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2022 Country Report - Austria

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Recommendation for a COUNCIL RECOMMENDATION

on the 2022 National Reform Programme of Austria and delivering a Council opinion on the 2022 Stability Programme of Austria

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European Commission

Austria

2022 Country Report

ECONOMIC AND EMPLOYMENT SNAPSHOT

Austria's economic rebound is losing momentum

Austria's economy has recovered from its deepest recession since the Second World War, but the expansion is losing momentum. In 2020, Austria's real GDP declined by 6.7%, partly due to the decline in tourism caused by the COVID-19 pandemic ([1]). Supported by decisive government measures to protect businesses and stimulate consumer spending, the economy recovered to pre-pandemic level in the third quarter of 2021, with real GDP growing by 4.5% over the year. The economy is now expected to expand by 3.9% in 2022 and by 1.9% in 2023 (for details, see Annex 18). Growth is supported by pent-up consumer spending, increasing private investment, and the recovery of the services and tourism sectors. A further boost is expected from the eco-social tax reform and the Austrian recovery and resilience plan (RRP). Russia's invasion of Ukraine risks affecting Austrian exports and increases the uncertainty of the economic outlook.

Inflation increased strongly and will remain high. Energy prices increased considerably already in late 2021 and are expected to remain high. After reaching 2.8% in 2021, headline inflation is expected to peak at 6.0% in 2022 before gradually easing to 3.0% in 2023. It is expected that these developments will over-proportionally affect poorer population groups, if not addressed by compensatory measures. Austria still depends on fossil fuels for about two thirds of its energy use, which makes the country vulnerable to increases in the international prices of energy. Gas accounts for more than 22% of Austria's energy demand, mostly for heating and industry.

Increasing productivity and resource productivity remains a challenge. Austria's economy is driven by its small and medium-sized enterprises (SMEs), but the country misses out on productivity gains from a stronger role of high-tech sectors. Austria's very high investment in research and development (R&D) does not consistently lead to more innovation, especially measured by new products or business creation. Restrictive regulation remains an obstacle to productivity growth, especially in the services sector. Furthermore, Austria's resource productivity is only at the EU average and its circular material usage lags far behind EU leaders (see Annex 1).

During the COVID-19 crisis, employment was effectively protected; however, skills and the supply of labour are now lagging behind rising demand. Austria's short-time work scheme is estimated to have protected around 200 000 jobs in 2020, or roughly 4% of the labour force. The scheme also largely protected households from the income shock of the pandemic ([2]). Despite the depth of the recession, unemployment increased only slightly in 2020 and already returned to its pre-pandemic level in 2021. As the economic expansion continues, labour shortages are becoming more apparent and are expected to constrain the economy. There are shortages of workers in both high-skilled professions and in the lower-skilled services and tourism industries.

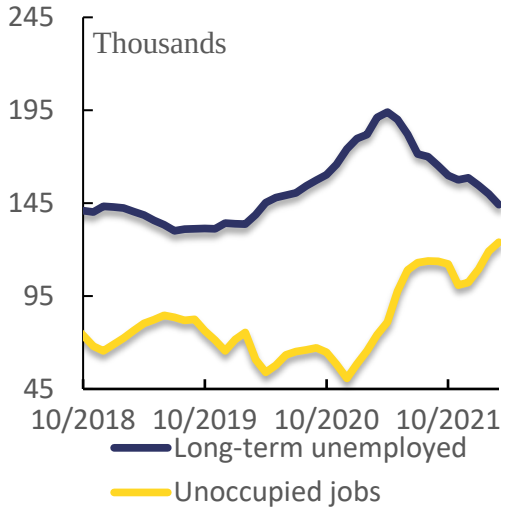
Labour shortages and skills gaps could be bridged by removing barriers for disadvantaged groups. It would be possible

([1]) In 2019 tourism and related services were responsible for about 19% of total employment (JRC121262).

([2]) European Commission Quarterly Report on the Euro Area (QREA), Vol. 20, No. 4 (2021).

to more actively include many more people in the Austrian labour market, especially women, low-qualified workers, older people, and people with a migrant background. This could partly be achieved by providing more quality childcare and targeted training in certain skills, such as languages. These measures would also further strengthen Austria's performance on the European Pillar of Social Rights. Aside from tapping into the potential of its domestic workers, migration of skilled workers to Austria from outside the EU could also help fill gaps in the labour market, especially for jobs requiring advanced IT skills.

