firms
			Electricity	Natural gas	Oil	Other	
Low energy intensity	**125.1**	**0.4**	**36.2**	**12.5**	**48.7**	**2.6**	**926**
Clothing	93.3	0.3	47.7	22.7	29.6		10
Leather goods/shoes	146.6	0.3	53.2	23.6	18.4	4.8	8
Computer equipment, electronic/optical products	62.5	0.3	69.7	13.0	16.3	1.0	69
Electron. Equipment	103.2	0.3	65.7	19.3	12.8	2.2	90
Mechanical engineering	83.5	0.3	54.4	23.6	19.8	2.3	238
Otherwise. Vehicle construction	59.7	0.3	54.9	31.0	14.1	0.0	19
Building construction	135.3	0.4	21.3	3.2	72.3	3.3	195
Preparatory site work, other. Building trade	177.5	0.5	12.7	5.7	78.5	3.0	297
Average energy intensity	**222.5**	**0.5**	**53.6**	**18.5**	**24.5**	**3.4**	**516**
Printed products	196.3	0.7	72.7	19.0	8.3	0.0	28
Pharmacist. Products	271.5	0.6	55.2	34.7	10.1	0.0	17
Rubber and plastic goods	241.2	0.5	69.1	20.8	8.9	1.1	96
Metal products	235.7	0.5	55.2	22.8	18.9	3.2	190
Motor vehicles (parts)	116.7	0.3	60.7	21.0	14.9	3.4	45
Furniture	156.5	0.4	48.7	7.4	22.2	21.7	40
Other goods	119.2	0.6	66.9	14.3	18.1	0.7	32
Civil engineering	315.3	0.4	10.8	5.8	83.3	0.1	68
High energy intensity	**702.3**	**0.6**	**45.8**	**26.9**	**18.0**	**9.3**	**651**
Food and animal feed	298.8	0.6	47.7	31.4	19.4	1.5	196
Drinks	365.1	1.1	43.8	44.1	9.5	2.6	21
Textiles	380.2	0.5	43.1	46.4	5.3	5.1	18
Energy-intensive in the narrow sense	**923.3**	**0.5**	**45.1**	**23.1**	**18.3**	**13.5**	**416**
Wood, wickerwork, basketry, cork goods (excluding furniture)	709.7	0.5	47.1	2.5	19.2	31.2	122
Paper, cardboard	1 306.8	0,6	55,3	31,9	4,3	8,5	59
Chemical products	716,8	0,5	55,3	31,9	10,6	2,2	57
Glass(wares), ceramics	1 140.5	0,7	28,4	25,9	38,3	7,3	106
Metal production, processing	814,5	0,5	49,9	39,4	5,1	5,6	72
ETS	**2 176.3**	**0,7**	**34,9**	**45,8**	**5,1**	**14,2**	**46**
Building industry	**179.6**	**0.5**	**15.5**	**4.8**	**76.9**	**2.8**	**560**
Medium-sized companies	**288.1**	**0.5**	**41.3**	**16.7**	**36.8**	**5.2**	**1 602**
Large companies	**460.8**	**0.5**	**50.4**	**24.3**	**21.6**	**3.7**	**491**

Note: Classification of economic sectors according to ÖNACE 2008, see overview in the appendix of the report.

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8. Structural change of firms and of the workforce

The most important facts at a glance

- Current developments in international trade and rising energy and labor costs are increasingly leading to economic policy discussions. At the same time, there is growing concern about dwindling industrial value creation and the loss of importance of the business location. The chapter places these developments in the long-term structural change from an industrial to a service economy. It examines the consequences for labor market structures and employment conditions.
- From the global economic and financial crisis to the COVID-19 pandemic, the share of manufacturing in employment in Austria stagnated, contrary to the declining international trend. From 2022, Austria on the other hand, recorded a sharper decline. The importance of the manufacturing sector has developed differently in the federal states since the economic and financial crisis - in some cases rising, in others declining.
- Structural change is also happening within existing companies. A distinction is made between functional and sectoral structural change. In functional structural change there is a shift within the value chain: Value creation is increasingly characterized by digital and service-based services. The result is hybrid company forms from production and product-related services, through to "fabless manufacturers" that continue to provide production-related services but are assigned to the service sector.
- In sectoral structural change within companies, the economic focus changes. In Austria, structural change within companies is measurable, but less pronounced than in other countries such as Denmark or the USA.
- Structural change is also increasingly taking place within the sectors through a shift in occupations. The share of manufacturing activities is decreasing. Service-oriented, knowledge-intensive activities are on the rise in areas such as research, development, management and organization. This development is being boosted by automation, digitalization and increasing technology intensity.
- There are different wage effects when switching from manufacturing to services. Overall, no wage effects can be observed when switching to market services. However, the change is accompanied by income gains for some groups and wage losses for others. When switching to non-market services, wage losses are usually noticeable. Women, younger people and university graduates are more likely to leave companies in the manufacturing of goods, whereby education is decisive for access to knowledge-intensive services and productive service sectors. People with a higher level of education are less likely to be unemployed or not available to the labor market at all. Overall, there are differentiated effects on wages and the probability of employment, depending on sector, occupation, level of education, age and gender.
- Since the beginning of 2023, unemployment in Austria has risen. People with a low level of education, occupations in primary services (office workers, sales staff, unskilled workers) and the manufacturing sector were particularly affected. Young people and women also tended to be more affected. For older employees, the increase was delayed by a few months.
- Industrial companies are planning to cut jobs over the next five years especially in the production sector, driven by automation, digitalization and falling demand. At the same time, knowledge-intensive areas such as product IT and R&D show potential for employment growth, which is further driving functional structural change.

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8.1 Introduction[107]

231 The discussion about possible **de-industrialization** has gained significant momentum in recent years. Increased energy prices are often cited as a trigger, leading to the question of whether Austria and other European countries are still competitive industrial locations. It emphasizes the threat and the decline in production in energy-intensive industries that is already apparent in 2023. As a result, there is a risk of relocation and a decline in investment (Hüther, 2023; Rusche, 2025).

232 Various studies on deindustrialization in Germany have already examined its causes and long-term economic and social effects. According to this work, the energy crisis can be seen as an **acceleration of ongoing structural change**, which is reflected, for example, in shifts in shares within the manufacturing of goods (NACE C) (Bialek et al., 2023). A decline in traditional manufacturing occupations in favor of an **increase in IT, scientific and management occupations** and a shift in occupational focus from production to IT, for example, has been observed for some time (Falck and Pfaffl, 2022). The **wage development** is unlikely to have accelerated deindustrialization in Germany. High gross value added was maintained despite high wage costs. This was achieved by outsourcing labor-intensive production, a highly qualified workforce, a good regulatory framework, a high level of research activity and efficient production technologies (Bialek et al., 2023; Müller, 2023).

233 A **possible development path** for the manufacturing sector is seen in the combination of a reduction in energy intensity and a shift to less energy-intensive products. With the shift away from energy-intensive sectors (petrochemicals, shipbuilding and aluminum to automobiles and electronics), Japan, a country poor in raw materials and energy, has also managed to keep the share of manufacturing goods at 20% in recent decades (Bialek et al., 2023; Müller, 2023).

234 As can be seen from the previous chapters, the Austrian economy is also confronted with developments that can contribute to an **acceleration** of structural change. **Trade policy turmoil** with the US is putting pressure on industrial demand from Austrian companies and burdening companies with increasing **uncertainty** (▶item 124). In some industries, **competitive pressure** is increasing due to China's new economic policy orientation (▶item 127). The **production costs** (energy and wages) in Austria and the EU are under pressure, which is being further increased by the requirements of the **ecological transformation** (▶chapter 7). The **skills shortage** and **demographic trends** pose additional challenges for economic development (Produktivitätsrat, 2024).

235 These developments also have a potential impact on long-term productivity trends in Austria. In the past, **productivity** in the manufacturing sector increased more than in services. In recent years, however, the highest contributions to productivity growth in the EU27 and the US have come from service sectors (▶chapter 5). A shift in the share of value added and employment from the manufacturing sector to knowledge-intensive service sectors in particular could therefore promote productivity growth.

236 This chapter examines the extent to which **structural change** is taking place in Austria as a permanent economic development, which trends are being reinforced by current developments and what challenges this entails. These include the decline in industrial value creation, the relocation of production abroad and the loss of industrial skills. As a result, employees are confronted with new demands on the labor market.

237 This chapter first looks at the general **development of the sectoral shares** of the manufacturing sector and services. As there was also a significant spread within the subsectors, these are not homogeneous sectoral developments (▶section 8.2).

[107] In all analyses, an attempt was made to pull the data to the current margin. In the case of data from the Austria Micro Data Center, this is the year 2022, for the Eurostat data used 2023 or 2024, for the microcensus 2024, for unemployment data 2025. The WIFO industry survey was conducted in 2025 and the forward-looking questions refer to 2025-2030.

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238 The share of goods production developed differently in the individual federal states. The importance of manufacturing goods has fallen in some cases and risen in others, especially since the financial and economic crisis. This heterogeneity points to the risk of not doing justice to the uneven development within the manufacturing sector and in the **regions** within Austria with uniform measures (►section 8.3).

239 In addition to the sectoral view, there are other developments that characterize structural change and enrich the assessment of the consequences and adaptation options. Structural change takes place **within companies** by shifting the focus of the production process or by a general change in the company towards services (►section 8.4.1). A long-term and gradual structural change can also be seen from a professional perspective. Manufacturing occupations are decreasing, **service occupations**, especially those with longer training periods, are increasing. This development is also taking place within the manufacturing sector and thus also demonstrates the structural change within the industry. The shift in the proportions of occupations illustrates which occupational groups are in greater demand during structural change (►section 8.4.2). An analysis of **employment biographies** reveals the frequency and consequences of employees switching between sectors (►section 8.5). The development of **unemployment** reveals specific difficulties on the labor market that the increasing pressure on the manufacturing sector since the energy crisis has brought (►section 8.6).

240 Economic policy measures can serve to reduce adjustment problems and support investment needs. The analyses of current developments highlight the challenges for **labor market and education policy** and support the identification of relevant fields of action. Above all, securing the employment and income of people who are more severely affected by structural change benefits those affected and the adaptation of companies to a fundamentally changing economic environment (►section 8.7).

Text Box 8.1: **Data sources**

Firms: Enterprises (legal entities) are assigned to a main activity in the Statistical Business Register (Performance and Structure Survey, LSE, Statistical Business Register, URS) according to the NACE classes. This allocation is made in consultation with the company. If there are several different NACE activities, the main activity is determined on the basis of the company-specific turnover shares, whereby these are assessed using the value-added-weighted turnover share (based on LSE data) (Statistics Austria, 2022). The main activity is derived at the top level of the NACE code. Even if the activity with the highest value added shifts to a different NACE upper class, the statistical classification at the detailed levels always follows the higher aggregation level ("top-down method", Statistics Austria, 2008). Data on gross value added, employment, sales and investments in intangible assets are taken from the LSE, supplemented by the R&D survey for R&D expenditure.

Employment: The reconciled employment statistics and employment statistics of the register censuses contain employment histories of the employees of the workplaces and the demographic characteristics used here (age, gender, education). The wages of employees were allocated with the help of wage tax statistics.

Unemployment: The labor market database (AMDB) of the AMS is based on data from the umbrella organization of social insurance institutions and the AMS offices. It includes a separate occupational classification for persons registered with the AMS as well as socio-demographic characteristics of the unemployed and employed.

Occupations: The microcensus labor force survey (MZ-AKE) of Statistics Austria is a sample survey that is used here to supplement information on the educational level and occupation (according to ISCO classification) of employees, as these are not available in the AMDB. The concepts of unemployment and employment differ slightly between AMDB and MZ-LFS. For the aggregated analysis in this chapter, these differences are negligible.

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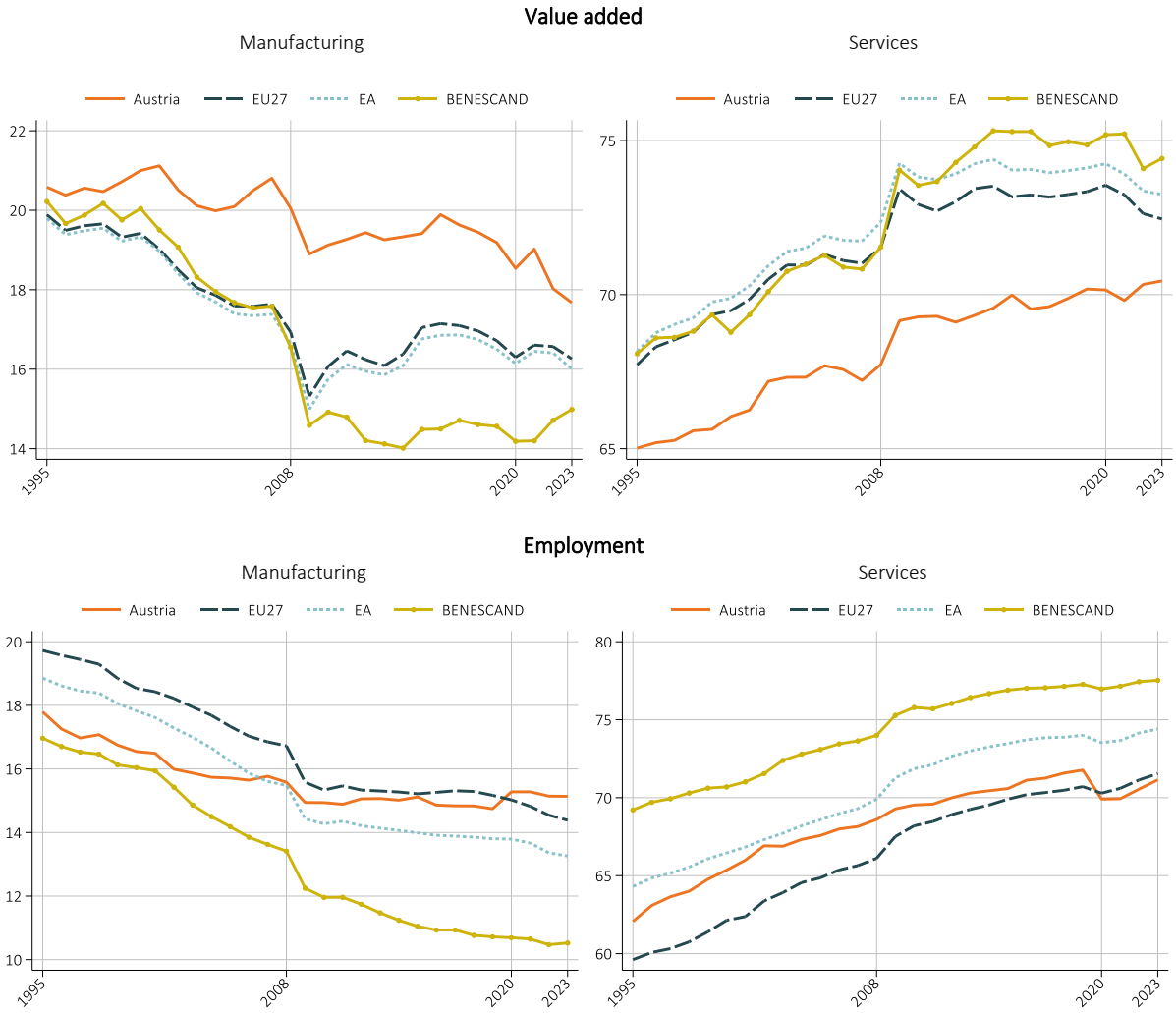
8.2 Sectoral development

241 In Austria, the **share** of both **value added** and **employment** in the manufacturing sector decreases over time, similar to many other countries (▶Figure 8.1). Changes in these proportions are two common indicators for describing structural change. Structural change refers to the shift in economic activity between sectors: from agriculture to the manufacturing sector and services (Herrendorf et al., 2013). These developments are accompanied by an increase in employment and value creation in the service sector.

242 The **time course** shows differences between Austria and the peer country groups. Until the financial and economic crisis, the decline in the share of value added and employment was greater in the peer country groups. After the financial and economic crisis until before the COVID-19 pandemic, the trends stagnated at different levels. Since the COVID-19 pandemic, the share of value added in Austria has fallen, while it has stagnated (EU27, EA20) or risen (BENESCAND) in the comparison groups. By contrast, the share of employment stagnated in Austria and fell in the comparative country groups. This development explains the decline in labor productivity in the manufacturing sector in Austria (▶chapter 5).

Figure 8.1: **Shares of the total economy in value added and employment, 1995-2023**

In %



Source: Eurostat (nama_10_a64, nama_10_a64_e).

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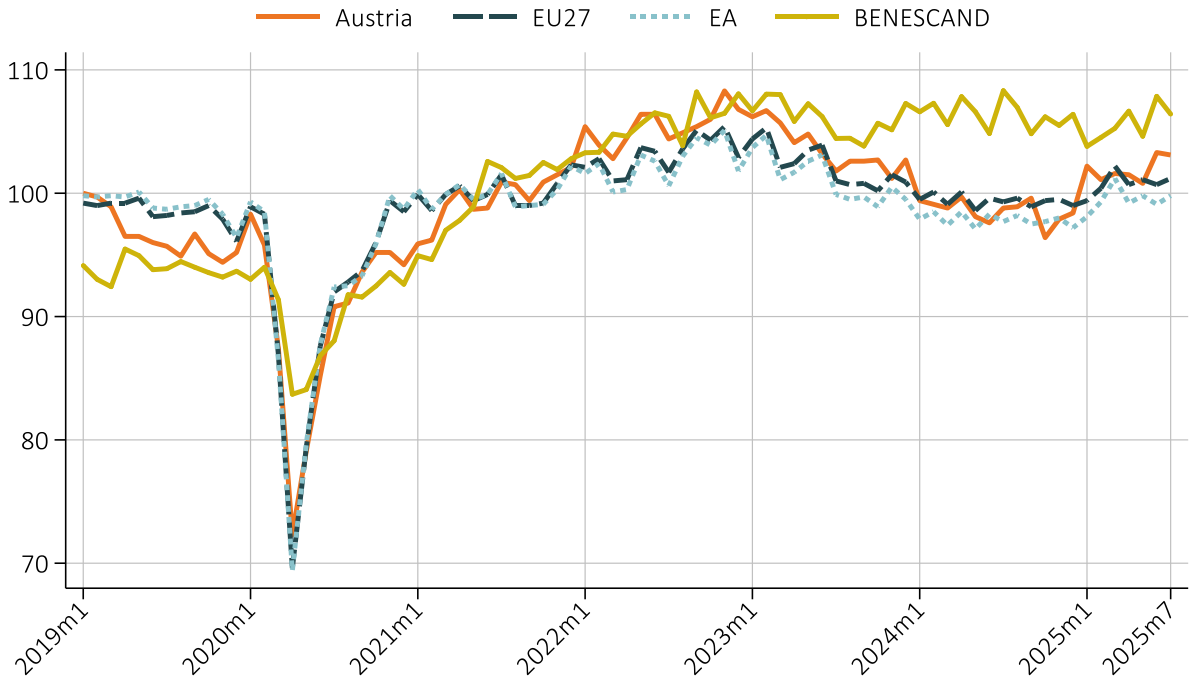
243 The **production index** in the manufacturing sector recovered in Austria after the cutbacks caused by the COVID-19 pandemic after 2021, similar to the EU27 (▶Figure 8.2). The decline from 2023 was similar. In the BENESCAND countries, the slump during the COVID-19 pandemic was lower. The decline from 2023 onwards was also only slight. In the last available months of 2025, the production index was at the same level as in the EU27 and EA20 countries before the energy crisis. In contrast to value added, intermediate inputs are not deducted from the production index and the services of industrial companies are only included in the case of assembly, maintenance or repair services (Bolz, 2025; Lehmann et al., 2025).

Figure 8.2: **Production index Manufacturing of goods**

Index (2021 = 100), seasonally and calendar day-adjusted data



Source: Eurostat (sts_inpr_m).

244 Structural change was not uniform in the various goods manufacturing sectors: While the total number of hours worked stagnated from 2010 onwards (▶Figure 8.1), there was **greater variation in employment across the subsectors**. A reduction in employment was concentrated in particular in **consumer goods** (excluding food) and in glass and ceramics. While the largest increase in employment was in **mechanical engineering**, the increase in value added was highest in the **chemical-pharmaceutical** industry (▶Figure 8.3).

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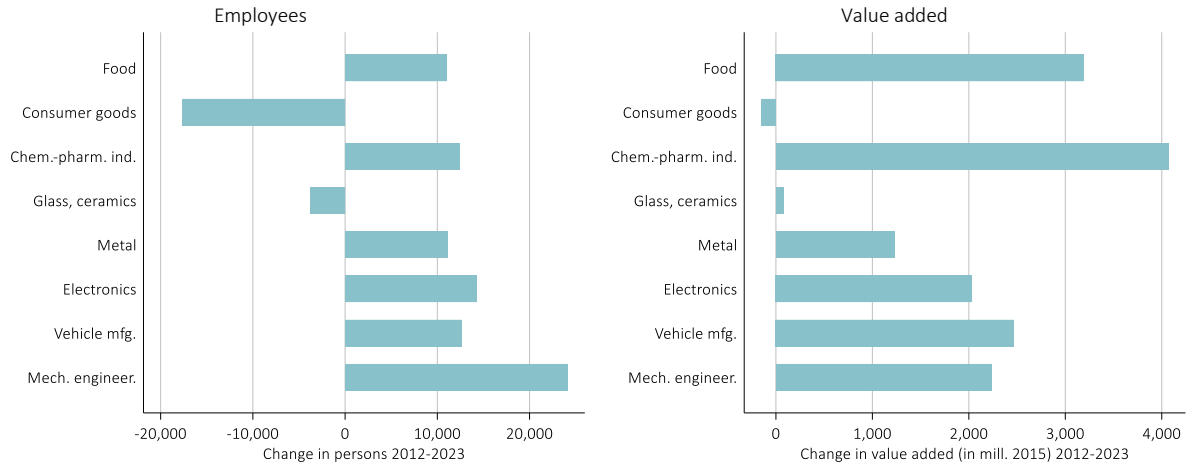
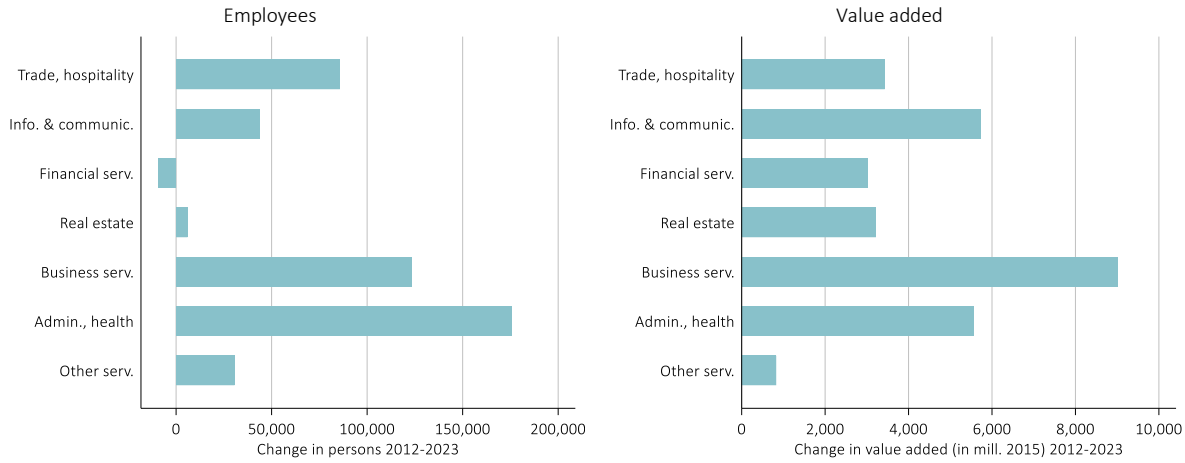
Figure 8.3: **Change in employment and gross value added in the manufacturing sector, 2012-2023**



Source: Eurostat (nama_10_a64, nama_10_a64_e).
Note: Employment in persons. Value creation in chain linked volumes. Classification of industries according to NACE 2008, Rev. 2. (▶Appendix for details). Food... C10-C12; Consumer goods (excluding food)... C13-C15, C16-C18, C31-C32; Chem.-pharm. ind... C19-C22; Glass, ceramics... C23; Metal... C24-C25; Electronics... C26-C27; Vehicle mfg... C29-C30; Mech. engineer... C28, C33.

