Productivity Report 2024: Strategies for sustainable growth, competitiveness and resilience in times of transition and recession

Executive Summary

This Productivity Report 2024 by the Austrian Productivity Board fulfils the Board's legal mandate under the Fiscal Advisory Council and Productivity Board Act 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, comparable indicators.

The Productivity Report 2024 elucidates some of the key economic, social and environmental challenges which Austria is facing. Austria has one of Europe's best-performing economies, with high productivity. However, the price competitiveness of its exporters has worsened compared with major competitors due to rising labour and energy costs. Increasingly, labour shortages are impeding growth. Even though incomes have stabilised following the crisis years 2020-2023, the social situation of certain groups in the population has deteriorated in relative terms. Despite the progress that has been made, Austria is expected to miss its greenhouse gas reduction targets. The green transition and digitalisation requirements demand comprehensive investment, as do changes to the energy market.

This overall picture confirms the analysis contained in the Productivity Report of the year 2023 and thus also the recommendations made in that report. However, recent developments have further increased the need for action. The Austrian economy has been in recession since 2023, and the tight budgetary situation limits fiscal leeway. Some key areas of economic policy need urgent reform to ensure long-term competitiveness and economic recovery. The economic policy recommendations in this report are intended to guide the Federal Government and other economic policy makers in addressing the multiple challenges.

The Productivity Report 2024 is divided into three parts. The first part gives an overall picture of how Austria's sustainable competitiveness is evolving, based on the Productivity Board's monitoring of the situation using indicators. The second part presents the results of in-depth analyses in a number of areas that are key to Austria's long-term competitiveness. The third part sets out economic policy recommendations derived from the analyses.

Part 1: Evolution of sustainable competitiveness in Austria

When measuring Austria's productivity rate for the purpose of considering sustainable competitiveness, the Productivity Board follows the 'beyond GDP' approach, which looks at economic, social and environmental aspects together. Sustainable competitiveness thus refers to institutions, policies and factors that secure long-term growth in productivity while at the same time ensuring health, economic and societal participation and environmental sustainability. The Board therefore monitors the economy, social aspects and the environment to enable it to arrive at a holistic diagnosis.

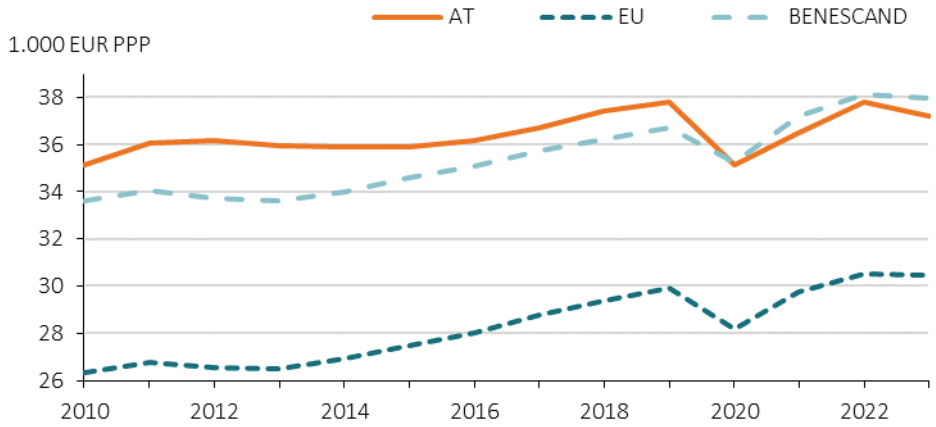
International comparisons are made mainly with European comparator countries (EU27). The most important comparator group is that of the BENESCAND countries (Belgium, the Netherlands, Denmark, Sweden and Finland) – small, open economies that are comparable to Austria's in their high level of development and to some extent in the policy conditions that frame them.

Economy

Austria enjoys high economic output per capita compared with other countries. In 2023, although Austria's real GDP per capita was 22% above the EU average, it was lower than in 2019. Austria has thus recovered less well from the crises since 2020 than most other EU countries, which got back to pre-crisis levels by 2023. Labour productivity in Austria was 17% above the EU average in 2023, placing Austria at the upper end of the normal range, but productivity growth has slowed steadily since the financial crisis in 2008/09. This is a trend that has been observed across Europe, although Austria's productivity growth lagged that of comparator country groups in 2023.

Figure 1: **Real GDP per capita**

Constant prices in 1.000 EUR (PPP-adjusted, EU-27 prices, base year 2015)



Source: AMECO (Label: RVGDP).

Austria invests more than comparator country groups. In 2023, gross fixed investment was 25.1% of GDP (compared with an EU average of 22.1%). However, the economic situation is leading to reductions in private investment. In the medium term, domestic companies need to adapt their production processes to the changed conditions on the energy market and to the requirements for green transition and digitalisation. This will require substantial public investment.

Austria's export industry has suffered a worsening in price competitiveness in recent times. In 2023, nominal unit labour costs were 9.5% higher than in 2022. Nevertheless, foreign trade proved resilient. After the crisis-induced collapse, the global market share of goods exports increased by 9.3% in 2023 compared with the previous year. Over the longer term, export share has however been in decline since the 2008/09 financial crisis, and exports are expected to deteriorate again in 2024. On the other hand, integration into global supply chains is steadily increasing.

Labour shortages constitute an increasing threat to economic growth, in particular due to the ageing of the population. Investing in human capital and skills can help alleviate labour shortages, at the same time improving the social situation of people in Austria. Despite comparatively high educational expenditure per pupil, educational outcomes are in the average range according to PISA.