Graph 1.1: **Labour market indicators**



Source: Austrian Labour Market Service Labour Force Survey (AMSLFS)

House prices have risen considerably recently and are showing signs of overvaluation. Real house prices grew by 10.4% in 2021, considerably faster than in previous years. According to the Austrian National Bank, these developments cannot be explained by fundamentals alone, indicating an overvaluation of about 20%. Other indicators such as the historical price-to-rent or price-to-income ratios point to an overvaluation of a similar magnitude. Risks have increased to a level that requires policy action and therefore triggered macro prudential recommendations by the European Systemic Risk Board (ESRB) in February 2022. At the same time, construction activity is high, despite steep increases in the cost of construction; hence, house prices are expected to grow at a lower rate in 2022. Private debt levels are still below the critical threshold, indicating contained financial risks.

Austria scores well on the United Nations Sustainable Development Goals (SDGs), Concerning *environmental sustainability*, Austria lags behind its own ambitious target of reaching climate neutrality by 2040 (SDG 13, climate action). In particular, emissions in the transport sector remain high. Austria's performance on *productivity* could be improved by better innovation outcomes. On *fairness*, Austria performs generally well on SDG 1 (no poverty) due to its functioning safety net and support policies, and on SDG 3 (good health and well-being). Austria also performs very well on SDG indicators related to *macroeconomic and institutional stability,* and has improved its investment share of GDP (See Annex 1).

Austria is affected by Russia's invasion of Ukraine

Gas imports strongly depend on Russia as a supplier. In 2021, at least 80% of Austria's total gas imports came from Russia ([3]). It will be difficult to replace them by imports from alternative sources in the short term. The sanctions on Russia directly affect Austria's oil and gas industry. Large increases in the price of gas and uncertainties about future supply also harm the chemicals, fertiliser, pharmaceuticals, and plastics industries.

Rare commodities and intermediate goods from Russia are important for certain sectors. Austrian manufacturing faces risks of disruption in certain supply chains relying on imports of raw materials and intermediate products from Russia.

The financial sector has a considerable exposure to Russia. Several financial

([3]) Source: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) estimates. https://www.bmk.gv.at/service/presse/gewessler/20220426_ausstieg-russisches-gas.html

institutions have significant activities in Russia, notably locally funded subsidiaries. Direct cross-border lending, however, plays a minor role.

The overall economic impact in Austria will be noticeable, but growth is expected to continue. Disrupted supply chains and increased prices will likely slow down economic growth. However, the ongoing recovery of the services and tourism industries, decisive policy support and pent-up consumer spending ensure that Austria's economy continues to grow.

Russia's invasion of Ukraine is expected to fuel inflation. Further price increases (in particular in energy) and the scarcity of commodities from the affected regions are likely to push up production costs. This will be reflected in consumer price inflation, which was already high before the invasion. Consequently, this will slow down the recovery in Austrian manufacturing and dent purchasing power of Austrians.

Austria registered a pronounced inflow of people fleeing war in Ukraine. Exceptional support under the Cohesion's Action for Refugees in Europe (CARE) initiative and through additional pre-financing under the Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) programme could help to finance expenditures related to the reception and integration.

Sound public finances helped withstand the pandemic

Public finances were in good health before the pandemic. The COVID-19 crisis hit at a time when public finances were well prepared. In 2018, the budget balance turned positive for the first time since 1974 thanks to accelerated economic activity and a sound fiscal policy. Before the outbreak of the pandemic, the debt-to-GDP ratio fell to a 10-year low, at 70.6% GDP in 2019, reflecting positive budgetary developments before the crisis and steadily decreasing interest payments.

The pandemic and the associated recession put an abrupt end to the positive developments in public finances. In 2020, the public deficit increased to an all-time high of 8.3% of GDP (see Graph 1.2). This was the result of the unprecedented fiscal response taken to counteract both the socio-economic consequences of the pandemic, and the contraction in GDP. However, thanks to the strong economic recovery following the relaxation of containment measures in 2021, positive labour market developments and the sharp rise in income-based tax revenues, the deficit stood at 5.9% of GDP in 2021. This is largely the result of strong growth in tax revenues and social contributions, which exceed pre-crisis levels. However, public expenditures continued to rise somewhat stronger than in normal times due to continued temporary crisis management measures, which prevented the deficit from decreasing further. The deficit is set to improve to 3.1% in 2022 and to 1.5% in 2023 on the back of the economic expansion. The debt-to-GDP ratio is expected to decrease from its peak of 83.3% in 2020 to 77.5% in 2023, thanks to robust nominal growth and moderate budgetary deficits.