245 In the **service sector**, too, there was a clear variation in the development of employment in the **subsectors**. The largest increases in employment were recorded in the **administration, education and health** sector (▶Figure 8.4, left). The **economic services** (professional, scientific, technical and other economic services) achieved the second-highest growth in employment and the significantly highest growth in value added (▶Figure 8.4, right). In the information and communication sector, employment growth ranked fourth and value added growth second.

Figure 8.4: **Change in employment and gross value added in the service sector, 2012-2023**



Source: Eurostat (nama_10_a64, nama_10_a64_e).
Remark: Employment in persons. Value creation in chain linked volumes. Classification of industries according to NACE 2008, Rev. 2. (▶Appendix for details). Trade, hospitality... G45-G47, H, I; Info. & Communic... J; Financial serv... K; Real Estate... L; Business serv... M-N; Admin., health... O-Q; Other serv... R-S.

246 Conclusion: The **sectoral structural change** in Austria is reflected in a long-term decline in the share of employment and value added in the manufacturing of goods in favor of the service sector. While production initially recovered after the COVID-19 pandemic, a renewed decline set in from 2023. However, the development was not uniform: Within the manufacturing of goods, consumer goods sectors were particularly affected by the reduction in employment, while the mechanical engineering and

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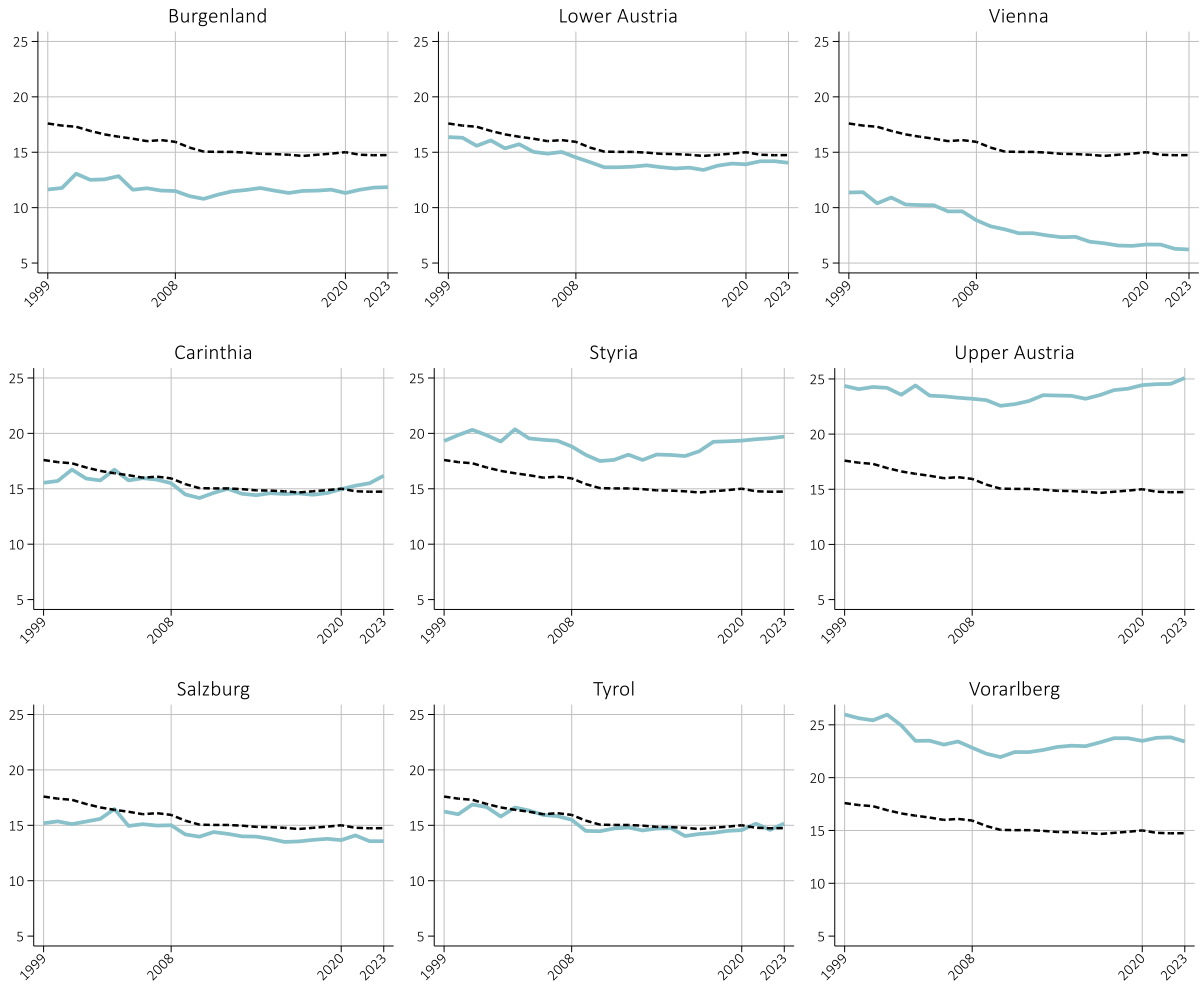
chemical/pharmaceutical industries, for example, recorded growth. There are also clear differences in the service sector - economic services and the information and communication sector developed particularly dynamically. Overall, the sectoral analysis illustrates the **long-term decline in the manufacturing sector** and the **heterogeneity** of structural change within the sectors.

8.3 Regional development

247 Structural change can affect and develop **regionally differently**. Industrial companies can influence regional development due to regional clustering or their regional employment. A decline in employment in industry represents a challenge for the affected region to create opportunities in new economic sectors. Regions (labor markets) with a high proportion of employment in the manufacturing sector are experiencing a greater decline in overall employment. Regions with a higher proportion of people with a higher level of education help to restore or even exceed the original employment level (Gagliardi et al., 2023).

Figure 8.5: **Share of employees in the manufacturing sector by federal state, 1999-2023**

In %; dashed: Austria total



Source: Eurostat (sbs_r_nuts03, sbs_r_nuts06_r2, sbs_r_nuts2021, lfst_r_lfe2emp).
Notes: Employment in persons.

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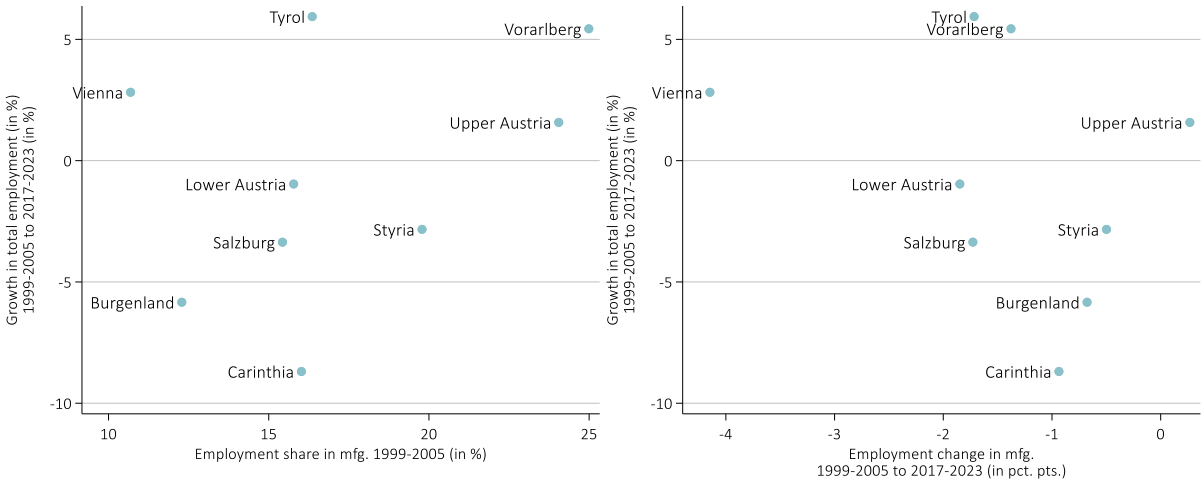
248 The proportion of employment in manufacturing fell or stagnated in all **Austrian federal states**[108] until the financial and economic crisis (►Figure 8.5).[109] After the financial and economic crisis, it continued to decline, particularly in Vienna and Salzburg. There were significant increases from around 2018 in Upper Austria, Styria, Vorarlberg and Carinthia.

249 The three federal states with the highest proportion of employees in manufacturing in the period 1999-2005 were Vorarlberg, Upper Austria and Styria (►Figure 8.6, left-hand graph, horizontal axis). Vorarlberg and Upper Austria also recorded high **growth in total employment** (►Figure 8.6, left-hand graph, vertical axis). The change in the share of manufacturing in total employment - as a measure of structural change - varies between close to 0 and -4 percentage points (1999-2005 compared to 2017-2023, ►Figure 8.6, right-hand graph, horizontal axis). In a comparison of the federal states, there was no correlation between structural change and a decline in total employment in the period 1999-2023.

Figure 8.6: **Change in the share of employment in manufacturing and total employment in the federal states, 1999-2005 compared to 2017-2023**



Source: Eurostat (sbs_r_nuts03, sbs_r_nuts06_r2, sbs_r_nuts2021, lfst_r_lfe2emp).

250 There is no clear correlation between structural change and employment growth in Austria's federal states. This is probably due to the different reasons for the **diverse regional development**. Regional availability of highly qualified workers has a positive influence on employment growth in the event of structural change (Gagliardi et al., 2023). High **qualifications** are created through longer-term investment in education. Regions with **specialization** in manufacturing can also develop against the trend of structural change and increase employment in manufacturing. Regions (NUTS 3) that were important for exports in particular recorded stronger growth and thus developed against the general trends of structural change (Dauth and Südekum, 2016).

251 In the longer term (1999-2022), all federal states have so far been affected by the decline in the share of employment in manufacturing. The extent of the impact varied between a slight reduction (Upper Austria) and -4% (Vienna). There will be a particular need for action in federal states and in even smaller structured labor markets that cannot compensate for the decline in employment in manufacturing through **growth in other sectors** or **expansion of core competencies**.

8.4 Functional structural change

252 Structural change takes place not only through the closure of industrial companies and the establishment of new service companies, but also **within existing companies**. Production-related activities are

[108] NUTS2 regions are considered largely closed labor markets (Antón et al., 2022).

[109] A detailed presentation of the structural development is available for Vienna (Mayerhofer et al., 2021).

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increasingly being supplemented or replaced by service-oriented activities. These new or expanded services can be closely linked to the original production processes - for example in areas such as design, research and development, marketing, sales or accounting. The **functional structural change** becomes visible on the basis of the **focal points of activity of the companies** by means of sectoral classification and on the basis of the **focal points of activity of the occupations**.

8.4.1 Functional structural change in companies

253 Companies can remain an integral part of the value chain in the manufacture of a product, even if they reduce or cease production. However, as soon as their **focus of activity** shifts to services - such as wholesale - they are statistically assigned to the service sector, even if they continue to provide production-related services (Bernard et al., 2017).

254 **Product-related services** can be provided both during the production phase (e.g. planning, consulting, design) and during the utilization phase (e.g. maintenance, training, repair, spare parts management). Advanced services such as software development, data analysis or operating models (e.g. software maintenance) are increasingly being offered by companies originally active in the manufacturing sector (Lehmann et al., 2025).

255 A distinction is therefore made between two forms of structural change within companies. **Functional structural change** describes the shift of activities within the value chain - away from production and towards upstream and downstream services. Hybrid company forms are also emerging, including "fabless manufacturers" that no longer operate their own production facilities. **Sectoral structural change** occurs when companies switch from selling goods to selling services. These services - such as warehouse management or research and development - are then offered to other companies and are often based on internally developed expertise (Ding et al., 2022; Fort et al., 2018).

256 As companies are classified in the statistics according to their **focus of activity**, it is not possible to record production and services separately for hybrid forms. It is therefore only possible to measure functional and sectoral structural change indirectly. For Denmark, Bernard et al. (2017) show that between 2002 and 2007, around 10% of industrial companies switched to the service sector - accounting for 42% of the decline in employment in manufacturing. In Austria, this change was less pronounced between 2008 and 2022: 5.6% of companies changed sectors, which corresponded to 2.5% of employment. This confirms the overall lower level of structural change compared to other countries (►section 8.2).

257 Further indications are provided by employment in **service workplaces** of companies in the manufacturing sector. In the USA, it contributed around 16% to employment growth in the service sector between 1977 and 2019, and around 6.6% in Austria between 2014 and 2022. The proportion of employees in such workplaces in Austria rose from 3.7% to 4.1% (Weichselbaumer, 2025).

258 Prominent **examples** of "fabless manufacturers" are Apple, Qualcomm or Nike, which focus on design, development and services while outsourcing production (Fort et al., 2018; Ding et al., 2022). Companies such as IBM, Unisys and Denmark's Iver C. Weilbach & Co also underwent similar developments. In Germany, companies such as Wolf GmbH, MTU Aero Engines, Siemens and Kaeser Kompressoren illustrate the increasing importance of digital and service-based services in production. They combine traditional industrial products with digital interfaces, remote maintenance, data analytics and flexible usage models (Lehmann et al., 2025; Bahrke et al., 2015).

259 Overall, the macroeconomic extent of structural change within companies is difficult to measure. Sectoral changes of companies and the development of employees in service workplaces provide evidence of the essential role of structural change within companies. Examples illustrate possible developments in functional and sectoral structural change. In Austria, **structural change within companies** also took place. The extent was lower than in comparable studies in other countries. Another way to characterize structural change within companies is to look at the activities and occupations performed (►section 8.4.2).

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Text Box 8.2: **Structural change due to companies switching sectors in Austria**

Data from business statistics[110] prove the structural change in Austria **within existing production companies**, not only through the emergence of new service companies (see Weichselbaumer, 2025). A key indicator of this is the **permanent reclassification of companies** from the manufacturing sector (NACE C) to the services sector (NACE G-N). Between 2008 and 2022, around 2,300 companies switched permanently from manufacturing to the service sector. In 2022, these "switchers" accounted for around **5.6% of surviving manufacturing companies**, employed **2.5% of the local workforce** and generated **2.2% of the sector's value added**.

The target sectors of these changes were highly concentrated: Over 75% of employees in changing companies can be found in the subsectors **real estate (NACE L68)**, **management consultancy (NACE M70)** and **wholesale (NACE G46)**. In many cases, the change was accompanied by a significant decline in employment - particularly in the areas of management, real estate and financial services.

Companies that switched from manufacturing goods to the service sector adjusted their size to the lower level of employment in the service sector. At the same time, their **labor productivity** increased compared to before and to other companies. In addition, these companies already had a higher proportion of **investments in intangible assets** - such as software, licenses or research and development - before the change and maintained this after the change.

Another indication of structural transformation is the **increase in service activities within production companies**. Between 2014 and 2022, the number of employees in non-manufacturing parts of industrial companies increased by around **14,000 people**. These companies thus contributed **6.6% to overall employment growth in the services sector** - indicating an increasing integration of services in industrial value chains.

These developments indicate that **production companies are increasingly adopting a hybrid approach**: They combine industrial expertise with service-oriented business models and thus respond to technological and market changes.

8.4.2 Main activities of the professions

260 Structural change is taking place within companies through a **service orientation of professions** (Boddin and Kroeger, 2024). The share of production or **manufacturing occupations** decreases due to the reduction in the share of manufacturing in total employment. A service orientation also takes place within companies in manufacturing. Traditional production occupations are increasingly being replaced by service-oriented activities, particularly in areas such as research and development, technical services and management and organization. This development is a manifestation of functional structural change (►section 8.4), but can also be attributed to the increasing importance of more demanding activities in manufacturing due to automation. Industrial value creation is increasingly characterized by knowledge-intensive and organizational functions (Eickelpasch, 2014).

261 A summary of the main areas of activity shows a clear decline in production and **manufacturing occupations** in the economy as a whole (►Figure 8.7). Primary and secondary service activities are distinguished from manufacturing activities. Manufacturing activities include machining and processing, repairing or controlling and maintaining machines and systems. **Primary service activities** are distinguished from manufacturing activities by the fact that they represent an extension of the production process, maintain the overall economic production flow or go directly into consumption. These include simple sales and office tasks as well as general services such as cleaning, catering, storage, security and

[110] The results presented are based on the background study by Weichselbaumer (2025). Technical details, if not mentioned in the text, can be found in this paper. This research project was carried out with data from the Austrian Micro Data Center (AMDC). The AMDC is a research data infrastructure facility of Statistics Austria that enables research to be conducted on microdata prepared in accordance with data protection regulations (Fuchs et al., 2023).

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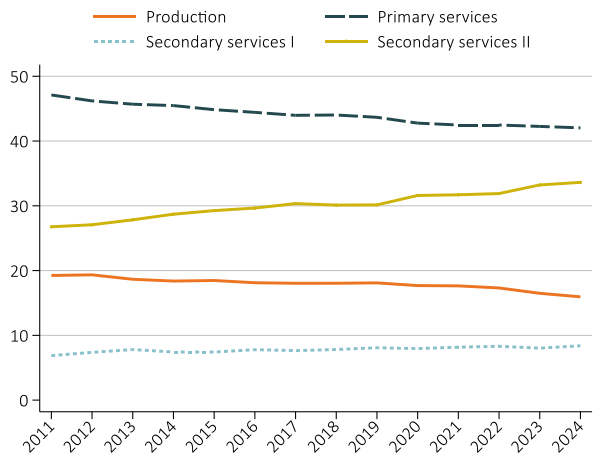
transportation. **Secondary service activities** are activities that are usually not physically tangible (intangible goods) and are predominantly performed mentally. As a rule, they require a university degree or a comparable level of qualification. These are activities such as researching, developing, organizing, managing, applying and interpreting the law, caring, healing, nursing, advising, teaching, publishing and entertaining (Helmrich and Zika, 2010; Tiemann et al., 2008).

Figure 8.7: **Main areas of activity, total economy**

Share of employees in %



Source: Microcensus, Statistics Austria.
Note: Total economy except agriculture and mining (NACE C-U). Classification of occupations (ISCO 08, microcensus, Statistics Austria) based on the scheme in Helmrich and Zika (2010). Production: Machining and processing, repairing or controlling and maintaining machines and systems. Primary services: simple sales and office work, general services such as cleaning, hospitality, storage, security and transportation. Secondary services I: personal services; primarily specialist and assistant professions in the areas of care, (medical) treatment, legal, social care and cultural areas. Secondary services II: knowledge-intensive services, primarily academic professions; research and development, STEM professions, teaching, legal advice, scheduling, coordinating, organizing and management.

262 The **secondary services** can be divided into two further groups. The first group (secondary services I) is referred to as **personal services**. These primarily include specialist and assistant professions in the areas of care, (medical) treatment, legal, social care and cultural fields. The second group is called **knowledge-intensive services** (secondary services II). These include mainly academic occupations such as research and development, mathematics, engineering, science and technology (STEM) occupations, teaching, legal advice, scheduling, coordinating, organizing and management (Stooß and Weidig, 1990).

263 There was a pronounced **trend towards service occupations** in manufacturing in Austria in the period 2011-2024 (▶Figure 8.8). Manufacturing occupations decreased by 9.5 percentage points. Knowledge-intensive secondary services rose by 6.1 percentage points. Personal services played a subordinate role. Although the production occupations in manufacturing were proportionally smaller (2024: 41.1%) than in other industry (2024: 49,5%). In terms of numbers, however, employees in production occupations predominated with 280 thousand employees in the manufacturing sector (other industry: 175 thousand employees). In the period 1975-2017, the ratio of production employees in manufacturing to production employees in services in Germany fell from 3 to 1.3 (Boddin and Kröger, 2021).[111]

[111] The reduction in production occupations in manufacturing could also be due to an increase in temporary workers for these activities, rather than an actual reduction in the proportion of these occupations. These employees could be employed in the placement and leasing of workers sector (NACE N78) can be found again. An evaluation of the overarching economic sector N does not indicate an increase in production occupations.

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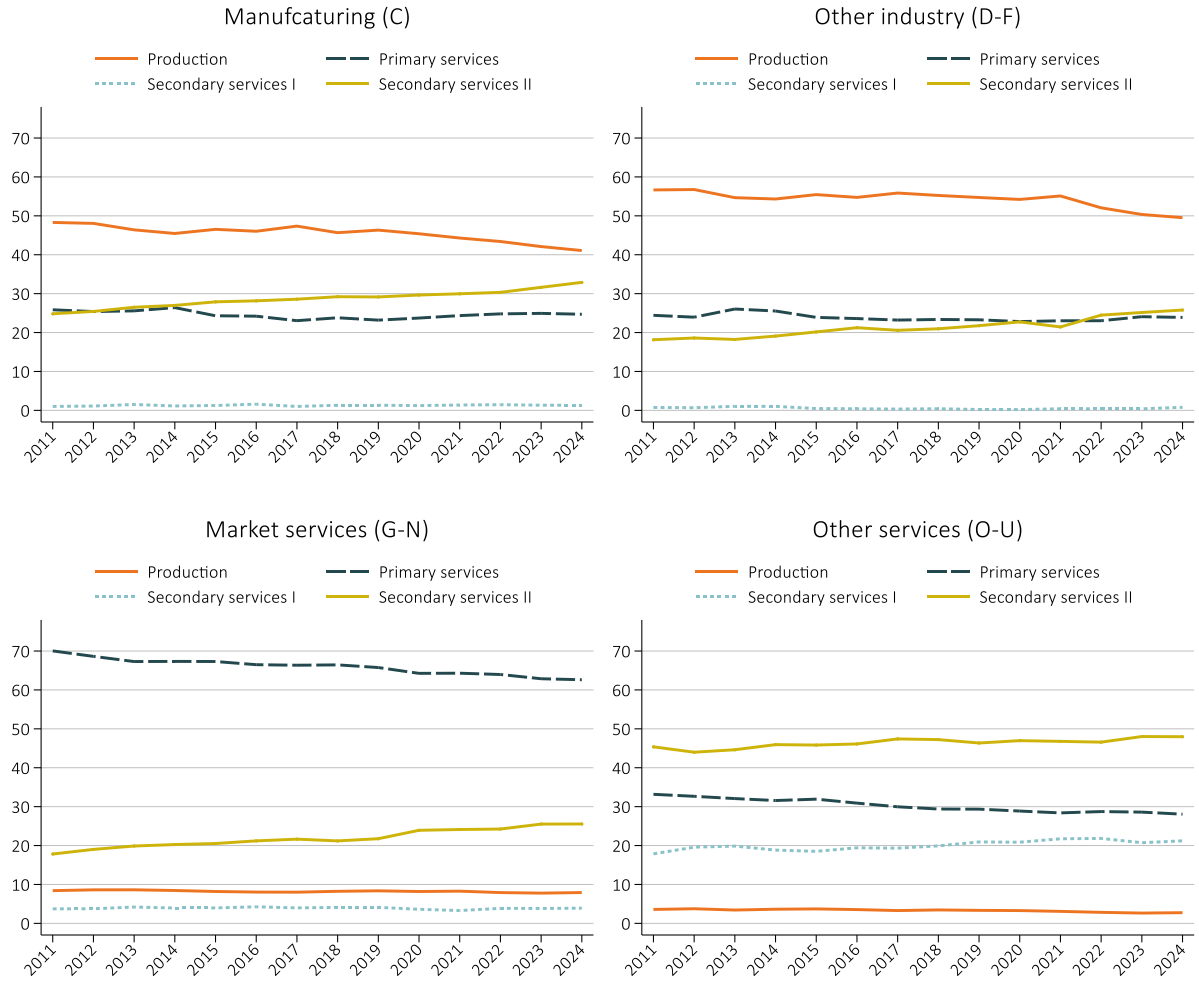
Figure 8.8: **Main areas of activity within the sectors**

Share of employees in %



Source: Microcensus, Statistics Austria.
Note: Classification of occupations (ISCO 08, microcensus, Statistics Austria) based on the scheme in Helmrich and Zika (2010). Subdivision of secondary services according to Stooß and Weidig (1990). Production: Machining and processing, repairing or controlling and maintaining machines and systems. Primary services: simple sales and office work, general services such as cleaning, hospitality, storage, security and transportation. Secondary services I: personal services; primarily specialist and assistant professions in the areas of care, (medical) treatment, legal, social care and cultural areas. Secondary services II: knowledge-intensive services, primarily academic professions; research and development, STEM professions, teaching, legal advice, scheduling, coordinating, organizing and management.

264 For Germany, according to Eickelpasch (2014), there is a correlation between the proportion of manufacturing activities and the degree of **export orientation**. Industrial sectors with an export share of over 50% reduced the proportion of production workers by 4.4 percentage points between 1999 and 2011, starting from an average share of 55.3% (1999). Industries with a medium export share (33%-50%) reduced the share of production workers by 3.2 percentage points, and industries with an export share of less than 33% by 2.2 percentage points.