Trust in public institutions is traditionally high in Austria, but perceptions that corruption is kept in check and of political stability have worsened in recent years.

The indicators used for monitoring indicate that there is untapped potential to strengthen productivity development in the specific areas of business start-ups, digitalisation, innovation and research, and business financing. In comparison with other EU countries, Austria spends a lot on R&D, but its innovation output indicators are below the BENESCAND average. Austria has ground to make up particularly

in the digitalisation of businesses. Despite increased investment in digital infrastructure, Austria finds itself only at the lower end of the EU average in this regard. When it comes to the rate of business start-ups, Austria is at the bottom of the pack, despite an upswing in 2022. Austria ranks middle by EU standards in the provision and use of venture capital, but far below the averages of the comparator country groups.

Social aspects

In 2021, Austria's social expenditure amounted to 32.9% of GDP. During the COVID-19 pandemic, the figure rose to 34%, falling back to 30.3% in 2023. Expenditure still remains above the 2019 level due to increased health and pension spending.

In recent years, healthy life expectancy in Austria has increased, standing at 60.9 years in 2022. This is in line with the EU average, as are the rates of chronic illness and occupational accident.

With regard to educational qualifications over and above compulsory education, Austria ranked only average by EU standards in 2023, despite an increase to 86%. The proportion of vocational training is above the EU average, but lags behind the BENESCAN countries.

The unemployment rate was 5.2% in 2023. The NEET rate (young people not in employment, education or training) was 9.4%. Both of these indicator figures are around average for the EU. Although the full-time equivalent employment rate and the rate of employment of older workers are improving, they remain below the EU and BENESCAND averages.

With regard to childcare, Austria in 2023 had an extended participation rate (as defined by Statistik Austria [Statistics Austria]) of 34.9% for children below the age of three and thus met the 'Barcelona target'. Despite this improvement, Austria is still below the EU average. However, it plans to increase the childcare rate to 38% (agreed target under the new 2024 redistribution of income between the federal state, provinces and municipalities).

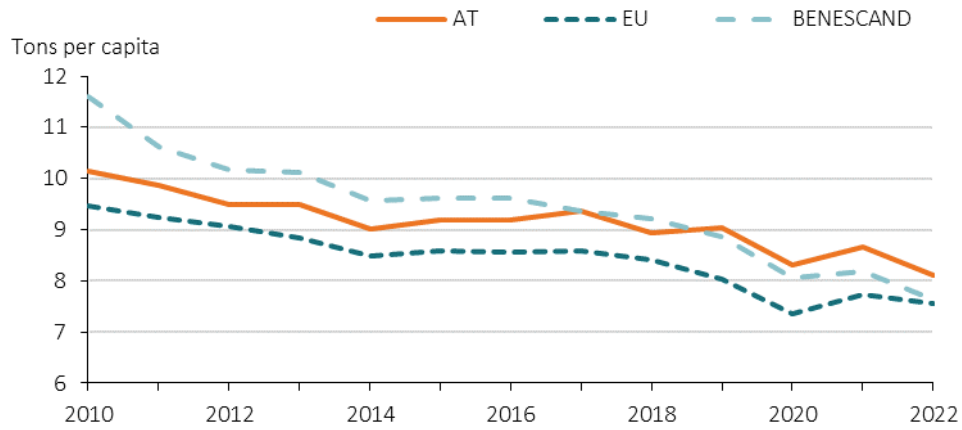
Austria has the second highest real net equivalised household income in the EU. Since the 2020-2023 crises, incomes have stabilised, but severe material and social deprivation has increased to 3.7% and in 2023 the at-risk-of-poverty rate was 14.9%. Income inequality in Austria is somewhat lower than the EU average, whereas wealth inequality continues to grow.

Environment

Austria has committed to cutting its greenhouse gas emissions by 48% by 2030, compared with 2005 emissions. Its emissions of 8.1 tonnes of CO_2 equivalents per capita in 2022 were higher than the EU and BENESCAND averages. Since a marked decrease in 2020, emissions have been broadly constant. They fell again in 2023 due to weak economic activity and weather-related factors. Industry is the largest emitter (33.5%), while the transport sector accounts for 27.5%. Transport emissions have increased by 57% since 1990. Austria is not on course to meet its targets for reducing greenhouse gas emissions, looking also at the strengthened EU climate targets.

Figure 2: **Greenhouse gas emissions per capita**

Total greenhouse gas emissions excluding LULUCF, in tons of CO_2 equivalents per capita



Source: Eurostat (Label: ENV_AIR_GGE).

In the energy sphere, renewable energy made up 33.8% of gross final energy consumption in 2022, whereas the target for 2030 is 42.5%. Almost all electricity produced in Austria comes from renewable sources, but Austria imports 74.5% of the energy it uses and is heavily dependent on foreign energy supplies. In the case of natural gas particularly, dependence on Russian energy was still high in 2024. Making the transition to climate neutrality in emission-intensive sectors continues to pose a challenge if long-term competitiveness is to be maintained.

The circular economy strategy aims to reduce domestic material consumption to 14 tonnes per capita by 2030. The figure of 16.3 tonnes in 2023 was above the EU average. The circularity rate (proportion of recycled materials) of 13.8% is well below the target of 18% by 2030.

Biodiversity in agriculture is worsening even though the proportion of Austria's agricultural land that is farmed organically is the highest in the EU (27.7%). Also problematic are the high proportion of areas that are at risk of soil erosion and per capita soil sealing, which are above the EU average and increase the risk of flooding.