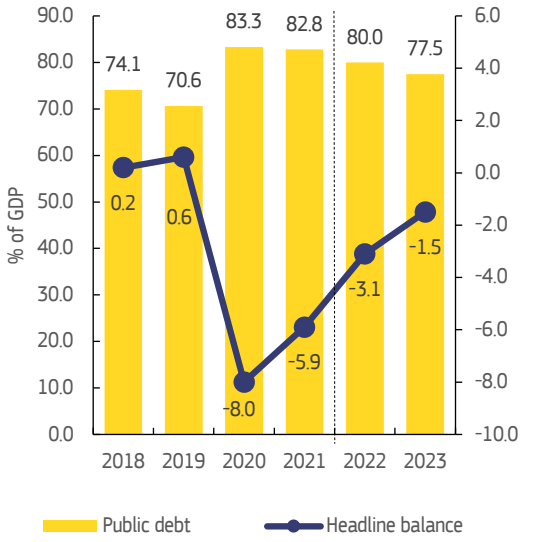
Large-scale support has successfully stabilised the economy. Austria provided far-reaching support to households, businesses and public services in 2020 and 2021 ([4]). The *COVID-19-Krisenbewältigungsfonds* set up right after the outbreak of the pandemic was at the centre of the emergency support. It financed various income-support measures, and substantial grants to companies. Taken together with large-scale short-time work schemes, the support measures provided a strong safety net to companies over the past 2 years ([5]). The

([4]) Apart from crisis-support measures financed by the COVID-19 crisis management fund and the economic stimulus package that have a direct impact on the government deficit, companies were protected from liquidity shortages through tax deferrals, reduced advance payments and guarantees.

([5]) Compared to 2019, corporate insolvencies declined by around 40% in 2020 to the lowest level in over 40

economic stimulus package adopted in June 2020 brought further support measures, but was also geared towards kick-starting the economic recovery in line with the green and digital transition.

Graph 1.2: **Budget balance and components**



Source: European Commission (Autumn forecast 2021) Exemplary figures to be updated and reviewed after the SF2022 spring forecast 2022.

The economic stimulus package and Austria's RRP ([6]) will help the country make progress on the green and digital transition. Further efforts will be needed to achieve the set climate and energy targets. In this context, the tax system and tax mix will play an important role as tax incentives can have significant steering effects on economic activity and resource use. On the one hand, taxes help internalise the cost of pollution, lead consumers to rely more on renewable energy sources and sustainable mobility and encourage investors to seek innovation in climate-friendly technology. On the other hand, the tax system has a major impact on the perception of fairness among the population. Ensuring a just transition will be key to securing broad support for reforms among the population. The recently adopted eco-social tax reform is a valuable step in this direction.

years, according to data by the credit protection association KSV1870.

([6]) The Austrian RRP is a plan for EUR 4.5 billion in investment, a significant part of which will be supporting the green and digital transition. It is currently supported by EUR 3.46 billion in funds from the Recovery and Resilience Facility (RRF), the EU's instrument for recovery from the COVID-19 pandemic. The RRP also contains major reforms.

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

Supporting the green and digital transition

The Austrian recovery and resilience plan (RRP) includes a comprehensive package of reforms and investments. It covers investments of EUR 4.5 billion, of which EUR 3.46 billion, or 0.87% of 2019 GDP, will be financed by the Recovery and Resilience Facility (RRF) ([7]). The measures covering green and digital aspects account respectively for 59% and 53% of the financial allocation. In addition, the components 'knowledge-based recovery' and 'just recovery' focus on policy actions to answer key challenges that Austria faces in the areas of research and innovation, skills and education, health and long-term care, childcare, and culture ([8]). The 59 measures in the RRP are expected to stimulate Austria's economic development, which will be further enhanced by spill-over effects from the implementation of other Member States' plans (see Annex 2 for further technical details on the RRP).