265 The development of the main areas of activity in manufacturing depends largely on the **technology intensity** (▶Figure 8.9). In the high-tech sub-sectors, employment rose in all key areas of activity between 2011 and 2024. Due to the sharp rise in employment in knowledge-intensive services, the proportion of other activities fell accordingly. In the mid-low tech sub-sectors, only manufacturing activities recorded a decline, as did the proportion of employees in the mid-high tech sub-sectors, although the number of employees in all fields of activity increased in absolute terms. In the low-tech sub-sectors, the number

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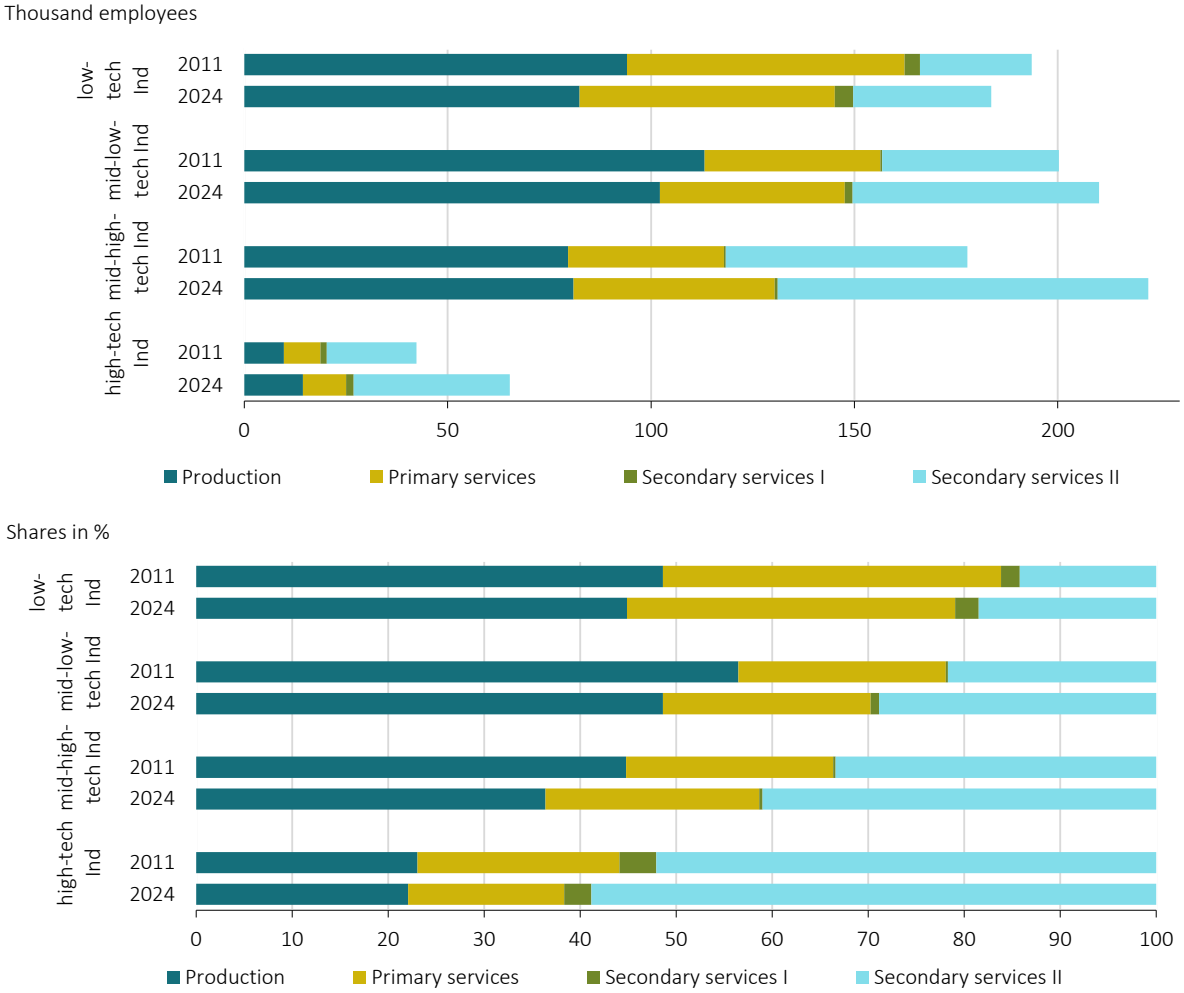
of employees only rose in secondary services (in absolute and relative terms), but this segment was the only one to record a decline in employment overall.

266 The growth in the number of employees was highest in the (mid-) high-tech sub-sectors, and in turn in knowledge-intensive services. **Knowledge and technology intensity** represent an essential basis for the **maintenance and expansion of employment in manufacturing** and could be an indication of how structural change can maintain and promote the sector in the future.

Figure 8.9: **Main areas of activity in manufacturing by technology intensity**



Source: Microcensus, Statistics Austria.
Note: Classification of occupations (ISCO 08, microcensus, Statistics Austria) based on the scheme in Helmrich and Zika (2010). Subdivision of secondary services according to Stooß and Weidig (1990). Production: Machining and processing, repairing or controlling and maintaining machines and systems. Primary services: simple sales and office work, general services such as cleaning, hospitality, storage, security and transportation. Secondary services I: personal services; primarily specialist and assistant professions in the areas of care, (medical) treatment, legal, social care and cultural areas. Secondary services II: knowledge-intensive services, primarily academic professions; research and development, STEM professions, teaching, legal advice, scheduling, coordinating, organizing and management.

267 Looking at occupations contributes to the understanding of structural change, as it goes beyond the consideration of companies and intersectoral development and makes the change in industrial value creation within companies visible. This development is consistent with the functional structural change that is taking place in the sectors and within companies. In the functional structural change, industrial companies are not only producing goods, but increasingly also **integrated services**. Employment of knowledge-intensive services in companies with a higher **technology intensity** even increased significantly in absolute terms. Automation and digitalization also mean that production itself increasingly

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requires services instead of manufacturing jobs. This form of structural change can be seen throughout the entire available time period (2011-2024), not just since the energy crisis.

268 The functional structural change within companies represents a challenge for statistical systems. Traditional sectoral statistical systems do not adequately reflect the new reality. A clear distinction between industry and services is becoming increasingly difficult to maintain empirically. This has consequences for economic policy analyses, innovation promotion, tax policy and education policy (Lehmann et al., 2025).

8.5 Structural change and employment

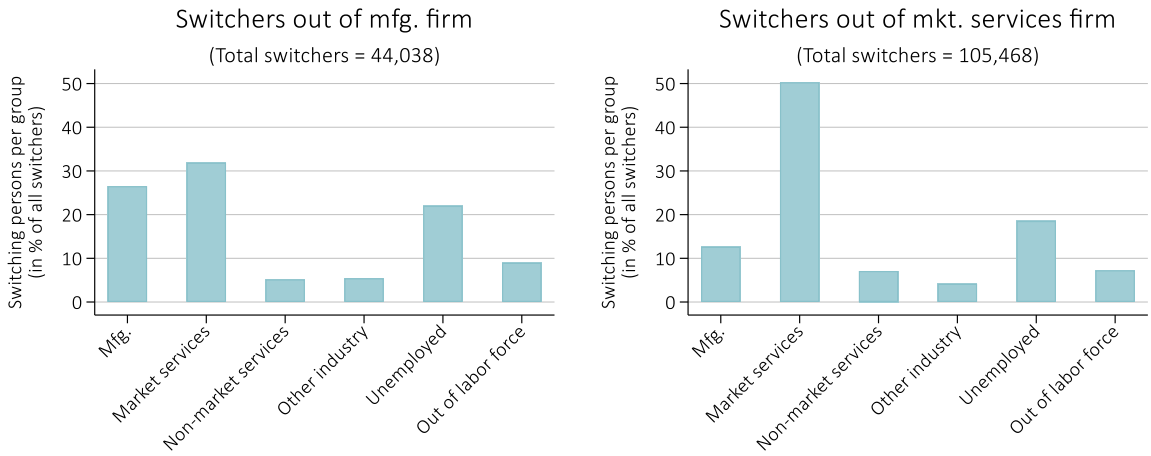
269 Structural change entails the **loss of jobs**, but also opens up **new employment opportunities**. Employees react differently to changes in shrinking sectors. Age, level of education and gender can affect whether a change is successful and what consequences it has for wages. The aim is to create a better understanding of the dynamics of **job changes** and to make **targeted support needs** visible for particularly vulnerable groups.

8.5.1 Change of employment

270 This section discusses factors influencing job losses in manufacturing for employees. The discussion is based on an analysis of Austrian employment biographies from 2013 to 2022. A large sample of people affected by job loss was analyzed (for information on how the sample was obtained, see ►Text Box 8.3). After the **job loss** in the **manufacturing sector**, on average 69% moved into new employment during the study period (►Figure 8.10, left). More employees (31.9%) switched to the market services sector and thus completed a sector change than to another company within the sector (26.5%). Smaller shares switched to non-market services (5.2%) or other industry (5.4%). The unemployment rate among those affected by job loss was 22.0%. A further 9.0% dropped out of the labor force.

271 After the job loss in **market services**, the majority remained in another company within the sector (50.3%; ►Figure 8.10, right). A much smaller proportion switched to the manufacturing of goods sector (12.6%). This share was therefore also significantly lower than in the sector change based on manufacturing (31.9%, ►item 270). The switching frequencies to companies in non-market services (7.1%) and other industry (4.2%) were again lower. Unemployment (18.5%) and leaving the labor force (7.3%) were slightly less common than job losses in manufacturing.

Figure 8.10: **Consequence of termination of employment, 2013-2022**



Source: AMDC, Statistics Austria.
Notes: NACE economic sectors: Mfg: NACE C. Market services: NACE G-N. Other industries: NACE D-F. Market-DL: NACE G-N. Non-market-DL: NACE O-U.

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Text Box 8.3: **Employment change and structural change: Methodology and data basis**

The analysis of the consequences of structural change for employees is based on **administrative individual data from Austria.**[112] They enable a comprehensive observation of employment histories over the period 2013 to 2022. The study focuses on full-time employees who worked continuously in the same company in the two years prior to the end of their employment. This ensures a stable employment biography for the people in question and avoids the inclusion of people who have already changed jobs frequently.

The methodological approach focuses on identifying **mass layoffs as exogenous shocks**. When analyzing the effects of job losses, the mass layoff design attempts to avoid central **selection distortions**. Voluntarily resigning employees might be better qualified or more motivated, while dismissed employees might be less productive. In the case of mass redundancies, however, job losses are not due to individual performance, but to external shocks (e.g. site closure, industry crisis). This makes it easier to attribute the consequences of the job loss causally to the event itself. At the same time, this design reveals the effect of systemic shocks on employees, as it shows how external economic changes (e.g. slump in demand, technological upheavals) affect workforces - regardless of their individual aptitude.

The event of a mass redundancy is classified on the basis of defined threshold values, which are based on the size of the company. For example, redundancies of at least 5% of the workforce in medium-sized companies or at least 30 people in large companies are deemed to be mass redundancies. In order to avoid confusion with company mergers or outsourcing, cases in which more than 20% of the workforce moves to another company are excluded. People who are involved in multiple mass redundancies or whose educational status changes are also excluded.

The analysis focuses on employees in manufacturing (NACE C) and in market services (NACE G-N), whereby transitions to other sectors are also taken into account. Wages are measured as annual gross wages in constant prices (2015, adjusted for inflation using the consumer price index). People with very high incomes (over 200,000 euros) are excluded in order to avoid distortions in this direction. The selection includes both white-collar and blue-collar employees, which together cover around 90% of the workforce.

A **quasi-experimental design** is used to investigate the **effects of mass layoffs on employment histories**. The people affected (switchers) are compared with those who remain with the company despite mass redundancies (stayers). This comparison group serves as a control group to identify differences in **transition probabilities**, **wage trends** and **unemployment**. In the comparison of the two groups, the influence of individual characteristics such as age, gender, education and wage level on various transitions is estimated.

The sectoral perspective is ensured by assigning companies to NACE classifications. This also takes into account whether people move into **knowledge-intensive** or **productivity-intensive** subsectors. The classification of the subsectors according to knowledge intensity follows the Eurostat definitions. The productivity classification is based on the average labor productivity of the companies prior to the period of the employment analysis. The analysis thus allows a differentiated view of sectoral mobility patterns in the context of structural change.

[1] The term "mass layoffs" is not used in the present context in the sense of employment law, but generally refers to the mass or frequent termination of employment relationships - regardless of the legal form, which is not covered in the data used.

[112] The results presented are based on the background study by Weichselbaumer (2025). Technical details, if not mentioned in the text, can be found in this paper. The research project was carried out using data from the Austrian Micro Data Center (AMDC). The AMDC is a research data infrastructure facility of Statistics Austria that enables research to be conducted on microdata prepared in accordance with data protection regulations (Fuchs et al., 2023).

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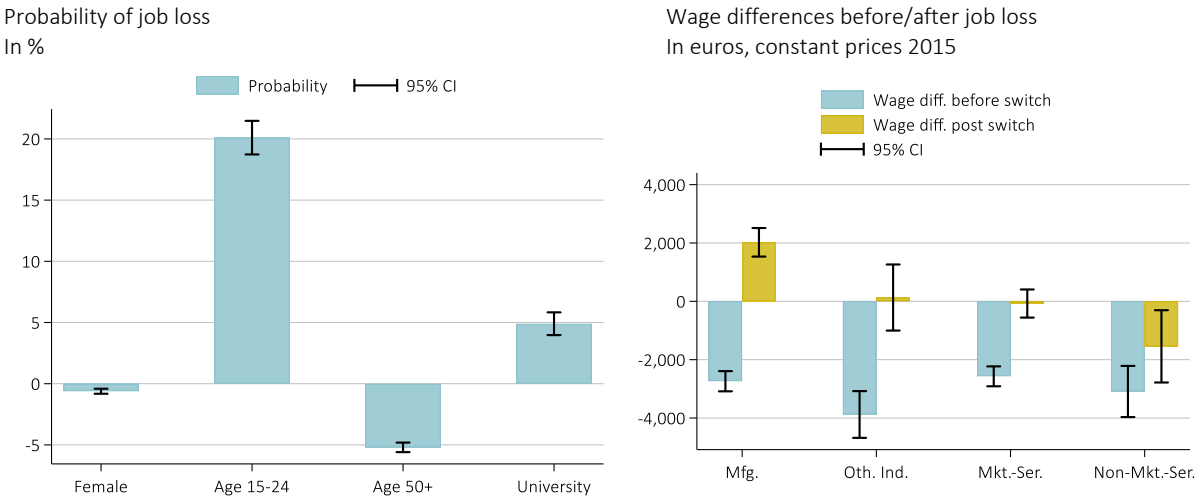
272 The **probability of job loss** in manufacturing varied according to **gender, age and education** (▶Figure 8.11, left-hand panel). Women were slightly less likely to leave employment (-0.6%). The 50+ age group had a lower probability of ending employment (-5.2%). Younger employees left their original company more frequently (+20.1%). A university degree increased the frequency of leaving the company (+4.9%). These differences in frequencies apply to comparable wages, highest completed education, original full-time employees and comparable original companies.

Figure 8.11: **Differences in the probabilities of job losses in manufacturing and wage effects**



Source: AMDC, Statistics Austria.
Notes: Probability compared to: Men; age group 25-49; compulsory schooling at most. Wage differences compared to employees who remain employed by the company in manufacturing (Weichselbaumer, 2025).

8.5.2 Wages after the change of employment

273 Structural change with a shift from employment to services could lead to lower wages. **Wages in the service sector** were lower on average than in manufacturing. In Austria, median earnings per hour in 2022 were 16.6% lower in services than in manufacturing (Geisberger and Hoser, 2024). Employees in manufacturing could suffer a loss of pay as a result of structural change and the associated change in employment.

274 Wages are influenced by a **number of factors** that can differ between sectors and are therefore responsible for part of the wage gap. If differences in age, gender, education and level of employment are taken into account, the wage gap is reduced. For Austria, a differentiated picture of **wage changes following a change of employment** emerges when wage-determining factors are taken into account. A change from a company in manufacturing to market services (NACE: G-N) did not lead to a reduction in gross wages compared to remaining in the same company in manufacturing (▶Figure 8.11, right panel). A change to another industrial sector (mining, energy, water/waste, construction; NACE B, D-F) did not result in a change in salary. A switch to another company in manufacturing resulted in an increase (+4.5% relative to the median wage), a switch to non-market services (NACE O-U), on the other hand, led to a reduction in wages (-3.4% relative to the median wage). However, changing employees already have lower wages than non-changing employees before a change. This could have to do with the occupations of the changing employees, for which no data is available for Austria in the analysis carried out.

275 Numerous studies show wage losses as a result of a change of employment. An analysis for Germany takes into account the effect of a **change of occupation or activity** in addition to a change of sector. If an employee in manufacturing switched from manufacturing to the service sector but remained in a

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production occupation, the average wage fell by 2.8%. If, on the other hand, they took a job in the service sector, their wages fell by 12.0% (Boddin and Kroeger, 2021).[113]

276 Wage losses are lower for **low-wage employees** than for employees with higher wages. The wage losses for all employees when **switching to less knowledge-intensive services** are twice as high as when switching to knowledge-intensive services. As low-wage employees switch more frequently to less knowledge-intensive services, this leads to a **polarization** of wages (Helm et al., 2023).

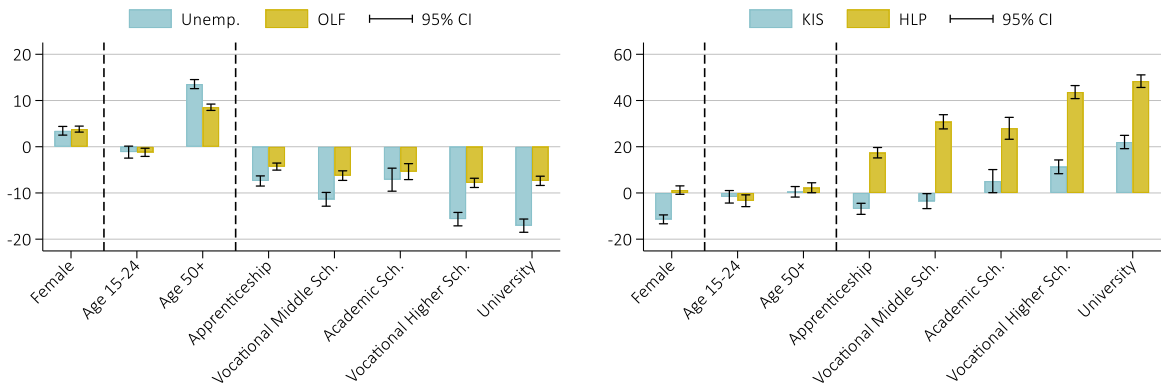
277 In Austria, employees had lower **wages** before changing jobs than employees who stayed with the company. However, the change only resulted in a further loss of salary when switching to non-market services. The risk of wage losses is therefore not generally present when switching from manufacturing to the service sector.

8.5.3 Unemployment and leaving the labor force

278 How often people lose their jobs and what happens afterwards depends, among other things, on **age** and **education** (►Figure 8.12, left panel). Older people (50+) are less likely to lose their jobs than younger people - so they are more likely to stay with the same company (►item 272). However, if they do lose their job, they are more likely to be unemployed than 25 to 49-year-olds - 13.6% more often. The proportion of those who become inactive is also higher among older people (+8.6%). Although younger employees change companies more often (►item 272), they do not become unemployed more frequently than 25 to 49-year-olds. The **gender** also plays a role. Women are more likely to be unemployed (+3.5%) or inactive (+3.8%) after leaving employment than men. These differences were calculated in such a way that the other factors - education, gender and age - were kept the same. This means: The figures show the effect of age, gender or education alone, if the other conditions are held constant.

Figure 8.12: **Differences in the probability of switching to different groups after the end of employment in manufacturing**

In %



Source: AMDC, Statistics Austria.
Notes: The differences shown show how much the probability changes compared to a reference group. This reference group consists of: Men, people aged 25-49 and with at most a compulsory school leaving certificate. The left panel shows the differences per group for unemployment and labor market inactivity. The right-hand panel shows the differences per group for switching to knowledge-intensive sectors or sectors with high labor productivity (Weichselbaumer, 2025).

279 The **highest level of education completed** had a clear influence on how often people became unemployed or withdrew from the labor market altogether after leaving their company. The higher the level of education, the less frequently these consequences occurred - compared with people who only have a compulsory school-leaving certificate. Age and gender were kept constant so that the differences can

[113] The wages evaluated are gross daily wages (Boddin and Kröger, 2021, FN 12; Antoni et al., 2019, p. 43-44).

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be attributed to education. People with an apprenticeship certificate or AHS were significantly less likely to be unemployed than those with a compulsory school-leaving certificate, and this difference became even greater as the level of education increased - down to a decrease of 17% for university graduates. The probability of withdrawing from the labor market altogether was also lower for those with a higher level of education - between 4% and 8% less than for those with a compulsory school-leaving qualification, depending on the qualification.

280 The switch from manufacturing to **knowledge-intensive services** was strongly related to the highest completed **education** (►Figure 8.12, right panel). However, the change was less frequent for people with an apprenticeship certificate (-6.9%) and BMS (-3.5%) compared to people with a compulsory school leaving certificate. People whose highest level of education was AHS (+5.1%), BHS (+11.3%) or a university (+22.0%) switched to knowledge-intensive services much more frequently. Women switched to knowledge-intensive services 11.4% less frequently. Age had no influence.

281 Switching from manufacturing to knowledge-intensive industries can be more difficult for employees with **originally lower wages**. In Germany (1990-2004), employees with low wages were 4.4 times more likely to switch from manufacturing to service sectors with low knowledge intensity than to sectors with high knowledge intensity. Employees with high wages were only 1.4 times more likely (Helm et al., 2023). With a higher level of education, there was also a higher probability of switching to knowledge-intensive services in Austria.

282 Young people aged 15 to 24 are 3.4% less likely to switch to a **service sector with high productivity growth** compared to the reference group of 25-50-year-olds (►Figure 8.12, right-hand panel). For people aged 50 and over, however, this probability was 2.2% higher. The highest level of education completed had a significant influence: Compared to the reference group with a compulsory school-leaving certificate, the probability of switching to a service sector with high productivity growth increased by 17.4% for people with an apprenticeship certificate, 30.8% for those with an intermediate vocational school certificate, 28.0% for those with an AHS, 43.6% for those with a BHS and 48.4% for those with a university degree.

283 **Conclusion**: The structural change in Austria led to considerable **changes in employment**. This was due to shifts in the focus of activities (►section 8.4.2) and the transition from the manufacturing sector to the service sector. While many employees successfully switched to new jobs, the consequences for wages and employment histories depended heavily on individual characteristics such as age, gender and education. Older and less qualified people were particularly at risk and were more likely to become unemployed or leave the labor force. A switch to knowledge-intensive services was associated with better wage prospects, but was less accessible for low-wage employees and women. Targeted labor market policy measures are necessary to support disadvantaged groups during structural change.

8.6 Current developments on the labor market

284 From the beginning of 2023, **production** in manufacturing declined (►Figure 8.1). This section looks at how subgroups in the **labor market** are affected by the decline in production. Analyzing the development of different groups within the working population enables a differentiated view of the effects of structural change. The differences in the unemployment rate can provide indications of long-term shifts in the demand for labor in connection with the structural change described above.