The environment industry offers opportunities for Austria's economy as a whole. Yet the proportion of Austrian inventions that are aimed at solving environmental problems is decreasing. The proportion of Government revenue that comes from environmental taxes is also in decline, coming in at just 4.3% in 2022. The taxation system thus continues to provide only limited impetus for the green transition.

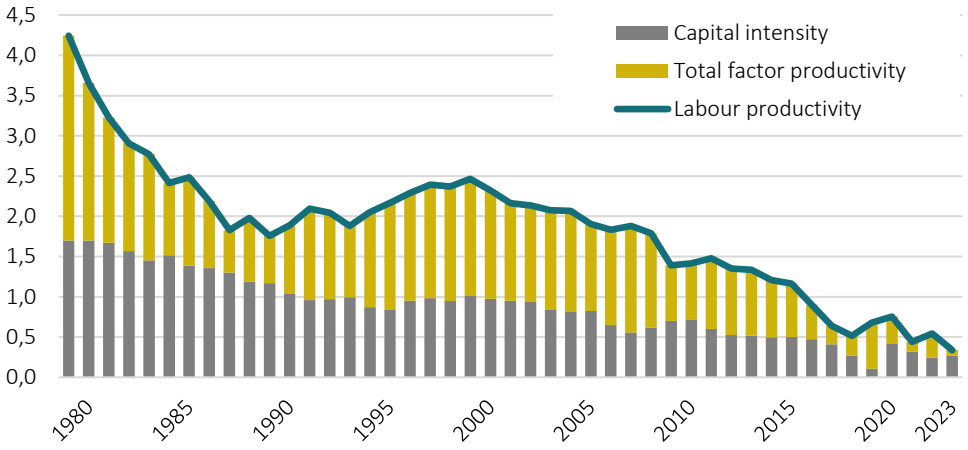
Part 2: In-depth analyses

Long-term evolution of labour productivity in Austria

With regard to GDP growth, Austria has lost ground relative to the USA in recent years, mainly because of a decline affecting labour productivity. Between 1995 and 2005, Austria's labour productivity grew by an average of 1.8% per year, whereas between 2006 and 2019 average annual growth in labour productivity was just 0.9%. This slowdown, which has been observed in many highly developed countries, is weighing on competitiveness.

Figure 3: **Growth rates of labour productivity in Austria**

Contributions of capital, labour, and total factor productivity, 5-year rolling averages, in %



Source: AMECO, PROD-calculations.

One key reason for what has happened in Austria is the changing workforce, with its changing age, skills and gender profile. In addition, Austria does not invest much in intangible assets such as patents, software, vocational training or digital platforms. Such investments are closely linked to digital technologies and are important for adding value to innovations. Weaknesses in digitalisation and ICT infrastructure therefore have a negative impact on productivity growth.

The labour productivity decline affects both the production of tangible goods and the services sector. High-growth industries in the services sector, such as telecommunications and finance, account for a smaller part of Austria's services sector. At the same time, less productive industries, such as housing, account for a greater proportion of Austria's production, which acts as a brake on productivity growth in the economy as a whole.

Service-sector industries with strong productivity growth are characterised by high levels of digitalisation and investment in intangible assets. Advanced digital technologies could accelerate structural change towards more knowledge-intensive services and increase overall productivity. For these, high-performance digital infrastructure is essential, and companies and the workforce must have a high level of digital capability. With the help of digital technologies, processes can be automated, new business models are possible, and access to global markets is facilitated. This would give scope to substantially increase the potential for economic growth.

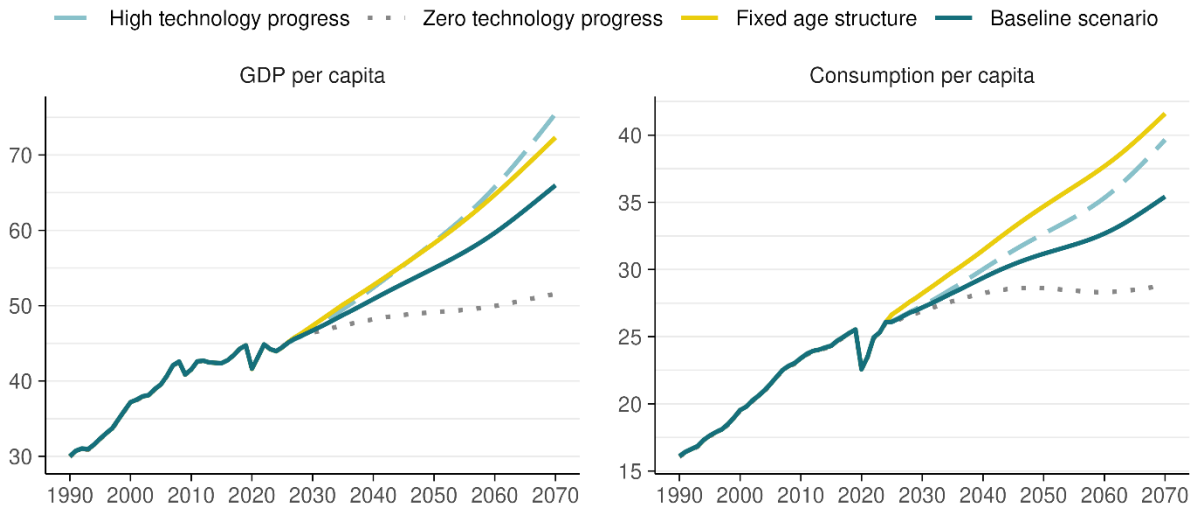
Macroeconomic effects of mobilising labour potential

Demographic change poses a major challenge for Austria's economic growth in the coming decades. Projections suggest that the ratio of people of working age to those aged 65 or over will decrease from 3:1 in 2024 to 1.8:1 in 2060. Having an ageing society will make it harder to maintain economic growth at the rate observed over the last 30 years.