Green investments and reforms are progressing and help to support the green transition. The introduction of a CO2 price in sectors that are currently not covered by the EU Emissions Trading System (ETS) is a key project of Austria's RRP and one element of the eco-social tax reform (see Box 3.1). As set out in the RRP, a nation-wide flat-rate public transport ticket was launched in 2021. The RRP also contains significant investment in (i) e-mobility (starting in 2022), (ii) charging infrastructure (which should be in place by 2026) and (iii) rail infrastructure (which has already started in 2020). The country started to implement an exit from fossil-fuelled heating systems in 2021. This is in line with Austria's long-term renovation strategy. The transition towards a circular economy will also benefit from measures in the RRP, such as the 2021 amendment of the Waste Management Act, which introduced new investment in sorting and recycling facilities and a mandatory deposit system for non-reusable beverage packaging. The planned (2022) soil protection strategy aims to tackle the intensive land use and land take. In combination with RRP investments through the Biodiversity Fund starting in 2023, the soil protection strategy will also better protect Austria's abundant natural assets ([9]).

The realisation of projects focussing on the digital transition and innovation help catch up with innovation leaders. In 2021, Austria started to distribute digital devices to pupils in lower secondary school. The RRP also aims to improve the provision of broadband, so that it can be accessed by 46% of households by 2023. In addition, the digitalisation of small and medium-sized firms and the introduction of e-government platforms are supported by measures set to be implemented in 2022 and 2023. Austria has already started to implement a package to improve the business environment for start-ups. These measures will help make Austria a more attractive place for innovation and particularly start-ups. The RRP will see Austria participate in two important projects of common European interest (IPCEIs), on

([7]) Following the Council Implementing Decision of 13 July 2021

([8]) The Recovery and Resilience Scoreboard gives a full overview, including the contributions to all six pillars and further indicators. https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html?country=Austria

([9]) Austrian vulnerabilities in the area of ecosystems, biodiversity and sustainable agriculture are confirmed by the vulnerabilities synthetic index for this sub-area of the green resilience dashboard (Resilience Dashboards | European Commission (europa.eu)).

microelectronics and hydrogen, which were launched in 2021. In 2021, it also started to implement projects in quantum science. In 2022, the country will start setting-up an institute for precision medicine, as well as projects in the area of digital research infrastructure.

Implementation is ongoing for a number of measures aiming at reinforcing economic and social resilience. The RRP includes several measures to strengthen the country's pension system, which will, however, have modest effects in light of the overall challenge. Since 2022, the early starter bonus (*Frühstarterbonus)* ([10]) is in force. In addition, a legal basis introducing automatic pension splitting ([11]) will enter into force by the end of 2022. Several measures address the identified labour and skills gap, as well as challenges in healthcare, thereby contributing to implementing the European Pillar of Social Rights. In 2022, a one-stop shop for the long-term unemployed will become operational. The RRP also includes investments to increase the number of places in high-quality early childhood care facilities, with the aim of increasing the percentage of children in formal childcare by the end of 2023. Austria also aims to complete the funding of 50 primary healthcare projects by the end of 2023. In the area of long-term care, Austria began implementing a pilot project on 'community nurses' in 2021.

Box 2.1: **Key deliverables under the recovery and resilience plan in the next 12 months**

- Entry into force of the eco-social tax reform introducing a CO_2 price.
- Exchanging oil and gas heating systems.
- Introducing automatic pension splitting for parents to compensate for time spent on childcare by one spouse.
- Adoption of the Austrian soil protection strategy in order to reduce land use in the coming years.
- Supporting the preservation and restoration of biodiversity through the Biodiversity Fund.
- Putting in place framework conditions for increasing collection rates for plastic beverage packaging.
- Facilitating the early stages of start-ups with the start-up package.
- Digitalisation investments in at least 3 000 companies.
- Provision of broadband access to 46% of households.

([10]) The early starter bonus helps acknowledge people who start their career at younger age than common. It replaces the early retirement pension without deduction.

([11]) Pension splitting describes the division of pension credits between parents to compensate for time spent on childcare by one spouse.

FURTHER PRIORITIES AHEAD

Beyond the challenges addressed by the RRP, as outlined above, Austria faces additional challenges not sufficiently covered in the plan. These concern mainly fiscal sustainability, labour shortages, productivity growth and Austria's ambitious energy security. Addressing these challenges will help the country make further progress towards achieving relevant SDG indicators, notably SDG 9 ('industry, innovation and infrastructure'), SDG 12 ('responsible consumption and production') and SDG 13 ('climate action') (see Annex 1).