285 The **total unemployment rate** (►Figure 8.13, left) has risen since the start of 2023. By June 2025, there was an increase of around 1 percentage point. The increase varied from sector to sector (►Figure 8.13, right). The highest increase was observalbe in market services (NACE G-N) and in manufacturing (NACE C). In non-market services (NACE O-U), unemployment remained almost constant. Unemployment in

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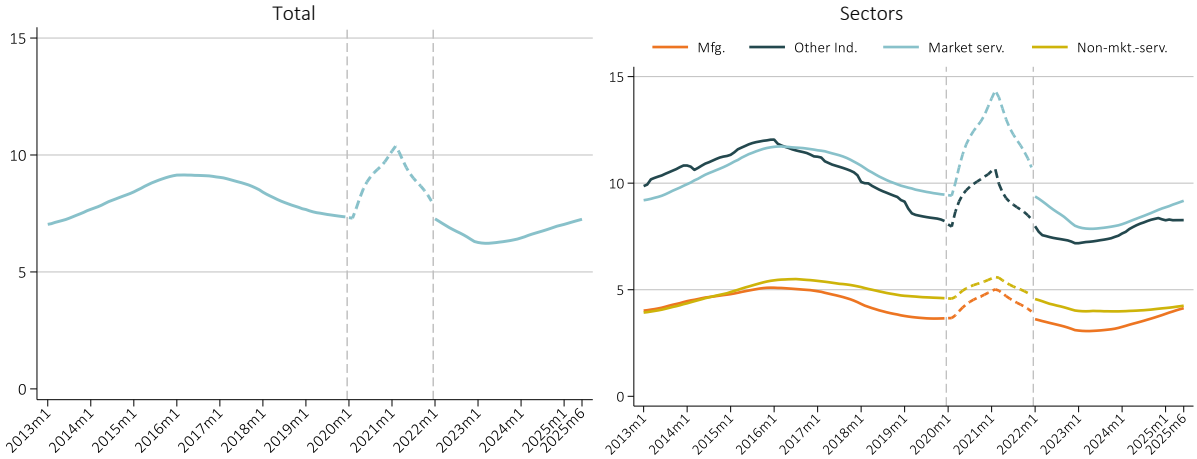
other industry (NACE D-F) approached the likewise rising unemployment rate for market services from 2023, but fell in the first half of 2025.[114]

Figure 8.13: **Unemployment rate**

Moving average 12 months, in %



Source: AMDB of the AMS Austria and the BMASGPK.
Notes: The previous months from 2019 are used for the 12-month average from January 2022. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. The separate treatment of the years 2021-2022 is indicated by the dotted lines. Classification of sectors according to ÖNACE 2008, Rev. 2 (see ►Appendix): Mfg... NACE C; Other. Ind... NACE D-F; Market serv...NACE G-N; Non-mkt.serv...NACE O-U.

286 Since the beginning of 2023, there has been an increase in unemployment among **women and men**, both overall (►Figure 8.14, left) and in manufacturing (►Figure 8.14, right). The differences between the unemployment rates (►Figure 8.14, lower part) make the differences in gender-specific development more visible. Unemployment fell more sharply among women after the COVID-19 pandemic. In manufacturing, the unemployment rate gap for women fell significantly below the pre-COVID-19 pandemic level. In the last 12 months, however, the gap to men has widened again, as unemployment among women has risen more than among men.

[114] Unemployment rates show strong seasonal patterns. Moving averages were formed with the 11 previous months in order to recognize the average trends. The years 2020 and 2021 were delimited separately due to the atypical pattern caused by the COVID-19 pandemic. For the 12-month average from January 2022 to November 2022, the year 2019 was used for the previous months instead of 2021. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. This is indicated by the dashed line in the unemployment rate charts for 2020-2021.

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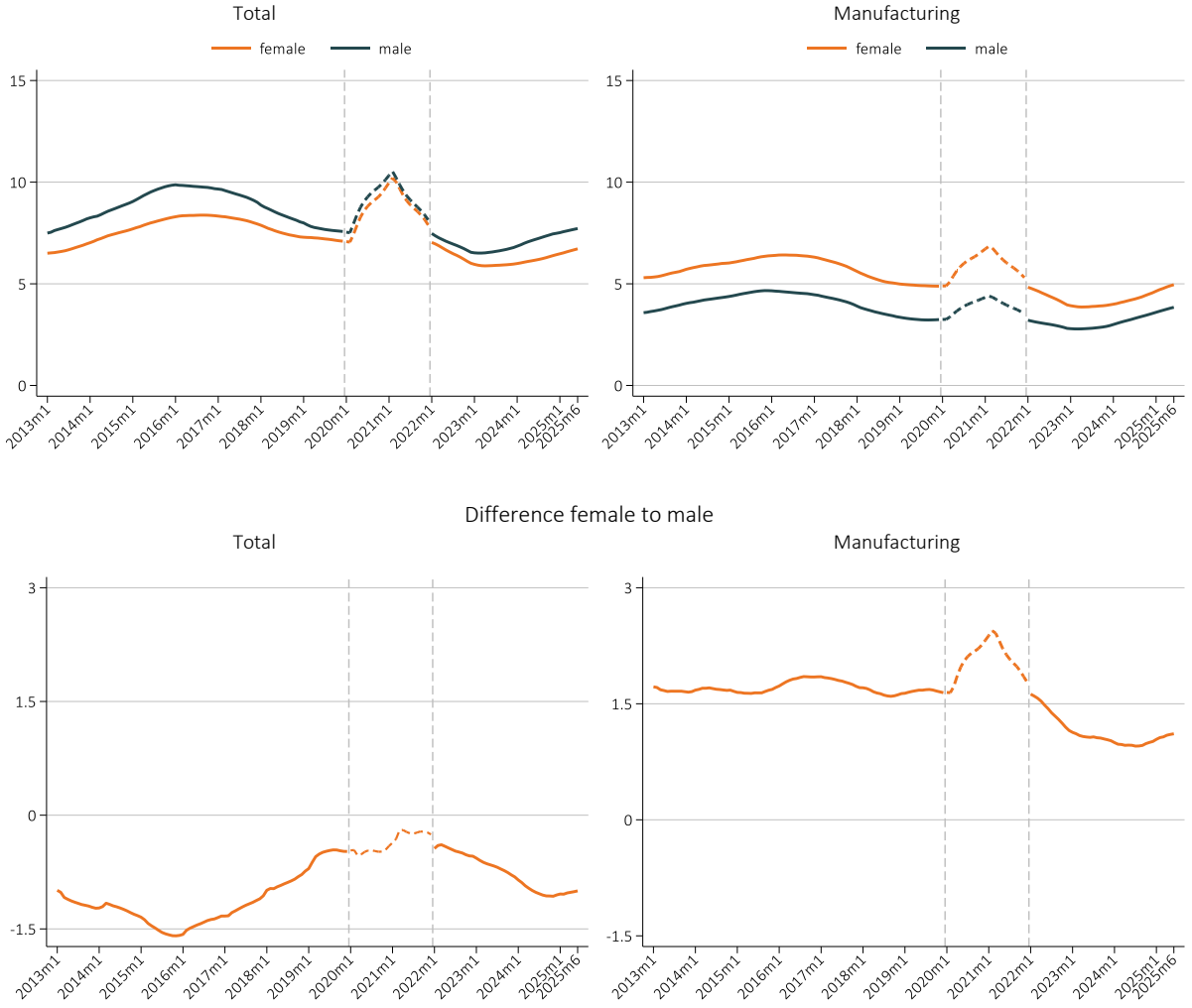
Figure 8.14: **Unemployment rate by gender**

Moving average 12 months, in %



Source: AMDB of the AMS Austria and the BMASGPK.

Notes: The previous months from 2019 are used for the 12-month average from January 2022. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. The separate treatment of the years 2021-2022 is indicated by the dotted lines.

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287 Unemployment also increased across all **age groups** (▶Figure 8.15). For the 50+ age group, however, the increase only began between the end of 2023 and the beginning of 2024, around one year later. The differences to the 25-49 age group (▶Figure 8.15, lower part) indicate a convergence of the unemployment rates of the age groups for the economy as a whole. Unemployment therefore increased more strongly among younger people (up to 25 years) and less strongly among older people (50+). In manufacturing, the gaps in unemployment rates hardly shifted after the delayed increase among older workers.

Figure 8.15: **Unemployment rate by age group**

Moving average 12 months, in %

Source: AMDB of the AMS Austria and the BMASGPK.
Notes: The previous months from 2019 are used for the 12-month average from January 2022. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. The separate treatment of the years 2021-2022 is indicated by the dotted lines.

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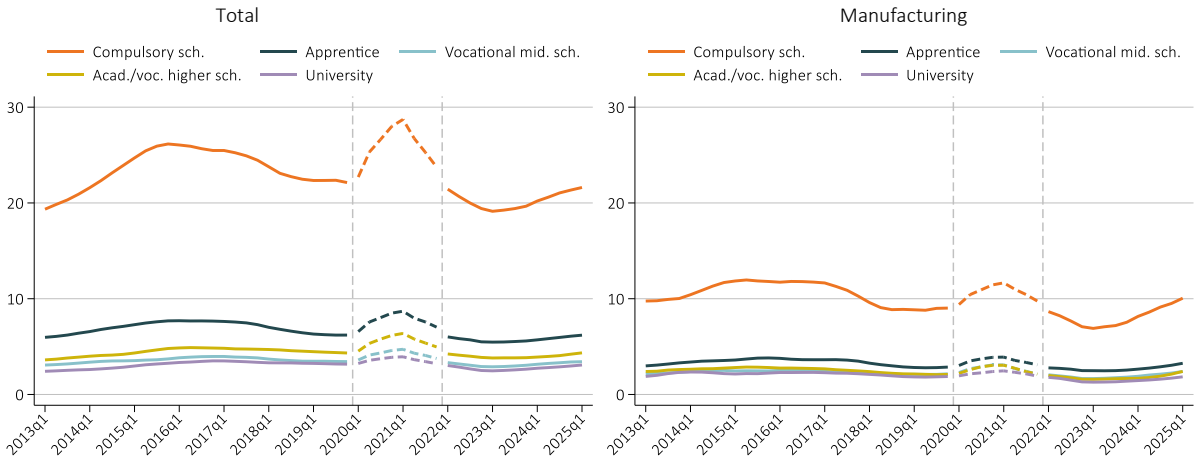
288 The group of people with **compulsory schooling** as their **highest level of education** showed higher unemployment rates and higher increases in the unemployment rate since 2023, both overall (▶Figure 8.16, left) and within manufacturing (▶Figure 8.16, right). The group accounted for 14.9% of the labor force (1st quarter 2025), but due to the high unemployment rate still had the highest *absolute* increase in the number of unemployed from the 4th quarter 2022 to the 1st quarter 2025 (around 31,000 people, or 43.6% of the increase in the number of unemployed). In manufacturing, the proportion of the group with no more than compulsory schooling is similarly high at 14.1% of the labor force. The increase in the number of unemployed in manufacturing is high for both compulsory school leavers (3,500) and apprentices (3,400).

Figure 8.16: **Unemployment rate by education**

Moving average 4 quarters, in %



Source: AMDB of the AMS Austria and the BMASGPK, microcensus, Statistics Austria.
Notes: The previous quarters from 2019 are used for the four-quarter average from the 1st quarter of 2022. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. The separate treatment of the years 2021-2022 is indicated by the dotted lines.

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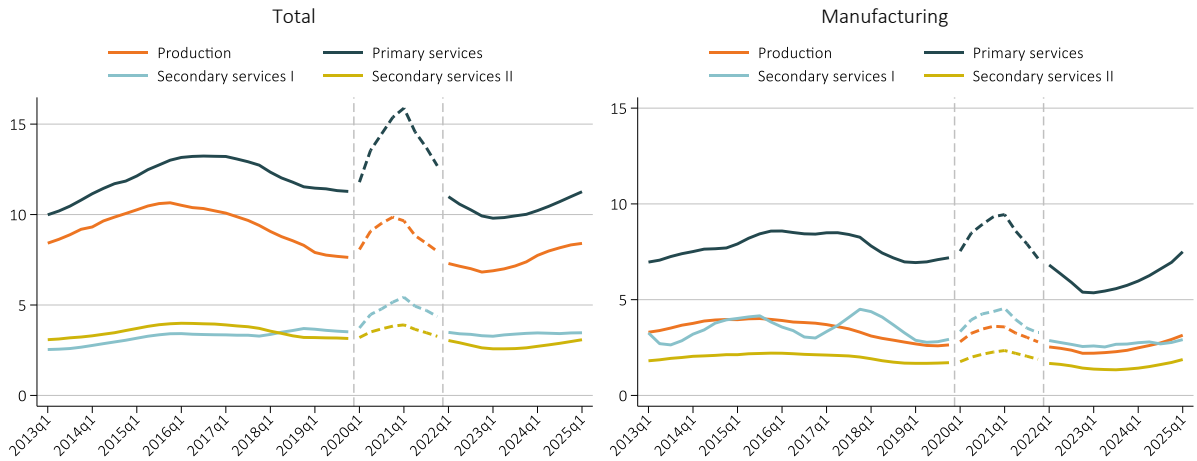
289 Along the **main areas of activity**, unemployment increased in manufacturing and primary services across the economy as a whole (►Figure 8.17, left). The increase in unemployment in the two main areas of activity was even more pronounced in manufacturing (►Figure 8.17, right). Unemployment in secondary services did not increase (secondary services I) or increased less (secondary services II) in the economy as a whole. In manufacturing, it also tended to increase in secondary services, albeit to a lesser extent than in the other main areas of activity.

Figure 8.17: **Unemployment by focus of activity**

Moving average 4 quarters, in %



Source: AMDB of the AMS Austria and the BMASGPK, microcensus, Statistics Austria.
Notes: The previous quarters from 2019 are used for the four-quarter average from the 1st quarter of 2022. This avoids the impact of the unusually high unemployment rates during the COVID-19 pandemic on the 2023 figures. The separate treatment of the years 2021-2022 is indicated by the dotted lines. Classification of occupations (ISCO 08, microcensus, Statistics Austria) based on the scheme in Helmrich and Zika (2010). Subdivision of secondary services according to Stooß and Weidig (1990). Production: Machining and processing, repairing or controlling and maintaining machines and systems. Primary services: simple sales and office work, general services such as cleaning, hospitality, storage, security and transportation. Secondary services I: personal services; primarily specialist and assistant professions in the areas of care, (medical) treatment, legal, social care and cultural areas. Secondary services II: knowledge-intensive services, primarily academic professions; research and development, STEM professions, teaching, legal advice, scheduling, coordinating, organizing and management.

290 Unemployment increased in all subgroups from 2023 or 2024 at the latest. The detrimental development of unemployment and participation in the labor force for people who only have a **compulsory school leaving certificate** (►items 278-279) is consistent with the faster rise in unemployment among this group. The developments for the **employee group 50+** went in different directions. Their frequency of employment ending was lower (►item 272). In the group of employees who left the original company, however, the frequency of unemployment or leaving the labor force was higher compared to the change of company or sector (►items 278-279). Overall, unemployment in the older age group increased with a delay of several months, and in manufacturing in 2025 at a similar rate to the other age groups.

8.6.1 Employment planning in manufacturing

291 According to the results of the latest WIFO Industry Survey (►Text Box 6.2), companies are also planning **different degrees of job increases and decreases** (►Figure 8.18) **in different business sectors over the next five years** . Although there is no change in overall employment, there are clear differences in individual **company divisions** and the corresponding **occupational groups**. **Production** stands out in particular among the areas with cutbacks: almost 40% of companies state that they are reducing their production workforce. On the other hand, around 26% of companies are planning to increase employment. A comparison of the sectors based on the difference between job creation and reduction shows that

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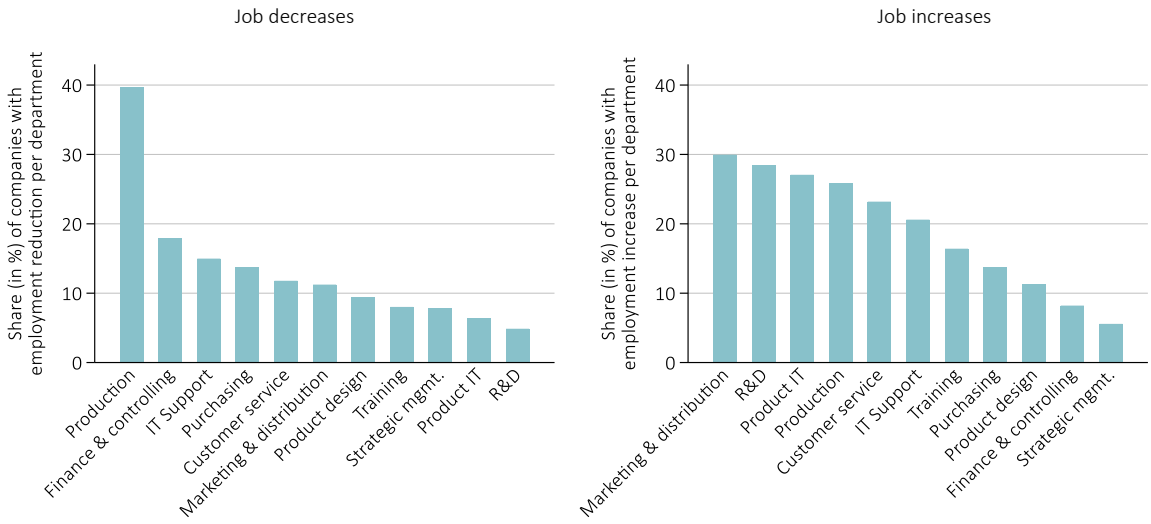
production is the sector in which companies are reducing employment more than creating it, at -14 percentage points.

292 The other areas with a high proportion of companies planning to cut jobs are among the main areas of activity of **primary services**. Their share stagnated in 2011-2024 in manufacturing (▶Figure 8.8) Figure 8.8in contrast to the downward trend in the economy as a whole (▶Figure 8.7). Primary services generally have a higher level of unemployment and have risen more than the other main areas of activity since 2023 (▶Figure 8.17). In the survey, the IT division is divided into "IT support" and "product IT". IT is one of the **secondary, knowledge-intensive services**. In IT support, companies are planning a greater reduction and weaker expansion than in product IT. Overall, both sectors have a higher proportion of companies with an increase in employment. In IT support, the intention to automate and replace with AI may already be more in the pipeline than in product IT. Secondary services such as R&D, product IT, training and marketing and sales (partly secondary services) have the largest majorities when it comes to employment growth.

Figure 8.18: **Change in employment in Austrian industry over the next five years**



Source: WIFO Industry Survey 2025.
Notes: The remaining companies stated that they would not change employment. Of the companies surveyed, 95% state that they have production facilities, 98% of which produce in Austria.

293 Technological changes such as **automation, digitalization and AI** were cited as the most important reason for the planned change in employment (▶Figure 8.19). Similarly important is a decreasing demand for the company's products during downsizing and an increasing demand during upsizing. Outsourcing the tasks of the company's own employees or high wages and costs also determine the reduction in employment. On the other hand, changes to the product portfolio are a similarly important reason for increasing employment.

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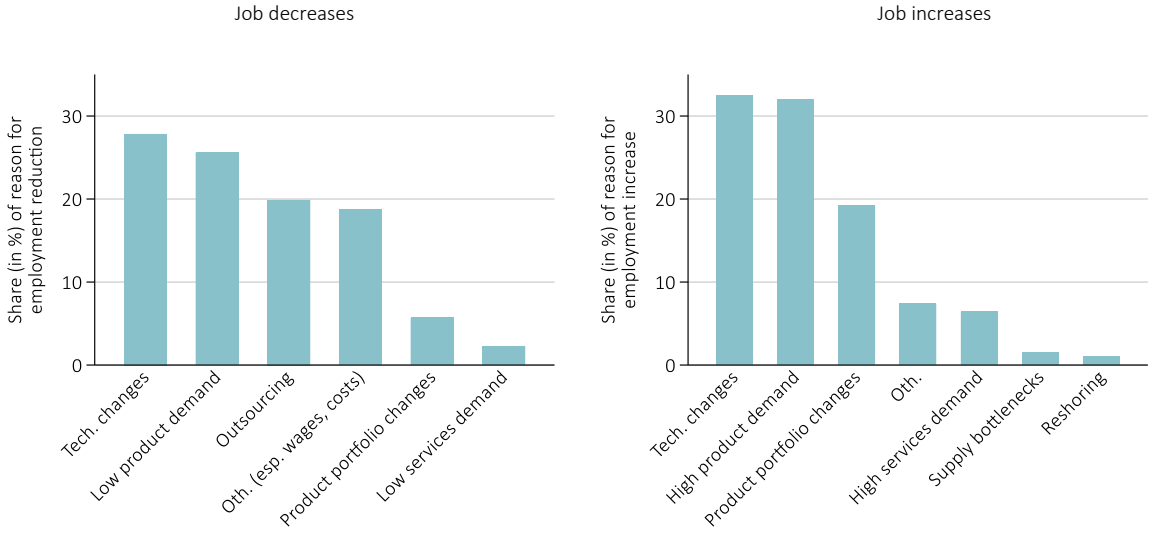
Figure 8.19: **Reasons for the change in employment over the next five years**



Source: WIFO Industry Survey 2025.

294 **Conclusion**: Developments in recent years point to an **acceleration of long-term structural change** in Austria. The decline in production in manufacturing since the beginning of 2023 (►Figure 8.2) led to an increase in unemployment, particularly among low-skilled workers. This development is in line with the previously observed trends of a shift in employment towards knowledge-intensive services and the decline in manufacturing activities. The current employment plans of industrial companies show that **functional structural change** is progressing (►section 8.4): While a reduction is planned in production, areas such as R&D and product IT are recording growth. Overall, the latest developments confirm the long-term trend towards service orientation and highlight the need for targeted labor market policy measures to support particularly affected groups.

8.7 Fields of action

295 In recent years, the discussion about **de-industrialization** has intensified in Austria and other European countries - and it is still topical. One of the main triggers for the discussions was the rise in **energy prices** since the war in Ukraine. Due to the deterioration in competitiveness caused by higher energy costs, there is a risk of industrial production moving to countries with lower energy prices, with a corresponding loss of jobs. Based on the approaches in analyses and findings from other countries, this chapter presents a more differentiated picture of deindustrialization. The shift in the focus of production and activities from manufacturing to services with higher qualification requirements also took place in the years before the energy crisis and can be seen as a permanent development in Austria and other countries.

296 The competitive pressure from the increasing export share of Chinese companies in Austrian export markets has been going on for some time. **Chinese competition** is causing structural change, which is often associated with a decline in employment and is linked to company exits in Austria (►items 136 and 145). However, there were also shifts in specializations (►items 149 and 150), which were reflected in the shift in the proportions of the main areas of activity, as shown in this chapter.

297 The significance of functional and sectoral structural change and the associated shift in the focus of activities was linked to the development of employment biographies in the event of a reduction in employment in manufacturing. While the fields of action in the previous chapters discuss how to deal with increasing foreign **competition and uncertainty** on international markets (►section 6.4) and how energy

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price developments can be shaped (►section 7.5), the discussion here focuses on how to deal with the requirements and adjustments on the **labor market**.

298 People whose highest level of education is **compulsory school** were particularly affected by the negative consequences of the shift in employment away from manufacturing and rising unemployment. Their unemployment rate in the 1st quarter of 2025 was 21.6% (after smoothing for annual seasonality; without seasonal adjustment: 24.4%; ►section 8.6). The high level of unemployment among this group is not a short-term phenomenon; the average unemployment rate for the years 2012-2024 was 22.8%. At 478 thousand out of 3,910 thousand (1st quarter 2025), the group of employees with no more than a compulsory school-leaving qualification was also large in absolute terms. Almost half of the total 342 thousand unemployed consisted of 154 thousand people with no more than a compulsory school-leaving qualification (1st quarter 2025). Their probability of becoming unemployed or leaving the labor force was significantly increased after the end of employment, especially in manufacturing (►section 8.5). The development of the main areas of activity is increasingly pointing in the direction of occupations with higher **qualification requirements** (►section 8.4.2). If younger people have only completed compulsory schooling, the higher unemployment rate and more frequent drop-outs from the labor force contribute to an increase in the NEET rate.

299 **Older employees** (50+) were less likely to lose their job in the original company than younger age groups in the downsizing setting under consideration. However, if they lost their job, older people were significantly more likely to become unemployed or to leave the labor force. The **need for further training** in connection with structural change and sector change therefore appears to need to be expanded less for all older workers, but rather specifically for those who lose their previous employment. If possible, however, the need for further training should be identified before the end of employment. Older employees are more likely to lose their job due to **automation**. Industries with a higher probability of automation are therefore suitable for targeted training programs for older employees. In addition, older people are less likely to be considered for jobs that are heavily influenced by **artificial intelligence** (OECD, 2025). This is where further training for older people can come in. In view of longer working biographies and a rising proportion of older people in the working population, these reasons are becoming increasingly important and argue for greater support for continuing education for older workers.

300 The **loss of wages** due to structural change and the loss of employment in manufacturing can lead to a **polarization** of wages. Low-wage employees switch more frequently to less knowledge-intensive services and thus experience higher wage losses. The wage losses when switching to less knowledge-intensive services are twice as high as when switching to knowledge-intensive services. For low-wage employees, wage losses have increased over time (Helm et al., 2023). In Austria, switching to non-market services was associated with wage losses (►section 8.5). Wage polarization could be counteracted with a focus on supporting employment changes for low-wage employees and older people.

301 Structural change is taking place to varying degrees in different **regions** and **local labor markets**, even when comparing the federal states (►section 8.3). In some regions, structural change took place more strongly, in others even in the opposite direction, so that the proportion of employment in manufacturing increased. Both developments can go hand in hand with successful and unsuccessful development of the region, and the adaptability of the regions varies (Dauth and Südekum, 2016; Gagliardi et al., 2023; Yi et al., 2024). The **extent of structural change** and the **adaptability of the region** must be taken into account in economic policy support for structural change.