Simulations using models indicate that economic growth will slow down greatly due to the labour force shrinking. Extrapolating the growth in multi-factor productivity (technological change, efficiency gains) and allowing for the long-term economic and population projections, growth in real GDP per capita would be nearly one third lower than the average over the past 30 years in this baseline scenario (compare blue and yellow lines representing the baseline scenario and the scenario with constant age structure respectively). In order to offset the effects of a shrinking labour force, productivity growth would need to be significantly increased.

Figure 4: **Baseline scenario, demographic change, and productivity growth**

Real GDP per capita (left) and private consumption per capita (right), in 1.000 EUR (base year 2015)



Source: PROD, simulations with FISK-OLG model.

One major strategy for addressing this challenge is to mobilise existing labour potential. Scenario analysis shows that various economic policies (such as increasing people's skills and increasing the level of participation of women and older people in the labour market) could have a positive impact on GDP. By bringing all of these indicators into line with EU medians, GDP per capita could be increased by about 7% by 2070, and the gap to the countries at the top of the EU leader board reduced by as much as 14%.

Measures aimed solely at increasing skills to match the EU top three would increase per capita GDP by 4.7% relative to the baseline scenario, although it would take time to achieve this effect. In contrast, improving the participation of women and older people in the labour market would have positive results even in the short and medium term.

If the rate of participation of women in the labour market were increased to that observed in the three EU countries with the highest rates, per capita GDP in 2070 would be 5.5% higher than in the baseline scenario. Tapping this potential would require a comprehensive strategy involving family policy, the education system, the world of work and social norms. Above all, childcare options will need to be expanded if women are to be able to participate more in the labour market. The proportion of women in Austria who only work part-time is very high by international standards. This has a negative effect on their earnings and pension entitlements long term.

Labour potential could also be increased if the rate of participation of older people in the labour market were higher. One scenario examined the impact of linking pension age to life expectancy. If the effective pension age were gradually raised to 65.6 in 2070, hours worked would be 3.3% and GDP per capita 2.7% higher than under the baseline scenario. Financial incentives, staying healthy and age-appropriate working conditions would have an important role to play on this front.

Migration will be another key factor in stabilising labour supply in the long term and mitigating skills shortages.

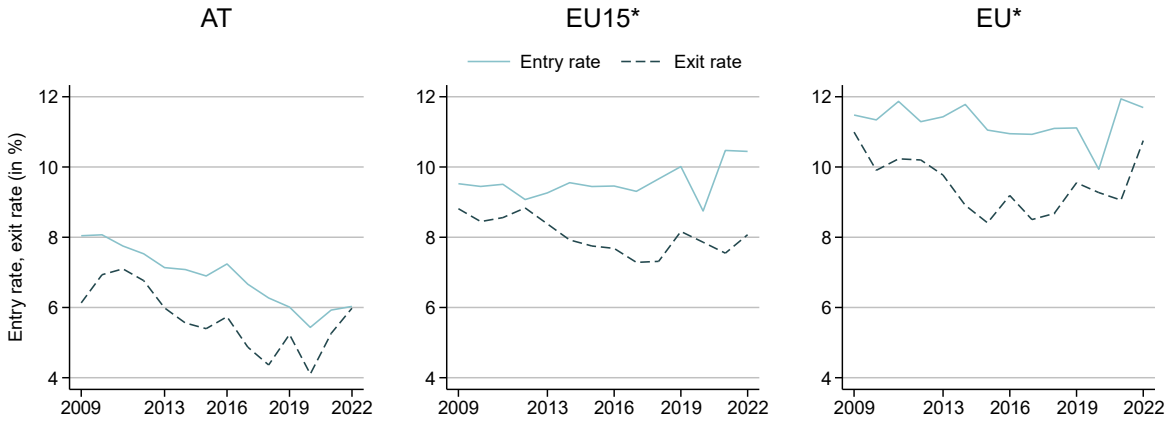
Analyses show that the greatest improvements will be achieved if measures are combined. It is therefore important to view the various possible reforms as complementary. Each area has untapped potential, and the reforms could between them have significant long-term effects on Austria's economic growth. If the economic challenges posed by an ageing society are to be successfully addressed, ambitious goals and comprehensive strategies are needed in all areas of reform.

Decline in business dynamics in Austria

When we talk of business dynamics, we are referring to businesses entering and exiting the market and to young businesses. In Austria new businesses create more jobs than existing ones, and the productivity of businesses entering the market is higher than that of businesses exiting it. This helps increase overall economic productivity. However, Austria's business dynamics have been in decline for years. The business entry rate decreased from 8% in 2009 to 6.2% in 2022, and the proportion of people working for young businesses also fell significantly.

Figure 5: **Entry and exit rates**

% of active firms, 2009–2022



Source: Eurostat. NACE C–N (without K). EU15*… Germany, France, Italy, Luxembourg, Netherlands, Portugal, Sweden, Spain. EU*… EU15* plus Bulgaria, Estonia, Lithuania, Latvia, Poland, Romania, Slovakia, Slovenia, Czechia.