302 Programs to promote sector change for specific groups can be established and further developed according to **evidence-based criteria**. This can be borrowed from the extensive evaluation research of labor market measures (see Card et al., 2017). The effects on program participants of existing and new programs should be examined using suitable comparison groups. In order to evaluate the effectiveness and efficiency of the programs and prioritize measures based on this, it is necessary to compare the labor market policy impact with the costs of the measures. Eppel et al. (2022) provide an example of a

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comprehensive evaluation for Austria (2013-2018). The study takes into account income losses and gains, costs of measures and public tax and social security revenues.[115]

303 Studies have emphasized the advantages and positive effects of **sectoral labor market measures** (see Katz et al., 2020). These are of particular importance in the context of structural change: Sectoral labor market measures have the special feature of providing targeted training for jobs with employers for which there is company- and industry-specific demand and for jobs that pay above-average wages. Sectoral measures can therefore be used to specifically address the increase in service industries and occupations. In addition, these measures actively counteract the polarization described in the structural change (►item 276). The sectoral labor market measures consist of several parts (e.g. pre-selection according to basic skills in arithmetic and reading, targeted training, support with job applications, maintaining contact after the start of employment) and are mostly aimed at groups with low educational qualifications and other disadvantages on the labor market. This **target group orientation** is similar to the groups with a more difficult situation on the labor market identified in this chapter.

304 Implacement foundations (*Implacementstiftungen*) and job-related qualifications (*Arbeitsplatznahe Qualifizierung*) have similar characteristics to sectoral employment programs. They are characterized by the fact that they generally require a specific job with **specific requirements**, which forms the starting point for the promotion. The aim is to provide job-related training for unemployed people that is tailored to the needs of companies, whereby the funding only covers the training - not the employment itself. During the qualification phase, the AMS supports the livelihood. There is no obligation to take them into the company at a later date (Eppel et al., 2022). Other characteristics of the sectoral employment programs that are demonstrably responsible for success (pre-selection, high-income jobs, etc.) should be integrated.

[115] All measures except "aid towards course costs" for measures on the free education market generated more costs than revenue in fiscal terms. Other measures examined: Vocational orientation, basic qualification, initial and further training, active job search, training.

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Literature

Antón J. I., Fernández-Macías E., Winter-Ebmer R. (2023). Does robotization affect job quality? Evidence from European regional labor markets. Industrial Relations: A Journal of Economy and Society, 62(3), 233-256.

Antoni M., Schmucker A., Seth S., Vom Berge P. (2019). Sample of integrated labor market biographies (siab) 1975-2017. Institute for Employment Research (IAB), Nuremberg, No. 201902 en.

Bahrke M. Kempermann H. (2015). Hybride Geschäftsmodelle als Lösungsanbieter zum Erfolg, study commissioned by the Bavarian Industry Association, Munich.

Bernard A. B., Smeets V., Warzynski F. (2017). Rethinking deindustrialization. Economic Policy, 32(89), 5-38.

Bialek S., Schaffranka C., Schnitzer M. (2023). No need to panic. The energy crisis is not a game changer, but it is accelerating the already imminent structural change in industry, ifo Schnelldienst 76, 3, 7-11.

Boddin D., Kroeger T. (2021). Structural change revisited: The rise of manufacturing jobs in the service sector, Bundesbank Discussion Paper 38/2021, Deutsche Bundesbank, Frankfurt am Main.

Boddin D. Kroeger T. (2024). Disentangling structural change, servitization, and skill-biased change, SSRN 4896776, Social Science Research Network, Rochester, NY.

Bolz M. (2025). The new production index for the overall economy, WISTA - Economy and Statistics, 77(1), 82-90, Federal Statistical Office (Destatis), Wiesbaden.

Card D., Kluve J., Weber A. (2018). What works? A meta analysis of recent active labor market program evaluations, Journal of the European Economic Association, 16(3), 894-931.

Dauth W. Südekum J. (2016). Globalization and local profiles of economic growth and industrial change, Journal of Economic Geography 16 (5), 1007-1034.

Ding X., Fort T. C., Redding S. J., Schott P. K. (2022). Structural change within versus across firms: Evidence from the United States (No. w30127). National Bureau of Economic Research.

Eickelpasch A. (2014), Functional structural change in industry: Importance of production-related services on the rise, DIW Weekly Report 33

Eppel R., Huemer U., Mahringer H., Schmoigl L. (2022). Evaluation of the Effectiveness and Efficiency of Qualification Support Programs of the Public Employment Service Austria, WIFO, Vienna.

Falck O., Pfaffl C. (2022). The deindustrialization of Germany: justified concern or German Angst?, Wirtschaftsdienst: Journal of Economic Policy 102, 12, 936-940.

Fort T. C., Pierce J. R., Schott P. K. (2018). New perspectives on the decline of US manufacturing employment. Journal of Economic Perspectives, 32(2), 47-72.

Fort T. C. (2023). The changing firm and country boundaries of US manufacturers in global value chains. Journal of Economic Perspectives, 37(3), 31-58.

Fuchs R., Göllner T., Hartmann S., Thomas T. (2024). Fostering Excellent Research by the Austrian Micro Data Center (AMDC), Jahrbücher für Nationalökonomie und Statistik, vol. 244, no. 4, 2024, pp. 433-445.

Gagliardi L., Moretti E., Serafinelli M. (2023). The world's rust belts: The heterogeneous effects of deindustrialization on 1,993 cities in six countries (No. w31948). National Bureau of Economic Research.

Geisberger T., Hoser B. (2024). Structure of Earnings Survey, STATjournal No. 3 (Statistische Nachrichten, 79. Jahrgang), Statistics Austria, Vienna.

Helm I., Kügler A., Schönberg U. (2023). Displacement effects in manufacturing and structural change (No. 16344), IZA Discussion Papers.

Helmrich R., Zika G. (2010). Profession and qualification in the future: BIBB-IAB model calculations on developments in occupational fields and qualifications up to 2025. BIBB Technical Papers on Vocational Education and Training. W. Bertelsmann Verlag.

Herrendorf B., Rogerson R., Valentinyi Á. (2013). Growth and structural transformation, NBER Working Paper 18996.

Hüther M. (2023). No need to panic. The energy crisis is not a game changer, but it is accelerating the already imminent structural change in industry, ifo Schnelldienst 76, 3, 3-6.

This machine translation was created on November 27, 2025, using DeepL.

Hüther M. (2025). Industrial policy for transformation and resilience, Wirtschaftsdienst: Journal of Economic Policy, 105, 8, 566-571.

Katz L. F., Roth J., Hendra R., Schaberg K. (2022). Why do sectoral employment programs work? Lessons from WorkAdvance, NBER Working Paper 28248.

Lehmann R., Linz S., Wollmershäuser T. (2025). Structural change in the manufacturing sector, ifo Schnelldienst digital 6(5), 1-13.

Mayerhofer P., Arnold E., Bachtrögler-Unger J., Firgo M., Gabelberger F., Huber P., Matzner A., Riegler M., Schuster B., Unterlass F. (2021). Fifth report on Vienna's international competitiveness. Partial report 1: Indicators and determinants of territorial competitiveness in a comparison of European metropolitan regions. WIFO, Vienna.

OECD (2025). Promoting Better Career Mobility for Longer Working Lives in Austria, Ageing and Employment Policies, OECD Publishing, Paris.

Rusche C. (2025). Direct investment flows indicate the deindustrialization of Germany, Wirtschaftsdienst: Journal of Economic Policy 105, 3, 212-214.

Statistics Austria (2008). Systematik der Wirtschaftstätigkeiten ÖNACE 2008, Band 1: Introduction, basic structure, explanations, Vienna.

Statistics Austria (2022). Standard Documentation on the Statistical Business Register, Vienna.

Stooß F., Weidig I. (1990). The change in fields of activity and profiles up to the year 2010. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, 23(1), 34-51.

Tiemann, M., Schade H. J., Helmrich R., Hall A., Braun U., Bott P. (2008). BIBB occupational field definitions based on the Classification of Occupations 1992 (No. 105). Scientific discussion papers.

Weichselbaumer M. (2025). Structural change of firms and of the workforce. Report 03/2025, Office of the Austrian Productivity Board, Vienna.

Yi M., Müller S., Stegmaier J. (2024). Industry mix, local labor markets, and the incidence of trade shocks, Journal of Labor Economics 42 (3), 837-875.

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Part 3:
Recommendations of the Austrian Productivity Board

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9. Recommendations of the Austrian Productivity Board

9.1 Introduction

305 In its annual report on Austria's competitiveness, the Austrian Productivity Board focuses on **medium to long-term challenges** that need to be overcome in order to secure Austria's position as a business location and maintain and improve the standard of living of the population. This year's report focuses on structural change. The in-depth analyses in ►Part 2 of the report shed light on the effects of international trade developments and changes in energy prices on competitiveness and location decisions in manufacturing. The consequences of structural change for employees in the manufacturing sector are also examined.

306 The **monitoring** of Austria's sustainable competitiveness shows that **many dimensions** of economic performance are developing **robustly** despite the prolonged recession. Productivity and investment levels are high in an EU comparison, but both key indicators fell in 2023 and 2024. Current economic forecasts point to an end to the recession in 2025, but economic development remains very subdued and characterized by **uncertainties**. Austria also has one of the lowest growth rates in Europe. Above all, **price competitiveness** has deteriorated due to high wage and energy costs. Furthermore, the tax ratio is one of the highest in the European Union. This is also reflected in a declining industrial ratio, which is fueling fears of deindustrialization in Austria. This trend is being exacerbated by intensifying international competition, structural weaknesses such as a shortage of skilled workers, slow progress in digitalization and sluggish business momentum. The welfare state is currently efficient but is under pressure from demographic change and rising healthcare, care and pension costs. Household incomes are high by EU standards, but the growing rate of significant social and material deprivation shows that more and more people are not sufficiently secure. The labor market developed robustly until 2024, but an increase in unemployment has been observed since mid-2024. Progress has been made in the development of energy intensity and renewable energies, but the transformation of energy-intensive sectors remains a key challenge for the location. In order to achieve climate targets and maintain social balance, more comprehensive measures are needed to ensure competitiveness and social cohesion.

307 The in-depth analyses in the report indicate an **accelerated pace of structural change in the industry**. The structural change can be seen, for example, in the shift in value creation from manufacturing to knowledge-intensive services and in the transition from manufacturing-oriented to service- and technology-driven activities within industrial companies. While this change has so far been less pronounced than in highly innovative countries such as Denmark, there are now clear signs of change. They are being driven primarily by automation, digitalization and increasing technology intensity, which are likely to intensify further in the coming years. High energy prices and rising wage costs are putting pressure on Austrian industry in particular. At the same time, external factors such as growing international competition - particularly from China - and the US import tariffs that will apply from 2025 are increasing the pressure on the entire European industry to adapt. However, due to its heavily industrialized economic structure, Austria is particularly affected by this. Industrial companies are planning to cut jobs in the production sector in particular, while knowledge-intensive activities such as product development and product IT are gaining in importance.

308 This development requires a sense of proportion in economic policy. On the one hand, it is justified to take short-term and temporary industrial policy measures that **compensate for competitive disadvantages** caused by geopolitically induced distortions of competition and European energy and climate policy vis-à-vis non-European partners. Government support should always be aimed at attracting private investment and not at permanent subsidization. In addition, measures should also be taken to reduce the overall **cost burden** in order to strengthen price competitiveness. In addition to wage and energy costs, this also includes the burden of regulations (►item 31). While a clear, stable and efficient regulatory framework is important for the economy, it should be associated with the lowest possible

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compliance costs. Simplifications are urgently needed at both European and national level - particularly in energy and environmental law, in order to facilitate and accelerate the transformation. This was also called for in the Draghi Report (Draghi, 2024) and has so far only been tackled very timidly by the European Commission. On the other hand, it is also necessary to **allow and actively support structural change** in areas where ecologically and economically sustainable development is not possible in the medium term, without calling into question proven labor and social law standards.

9.2 Priority starting points for a future-oriented location strategy

309 A **future-oriented location strategy** must actively shape **structural change**: It is intended to create framework conditions in which existing industrial and technological expertise can be expanded, and new comparative advantages can be created. At the same time, it must anchor **productivity growth as the overarching goal of all economic and structural policy measures**, because productivity is the most important determinant of prosperity and competitiveness.

310 Productivity potential can be mobilized on three levels: Firstly, through **allocation and scale efficiency**, i.e. a more efficient use of resources and their relocation to activities with higher added value. This requires functioning product, energy and labor markets as well as an administration that makes regulations efficient, proportionate and stable in order to ensure social benefits, planning security and low compliance costs. Secondly, through **technological diffusion**, i.e. the rapid spread and application of modern technologies. Investments, digitalization, targeted training programmes and smart follower strategies are key levers for quickly adopting international innovations. Thirdly, productivity growth is generated by **technological change**, which creates new markets, changes existing processes, company and industry structures and thus triggers a profound structural change towards more efficient production methods, thereby raising the long-term growth trajectory.

311 Structural change should therefore **be seen as an opportunity for economic renewal**. The government's task is to actively shape this change through reliable and innovation-friendly framework conditions and to support it with measures. It is crucial that **research, technology development, industrial production and education** are closely interlinked in order to promote **key technologies** and strengthen **future industries**. However, an effective structural policy must not only pursue economic goals, but also take social and ecological consequences into account. Possible frictions on the labor market and the associated risks for the workforce should therefore be addressed at an early stage. This results in four priority **starting points for location and industrial policy measures**: (i) a future-oriented research and technology policy, (ii) the further development of human capital through a skilled labor strategy, (iii) accelerating the expansion of renewable energies and securing competitive energy prices, and (iv) increasing the attractiveness of the location through efficient administration and a stronger commitment at European level to accelerating reforms and measures to strengthen competitiveness.

312 **Future-oriented research and technology policy (RTI)**: Austria has a differentiated research and technology policy. Nevertheless, the development of international competition and the requirements of the digital and ecological transformation necessitate far-reaching adjustments. An effective RTI policy today requires tailor-made solutions that are better suited to the different degrees of maturity, innovation dynamics and location potential of individual fields of technology. The ability to innovate in the key technologies that are particularly relevant for Austria is a central prerequisite for strengthening the business location in the long term. Austria is the technology leader in some areas and can achieve this in others. In other fields of technology, however, the aim should be to enable companies to use and adapt new technologies as users at an early stage and to fully exploit their economic potential. A stronger focus should therefore be placed on areas of strength with high potential, on accelerated and consistent funding processes, on a broad diffusion of innovations in the economy and on the targeted qualification of the workforce.

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313 **Further development of human capital through a skilled labor strategy**: The Austrian labor market is facing profound challenges due to digitalization, greening and demographic change, which are mutually reinforcing. The decline in the working population and the increasing proportion of older employees are leading to growing replacement and adjustment requirements. Mid-level skills in particular, which are key to the ecological and digital transformation, are at risk of becoming scarce. Technical, manual and IT professions are particularly affected by these structural changes. At the same time, insufficient digital skills, limited mobility and low labor market integration of some population groups make it difficult to effectively secure skilled workers. The further development of human capital is not only economically necessary in order to ensure innovation and productivity, but also socially significant, as it protects people from falling down the career ladder and strengthens opportunities to participate in prosperity. A successful response to the aforementioned challenges therefore requires targeted education and training strategies, better use of the domestic workforce potential, including measures to integrate migrants into the labor market and measures aimed at keeping older people in employment for longer. Only a forward-looking education and labor market policy can ensure that structural change is socially balanced and economically viable.

314 **Accelerating the expansion of renewable energies**: Energy policy is also industrial, location and security policy. Clear expansion targets and their consistent implementation along a predictable time path are required to secure the location, especially in the energy-intensive industrial sector, but also for data centers or the electrolysis requirements for the production of green hydrogen. Planning and investment security are of central importance for all companies in the energy supply and distribution sector as well as in industry and energy-intensive service sectors. Since taking office, the Federal Government has taken important steps in its efforts to swiftly implement the Electricity Industry Act (ElWG) and the Renewable Energy Expansion Acceleration Act (EABG). Nevertheless, further progress must be made both nationally and at European level to ensure that the energy transition succeeds and that domestic energy prices remain internationally competitive.

315 **Coordination at European level for the rapid implementation of reforms and measures to strengthen competitiveness**: Austria should advocate measures in the EU that ensure European value creation in important industries and strategic areas and accelerate the development of European value chains in key technologies. Europe's competitiveness can only be secured through coordinated measures in these areas. The deepening of the internal market and new trade agreements are crucial in order to leverage economies of scale and reduce dependencies. At the same time, additional efforts are required in energy policy in order to bring about improvements to the pan-European infrastructure and thus reduce energy price variation within the EU on the one hand, and to shape the market design beyond 2030 and adapt it to the requirements of an energy industry increasingly based on renewable energies on the other. Far-reaching simplifications, a reduction in excessive European regulations and measures to scale innovative markets within the EU are also required in order to reduce barriers to innovation and investment.

316 In its first two reports from 2023 and 2024, the Austrian Productivity Board has already made recommendations that take into account both the various dimensions of productivity development and the four central starting points of a future-oriented location policy. These recommendations thus address the production factors capital (fields of action: investment, capital formation), labor (fields of action: labor supply, human capital development) and energy, as well as the corresponding factor costs, on the one hand, and the framework conditions that are decisive for productivity progress (fields of action: technological progress, business start-ups, efficiency and government performance), on the other. They remain largely valid. An overview is provided by ►Table 9.1 in the appendix to this chapter.

317 The current productivity report revisits these four starting points, expands on them in key areas of action and supplements them with specific recommendations. These contain both strategic impulses and concrete measures for the long-term and sustainable development of the business location.

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9.3 Shaping structural change, boosting productivity growth: Recommendations of the Austrian Productivity Board

9.3.1 Reorientation of research and technology policy (RTI) through future-oriented priorities and consistent funding approaches

Background

318 Austria is among the EU leaders in research and development expenditure, both in terms of overall economic expenditure and research expenditure in the corporate sector (►item 36). The sum of direct state support and tax relief for R&D expenditure is also high in an OECD comparison (►item 168) and has increased significantly in recent years. Federal funding for basic and applied research in Austria has increased by 55% in nominal terms since 2017 (Budget Service, 2024). Nevertheless, in terms of country size-weighted indicators of **innovation output, Austria is only in the middle of the EU** and is well behind global leaders such as Sweden, Switzerland, the USA, South Korea, the UK and Japan (Bello et al., 2025).

319 In recent years, China's **industrial expansion in particular has played a major role in location-related decisions** (►items 136ff and 153) and the innovation activity (►items 140ff and 143) of Austrian companies. In terms of the number of patent applications per inhabitant, China is still well below the EU average despite massive growth in recent years, but in 2023 China already has the highest proportion of the most influential research publications globally in a large number of innovative high technologies (Wong Leung et al., 2024). This development is in line with the "Made in China 2025" strategy of the State Council of the People's Republic of China, which aims for China's global technology leadership in selected key industries (►item 97). China's focus was particularly evident in an increase in innovation funding for companies in prioritized technology fields (Li and Branstetter, 2024).

320 Such a focus in research and innovation funding is not very pronounced in Austria in an international comparison, measured by a relatively **high proportion of undifferentiated funding** by means of tax incentives (OECD, 2024; ►item 168). Based on current strategy reports by the Federal Ministry of Finance (Federal Ministry of Finance, 2023; 2025), there are also no signs of a change in the weighting between tax incentives and targeted research funding, although recent evidence (Keuschnigg et al., 2020) underlines the **positive effects of non-tax research funding** in Austria. In particular, in view of Austria's expected high budget deficits in the medium term (Fiscal Council, 2025), no further expansion of the nominal research funding budget is planned from 2025. According to the Strategy Report 2025 to 2028, this means a real decrease in the planned budget of the central research and research funding institutions in accordance with the Research Funding Act. The RTI pact, which will apply from 2027 and determines the budget for these institutions, is currently being negotiated.

321 Applied research in Austria covers a wide range of topics. However, in order to increase their impact, it is important to set **priorities in selected areas and achieve a critical mass** in these. A strong innovation base in particularly relevant key technologies is crucial for the future viability of the business location. The definition of priorities and the associated prioritization of Austrian research funding provided for in the government program (p. 40ff) should contribute to a stronger focus on innovation efforts. In Germany, a corresponding focus has already been set recently as part of the High-Tech Agenda Germany.

322 Austria is already well positioned internationally in individual fields of technology. These **strengths need to be consolidated, differentiated and further developed**. In other areas, there are real opportunities to achieve technological leadership in the medium to long term. This potential must be consistently utilized and expanded.

323 At the same time, Austria will not be able to assume the role of technology leader in many key technology fields. This makes it all the more important to position domestic companies as early adopters or system integrators so that they can quickly adopt key technologies and exploit their value creation potential for the location. Instead of relying on expensive in-house developments, the focus in such areas

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could be on the development of **"smart follower" strategies**, i.e. the rapid, broad and efficient application of artificial intelligence in industry, research and administration, for example.

324 Disruptive, high-risk research activities are of great importance for significant technological leaps. With such research activities, project-based funding reaches its limits: It is bureaucratic, slow and offers companies too little planning security. The aim here is to create flexible funding instruments that accompany **innovators through various stages of the innovation process** and reduce uncertainty with regard to the continuation of state support.

325 In order to exploit the economic potential of research activities, the **entrepreneurial exploitation of research results** is crucial. A central intention of the European Innovation Act is therefore to facilitate and accelerate the commercialization of research results. In this context, cooperation between industry and basic research in university institutions is of great importance. Existing programs, such as those of the Christian Doppler Research Association, are successful with regard to the probability of patenting publications as an indicator of the entrepreneurial exploitation of research results. However, due to the short funding periods of three years under the RTI pact, the continuation of funding programs (e.g. "Transfer Science to Spin-off") is subject to significant uncertainty (see FORWIT, 2025). Against this background, the current government program (e.g. p. 193) provides for an extension of the validity period of the RTI pact and the guaranteed funding periods of central research funding institutions in accordance with the Research Funding Act.

Recommendation 1: The federal government should focus innovation funding on areas of strength and key technologies with high location potential and promote both the market penetration of innovative solutions and the operational application of new technologies.

- **Setting priorities in research funding:** Public funds should increasingly be directed towards areas that contribute to the deepening and diversification of existing areas of strength and the development of technologies that are strategically relevant for the location. In the medium to long term, the development of key technology fields should be promoted in which Austria has the opportunity to achieve technological leadership on the basis of existing scientific expertise or existing domain knowledge and thus build up new comparative advantages in international trade. The thematic focus should support transformation processes - in particular the digital and ecological transformation - and be reflected in the new RTI pact. The funding programs should be designed to be open to all technologies and offer the funding recipients sufficient flexibility in terms of content to be able to adapt to a dynamically changing technological environment within the framework of the funding. Furthermore, output and impact indicators should be given greater consideration in the allocation of R&D funding (e.g. to avoid deadweight effects) and sufficiently long funding periods should be ensured.
- **Set up key technology cluster**: The thematic focus on key technologies is intended to promote the creation of scientific and industrial communities that also cover different stages of integrated value chains by establishing key technology clusters. It should be possible to combine separate funding pillars (FWF, FFG, aws) flexibly and unbureaucratically along ambitious development concepts. Regulatory sandboxes that provide simplifications for innovative companies for limited periods of time can support the development of such clusters.
- **Strengthen technology diffusion and targeted application of modern key technologies:** The strengths of the Austrian location should be used strategically and developed further in a targeted manner. By linking these with modern key technologies - especially in areas where there are currently technological backlogs - existing locational advantages such as industrial skills, domain knowledge and qualified

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specialists can be expanded and strengthened by rapidly integrating technological developments into existing technologies and products.

- **Enable flexible combination of funding instruments across the innovation process:** To improve innovation performance, flexible funding instruments should be developed that cover the entire innovation process - from the idea to the market - and are geared towards measurable milestones, e.g. on the basis of competitive stage-gate approaches[116] that accompany innovators through different innovation phases and also flexibly combine instruments from different funding institutions.
- **Ensure greater scalability through coordination with European initiatives**: Improving support for companies and close coordination with European initiatives, such as the EIC Accelerator, should ensure increased scalability, visibility and impact, especially for disruptive innovations.
- **Strengthen cooperation programs through longer financing periods**: Established and successful cooperation programs between university research and industry (Christian Doppler Research Association, FFG Comet) should be strengthened through extended funding guarantee periods (performance and funding agreements).
- **Promote the adoption of innovative technologies through incentives and training:** Specific qualification measures should support companies in building up the skills and necessary expertise to accelerate the adoption of innovative and productivity-enhancing key technologies (e.g. artificial intelligence). In addition, specific incentives for investments in innovative technologies (e.g. special depreciation rules) should be created.
- **Promoting innovation through public procurement:** Public procurement is a largely untapped lever and should be used strategically to promote innovation, especially in the context of mission-oriented policy approaches.

Relevant recommendations of the 2023 and 2024 productivity reports

326 The Productivity Report 2023 recommended the use of research and development to further develop areas of strength and to make greater use of diversification potential (E11). In order to promote the growth of innovative, technology-intensive start-ups, corporate law and regulatory measures to strengthen the venture capital market (E14) and a review of early-stage financing instruments for transformative and delayed-return technologies were also recommended (E15). In addition, the Productivity Report 2024 recommended that research and technology policy should focus on the further development of energy technologies (E8).

9.3.2 Increasing the labor supply and developing human capital by improving basic qualifications, apprenticeship training and an active labor market policy in structural change

Against the backdrop of the structural change that can be observed, the entirety of labor market and education policy is challenged. These include, in particular, measures to remove obstacles and create incentives to expand the supply of labor, the expansion and adaptation of education policy to changing requirements as a result of the digital and ecological transformation, improvements in access to education and the integration of socio-economically disadvantaged groups into the labor market and the promotion of qualified immigration. The 2023 and 2024 Productivity Reports contained various recommendations on these areas of labor market and education policy (see ►Table 9.1 in the appendix to this chapter). The following recommendations supplement these.

[116] A research funding instrument in the sense of a stage-gate approach provides funding for the entire development process of a product from the idea to the market launch. Funding is released in stages and is linked to the achievement of certain milestones in the development process.

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9.3.2.1 Increase labor supply, establish basic qualifications

Background

327 **In manufacturing, dependent employment** fell by 13,400 people or 2.1% in the 12 months from June 2024 to June 2025, starting from 640,000 people (AMDB; ►section 8.6). In all other sectors of the economy, employment increased to varying degrees, resulting in a small increase overall. However, this was overshadowed by the increase in the number of people in employment, so that overall the proportion of people in employment as a percentage of all people in employment fell and the unemployment rate rose as a result.

328 Since the beginning of 2024, the reduction in employment in manufacturing has been accompanied by a longer-term **shift from production occupations toward secondary knowledge-intensive services**. Employment growth in manufacturing was stronger in sub-sectors with higher technology intensity (►section 8.4). In the service sector, there is a shift from primary services to secondary services, and increasingly towards knowledge-intensive services. Primary services directly support the production process with practical activities such as sales, cleaning or transportation. Secondary services require a high level of qualification and involve complex knowledge work. Unemployment and leaving the labor force (►section 8.5.3, ►section 8.6) more frequently affects people who have at most a compulsory school leaving certificate. The unemployment rate is particularly high for people with no more than a compulsory school-leaving qualification and has risen more sharply recently (►section 8.6). Higher levels of education, which require basic qualifications, offer better employment opportunities. Both apprenticeship training, which is important for the recruitment of skilled workers, and initial and further training for adults require basic qualifications.

329 In view of demographic developments and the need for workers for the digital and ecological transformation, an **increase in the demand for mid-level qualifications** is expected. This need can be addressed by training measures for people who have completed compulsory schooling or less. Basic qualifications, language skills and basic digital skills are prerequisites for participation in qualification measures (Bock-Schappelwein et al., 2025).

330 **Basic qualifications are of great importance as a basis for further training** and for meeting the demand for skilled workers (Bock-Schappelwein et al 2025, Rechnungshof 2024). For example, the Court of Audit (2024) recommends targeted monitoring to identify pupils with inadequate numeracy and literacy skills. According to the Ministry of Education, the "Individual Competence Measurement Plus" has already created a corresponding monitoring system (Rechnungshof, 2024). Based on this, individual support requirements would be addressed. In addition, the school entry screening that already takes place during school enrollment enables the use of support measures before the start of school.

331 The **lack of basic qualifications** in Austria has worsened significantly over the last decade. In particular, the basic skills in reading and everyday mathematics measured in the PIAAC survey of adults have deteriorated among those with at most a compulsory school-leaving certificate: In reading, the proportion with the lowest reading literacy level (level <1 to 1 of 5 levels) increased from 25% to 43% between 2011/12 and 2022/23; in everyday mathematics from 27% to 39% (Statistics Austria, 2024a). The entry requirements for vocational education and training, measured by the performance and competence level of 15-year-olds in the PISA study, have deteriorated in recent surveys. Compared to the EU average, the situation has improved (Dornmayr, 2024). In the 2022 wave, however, a significantly higher proportion did not reach level 2 "Basic skills" (compared to 2012): Mathematics 24.9% (2012: 18.7%), reading 25.3% (2012: 19.5%), natural sciences 22.7% (2012: 15,8%). A lack of basic qualifications hinders the completion of further education after compulsory schooling. In addition to basic math skills and a lack of German language skills, a comprehensive basic qualification may also require offering career coaching and career counseling. Basic skills such as punctuality and reliability can also be taught.

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332 The range of basic education programs in Austria is extensive, centrally coordinated and widely distributed regionally. A considerable part of the existing offer is funded by Level Up - Adult Education - a cooperation between the federal government and the federal states in accordance with Art. 15a B-VG - and is free of charge for participants. Nevertheless, the existing demand exceeds the available supply, especially with regard to courses for people at the beginning of the literacy process. At the same time, there is a lack of awareness of the existing offer, especially among people with German as their first language and a need for basic education.

Recommendation 2: In view of technological and demographic change, there is an urgent need for a comprehensive strategy to strengthen the supply of labor (skilled labor strategy) in terms of quantity and quality. In order to meet the complex and heterogeneous needs of people with a lack of basic qualifications, the federal government should adopt a comprehensive approach. Existing education and labor market policy instruments for different age groups should be integrated, coordinated and expanded where necessary.

- **Ensure target group-oriented teaching of basic qualifications:** It must be ensured that the target groups of existing measures are actually reached and that they are informed about the opportunities for acquiring and the benefits of basic qualifications. The needs of those who have at most a compulsory school leaving certificate should be specifically addressed. Individual obstacles to acquiring further educational qualifications must also be taken into account.
- **Avoid deficits at an early stage**: Findings from the school entry screening, the "IKM Plus" and the deficits identified by the AMS should be analyzed and processed holistically with regard to the acquisition of basic qualifications and the associated costs. The effectiveness of early childhood education and upbringing must also be taken into account. The education system must ensure that sufficient basic qualifications are available at the end of compulsory schooling. With this in mind, appropriate resources must also be made available for the effective and sustainable acquisition of basic qualifications.

Relevant recommendations of the 2023 and 2024 productivity reports

333 Previous productivity reports have already recommended providing primary and secondary schools with sufficient resources to ensure high-quality education for all pupils (2024: E9). Schools with a high proportion of pupils from socio-economically disadvantaged backgrounds should receive additional funding in order to deal with the associated challenges in a targeted and effective manner. The central importance of early childhood care, education and upbringing was particularly emphasized. This prevents the development of a lack of basic qualifications at an early stage (2023: E35, E37, E38, E39; 2024: E9). Further measures should increase the necessary supply of teachers as well as the attractiveness of the teaching profession (2023: E36).

9.3.2.2 Promoting apprenticeship training

Background

334 A quarter of companies in OECD countries state that they **had serious bottlenecks in filling vacancies** in the period 2022-2023; in Austria, the figure is 33% (fourth highest). Severe shortage means that all or most - as opposed to few or none - vacancies were difficult to fill. Since at least 2010, the labor shortage in OECD countries has been increasing, particularly in sectors with a high proportion of highly qualified employees ("high skills sector"), but it is also increasing in the sector with a lower proportion of highly qualified employees ("low skills sector") (OECD, 2025). According to the IBW's labor force radar, 78% of

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companies in Austria were affected by labor and skills shortages in 2025 (53.5% rather strongly or very strongly) (Dornmayr and Riepl, 2025).

335 In the WIFO industry survey, Austrian companies stated that they **intend to cut the most employees in production** over the next 5 years. The largest increase in employees is planned in innovation and research and in production-oriented IT (including software as a product) - two areas that can be assigned to the knowledge-intensive services occupational group (►section 8.6.1). These future-oriented developments correspond to the downward and upward trends of the occupational groups in the period 2011-2024 (►section 8.4). On the other hand, the most significant challenge in the search for qualified employees is the low number of applications with the necessary skills. The industry survey thus shows that the shortage of skilled workers continues to exist and is expected to increase.

336 **Apprenticeship training is an essential pillar** for meeting the demand for skilled workers in the industry (Schmid and Petanovitsch, 2025). Despite a decline in the number of employees with an apprenticeship as their highest educational qualification, the continued high demand for employees with an apprenticeship qualification is reflected in various indicators: The relative increase in the unemployment rate among employees in industry was lower for apprenticeship graduates than for BMS, BHS, AHS and university graduates (Q1 2024-Q1 2025; AMDB; ►section 8.6). The most common difficulty is finding suitable employees with an apprenticeship qualification (2025: 60.9%) and this share has increased compared to previous years (2024: 59,4%, 2023: 59.1%; Dornmayr and Riepl, 2023, 2024, 2025). Important reasons for the reduced number of apprenticeship vacancies are demographic developments and a trend towards school-leaving qualifications and university studies (Schmid and Petanovitsch, 2025).

337 The **permeability between apprenticeship training and higher education** exists in principle, but does not take place very often. On the one hand, drop-outs should be better informed about the opportunities for apprenticeships in industrial companies, and on the other hand, the recognition of academic achievements should be promoted. The recognition of (partial) academic achievements in the form of micro-credentials for in-company training or apprenticeships would be one way of addressing this problem. On the other hand, attractive apprenticeship training that does justice to the tertiarization of the education system should create better opportunities to follow on from apprenticeship training with further educational opportunities (Schmid and Petanovitsch, 2025). 5.5% of newly admitted domestic students enter university or university of applied sciences via the Berufsreifeprüfung (Statistics Austria, 2024b). This corresponds to 6% of apprenticeship qualifications (Statistics Austria, 2024c). There is also little permeability in the opposite direction: The proportion of apprenticeship starters with a school-leaving certificate/entrance qualification is 2.6% in Austria and 28.5% in Germany (both 2022; Dornmayr, 2024).

338 Improved access to apprenticeship training should be created in particular for people who have only completed compulsory schooling, given their high share of the labor market and their poorer chances on the labor market (►sections 8.5, 8.6). At the same time, this can help to meet the demand for skilled workers, particularly in connection with structural change, and the poor career prospects of this group of people. This is because higher qualifications after compulsory schooling reduce the NEET rate and increase the income of low-paid employees.

Recommendation 3: The federal government should expand the existing AMS support measures for access to apprenticeship training in a targeted manner and take additional initiatives to increase the attractiveness of apprenticeships in the long term.

- **Promoting access to apprenticeship training**: For people who do not complete further education after compulsory schooling, access to apprenticeship training should be comprehensively promoted, among other things by establishing the required qualifications for apprenticeship training.

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- **Target group-oriented information**: A comprehensive program to reach the target group and provide relevant information on possible training paths and directions should be developed.
- **Increase the attractiveness of apprenticeship training**: The attractiveness of apprenticeship training should be increased through quality assurance of the training content and good working conditions.
- **Strengthening the link between apprenticeship training and higher qualifications**: The link between apprenticeship training and higher qualifications should be improved. This should be achieved both by increasing the transfer of people with a university entrance qualification/matura to apprenticeship training and by increasing the permeability of apprenticeship training to higher education.
- **Strengthen the range of apprenticeships**: Incentives need to be created for companies to provide more apprenticeships.

Relevant recommendations of the 2023 and 2024 productivity reports

339 The aspect of meeting the demand for skilled workers was often addressed in previous reports by making better use of the labor force potential. To this end, it was recommended to improve the care situation for children and relatives, to adjust working hours to life expectancy, to increase the labor market integration of foreign nationals, to expand the acquisition of qualifications, including at the AMS, to improve healthcare, to avoid tax breaks for part-time work and to distribute unpaid work equally between the sexes (2023: E32, E39, E41, E42, E45, 2024: E10, E11).

9.3.2.3 Strengthening active labor market policy in structural change

Background

340 **Regions and industries are affected differently by structural change**. Due to the regional nature of the workforce and its limited mobility, increases and decreases in labor requirements are not fully offset by regional shifts. If the activities of occupations undergo structural change, the regions are dependent on the adaptability of the workforce and the availability of employees in other regional sectors. Adaptability differs according to training and target qualification, among other things (►section 8.3).

341 **Sectoral labor market measures** are targeted at specific sectors or occupational groups and offer particularly promising approaches for an active labor market policy in the context of structural change. They enable targeted qualifications for occupations with consistently high demand and above-average wages, particularly in growing service sectors and service-oriented occupations (►section 8.4). By focusing on the workplace and supporting disadvantaged groups, sectoral labor market measures help to reduce labor market polarization (►section 8.7).

342 With the **labor foundations** (*Arbeitsstiftungen*), Austria's active labor market policy offers instruments that support **regional and sector-specific adjustment processes** on the labor market as a result of structural change - whether after a significant reduction in staff (outplacement foundations) or to cover an increased need for skilled workers (implacement foundations) (AMS, 2024). The labor foundations are jointly designed and implemented by the companies concerned, regional labor market policy players and local authorities. The aim is to provide continuous support for participants - from career orientation (outplacement) and the personnel selection process (placement), to training and further education in theoretical and practical parts, right through to the job search. The support and training offered for this can last up to three years and is usually financed by the company. The federal states and municipalities often also participate, as labor foundations contribute to regional and structural development beyond individual support. During participation in a foundation, the AMS secures the livelihood of the participants.

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343 Labor foundations make targeted contributions to coping with structural change by providing qualifications that can be used in a targeted manner between companies that are downsizing and those seeking personnel or within a region. The regional focus of the measures makes sense in order to take into account the limited willingness or ability of employees to be mobile at work. Due to limited mobility, qualifications must be adapted where existing qualifications are less in demand and at the same time there is a shortage in other specialist areas. A comprehensive evaluation shows the positive employment effect of labor foundations and recommends their extended use (Eppel et al., 2022)[117].

344 The other AMS training measures considered in this evaluation also have a positive effect on individual labor market participation, but are associated with additional fiscal costs in the short term (Eppel et al., 2022). The selection of instruments should be based on effectiveness and efficiency. Existing success features should be promoted and further promising features should be introduced. Above all, this includes **close cooperation with the companies** that are eligible for recruitment in order to respond to the specific demand for labor regionally and with regard to the required qualifications. Other sectoral labor market measures in addition to the labor foundations include job-related qualifications (AQUA), skilled worker scholarships, qualification support for low-skilled and older employees or the Impuls-Qualifizierungsverbund (IQV), a network of several companies that identifies industry-specific training needs and develops coordinated qualification measures for employees. In the further application and future design of all instruments, training and further education should cover a longer-term need for qualifications, which is reflected in permanently higher wages.

345 The core statutory task of the AMS is the **placement** of unemployed persons (AMSG § 29; Federal Ministry of Labor and Economic Affairs, 2023). However, qualification measures are becoming increasingly important as a result of structural change. To ensure that labor market policy measures have a positive economic impact in the long term, the decision between placement and qualification should be based on long-term individual employment opportunities (►section 8.7). This requires adequate funding for these measures.

Recommendation 4: Together with the AMS, the federal government should coordinate qualification measures of active labor market policy with regional and professional needs. In addition to direct placement, qualification and the achievement of permanently higher wages should be emphasized in the target orientation.

- **Close cooperation between the AMS and employers:** Close cooperation between the AMS and employers for the initial and further training and (re)qualification of workers - while ensuring that skilled workers can be deployed throughout the industry - is a prerequisite for the targeted reduction and prevention of skills shortages and the development of the qualifications required in the future. The existing instruments of labor foundations (*Arbeitsstiftungen*) and job-related qualification already represent adequate approaches for the requalification of workers for certain sectors and regions and should be provided with the necessary resources for further strengthening.
- **Promote opportunities for advancement:** Up-skilling should not be given lower priority than (immediate) job placement. Qualifications should be geared towards occupations that will be in demand in the future and in the long term, and which enable higher wages. By upgrading up-skilling, AMS measures could be geared more towards occupations in demand and meeting the demand for skilled workers, especially in the areas of digital skills, STEM and green skills, and achieve longer-term,

[117] On April 9, 2025, the federal government announced an expansion of job-related qualifications in foundations (*Arbeitsstiftungen*) and a new edition of the Environmental Foundation (*Umweltstiftung*) from 2026 as part of the Council of Ministers' presentation 6/11.

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positive wage effects for the people receiving support (AMS, 2025). A focus on immediate job placement can hinder these goals. The federal government should set a priority in the labor market policy targets (AMSG §59 para. 2) that promotes the qualification measures of the AMS.

- **Social security**: The federal government should take measures to provide social security for people in the phase of structural change. In addition to the proven instruments of the welfare state, the focus should be placed more on activation and qualification measures. The aim is to combine structural change with opportunities for advancement and social mobility instead of slowing it down through passive transfer payments.
- **Conduct impact analyses**: When implementing the measures, suitable data should be collected using high-quality designs, ideally including randomized controlled trials (RCTs), and impact analyses should be carried out.
- **Improve understanding of the need for skilled workers**: In order to improve the understanding of the demand for skilled workers, it is necessary to administratively collect data on occupations from employers. This could be done by reporting this data to the social security authorities when registering.

Relevant recommendations of the 2023 and 2024 productivity reports

346 An expansion of professional reorientation and qualification was recommended, particularly in areas with a high shortage of skilled workers (2024: E10).

9.3.3 Accelerating the expansion of renewable energies through forward-looking and consistent energy planning, measures to secure cost-effective energy and an increase in energy efficiency

9.3.3.1 Implement future-oriented and consistent energy planning to secure the industrial and technology location

Background

347 The sharp rise in energy costs, particularly for electricity, represents a considerable competitive disadvantage for many Austrian industrial companies. Together with climate policy and the requirements of the energy transition, they are **accelerating structural change in the industry**. Many companies are planning to cut jobs and relocate production (►items 185 and 188). The potential for increasing energy efficiency with a given technology can provide relief, but is not enough to ensure the long-term competitiveness of affected companies. Direct support measures by the public sector entail the risk of delaying structural change and should therefore only be implemented in the short term and to a limited extent. Future-oriented and consistent measures in energy policy determine whether energy-intensive production in Austria can be made economically and ecologically viable. Many companies are facing challenges in implementing their decarbonization plans, as there is currently not enough emission-free energy available. It is therefore necessary to accelerate the energy transition in a targeted manner and make it more efficient in order to secure the industrial base and avoid future competitive disadvantages.

348 In view of the current industrial crisis, there are increasing political calls at both national and EU level to slow down the energy transition, for example by further **postponing the European Emissions Trading System** (ETS 2) to ease the burden on companies. However, the resulting cost relief **could have a counterproductive effect in the medium term**, as it would limit important incentives to build up key technological expertise - for example in the areas of renewable energies and hydrogen. As a result, there would be a risk of falling behind competitors from the USA and China. In China in particular, renewable energies and gases are being massively expanded in line with government requirements.

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349 **A stable energy supply and competitive energy prices** require a clear prioritization of grid infrastructure, storage technologies and system integration. What is needed is a coordinated expansion of high-voltage lines, flexibly controlled distribution grids, electrolysers and large-scale storage facilities - tailored to the generation of wind and solar energy. This is complemented by a functioning European internal energy market, binding expansion targets and sufficient investment capital for production and infrastructure. The attractiveness of the business location increasingly depends on the availability of CO_2-neutral energy, not only for energy-intensive industries, but also for technology-oriented companies that use powerful and energy-intensive data centers.

350 Due to the electrification of industry, transport and heating, various estimates assume **more than a doubling of electricity consumption** in Austria by 2040 compared to 2023 (approx. 61 TWh).[118] In contrast, the Renewable Energies Expansion Act (EAG) only provides for an increase of 27 TWh by 2030. In view of the estimated dimension, even the more ambitious plans in the Austrian Grid Infrastructure Plan (ÖNIP), in which demand is set at 39 TWh (period 2020-2030), would not be sufficient.[119] It should be noted that the energy requirements of data centers, which are an important pillar of the digital transformation, have not even been taken into account in these calculations. This discrepancy between the planned expansion of renewable energy generation and the forecast consumption could lead to a growing imbalance and requires an acceleration in the expansion of renewable energy. This uncertainty makes it difficult for companies to plan investments not only in grid expansion, but also in switching from fossil fuels to CO_2-neutral energy sources.

351 The expansion of renewable energies is currently very dynamic (►item 73) and the **target paths of the Renewable Energy Sources Act** are likely to be achievable according to the monitoring report on the Renewable Energy Sources Expansion Act by E-Control . However, the report also points to a **divergence between the actual and planned expansion paths** by technology. The expansion is currently being driven primarily by the growth of photovoltaics, while the expansion of hydropower and wind power is lagging behind the target figures. If this gap is not closed, the requirements for grid expansion will increase, as will the need for reserve power plants due to the higher volatility in electricity generation. It must therefore be ensured that the different development of the expansion paths does not increase the need for infrastructure investments.

352 Although the security of electricity supply in Austria is currently classified as stable and no increased risks of supply bottlenecks are foreseeable in the short term, there are growing challenges in the medium to long term due to the restructuring of the energy system (see E-Control, 2024). In particular, the increasing proportion of volatile renewable energies, seasonal fluctuations and limited storage and grid capacities are pushing existing grids to their technical limits. In fact, **grid expansion is lagging behind the expansion of renewables**. The long-term increase in the number of interventions required in power plant management indicates a corresponding strain on the electricity grid. These are already causing high economic costs.[120] Investments in generation, grids, storage and flexibility options are urgently needed to guarantee supply in the future and ensure stable framework conditions for investments in the electrification of industrial processes. Overall, security of supply remains high. However, the integration of renewables into the electricity system will result in a **rapid need to expand the grid infrastructure, the need for a flexible and efficient demand management system and extensive investment in storage technologies**.

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[118] Energy balances - STATISTICS AUSTRIA - The information managers.

[119] The ÖNIP "Transition" scenario even envisages additional electricity demand in industry of 12 TWh per year, 22 TWh in the mobility sector and 16 TWh through national hydrogen production (Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, 2023, p. 33).

[120] Over 80% of the expansion of renewable energies is currently taking place in eastern Austria, while pumped storage is located in the west. This results in grid bottlenecks within Austria. An efficient, digitally controlled transmission grid is therefore required for stabilization.

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353 The **draft of the Electricity Industry Act (ElWG)** already contains important elements that create the necessary conditions for accelerating the expansion of renewables. The options already provided for flexible demand and grid management as well as the expansion and grid-friendly use of storage facilities are important steps towards ensuring the stability of the electricity grid and security of supply in Austria and should not be restricted in the final version of the law. The law should be passed quickly. As already stated in the Productivity Report 2023, Parliament has an important responsibility to ensure that relevant two-thirds matters are negotiated and resolved swiftly.

354 Restrictive regulations on spatial energy planning in individual federal states are leading to considerable delays in the expansion of renewable energies and are resulting in a strong concentration of the expansion of renewable energies in eastern Austria. The ministerial draft of the **Renewable Energy Expansion Acceleration Act (EABG)** does provide for the legally binding **designation of acceleration areas** by the federal states for photovoltaics and wind power. However, the planned generation benchmarks remain non-binding and in some cases are set so low that they fall short of the existing expansion targets. In order to achieve the expansion targets of the EAG by 2030, a nationwide standardized, legally binding energy spatial planning is required, which, in addition to the rapid designation and expansion of acceleration areas, also includes repowering measures and the development of new areas. It is also crucial that the generation benchmarks set out in the law are underpinned by clear obligations and monitoring mechanisms so that deviations from targets can be identified and counteracted at an early stage. Ultimately, the success of the EABG depends to a large extent on its implementation at state level and on sufficient human and technical resources in the planning and approval authorities so that the accelerated procedures can actually take effect.

355 The transformation of the energy system requires **adaptive overall planning that integrates production, consumption, storage and grid expansion across all local authority levels**. There is considerable uncertainty regarding the future demand for renewable energy, green gases and hydrogen. Expansion along the forecast maximum paths would require a sharp increase in annual investment and entail the risk of sunk costs. At the same time, a clearly defined development path is essential to provide industry with reliable framework conditions and planning security for decarbonization measures, especially in energy-intensive companies. The creation of a credible development path beyond the 2040 planning horizon requires the consistent linking of generation and consumption targets with strategies for the expansion of storage and grid infrastructures - embedded in a coherent and legally secure planning framework. In view of the complex and often overlapping requirements - from electricity and heat supply to hydrogen and gas grids and mobility - cross-sector, dynamic control is required. An evidence-based approach ensures that expansion targets remain realistic, resources are used efficiently and bad investments - for example due to misjudgements in electrification trends or industrial site development - are avoided. This should **ensure long-term planning and investment security for Austrian industry and the energy sector**.