Many studies have highlighted the increasing importance of business models that are based on digital technologies and intangible assets beyond R&D spending, software development and training (e.g. (customer) databases and specific services that build on them) as a factor in market success. The high costs of putting these in place and making them available are identified as a significant reason for the decline in business dynamics. Investments in such assets generally require lengthy development work and are associated with high fixed costs. On the other hand, reproduction costs are then very low (e.g. software). For small and new businesses, these high costs often constitute a major hurdle, which makes it harder for such businesses to enter new markets.

Digital technology is crucial to developing and making use of intangible capital. SMEs in particular often lack the resources to make the necessary investments. Digital technologies, in particular cloud services and data analytics, are less widely used in Austria than in other EU countries. This hampers the growth potential of SMEs and reduces their competitiveness.

Demographic change is further exacerbating the business dynamics issue. The decline in the proportion of young people in the population is reducing the number of potential entrepreneurs. The rate of business start-ups could therefore continue to decrease, negatively affecting Austria's innovative capacity and economic growth in the long term. An ageing population reduces the supply of labour further. This limits the number of qualified workers available to existing businesses and restricts the growth of existing businesses as well as the setting up of new ones.

To increase business dynamics in Austria, ambitious economic policy measures and targeted support measures are required to address both the digitalisation issue and the demographic challenges, as both

of these have a major impact on business dynamics. Investment is required in digital infrastructure, particularly to help give SMEs access to broadband networks and high-performance advanced digital technologies to ensure they are competitive and to promote digitalisation in all regions. Meanwhile, changing demographics must be accompanied by other measures to increase labour market participation, e.g. targeted support for business start-ups, older workers and migrants. This would expand the labour force and increase start-up activity.

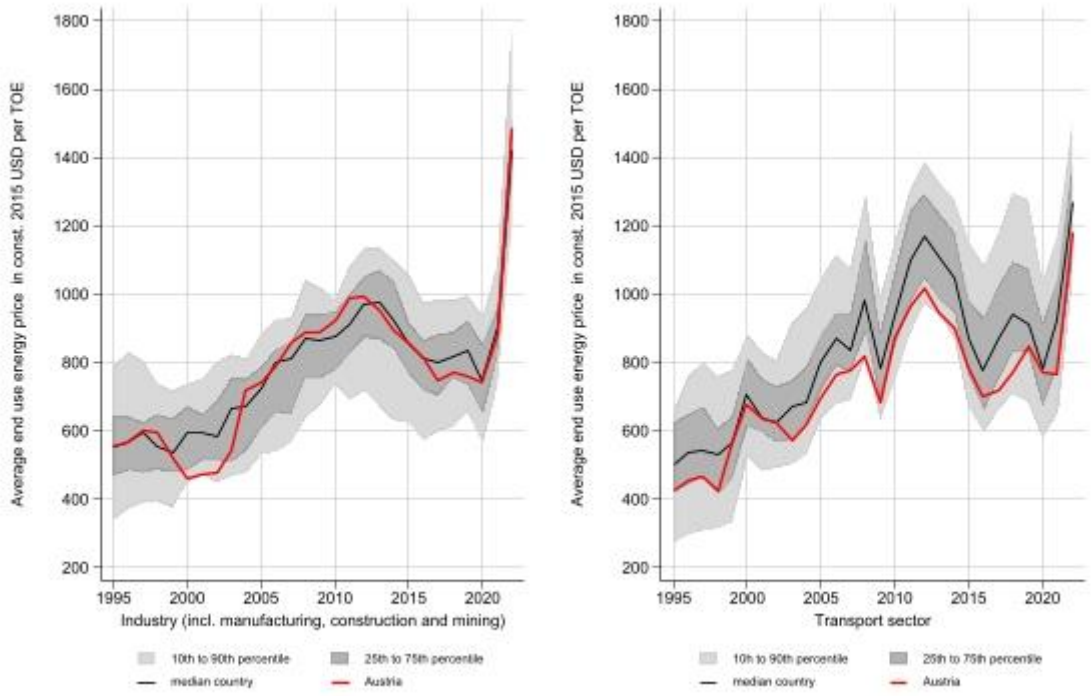
Energy costs and price competitiveness of the Austrian business sector

The competitiveness of Austrian industry is largely determined by production costs, which comprise energy costs plus other costs such as wages and outlay. In energy-intensive industries particularly, energy costs account for a significant part of total costs. Energy costs depend on energy prices and the energy intensity of the industry, i.e. energy consumption per production unit.

Energy prices depend on many factors, including production costs, infrastructure and distribution costs, regulations, taxes, market dynamics and geopolitical developments. In 2021 and 2022, natural gas and electricity prices fluctuated more in Europe than in non-EU OECD countries. In Austria, electricity prices are strongly linked to fluctuations in natural gas and coal prices. Being highly dependent on Russian natural gas, Austria is at high risk of such price fluctuations. This undermines the stability of the economy. The strong link that exists between electricity prices and natural gas prices makes a critical analysis of pricing necessary.

Figure 6: **End use energy prices in industry and transport**

1995–2022, constant USD per TOE (base year 2015), Austria compared to 36 EU- and OECD-countries



Source: IEA Energy Prices and World Energy Balances, Eurostat Energy Balances, PROD calculations.

Final energy prices for companies have risen across the world long-term (cf. Figure 6). In Austria's industrial sector, they were generally at the upper end of average for the OECD, whilst prices in the transport sector were at the lower end of the range. Energy costs make up a significant proportion of

total costs for few companies only. Final energy use is concentrated in a few hundred companies, but those companies' production does play an important role in the overall economy. These companies should be one of the main target groups of energy and climate policy.

The energy intensity of Austrian industry is determined by factors such as the energy mix, industrial structure and energy efficiency. The decrease that has occurred in energy intensity is mainly down to a structural shift towards less energy-intensive industries. The contribution from energy savings and efficiency gains has been low. Austria's use of fossil fuels is changing only slowly. This is indicative of the limited options available for replacing them and the high investment costs of the green transition.

In 2021-2022, unit energy costs increased sharply across all sectors, especially those where unit labour costs also increased sharply. This has reduced price competitiveness in particular in the vehicle manufacturing sector.

Providing low-cost energy from CO_2-neutral sources and ensuring high security of supply should be key items on Austria's agenda. To these ends, growing the energy produced from renewable sources and the energy infrastructure will be crucial. Making sure that the energy wholesale and end-customer markets are competitive is likewise essential if low-cost energy is to be available. Clear financing programmes, legal certainty and professional governance structures are needed to transform the energy system, as is full coordination between the Federal Government and the provinces.

In the near term, Austria should seek to further diversify its gas supply and become independent of Russian natural gas. Effective measures to reduce energy consumption are also needed. Austria's medium- to long-term goals should include electrifying and increasing the energy efficiency of industrial processes as well as replacing natural gas with climate-neutral energy sources. This will require the infrastructure for carbon-neutral energy sources to be expanded, storage technologies to be developed, and distribution networks to be adapted.

Combining measures to stabilise energy prices with measures to improve energy efficiency will help improve the price competitiveness of Austrian industry in the long term. Network tariffs and energy taxes will also need to be reformed accordingly.

Part 3: Recommendations of the Productivity Board

Secure the Austrian economy long-term by digital transformation

Recommendation 1: The Federal Government should improve the conditions for innovation and investment and thus for higher productivity. This will involve having a competitive taxation system, reducing unnecessary red tape and mobilising venture capital. With regard to the major international challenges facing the Austrian economy, the Federal Government should develop a comprehensive industrial policy strategy coordinated with European initiatives.

Speeding up productivity growth through digitalisation

Recommendation 2: The Federal Government should accelerate the development of ICT infrastructure, in particular high-speed internet access. It should also accelerate the adoption by companies of advanced digital technologies through a new and comprehensive digital offensive, taking into account the latest technological developments.

- Public investment should facilitate broadband infrastructure and internet speeds that allow businesses to make use of and further develop advances in digital technologies such as AI applications, cloud computing and data analytics.
- The uptake and use of advanced digital technologies such as AI, cloud services and data analytics in companies should be promoted with specific investment incentives and action to increase skills in the

application of advanced digital technologies. The aim should be to further increase the value added by digital business models or digital services.

- There should also be a digital offensive with strategic targets for the digital business sectors in which Austria wants to become a world leader by 2040.
- A comprehensive digitalisation offensive requires a stable legal framework. This should be developed as part of a national data strategy and should include support for – and enforcement of – security standards so as to maximise cybersecurity in the use of digital infrastructure and technologies.
- Further potential for improvement should also be exploited in the area of e-government to provide end-to-end digital official channels.
- To enhance the functionality of the public data ecosystem, an effective Data access act implementing the European Data Governance Act (DGA) should, finally, be put in place. This, along with the implementation of the recently published National Data Strategy, should give an important role to independent institutions with high-level data skills and an international network.

Removing barriers to digitalisation for SMEs and start-ups

Recommendation 3: The Federal Government should adopt measures to mitigate cost disadvantages for start-ups and SMEs in the context of digitalisation and related investments.

- The process of setting up businesses should be further digitalised, and the associated red tape further reduced, so that a transparent, end-to-end, digital process is available for setting up businesses whatever their legal form.
- The objectives and effects of existing and future measures should be clearly defined and measured. The prerequisites for using advanced digital technologies should be reflected in the objective-setting process.
- A comprehensive impact analysis of all the relevant measures and their combined effect relative to the new objectives should be carried out. The portfolio of measures should be adapted based on the results in order to increase effectiveness and efficiency.
- The data for measuring the objectives and effects should be comprehensible and accessible to third parties.

Increasing digital skills

Recommendation 4: The Federal Government should continue to promote improvements in digital skills by formulating specific, measurable objectives.

- There should be greater incentives to ensure that suitable teaching staff are available for digitalisation subjects in schools. All educational institutions should also have modern, up-to-date digital infrastructure; forward-looking curricula should be developed; and initial teacher training and continuing professional development for teachers should include the requisite measures.
- The success of measures to promote women's access to IT should be reviewed early on, and the long-term effect of such measures should be tracked and documented. One approach to doing this would be to evaluate, in the near term, the effect of these measures on skills and interest in STEM subjects and digital skills. The data for evaluation should be made available and comprehensible to third parties.
- Places on ICT courses should be increased in line with the demand for specialists in the area. The number of places at technical colleges should therefore be further increased (over and above the increase there has already been) and a further increase in the number of places for studying IT at universities should also be an aim, to cover demand.
- The Federal Government should review how suitable its measures for promoting the acquisition of digital skills are for the future and adapt the measures as necessary. In consultation with the social partners, it should also set clear objectives concerning the desired skills profiles in the area of (advanced) digital technologies and with regard to the number of graduates with these skills profiles it wishes there to be by 2040.

Increase competitiveness and achieve green transition in a targeted way

Ensuring long-term competitiveness through a secure supply of low-cost energy

Recommendation 5: The Federal Government should work to build up the infrastructure for the provision of low-cost energy from CO_2-neutral energy sources fast. This requires coordinated action to promote both an increase in the supply of climate-neutral energy and greater competition in the energy markets.