Recommendation 5: The federal government should develop an adaptive and integrated overall system plan for the energy transition involving all levels of government. This plan should be aligned with clearly defined expansion targets and implementation steps beyond 2040 and be implemented consistently.

- **Integrate regional energy infrastructure with supra-regional and national systems**: The overall planning objective should primarily be to ensure the coordinated, integrated provision of energy infrastructure across all levels of government.
- **Align renewable expansion paths with expected demand:** The expansion of renewables must be adapted to the expected consumption and harmonized across technologies.
- **Standardize spatial energy planning:** Spatial energy planning should be standardized nationwide, made legally binding and harmonized with the expansion paths.

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- **Monitoring the implementation of the EABG:** The implementation of the EABG should be ensured by coordination and monitoring the generation benchmarks of the federal states.
- **Align generation benchmarks in the EABG with expansion pathways:** Under the EABG, the prescribed generation benchmarks of the federal states should be aligned with the overall economic expansion paths.
- **Evidence-based adaptation and adaptive management at project level:** Regular, evidence-based adjustment and adaptive management at project level can prevent the development of both overcapacity and undersupply and at the same time respond flexibly to the dynamics of different locations - for example, by also taking the energy requirements of data centers into account in planning.
- **Expand storage technologies:** The expansion of storage technologies should be accelerated, and grid-friendly use should be promoted through monetary incentives.

9.3.3.2 Setting the course for a sustainable gas supply

Background

356 Gaseous energy sources remain indispensable, particularly for high-temperature processes that are difficult to electrify. Therefore, in addition to the expansion of renewable electricity generation, the development of a **sustainable hydrogen and renewable gas economy** is central to the energy transition in industry. The expansion of at least 1 GW of electrolysis capacity by 2030 planned in the hydrogen strategy covers around 80% of the current demand for hydrogen in industry.[121] However, this is not enough for a complete decarbonization of industrial high-temperature processes. In order to catch up with the target paths of the Renewable Energies Expansion Act, rapid implementation of the Renewable Energies Gas Act (EGG) and a long-term strategy for demand, production and use would be required. This requires a clear regulatory and infrastructural framework - in particular a hydrogen start-up network, storage connections and integration into the EU grid. Due to its high proportion of renewable electricity, Austria has a locational advantage that should be exploited.[122]

357 At present, however, the relative prices between natural gas and green gases or hydrogen are still such that the **economic incentive for a switch in industrial high-temperature processes remains low**.[123] For this to change, a continuous increase in CO_2 prices is crucial in order to gradually make fossil fuels more expensive and climate-neutral alternatives more competitive. On the other hand, companies need targeted incentives to replace the use of natural gas with electrification where the use of hydrogen or biogas is not economically viable. As hydrogen is not expected to be available in sufficient quantities until well into the 2030s, reducing its demand by recycling materials that require hydrogen for their production is also likely to be an option. The relocation of particularly hydrogen-intensive production steps or intermediate products can also be an option, provided that a large part of the added value remains in the country (cf. Lininger et al., 2024). However, the increase in demand for hydrogen is also driven by the low availability of biomethane, as hydrogen and methane are substitutes in many processes (AEA, 2021). In view of the expected scarcity of hydrogen, its use in industrial processes should be given preference over its use for interseasonal stabilization of the electricity system by operating electrolysis plants with electricity, as the low efficiency of hydrogen conversion to electricity leads to high losses.

358 As it will not be possible to fully cover hydrogen demand through domestic production (see Lininger et al., 2024), the accelerated expansion and conversion of a supra-regional hydrogen network in

[121] Hydrogen - E-Control.

[122] The delegated regulation 2023/1184 provides in Art. 4 that hydrogen produced in bidding zones with more than 90% renewable electricity can be counted as fully renewable.

[123] SEG Market Report| SEG: Renewable Gases Service Center.

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coordination with European partners and the use of existing gas infrastructure for imports should ensure that cost-effective hydrogen is available in the required industrial quantities, primarily via pipelines. At the same time, the ramp-up of the domestic hydrogen and biogas industry should be accelerated so that costs can be reduced more quickly through learning effects and efficiency improvements.[124]

359 The political pressure from the USA and Qatar in recent months shows the vulnerability of the EU, which is increasingly dependent on these countries to diversify its energy supply following the withdrawal from Russian natural gas. This new dependency opens up opportunities for external players to influence European climate and sustainability targets. In order to strengthen the resilience and strategic autonomy of the EU - and thus also of Austria - investments in the domestic production of renewable energies must be significantly increased. In the short term, despite Austria's improved position in terms of energy dependency (►item 73), it is necessary to further diversify the portfolio of suppliers of critical raw materials and energy sources and to expand domestic production in Europe.

Recommendation 6: The federal government should further accelerate the expansion of renewable gases and hydrogen and prioritize their use in industrial processes.

- **Rapidly implement the Renewable Gas Act (EGG) and develop a long-term strategy for the demand, production and use of renewable gases**: Clear regulatory and infrastructural framework conditions are required - in particular the establishment of a hydrogen start-up network, connection to storage facilities and integration into the EU network. The rapid implementation of the EU hydrogen and gas market package in the Natural Gas Act (GWG) is crucial in order to create investment security and planning clarity.
- **Promoting the ramp-up of the hydrogen economy**: In addition to investment subsidies, the current state of technology also requires operating cost subsidies to ensure long-term investment security. In view of the currently still limited economic viability of many applications, funding instruments should be specifically geared towards pilot and scaling projects.
- **Assess biomethane potential realistically and from a macroeconomic perspective**: It must be considered that various economic sectors are competing for limited biomass resources and that forests are increasingly turning from CO_2 sinks into CO_2 sources.
- **Promote CO_2 capture and utilization (CCU/CCS)**: Corresponding products should be bound for as long as possible or recycled - for example by using them in plastics production or in other durable materials.
- **Own generation of natural gas to bridge the transition phase**: In both the European and Austrian context, in-house production of natural gas should be promoted to bridge the transition phase in the energy transition in order to dampen the volatility and uncertainty of the LNG markets to which Austria and other EU countries have turned as a result of the Ukraine conflict.

Relevant recommendations of the 2023 and 2024 Productivity Reports on recommendations 5 and 6

360 The Productivity Report 2023 contained the recommendation to improve cooperation between the responsible federal agencies and between the federal government, federal states and municipalities and to define a central steering responsibility for measures for ecological transformation (E9). The Productivity Report 2024 contained a recommendation to quickly create a clear legal framework for the

[124] Experience from the scaling of biogas use in Denmark can provide valuable, albeit only partially transferable, insights, see Biogas in Denmark.

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expansion and conversion of the energy system. In particular, it was emphasized that the legal framework for CO_2capture and storage should be created (E6).

9.3.3.3 Secure cost-effective energy, increase efficiency

Background

361 **Low electricity prices** are an **indispensable prerequisite** for the successful electrification of industrial processes and therefore essential for **mitigating the observed deindustrialization trends**. As E-Control's long-term analysis of electricity market prices shows, the average market price for electricity in Austria was relatively stable at around EUR 40/MWh in the decades prior to 2022.[125] Based on developments in futures markets, the market price is likely to settle at a level of around EUR 70/MWh, which is well above the historical average and will continue to have a significant impact on the international competitiveness of the domestic industry, particularly on non-European markets.

362 The planned Electricity Cost Equalization Act 2025 (SAG) represents an **appropriate relief measure** in view of the current sharp rise in electricity costs for energy-intensive companies in Austria - and is also necessary to ensure the competitiveness of domestic industrial companies in the European environment. Fifteen EU member states have already set up electricity and energy cost relief for energy-intensive companies as part of the exemptions under EU state aid law, with numerous programs already in place until 2030.[126] Although the linking of the relief to efficiency measures provided for in the law makes sense at first glance, it is unlikely to lead to significant savings for the companies affected, many of which are already very energy-efficient (►item 207), while at the same time increasing the administrative burden. These measures are **only effective in the short term**, but do not address the **structural causes** of high electricity prices, such as the continued lack of decoupling of generation and gas prices or insufficient grid and market integration.[127]

363 Although **efficiency measures** alone are not sufficient to cushion the now higher energy costs, the possible reduction in energy consumption of 7-10% estimated in this report through low-threshold measures - i.e. with the given technology - can nevertheless make an important contribution to **reducing energy demand in the production of material goods**. Such measures should therefore be continued and strengthened, especially as they also increase added value and productivity by reducing costs. However, sustainable progress requires investment in technological change and innovation. Funding programs (e.g. as part of the climate and technology offensive) should be increasingly geared towards creating incentives through the combination of innovation funding and investment grants to combine the increase in technological performance and competitiveness of companies with the reduction of greenhouse gas emissions and the replacement of fossil fuels. In view of the scarcity of innovation resources and the permanent innovation race, which is characterized by the rapid obsolescence of new technologies (cf. Ando et al., 2025), companies must use their innovation resources in a targeted manner in order to survive in this dynamic environment.

364 **Competitive electricity prices are possible in Europe and Austria**, as the pronounced price differential on the European electricity exchanges from north to south shows.[128] Countries with a high proportion

[125] Market price in accordance with the Green Electricity Act, Current market price - E-Control. It is not the same as the energy price for end customers and reflects the wholesale price of base load energy.

[126] Cf. Report from the Commission to the European Parliament and the Council on the functioning of the European carbon market 2023 (SWD(2024) 264 final).https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52024DC0538

[127] Mario Draghi pointed this out in his speech on September 16, 2025: "That may offer temporary relief. It does not fix the structural reasons why energy in Europe is so expensive."

[128] By the end of October 2025, the average exchange electricity price in the Swedish bidding zones was between EUR 13.51 and 59.15/MWh (Austria EUR 95.51/MWh), in Finland EUR 38.96/MWh and in the Norwegian bidding zones between EUR 7.04 and 71.26/MWh, with prices rising with proximity to mainland Europe, cf. Exchange electricity prices - Map | Energy charts from the Fraunhofer Institute for Solar Energy Systems.

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of renewable energies - such as wind or hydropower - or nuclear energy can already supply their industrial sector with electricity at significantly lower prices. Renewable energy depresses the price of electricity when grid capacities are available. The main limiting factor is therefore grid capacity. For Austria, this means that securing industrial capacities, especially in the energy-intensive sector, can only be successful if the electricity price for industrial companies falls sustainably through investments in renewable generation capacities, grid infrastructure and the redesign of market mechanisms through the ElWG and beyond. For this reason, the Productivity Report 2024 emphasized the importance of these fields of action in energy policy for competitiveness. However, while energy prices are falling, competitive pressure in the industry is constantly increasing. A swift and well-coordinated approach to energy policy with clear objectives is therefore necessary.

365 The high wholesale electricity prices in Austria are the result of a complex interplay of structural, infrastructural and market-related factors. A key driver is the **fragmentation of the European internal market** for energy, which is primarily due to limited electricity transmission capacities between the EU member states in relation to national generation capacity (so-called interconnection rate). The low cross-border capacities of many EU countries hinder efficient market integration and lead to considerable price differences between countries, which also affect the Austrian electricity market.

366 Austria has high capacities in cross-border electricity transmission, but it borders on price zones in eastern and southern Europe where electricity prices are particularly high (AEA, 2022). This geographical location also contributes to the rise in domestic wholesale prices. In the first half of 2025, the price difference compared to Germany was EUR 7.8/MWh by the end of October 2025, compared to the most expensive bidding zone in Sweden around EUR 36.4/MWh and compared to Finland around EUR 55.6/MWh. The **consequences of fragmentation primarily affect large industrial companies**, as their electricity costs are based on wholesale prices.

367 Commercial enterprises, SMEs and above all households, on the other hand, are likely to be affected by **competitive distortions on the end customer market for electricity**, as identified in the final report of the joint task force investigating the energy sector by **BWB and E-Control**.[129] One of the main points of criticism in this report is cross-shareholdings between the energy supply companies. The effect of cross-shareholdings on market prices suggests distortions of competition due to such ownership structures (►section 225). Appropriate measures should be taken to prevent damage to the business location.

368 Another aspect that was already highlighted in the Productivity Report 2024 is the **issue of viable models for financing** the high investment requirements for the expansion of renewable energies and the electricity grids. These are financed via the grid fees, which accumulate for commercial enterprises, SMEs and above all households across the various grid levels. Although the Electricity Industry Act already provides for measures to improve predictability and reduce grid costs - for example by extending depreciation periods - the exclusive allocation of costs via grid fees remains an important factor contributing to the development of energy prices. In order to limit the financial burden on consumers and at the same time accelerate the transformation, financing instruments should be created that mobilize more private capital and in particular institutional investors and spread the repayment of capital costs over as long a period as possible. Green bonds for grid infrastructure[130] or similar capital market instruments could help to provide a broader basis for financing grid expansion and limit the increase in grid cost surcharges on the energy price.

369 In addition, climate and energy policies at EU and national level are creating competitive disadvantages in non-European markets, especially for energy-intensive industries. The most important trading partners outside the EU pursue their climate policy with less ambitious instruments. In particular, the use and spread of carbon pricing mechanisms and the coverage of CO_2emissions by such instruments is

[129] BWB und E-Control präsentieren Abschlussbericht der gemeinsamen Taskforce zur Untersuchung des Energiesektors in Österreich: BWB Bundeswettbewerbsbehörde

[130] See e.g. Masterplan: Energy for Austria - WKO.

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stagnating internationally, as many countries have weakened corresponding measures as a result of the energy crisis (OECD, 2024). In addition, the compensation mechanisms provided by the EU, such as the carbon border adjustment mechanism (CBAM), will not be sufficient to fully compensate for the competitive disadvantages. In view of the weak economic development, growing competitive pressure from China, increasing geopolitical uncertainties and insufficient conditions for rapid decarbonization, readjustments in the implementation and staggering of measures at both EU and national level are necessary in order to cushion the resulting accelerated structural change in the industry.

Recommendation 7: The federal government should take structural measures to reduce industry's energy costs and stabilize price paths.

- Combine short-term relief with structural measures to reduce costs: Short-term relief for energy-intensive companies should be combined with measures that make a structural contribution to reducing costs - for example by accelerating the expansion of domestic grid infrastructure and storage capacities.
- Expand transmission grids: The accelerated expansion of the transmission grids in Austria and at the European borders is a key prerequisite for the efficient use of renewable surpluses, reducing price differences between bidding zones and lowering system costs.
- Strengthen competition in the end customer market: The competitive distortions identified by BWB and E-Control due to cross-shareholdings and market structures require targeted intervention to ensure fair pricing and market transparency.
- Strategically linking efficiency and innovation policy: Energy efficiency measures - including low-threshold measures - must be continued but should be linked to technological modernization and competitiveness. Subsidies must steer innovation towards productivity and technological renewal, not just focus on reducing greenhouse gases.
- Develop new financing instruments for grid expansion: The sole allocation of grid costs to consumers places a disproportionate burden on SMEs and households. Green bonds or similar capital market-oriented instruments should be used to mobilize more private and institutional funds for grid expansion.
- Coordinate European climate and industrial policy: In view of unequal climate policies outside Europe and the limited impact of CBAM, greater coordination is needed to eliminate the undesirable effects of the EU's cap-and-trade system in international competition.

Relevant recommendations of the 2023 and 2024 productivity reports

370 The Productivity Report 2024 contained a number of recommendations for successfully managing the energy transition, which are still fully valid. It was recommended that the expansion of the energy infrastructure for the provision of cost-effective energy from CO_2-neutral energy sources be driven forward quickly and that competition on the energy markets be promoted (E5). It was also recommended to develop a concept for financing the energy transition (E7). In the Productivity Report 2023, the Federal Government was recommended to keep an eye on the international competitive disadvantages for companies due to the development of energy prices and to develop measures for energy-intensive sectors to accelerate the ecological transition (E7).

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9.3.4 Intensify coordination at European level for the rapid implementation of reforms and measures to strengthen competitiveness

9.3.4.1 Supporting companies in opening up new sales markets and strengthening competitiveness through coordination with EU partners

Background

371 The **diversification of sales markets** is an important strategy for companies in dealing with trade policy distortions (►item 122) and increasing competition (►item 151). Companies that sell their products in a larger number of markets are also less exposed to sudden changes in demand in a market, such as those that occur due to trade policy distortions. The size of the sales market is also important for the **scalability of innovations and the exploitation of economies of scale** in production and energy use (►item 197ff). In this context, the increased integration of the European single market plays a key role.

372 **Different national legal frameworks and legal uncertainty** represent significant barriers for companies to enter new sales markets (►item 170, 172) and are also still significant within the EU single market (Adilbish et al, 2024). Economic policy measures that aim to harmonize legal frameworks and increase legal certainty can reduce barriers to entering new markets and thus make it easier for companies to tap into new sales channels.

373 In addition to **international trade agreements**, a **strengthened integration of the European internal market** and thus a consistent implementation of the current EU internal market strategy plays a decisive role for Austria in this context (►item 162ff). The central objectives of the EU internal market strategy are the simplification and harmonization of regulations. In particular, the harmonized implementation of EU directives into national law is crucial for this.

374 As an important element of the EU internal market strategy, the **development and implementation of an optional and uniform legal framework for companies within the EU** – the 28th regime – is intended to facilitate cross-border business activities until the first quarter of 2026 (►footnote 72). The documents available to date (Report 2025/2079(INL) of the EU Legal Affairs Committee) largely deal with company law aspects of the planned legal framework. However, a comprehensive harmonization of applicable employment law, insolvency law and tax law is also being sought (Sanders, 2025). If the implementation of the 28. regime is based on an EU directive, as envisaged in the report of the EU Legal Affairs Committee, harmonized transposition into national law is crucial to ensure that the initiative fulfills its intended purpose.

375 The Single Market Enforcement Taskforce (SMET) was set up at EU level to harmonize administrative and bureaucratic processes. This identifies best practice approaches within Europe and attempts to promote the harmonization of national processes on the basis of these approaches. According to the current SMET report , Austria is among those countries that do not intend to implement the **largest proportion of the respective best practice approaches** with regard to all harmonization projects in 2024. These SMET projects include, for example, the simplification of administrative requirements for cross-border service providers and the simplification of authorization procedures for placing biopesticides on the market.

Recommendation 8: The Austrian federal government and the Austrian members of the European Parliament should support and promote efforts at EU level to increase integration and use of the EU internal market as well as the negotiation and ratification of additional trade agreements with third countries.

- **Support the harmonization of national legislation within the framework of the EU internal market strategy**: Austria should support efforts to harmonize national legislation within the framework of the EU internal market strategy. This includes explicit consideration of the goal of harmonizing the legal framework within Europe

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when transposing EU law into national law. Individual additions to the national implementation of EU directives lead to regulatory fragmentation and thus create additional obstacles to cross-border business activities within the EU.

- **Simplify national administrative and bureaucratic processes**: In the course of harmonizing and simplifying national administrative and bureaucratic processes, Austria should focus more on best practice approaches and follow the recommendations of the Single Market Enforcement Taskforce. The reduction of restrictive and divergent regulations is particularly important for the strengthening of trade in services (licensing and certification regulations) as part of the EU internal market strategy.
- **Proactive trade policy and ratification of already negotiated trade agreements:** The Austrian Federal Government should approve the ratification of trade agreements already negotiated in the European Council. These include, in particular, the Mercosur Agreement, the modernized agreement with Mexico and the first agreement with Indonesia. In addition, Austria should work to ensure that ongoing negotiations with important growth regions such as India, the Philippines and Malaysia are driven forward intensively.
- **Reduce dependencies on raw materials**: In order to free ourselves from strategic dependencies, we need a long-term, consistently implemented overall European strategy that focuses on diversification, in-house production and recycling.
- **Push ahead with a strategic European industrial policy:** A strategic European industrial policy should be based on coordination, complementary strengths and common goals, thereby strengthening the European industrial location and its competitiveness. A minimum proportion of European added value ("Made in Europe") for public tenders as well as the use of European funding instruments including an opt-out option for reasons that do not relate to price (e.g. availability) and options for increases, for example if economic security is at risk, support this objective. A common funding basis for projects of strategic importance (e.g. research, defense) is also required by pooling funds from European programs and anchoring central initiatives in the EU budget. National industrial policy should be coordinated with the European Competitiveness Fund, be sensibly and coherently integrated into the European strategy and make targeted use of the advantages of the internal market.

Relevant recommendations of the Productivity Report 2023

376 The Productivity Report 2023 recommended expanding measures to involve Austrian companies in building and strengthening European value chains, which would go hand in hand with a deepening of the EU internal market (E28).

9.3.4.2 Effectively countering market distortions in international competition at EU level

Background

377 Key elements of China's industrial policy are perceived internationally as distorting competition, even though the competitive advantage of Chinese exports now often lies in their technological content. The **diverse effects of Chinese competition** on industrialized economies underscore the problem of competitive disadvantages, which are at least partly attributable to the use of market-distorting industrial policy instruments (►**Table 6.1**, ►item 98). These include, in particular, negative effects on companies' innovation (►items 140ff) and investment activities, which are important for increasing productivity (Pierce and Schott, 2018).

378 Against this backdrop, the European Commission has created a wide range of trade and competition policy measures since 2016 to **counter competition-distorting measures by trading partners** (►item 129ff, 157ff). The aim of these instruments is to compensate for competitive disadvantages due

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to competition-distorting public subsidies and economic constraints or to restrict access to the European market for foreign companies that have benefited from such practices. However, the evidence on the effectiveness of these newly created EU measures is limited, making it largely unclear whether they are having their intended effect (►item 167). In addition, the EU's trade policy instruments only offer a means of dealing with some of the aspects of Chinese industrial policy that have been identified as distorting competition. China's practices that are not comprehensively addressed include selective market opening for foreign companies and inadequate protection of intellectual property.

379 The already negotiated **Comprehensive Agreement on Investment** (CAI, ►item 166) contained regulations to counter forced technology transfer by European companies in the Chinese market and to improve the conditions for European companies to enter the Chinese market. However, after China imposed its own sanctions against some EU parliamentarians in response to EU sanctions due to China's human rights violations against the Uyghur minority, the drafting of the legal text and the ratification of the CAI were interrupted by the EU Parliament and have not been resumed since[131]. Although an EU response to the Chinese sanctions seems appropriate, the suspended ratification of the CAI means a continuation of access restrictions and unequal treatment in the Chinese market for European companies.

380 In its existing form, however, the CAI would not provide any means of dealing with Chinese companies that have appropriated the intellectual property of foreign companies in the past due to China's competition-distorting regulations (e.g. forced technology transfer by means of investment requirements). Compensating for competitive advantages based on inadequate protection of intellectual property would therefore potentially require a supplement to the EU instruments.

Recommendation 9: At the EU level, the federal government should advocate an evaluation and subsequent further development of the EU's trade and competition policy instruments to combat competition-distorting practices in international trade.

- **Resumption of negotiations with China with a view to the Comprehensive Agreement on Investment**: The Austrian Members of the European Parliament should advocate a resumption of negotiations with China with regard to the Comprehensive Agreement on Investment. As part of any negotiations, the lifting of Chinese sanctions against members of the European Parliament should also be sought.
- **Strengthen EU measures against distortions of competition in international trade**: Austria should advocate examining the necessity and possibility of additional EU measures to counter distortions of competition that are not comprehensively addressed by the existing EU trade policy instruments. To this end, the existing portfolio of measures should first be evaluated on a scientific basis.

9.3.4.3 Driving forward energy market integration and climate policy coordination in the EU

Background

381 **Eliminating fragmentation and reducing intra-European electricity price differences** through better technical integration on the European electricity market would help to increase grid stability, improve the integration of renewable energies and better balance supply and demand across larger geographical areas, thereby reducing intra-European price variation and ultimately prices. The expectation that price signals in energy-only markets within different bidding zones would create sufficient incentives for investments in grid capacities and flexibility options - and thus lead to a harmonization of electricity prices

[131] See https://www.europarl.europa.eu/news/en/press-room/20210517IPR04123/meps-refuse-any-agreement-with-china-whilst-sanctions-are-in-place.

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between the EU member states - has not yet been confirmed. Coordination at EU level and targeted incentives are therefore required to balance out these disparities (cf. AEA, 2025).

Recommendation 10: The federal government should push for greater market integration at European level by expanding the European transmission grids and strengthening interconnectivity.

- **Structural integration of the energy markets:** The European internal energy market should be more closely integrated. Due to the long negotiation periods, the political process for the European market design after 2030 should be initiated now. The federal government should work at European level to further develop the system so that it is less one-sidedly based on price signals and is better protected against extreme fluctuations in electricity prices.
- **Cross-border network expansion and interconnectivity:** The expansion of transmission grids at European borders is a key prerequisite for the efficient use of renewable surpluses, reducing price differences between bidding zones and lowering system costs. The federal government should work at European level to further develop the system so that it is less one-sidedly based on price signals and is better protected against extreme fluctuations in electricity prices.

Relevant recommendations of the Productivity Report 2024

382 The Productivity Report 2024 highlighted the European dimension of energy prices and the bottlenecks in the European grid and recommended that the federal government step up its efforts to accelerate the expansion of transmission capacities with European partners (E5).

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Literature

Adilbish O., Cerdeiro D., Duval R., Hong G.H., Mazzone L., Rotunno L., Toprak H., Vaziri M. (2024). Europe's Productivity Weakness: Firm-Level Roots and Remedies. IMF Working Paper, 25/40.

AEA (2021). Renewable gas in Austria 2040. Quantitative estimation of demand and supply. Austrian Energy Agency (AEA). Vienna.

AEA (2022). Price reduction mechanisms in wholesale electricity trading and their effects in the European context. Austrian Energy Agency (AEA). Vienna.

AEA (2025). Preserve, Repair, or Rebuild? Austrian Energy Agency (AEA). Vienna.

AMS (2024). Federal Directive on the Recognition, Promotion and Implementation of Measures of the Work Foundation (AST), AMF/13-2024 GZ BGS/AMF/0722/9968/2024.

AMS (2025). Qualification offensive for employees in the areas of ecological sustainability, circular economy and digitalization. AMS position paper. Vienna.

Ando Y., Bessen J. E., Wang X. (2025). Is R&D Rivalry Slowing the Growth of Productive Firms? Boston Univ. School of Law Research Paper No. 25-25.

Bello M., Katsinis A., Lopez Alvarez J., Ravanos P., Smallenbroek O. (2025). Tracking Country Innovation Performance: The Innovation Output Indicator 2024.

BMBWF - Federal Ministry of Education, Science and Research (BMBWF) (ed.) (2024). National Education Report Austria 2024, BMBWF, Vienna.

Bock-Schappelwein J., Bilek-Steindl S., Url T. (2025). Effects of (non-)action: Possible costs of the age-related departure of skilled workers, WIFO, Vienna.

Branstetter L. G., Li G. (2024). Does "Made in China 2025" Work for China? Evidence from Chinese Listed Firms. Research Policy, 53, 105009.

Budget service (2024). Development of federal funding since 2017. Parliament Austria.

Federal Ministry of Labor and Economic Affairs (2023). Labor market policy targets set by Federal Minister Univ.-Prof. Dr. Martin Kocher. Vienna.

Federal Ministry of Finance (2023). Strategy report 2024 to 2027 and budget report 2024. Vienna.

Federal Ministry of Finance (2025). Strategy report 2025 to 2028 and 2026 to 2029 as well as budget report 2025 and 2026. Vienna.

Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (2023). Integrated Austrian network infrastructure plan.

Dornmayr H., Riepl M. (2023). Company survey on labor and skilled labor demand/shortage, Arbeitskräfteradar 2023, ibw Research Report No. 215, IBW Austria, Vienna.

Dornmayr H., Riepl M. (2024). Company survey on labor and skilled labor demand/shortage, Arbeitskräfteradar 2024, ibw Research Report No. 220, IBW Austria, Vienna.

Dornmayr H. (2024). Apprenticeship training at a glance 2024 Structural data, trends and prospects, ibw research report no. 221, IBW Austria, Vienna.

Dornmayr H., Riepl M. (2025). Company survey on labor and skilled labor demand/shortage, Arbeitskräfteradar 2025, ibw Research Report No. 223, IBW Austria, Vienna.

Draghi M. (2024). The Draghi report: A competitiveness strategy for Europe, Luxembourg: Publications Office of the European Union.

Eppel R., Huemer U., Mahringer H., Schmoigl L. (2022). Evaluation of the effectiveness and efficiency of qualification measures of the Public Employment Service Austria. Study by the Austrian Institute of Economic Research on behalf of the Federal Ministry of Labor.

Fiscal Council (2025). Report on compliance with the fiscal rules 2024-2029. Vienna.

IRENA (2022). Global hydrogen trade to meet the 1.5°C climate goal: Part I - Trade outlook for 2050 and way forward. International Renewable Energy Agency, Abu Dhabi.

This machine translation was created on November 27, 2025, using DeepL.

Keuschnigg C., Gogola G., Johs J., Kritzinger M., Sardadvar S. (2020). Wirkung von Forschungsausgaben. WPZ-Wirtschaftspolitisches Zentrum, study commissioned by the Federal Ministry for Digital and Economic Affairs (now Federal Ministry for Economic Affairs, Energy and Tourism).

Lininger C., Steininger K. W., Kulmer V., Salomon M. (2024). Hydrogen for the energy transition: Major uncertainties about demand, anticipated bottlenecks in provision. INTEGRATE discussion paper, Wegener Center, University of Graz.

OECD (2024). Pricing Greenhouse Gas Emissions 2024. Paris. https://doi.org/10.1787/b44c74e6-en

OECD (2024, September 17). How Do Governments Direct Support for Innovation? Lessons from Recent OECD Measurement and Impact Analysis (mabis) Work. OECD Policy Brief.

OECD (2025). Labor shortages and productivity, Firms report severe difficulties finding personnel, [20.10.2025].

Austrian Council for Research, Science, Innovation and Technology Development [FORWIT] (2025). Recommendation on the preparation of the RTI pact 2027-29. FORWIT.

Court of Auditors (2024). Taking stock of the skills shortage. Report of the Austrian Court of Audit, Series Bund 2024/12, Austrian Court of Audit, Vienna.

German Council of Economic Experts (2025). Spring Report 2025. Wiesbaden.

Sanders A. (2025). The Scope of the 28th Regime: A Legal Framework for Innovation the European Way. In-depth analysis commissioned by the Legal Affairs Committee of the European Parliament.

Single Market Enforcement Taskforce (2024). Report 2023-2024.

Schmid K., Petanovitsch A. (2025). The future of apprenticeship training. Qualitative findings from the perspective of industrial companies, ibw Research Report No. 222, IBW Austria, Vienna.

Statistics Austria (2024a). PIAAC -- Basic Skills of Adults 2022/23, National Results Report - Volume 1, Statistics Austria, Vienna.

Statistics Austria (2024b). Education in figures 2022/23 - volume of tables, Statistics Austria, Vienna.

Statistics Austria (2024c). Education in figures 2022/23 - key indicators and analyses, Statistics Austria, Vienna.

Schützenhofer C., Alton V., Gahleitner B., Knöttner S. B., Kubecko K., Leitner K.-H., Rhomberg W., Kienberger T., Baumann M., Böhm H. (2024). transform.industry. Transformation paths and RTI roadmap for a climate-neutral industry in Austria in 2040. Austrian Institute of Technology (AIT), Austrian Energy Agency, Montanuniversität Leoben, Energy Institute at the Johannes Kepler University Linz.

Wong Leung J., Robin S., Cave D. (2024). ASPI's two-decade Critical Technology Tracker: The Rewards of Long-term Research Investment. The Australian Strategic Policy Institute, Barton.

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Appendix: Overview of the Austrian Productivity Board's recommendations to date

►Table 9.1 assigns the recommendations published in the Austrian Productivity Board's previous annual reports to one of the two structural policy focuses "Shaping structural change" or "Boosting productivity growth" (►item 309) and the associated fields of action. The assignment of the recommendations for the structural policy focus "Shaping structural change" to fields of action is based on the dimensions of the triple transition - ecological transformation, digitalization and social justice - which is directly related to the observed structural change in the economy. The thematic allocation of the recommendations to the structural policy focus "Boosting productivity growth" is based on a subdivision of the recommendations according to the determinant of productivity development addressed in each case. This includes the production factors capital, labor and the corresponding factor costs on the one hand, and the framework conditions that are decisive for productivity development on the other.

To distinguish which of the two target dimensions derived from the FPRG 2021 (►item 4) the recommendations serve, each recommendation is highlighted in color in the last column. Lines marked in yellow (●) refer to the social objective function "Secure the business location in the long term and increase competitiveness through the ecological and digital transformation of the economy". Lines marked in blue (●) refer to the social objective function "Promote participation in economic prosperity and economic capacity through education and the mobilization of labor force potential".

Table 9.1: Overview of the Austrian Productivity Board's recommendations to date

1. Recommendations on the structural policy focus "Shaping structural change"

Year	No.	Item	Summary of the recommendation text	Target function
General				
2023	10		Develop a holistic and systemic industrial strategy	●
2023	27		Use industrial policy measures at EU level to strengthen the competitive advantages and diversification of specific industries	●
Field of action: Energy transition				
2023	1		Swiftly implement and systematically develop legal foundations and measures to achieve the climate and energy targets by 2030	●
2023	2		Accelerate expansion of renewable energies and infrastructure, diversify energy imports	●
2023	3		Reduce soil erosion and land sealing through regulatory measures and own administrative action and strengthen the CO_2 absorption capacity of soils	●
2023	7		Monitor competitive disadvantages due to energy prices and develop targeted measures for ecological restructuring for energy-intensive sectors, see also 2025 E7	●
2023	8		Implementing a circular strategy as part of industrial policy and strengthening material cycles	●
2023	9		Improve cooperation between the responsible bodies and define a central steering responsibility for ecological transformation measures, see also 2025 E5/6	●
2024	5	1	Energy infrastructure: Adapt gas infrastructure to diversify supply and plan for long-term decommissioning	●
2024	5	3	National measures to decouple electricity and gas prices through energy storage, demand flexibility and diversification of energy sources	●
2024	5	4	Quickly implement measures to ease the burden and prevent crises in all energy price components	●
2024	5	5	Promote sufficient investment in line and grid infrastructure at EU level to ensure functioning energy markets, see also 2025 E10	●
2024	5	8	Develop control structures for coordinated energy and climate policy and establish scientifically sound monitoring	●
2024	6		Energy transition regulation: Creating a clear legal framework for the expansion and conversion of the energy system	●

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Year	No.	Item	Summary of the recommendation text	Target function
2024	6	1	Eliminate the reform backlog in the energy sector and create a legal basis for the expansion and conversion of the energy infrastructure	●
2024	6	2	Accelerate approval procedures for energy and industrial infrastructure and adapt industrial plant law	●
2024	6	3	Establish regulatory sandboxes for innovation in the energy sector to enable innovation and avoid distortions of competition	●
2024	6	4	Create a legal basis for carbon capture and storage and use technology responsibly, see also 2025 E6	●
2024	6	5	Evaluate energy policy instruments for effectiveness and efficiency and eliminate inefficient measures	●
2024	7		Financing the transformation: Developing a concept for financing the energy transformation	●
2024	7	1	Adapt grid fees to the requirements of renewable energies and introduce time-variable models	●
2024	7	2	Optimizing energy infrastructure and exploiting efficiency potential through digitalization and flexibilization	●
2024	7	3	Sharing the burden of grid charges in a way that is fair to the polluter and socially balanced	●
2024	7	4	Focus public subsidies on grid expansion costs and reduce system usage fees	●
2024	7	5	Develop new financing models for major projects in the energy sector, see also 2025 E7	●
2024	8	1	Expansion of measures for the operational integration and scaling of new energy technologies	●
2024	8	3	Expansion of storage technologies to secure the energy supply, see also 2025 E5	●
2024	8	4	Promoting technologies to increase efficiency and electrify industrial processes	●
Field of action: Digitization				
2023	16		Strengthening the digital skills of SMEs and employees	●
2023	17		Rapid expansion of broadband with gigabit connectivity by 2030	●
2024	2		Expand ICTinfrastructure and accelerate the use of advanced digital technologies in companies	●
2024	2	1	Broadband expansion with the aim of being able to use advanced digital technologies in companies	●
2024	2	2	Increase the added value of digital business models/services through the spread of advanced digital technologies	●
2024	2	3	Set strategic goals for digital business areas in which Austria wants to become a world leader	●
2024	3		Eliminating cost disadvantages in digitization for SMEs	●
2024	3	2	Clearly define the goals and effects of digital policy measures and align them with technological requirements	●
2024	3	4	Make data for measuring digitalization measures comprehensible and publicly accessible	●
2024	4		Promote the strengthening of digital skills through concrete and verifiable goals	●
2024	5	7	Energy infrastructure: Reducing energy consumption through digital technologies and expanding smart energy and grid systems	●
2024	8	5	Investment promotion: Strengthening digitalization and data security in transformative energy technologies	●
Field of action: Just transition				
2023	4		Create structural and institutional conditions for effective climate adaptation strategies and accelerate their implementation	●
2023	20		Scientifically evaluating the impact of the ecological and digital transformation on jobs	●
2023	21		Define the priorities of an active labor market policy with a view to regional differences in the transformation, see also 2025 E4	●
2023	22		Examine (climate) policy measures for their social impact in terms of a just transition	●
2023	23		Strengthen institutional coordination of the just transition process and develop a roadmap to climate neutrality by 2040 with accompanying measures	●
2023	26		Upgrading non-technical professions necessary for climate and demographic change and making them more attractive	●

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Year	No.	Item	Summary of the recommendation text	Target function
2023	31		Organize targeted support for vulnerable groups to ensure basic needs are met	●
2023	33		Expand successful models of further training and requalification and job-related training, see also 2025 E3	●
2023	35		Adapt education system to new challenges; focus on the acquisition of basic skills, see also 2025 E2	●
2023	38		Use early childhood education to reduce risk factors for educational success at school, see also 2025 E2	●
2023	40		Ensuring effectiveness and quality standards in early childhood education	●
2024	10	4	Promote a more equal distribution of paid and unpaid work and strengthen income and career transparency	●
2024	10	5	Strengthening health, prevention and health literacy in all areas of life	●

2. Recommendations on the structural policy focus "Boosting productivity growth"

Year	No.	Item	Summary of the recommendation text	Target function
General				
2024	1		Improve framework conditions for innovation, investment and productivity increases; develop industrial policy strategy; mobilize venture capital	●
Field of action: Investments and capital formation				
2023	5		Identify financing needs for climate investments and create a supportive financing framework based on these needs	●
2024	8		Public subsidies to activate private investment for energy-efficient renovation, see also 2025 E7	●
Field of action: Labor supply				
2023	24		Analyze range of relevant training courses in the area of "green" and ICT-relevant professions, see also 2025 E3	●
2023	32		Strengthen health care and prevention to increase healthy life expectancy, see also 2025 E3	●
2023	36		Increase the attractiveness of the teaching profession and other educational professions, see also 2025 E2	●
2023	39		Proactive measures to meet childcare needs by all local authorities, see also 2025 E2, E3	●
2023	42		Enable age-appropriate working incl. advice for companies, see also 2025 E3	●
2023	43		Identify and eliminate unfavorable employment incentives in the tax and transfer system for older people	●
2023	45		Eliminate incentives in the tax and contribution system with a negative effect on work intensity, see also 2025 E3	●
2023	46		Promote regional mobility of jobseekers more strongly	●
2023	47		Increase immigration of qualified workers and evaluate existing measures	●
2024	4	1	Ensure availability of teaching staff	●
2024	4	2	Promoting women’s access to the IT sector	●
2024	10	1	Increase the flexibility of working conditions for older people/people with care responsibilities	●
2024	10	2	Support families by providing sufficient care and support services and adapting opening hours to full-time employment	●
2024	10	3	Eliminate negative financial incentives to increase working hours (e.g. low income threshold), see also 2023 E43, E45	●
2024	10	7	Promoting innovative concepts for a long working life and ensuring the participation of older people in the labor market, see also 2023 E43	●
2024	10	8	Statutory retirement age should reflect changes in life expectancy	●
2024	10	9	Improve access to the labor market and integration measures for asylum seekers and speed up asylum procedures	●
2024	11		Facilitate access to the labor market for qualified immigrants and specifically promote labor market integration, see also 2023 E47	●

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Year	No.	Item	Summary of the recommendation text	Target function
2024	11	1	Access to the Austrian labor market: Active efforts to attract qualified immigrants, see also 2023 E47, 2025 E3	●
2024	11	4	Expand participation in innovative migration concepts such as talent partnerships, see also 2023 E47	●
Field of action: Human capital development				
2023	25		Strengthening ecological and digital basic education and expanding STEM study places	●
2023	34		Expand qualification measures and job-related training in shortage occupations, especially in nursing and healthcare, see also 2025 E3	●
2023	37		Make educational pathway independent of socio-economic background, see also 2025 E2	●
2023	41		Develop further training strategy for longer careers, in particular further training/retraining of older employees, see also 2025 E3	●
2024	4	3	Further expand training and study places in the ICT sector in line with the demand for skilled workers	●
2024	4	4	Evaluate and adapt measures for digital skills acquisition and define target values for qualification profiles by 2040	●
2024	8	6	Targeted development of skills and expertise in energy and future technologies	●
2024	9		Ensure access to education and skills acquisition regardless of socio-economic background	●
2024	9	1	Establish and implement uniform quality standards in early childhood education nationwide	●
2024	9	2	Providing educational institutions with sufficient resources and targeted support for disadvantaged schools	●
2024	9	3	Expand integration measures for children and young people with a migration background and specifically promote German language skills, see also 2023 E47	●
2024	9	4	Ensure access to high-quality education up to tertiary level and reduce early selection in the education system, see also 2023 E 37	●
2024	9	5	Facilitate access to education for disadvantaged groups and adults in shortage occupations, see also 2025, E2	●
2024	10	6	Expand vocational reorientation and skills acquisition for all age groups, especially in areas with a high labor shortage, see also 2025 E4	●
2024	11	3	Facilitate the recognition of foreign qualifications and accelerate the closing of qualification gaps	●
Field of action: Factor costs				
2023	28		Strengthen the participation of Austrian companies in the development of strategic European value chains, see also 2025 E8	●
2023	29		Diversifying the supply of critical raw materials	●
2023	44		Reduce the burden on labor; ensure counter-financing	●
2024	5		Expand energy infrastructure to provide cost-effective energy from CO_2-neutral energy sources, see also 2025 E5	●
2024	5	2, 6	Reform of the European electricity market design/coordination of line capacities in the EU & market integration, see also 2025 E10	●
Field of action: Technical progress				
2023	6		Review fiscal and regulatory measures for consistent incentives for R&D and investment in climate-friendly technologies	●
2023	11		Focus research/innovation funding on productivity-enhancing areas of strength and promote diversification, see also 2025 E1	●
2023	12		Driving digital and ecological transformation through a broad innovation approach and technologies that promote employment	●
2024	8	2	Drive forward the development of energy technologies such as hydrogen and green gas as a focus of RTI policy, see also 2025 E1	●
Field of action: Business start-ups				
2023	13		Systematically investigate the causes of sluggish start-up dynamics	●
2023	14		Strengthen the venture capital market through corporate law and regulatory measures, see also 2025 E1	●

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Year	No.	Item	Summary of the recommendation text	Target function
2023	15		Identify specific needs for early-stage financing for companies in the field of transformative technologies, see also 2025 E1	●
2024	12		Promote population groups that contribute to business start-ups	●
2024	12	1	Targeted support for women starting up businesses and adapting childcare to their needs	●
2024	12	2	Addressing young people with training programs for business start-ups	●
2024	12	3	Improve framework conditions for founders with a foreign place of birth	●
Field of action: Efficiency and government performance				
2023	18		National data strategy and clarification of responsibility for the Data Governance Act	●
2023	19		Provide public sector register data in Statistics Austria's AMDC	●
2023	30		Strengthening the expertise of exporting SMEs on due diligence obligations in supply chains and harmonizing international reporting standards	●
2024	2	4	Stable legal framework within a national data strategy, see also 2023 E18	●
2024	2	5	Utilizing potential for improvement in e-government for integrated, digital official channels	●
2024	2	6	Increase the functionality of the data ecosystem by implementing the Data Governance Act, see also 2023 E18	●
2024	3	1	Advancing digitalization and reducing bureaucracy for start-ups	●
2024	3	3	Comprehensive impact analysis of all measures in the area of digitalization	●
2024	9	6	Increase the efficiency of the education system, improve the data basis and quickly implement successful pilot projects	●
2024	11	2	Design work and residence permits according to transparent, simple and flexible criteria	●

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Appendix

Country abbreviations and peer country groups

Country abbreviations and peer country groups			
BE	Belgium	LT	Lithuania
BG	Bulgaria	LU	Luxembourg
CZ	Czechia	HU	Hungary
DK	Denmark	MT	Malta
EN	Germany	NL	Netherlands
EE	Estonia	AT	Austria
IE	Ireland	PL	Poland
GR	Greece	PT	Portugal
ES	Spain	RO	Romania
FR	France	SI	Slovenia
HR	Croatia	SK	Slovakia
IT	Italy	FI	Finland
CY	Cyprus	SE	Sweden
LV	Latvia		
EU27/EU	All 27 countries of the European Union (excluding the UK)	EA20/EA	20 countries in the eurozone
BENESCAND	Belgium, Denmark, Finland, Netherlands, Sweden		

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ÖNACE 2008 Classification of Economic Activities

NACE codes and sector name	
A	**Agriculture, forestry and fishing**
A01-02	Agriculture and forestry
A03	Fishing
B	**Mining and quarrying**
B05-06	Extraction of coal, oil and gas
B07-08	Ore and other mining, quarrying of stones and earth
B09	Services for the mining industry
C	**Manufacturing**
C10	Manufacture of food and animal feed
C11	Beverage production
C12	Tobacco processing
C13	Manufacture of textiles
C14	Manufacture of clothing
C15	Manufacture of leather, leather goods and shoes
C16	Production of wood, wickerwork, basketry and Cork goods (excluding furniture)
C17	Manufacture of paper, cardboard and articles thereof
C18	Printed matter and reproduction of recorded sound, image and data carriers
C19	Coking plant and mineral oil processing
C20	Manufacture of chemical products
C21	Manufacture of pharmaceutical products
C22	Manufacture of rubber and plastic goods
C23	Manufacture of glass and glassware, ceramics, Processing of stones and soils
C24	Metal production and processing
C25	Manufacture of metal products
C26	Manufacture of data processing equipment, electronic and optical products
C27	Manufacture of electronic equipment
C28	Mechanical engineering
C29	Manufacture of motor vehicles and parts
C30	Other vehicle construction
C31	Manufacture of furniture
C32	Manufacture of other goods
C33	Repair and installation of machines and Equipment
D	**Energy supply**
E	**Water supply, wastewater and waste disposal and removal of environmental pollution**
E36-37	Water supply and wastewater disposal
E38	Collection, treatment and disposal of waste; Recovery
E39	Elimination of environmental pollution and Other disposal
F	**Construction**
F41	Building construction
F42	Civil engineering
F43	Preparatory site work, building installation and other finishing trades
G	**Trade; maintenance and repair of motor vehicles**
G45	Trade in motor vehicles, maintenance and repair from Kfz
G46	Wholesale
G47	Retail trade without motor vehicles
H	**Transportation and warehousing**
H49	Land transportation
H50	Shipping
H51	Aviation
H52	Services for transportation
H53	Postal and courier services
I	**Accommodation and gastronomy**
I55	Accommodation
I56	Gastronomy
J	**Information and communication**
J58-60	Publishing, films, TV and music production
J61	Telecommunications
J62-63	IT and information services
K	**Financial and insurance services**
K64	Financial services
K65	Insurance companies and pension funds
K66	With financial and insurance activities Related activities
L	**Real estate and housing**
M	**Freelance, scientific and technical Services**
M69	Legal advice, tax advice, auditing
M70	Administration and management of companies and Businesses; Management consulting
M71	Architectural/engineering firms, techn. / phys. / chem. Investigation
M72	Research and development
M73	Advertising and market research
M74	Other freelance/scientific/technical Activities
M75	Veterinary services
N	**Provision of other economic services services for companies and private individuals**
N77	Rental of movable property
N78	Placement and leasing of labor
N79	Travel agencies, tour operators, reservation services
N80	Guard and security services, detective agencies
N81	Building management, gardening and landscaping
N82	Econom. Services n.e.c.
O	**Public administration, defense; Social insurance**
P	**Education and teaching**
Q	**Health and social services**
Q86	Healthcare
Q87	Homes (excluding recreation and vacation homes)
Q88	Social services (excluding homes)
R	**Art, entertainment and relaxation**
S	**Provision of other services**
S94	Representation of interests, church associations
S95	Repair of data processing equipment Consumer goods
S96	Otherwise mainly personal services Services
T	**Private households and others**
U	**Extra-territorial organizations and Corporations**

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