- To secure the supply of natural gas in the short term, changes must be made to the gas infrastructure to allow access to new sources of gas and thus modification of the gas supply. The fact that the demand for gas will fall longer term must, however, also be taken into account, and these investments must be linked to a plan for medium- to long-term dismantling.
- The necessary energy infrastructure must be built up fast. As part of this process, it is important to implement innovative network operation concepts (building networks with flexibility and storage options, sector coupling).
- In order to reform the design of the European electricity market to promote long-term supply contracts, and given the market's current pricing mechanism, additional national measures will be required to decouple electricity prices from natural gas prices. Expanding energy storage capacity, exploiting the potential for demand flexibility, and further diversifying energy sources are important to achieving this goal.
- Measures to reduce pressure and to prepare for possible future crises should be put in place as soon as possible for all components of energy price (wholesale prices, network charges, taxes).
- As pipeline capacity must also be available not only in Austria but throughout Europe, the Federal Government should step up its efforts at European level to ensure that investment in the pipeline capacity and network infrastructure of its partners is sufficient for the energy market to function.
- As the investment that European countries make in energy infrastructure has significant cross-border effects, competition in the integrated wholesale electricity market can be increased through better coordination with other European countries and better regional coordination of capacity planning and provision and of corresponding changes to bidding zones.
- In the near and medium term, more effective measures for reducing the amount of energy that is consumed are needed. To help with this, the scope for employing digital technologies to increase energy efficiency should be exploited as fully as possible. Examples of this would be switching to smart energy management systems, accelerating the roll-out of smart meters, and expanding complementary digital infrastructure such as 5G networks.
- The Federal Government should endeavour to set up governance structures under which the responsible federal ministries, provinces and affected groups of society can coordinate and agree energy and climate policy matters. A system for the systematic and regular monitoring – based on scientific evidence – of progress in the provision of a low-cost supply of energy from CO_2-neutral energy sources should be set up to provide a good foundation for evidence-based policymaking in this area.

Removing legal obstacles to transforming the energy system and creating consistent incentives

Recommendation 6: The Federal Government and the Parliament should swiftly establish a clear legal framework for the development and transformation of the energy system. As part of this, they should establish consistent incentives and remove legal obstacles both in the area of industrial energy end-use and in energy production.

- The Federal Government should aim to clear the energy reform backlog in the near future and it should put the legal foundations for the development and transformation of the energy infrastructure in place rapidly - first and foremost by bringing about consensus on an Energy Act (EIWG) decision as soon as possible.
- Approval procedures for infrastructure projects and pilot facilities in the sphere of energy production, storage and distribution and for new industrial processes must be sped up. The changes needed to the law on commercial installations should likewise be identified and actioned.
- In areas where existing regulations prevent the development and implementation of innovative solutions, more regulatory sandboxes should be put in place to develop suitable technical and regulatory solutions. It is, however, important to ensure that such measures do not lead to distortions in competition.

- Besides the necessary reduction in CO_2 emissions, Austria will – like other industrialised countries – need to employ CCS (carbon capture and storage) solutions, at least in the short and medium term. The legal basis for doing so should be put in place and the technology should be used judiciously.
- The effectiveness and efficiency of all energy-related climate policy instruments should be evaluated, and the way they interact should be assessed. Inefficient instruments should be removed from the portfolio of measures.

Securing financing for investment in energy infrastructure

Recommendation 7: The Federal Government should draw up a plan to finance the investments needed for the energy transition and, in the interests of long-term planning certainty, should give it legal backing and implement it in a timely manner. Besides achieving energy security, particular attention should be given to applying the 'polluter pays' principle and minimising the costs of the energy transition to the economy as a whole.

- Network charges should be adapted rapidly to the requirements arising from the ever-increasing importance of renewable energy sources in the supply of energy. Time-variable and dynamic network charges could be used to provide incentives for using energy in a way that reflects electricity input. This would enable end users to minimise their costs by altering their energy consumption behaviour.
- To minimise the total costs of transforming the energy system, particular focus should be placed on optimising the energy infrastructure. Exploiting the potential that (a) digitalisation and (b) making maximum use of the flexibility in the system offer to increase the efficiency of, and optimise, existing and new installations could make a significant contribution to achieving this objective. This could also reduce the costs of managing bottlenecks.
- As a general rule, costs should be shared between the different user groups according to the 'polluter pays' principle; on the other hand, social and competitive distortions should, however, also be kept to a minimum. Public support should focus on areas where this subsidiary condition cannot be met.
- Public support should start with subsidies for meeting the costs of constructing and expanding the network system, thus permanently reducing the charges for using the system across the economy as a whole. In line with EU State aid rules, these interventions should primarily serve to achieve competitive/affordable energy prices and mitigate the cost increases associated with the energy transition.
- New ways of financing large-scale infrastructure projects through the European Investment Bank should be examined/prepared.

Anchoring the transformation of the energy system as one of the key missions of research funding

Recommendation 8: To support the energy transition in Austrian industry, the Federal Government should make additional public grants available, particularly to activate private investment. These grants should be available for the development of technologies and processes at all stages of technological maturity.

- For the energy transition, additional measures are required to promote the integration into installations and adoption of technologies on an industrial scale.
- It is often very difficult to replace the use of natural gas in industrial processes. Further development of energy technologies (including hydrogen and green gas) should therefore be considered a priority of a transformational research, technology and innovation policy.
- For security of supply, on the other hand, storage technologies have an important role to play, as they are needed in order to be able to decouple energy production and energy consumption.
- Technologies that increase energy efficiency and make the electrification of industrial processes more effective and efficient could provide significant help in decoupling companies' energy costs from fossil fuels.
- Digitalisation should play an important role across the board in all relevant areas of transformational technologies. In connection with this, developing data transparency, data security and security standards for adaptive management should in particular be driven forward.
- All these technological policy measures must be accompanied by an increased use/development of skills and expertise in the above areas.

Promote participation in economic prosperity and economic capacity through education and the mobilisation of labour force potential

Promoting human capital, adapting skills and increasing labour market participation and opportunities by dealing with socio-economic inequality

Recommendation 9: The Federal Government should ensure that everyone who lives in Austria has access to education and can acquire additional skills, whatever their socio-economic background and living situation.

- All children should have access to high-quality early childhood education and care (ECEC), whatever their family situation and the employment status and income of their parents. Rules on group size, conditions, etc. currently vary greatly across Austria. An Article 15a B-VG agreement should be put in place so that, in future, early childhood education quality standards and objectives are clearly defined, standardised throughout Austria, binding, and adhered to in practice, e.g. a mandatory curriculum for 0-6 year olds and improved educator-to-child ratios.
- Early childhood care facilities, primary schools and secondary schools should have the necessary resources to ensure high-quality education for all children in the education system. Schools with a high proportion of pupils from socially disadvantaged backgrounds should receive extra resources to deal with the associated challenges. Special attention should also be paid to promoting health and to children and young people with special needs.
- Children and young people with a migrant background need different integration measures, depending on their age and language skills. Tackling deficient German language skills should be afforded high priority for this group. A second year of compulsory kindergarten and a legal right to childcare would help in meeting this objective.
- The education system should be designed to give everyone access to high-quality education up to tertiary level (depending on each individual's capabilities and abilities). The system of early selection in the education system ('early tracking') should be dismantled. Support programmes for groups who are underrepresented in tertiary education should be strengthened.
- Disadvantaged groups, such as immigrants and low-skilled adults, should have the opportunity to acquire skills and go back into education, particularly in areas with labour shortages. The conditions should be designed in such a way that people in different life situations have access to education.
- A greater focus is needed on the efficiency and outcomes of the education system. Data that is as detailed as possible should be available for research and analytical purposes. The results of pilot projects should be analysed in a transparent manner, and measures that are effective should be implemented without delay across the board.

Addressing labour market bottlenecks by mobilising labour supply

Recommendation 10: The Federal Government should do more to develop and implement measures to give everyone the opportunity to participate in the labour market and to support them in doing so. Participation in the labour market up to older ages should be actively promoted.

- Working conditions should be made more flexible to give older people, people with caring responsibilities, etc. the opportunity to participate more in the labour market.
- Families should receive adequate support in caring for children, looking after relatives and other challenging situations. The opening times of childcare facilities for pre-school and school-age children should be compatible with parents working full-time and be flexible enough to accommodate different forms of employment.
- Financial disincentives to increasing working time should be eliminated (e.g. the *Geringfügigkeitsgrenze* [de minimis limit]). The tax system should not favour part-time work.
- A more equal division of paid and unpaid labour between the genders should be promoted. Easy-to-understand information should be made available on how the division of paid and unpaid labour affects people's own careers and pensions and those of their partner. Wage transparency at company level should be promoted.
- Health and a healthy lifestyle should be promoted. This should also encompass workplace health provision and promotion. The population, the public health system and employers should be actively involved in

increasing health provision and preventative healthcare. Health literacy should be promoted from an early age to reduce the social inequalities in health outcomes.

- Employment agency services, including Arbeitsmarktservice (Public Employment Service Austria), should increase their focus on career changes and new skills acquisition, particularly in areas with large labour shortages. Support should be provided to help members of the active population belonging to all age groups to acquire skills, taking into account efficiency.
- Successful models and innovative approaches for long working lives should be recognised as social innovations and promoted. Measures which keep older people in work and increase the labour market participation of this group are particularly important.
- The statutory retirement age should reflect changes in life expectancy so that financing the pension system is sustainable and replacement rates (which help prevent poverty in old age) are adequate. In conjunction with this, the second and third pillars of pension provision should be expanded.
- Access to the labour market and integration measures should be improved for asylum seekers. Asylum procedures should be shortened.

Integrating skilled workers into the Austrian labour market with flexible, efficient immigration policy

Recommendation 11: The Federal Government should (a) make it easier for skilled workers from abroad to enter the Austrian labour market, (b) provide specific support for integrating immigrants into the labour market, and (c) increase Austria's attractiveness with active immigration policies.

- Austria should actively seek to recruit qualified people from abroad. In doing so, it should also consider foreign students in Austria.
- The conditions for obtaining work and residence permits should be transparent and simple with predictable outcomes for applicants. Decision-making procedures should be slimmed down to make them faster. The design of the system should be flexible so that it can respond to changes in the labour market.
- Recognition of foreign qualifications should be made easier and the rapid bridging of skills gaps encouraged.
- Austria should take part in innovative migration programmes such as talent partnerships and skills mobility partnerships and actively drive them forward.

Mobilising entrepreneurial potential across all socio-economic groups

Recommendation 12: Bearing in mind demographic change, the Federal Government should take specific action to help segments of the population that could contribute to increasing the number of business start-ups.

- In the start-ups sphere, specific support needs to be provided for women. The childcare options that are made available should take into consideration the needs of women setting up businesses.
- More training in starting up your own business should be directed at young people.
- The Government should make sure that it provides a favourable environment for people born in other countries to start up businesses.