Ensuring the sustainability of public finances as the population ages

Austria's public finances weathered the COVID-19 crisis relatively well, but they now face sustainability challenges. Key fiscal indicators are expected to improve already in 2022 and fiscal concerns appear to be contained in the coming years. However, Austria now faces demographic trends linked to the upcoming retirement of the baby-boom generation and increasing life expectancy. These demographic trends will put pressure on the sustainability of public expenditure for pensions, healthcare and long-term care, making further reforms indispensable ([12]). For instance, the number of elderly Austrians (aged 65+) will increase by more than 60% in the next 50 years ([13]). The ratio of elderly people to the working-age population is expected to increase from two pensioners for every person in working age to roughly three pensioners per person in working age over that time.

Long-term care will come under particular financial pressure. The cost of long-term care is expected to soar by up to 30% in the next 8 years ([14]). In addition to demographic developments, the need for more intensive care due to old-age-related illnesses is also expected to play a role in these increased costs. A comprehensive reform of the long-term care system was announced already before the pandemic, but is still pending. In early 2021, a dedicated task force on long-term care has presented the main conclusions from a public consultation in the form of 17 objectives and 63 measures that could be taken to improve adequacy and fiscal sustainability ([15]). On fiscal sustainability, one priority of the reform will be setting up a coordinated overall control of the system with a clear assignment of responsibilities across levels of government and transparency about the origin and use of funds ([16]). Another issue is that nursing care in Austria is expected to be increasingly affected by staff shortages. 76 000 new persons are needed in the acute inpatient and in the long-term care sector by 2030 ([17]). This number can only partially be reached with the current number of graduates. This underlines the need for forward-looking,

([12]) The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070) presents projections showing the economic and budgetary impact of an ageing population over the long-term.

([13]) Statistik Austria (2021): Bevölkerungsprognose 2021, base year 2020

([14]) Based on The 2021 Ageing Report

([15]) See the Report of the task for on long-term care, accessible via https://www.sozialministerium.at/dam/jcr:d7f5ca44-95d2-43f2-bb0c-304ed51d50d2/Bericht_TFPflege_fin_.pdf

([16]) Taskforce Pflege: Begleitung des Prozesses zur Erarbeitung von Zielsetzungen, Maßnahmen und Strukturen, p. 36.

([17]) BMGSK (2019): Pflegepersonal-Bedarfsprognose für Österreich

needs-based planning and more attractive job conditions. Two of the ways to improve working conditions for nurses is to focus on better training and better salaries in the sector. The need to increase salaries in nursing has gained particular prominence during the pandemic.

The healthcare and pension systems also face persistent structural challenges. The healthcare system proved resilient during the pandemic but preventive and primary healthcare need to be further strengthened as too many healthcare services are still provided by hospitals. Efficiency gains and cost savings can be expected from the ongoing reform of primary healthcare and the merger of social insurance agencies. The pension system provides overall adequate pensions. However, raising the statutory retirement age, or at least providing incentives to work longer, could also help strengthen fiscal sustainability.

Austria's fiscal federalism is complex and provides limited incentives for efficient public spending. Without relying on tax autonomy, budgets of the *Länder* (Austria is a federal republic divided into nine regional states known as *Länder*) are based on a complex system of tax sharing, transfers and cost bearing. In 2022, 40% of federal tax revenue is expected to be transferred to the different subnational governments, using a variety of allocation formulas ([18]). At the same time, *Länder* and municipalities have important expenditure-incurring tasks in the area of healthcare and social protection. This blurs the link between the tax burden and government expenditures. It also makes the system difficult for the administration to run and for the public to understand. Reforming this framework has been a priority of the government for some time but the uncertainty underlying tax revenues during the pandemic hampered efforts to work out a fully-fledged reform. The negotiations for the next Intergovernmental Fiscal Relations Act are expected to start in December 2022 and provide a new opportunity for reform. In addition, spending reviews can help boost the effectiveness and efficiency of public expenditures as they help scrutinise financial allocations against policy priorities.

([18]) Federal Ministry of Finances (2021): 'Zahlungsströme zwischen den Gebietskörperschaften'.

Box 3.1:

Austria's eco-social tax reform: a step in the right direction

With the eco-social tax reform, the government delivers on its promise of significant tax relief and implements a flagship project of the RRP. Plans for far-reaching relief were already considered in the past and follow the tradition to regularly compensate for the cold progression [1] around every five years (2016, 2010, 2005). The comprehensive reform reduces labour and corporate income taxes as well as social contributions. With the introduction of a CO_2 price on fossil fuels that are currently not covered by the European Emissions Trading System (ETS) and compensatory measures, the reform also includes an important measure of the Austrian RRP. The main reform measures are:

- **reduction of personal income tax;**
- **increase of tax credit 'Family bonus plus';**
- **a bonus on health insurance contributions for self-employed low- and middle-income earners (and farmers);**
- **introduction of a price path for CO_2 emissions in non-ETS sectors; ***
- **compensation of the CO_2 price for households and businesses; ***
- **reduction of corporate income tax.**

* Measure included in the RRP

These measures address some weaknesses of the tax system [2]. Undoubtedly, lowering tax rates in the second and third income tax bracket will effectively reduce the tax burden but this merely offsets the cold progression accumulated since the last reform in 2015. Moreover, due to the non-indexation of tax brackets, the relief is set to be temporary in light of recent surges in inflation. The increase of the Family bonus plus reduces the tax burden but its current design might create disincentives to work for second earners.

The reform is expected to further boost private consumption, investment and employment. The impact of the reform on GDP growth hinges on the extent to which the relief affects savings, which were already high due to missing consumption possibilities related to COVID-19 confinement measures. Real GDP is estimated to increase by 0.8% until 2026 and employment by about 27 000 people (+0.6%).

The reform has paved the way for CO2 pricing, but the impact will be limited in the beginning. The introduction of a CO2 price for sectors that are currently not covered by the EU ETS is an important step forward. The reform sets a national carbon price on fossil fuels, starting at EUR 30 per tonne of CO2 and reaching EUR 55 in 2025, inspired by the German example. The instrument will, therefore, become more effective over time, with the initial price having a more limited impact on the reduction of CO2 emissions, as indicated in recent studies. While the introduction of a CO2 price and related compensatory measures were originally conceived as budget-neutral, the overall impact of the eco-social tax reform is now assessed to be deficit increasing over the coming years.

[1] Cold progression, also referred to as tax bracket creep describes the additional tax revenue that arises when inflation pushes wages and salaries into higher tax brackets

[2] The assessments presented here are based on comprehensive analyses carried out by the WIFO Institute: 'CO2-Bepreisung in der Steuerreform 2022/2024', Research Briefs 13/2021, November 2021, Austrian Institute of Economic Research, Vienna 2021. 'Steuerreform 2022/2024: Makroeffekte', Monatsberichte 12/2021, December 2021, Austrian Institute of Economic Research, Vienna 2021. 'Steuerreform 2022/2024: Maßnahmen', Monatsberichte 11/2021, November 2021, Austrian Institute of Economic Research, Vienna 2021.

Structural challenges remain in the area of taxes. The new eco-social tax reform provides major tax relief to households and businesses and lays the foundation for pricing CO_2 emissions (see Box 3.1 above). However, relevant challenges remain [19]. In particular, comparatively high non-wage labour costs continue to hinder job creation and

[19] See European Commission Country Report Austria 2020, Country-specific recommendations 2020, WIFO studies, EDRC of the OECD.

participation in the labour market, especially for second earners ([20]). Moreover, the tax system is characterised by a number of tax expenditures (i.e., special provisions in the tax code that reduce taxes through exceptions), as well as underused potential of relatively growth friendly taxes, which can also improve the fairness of the tax system ([21]).

Tapping into Austria's labour market potential

The labour market is recovering, but there is scope to improve labour market participation further. The strong social protection system and extensive policy measures have limited the social impact of the COVID-19 pandemic. Austria performs well on most of the dimensions of the European Pillar of Social Rights, but some challenges remain, especially the underused labour market potential of women, low-qualified people, older workers, and those with a migrant background. This is particularly problematic given Austria's shortage of workers. This shortage spans across several sectors (such as manufacturing, tourism, health and long-term care) and skills (such as IT workers, doctors, engineers). Due to Austria's ageing population, the number of people of working age between 20 and 65 is expected to fall by almost 300 000 people by 2040. This means that the labour force will shrink by 5% below its current level. This will further aggravate existing skills shortages.

The labour market potential of women remains underused. While the female employment rate is well above the EU average, Austria ranks second highest in the EU for the part-time employment of women (49.9% of women in work are working part-time in 2021), leaving considerable potential to strengthen the participation of women in the labour market. A limited supply of affordable, high-quality childcare makes it difficult for parents, notably mothers, to participate more actively in the labour market. Only 21.1% of children under the age of 3 are in formal childcare, which is well below the EU's 33% Barcelona target and one of the lowest rates in the EU (see Annex 12 and 13). Although the Austrian RRP allocates around EUR 28 million to the expansion of childcare facilities, a recent study ([22]) puts the costs for a full nationwide expansion of childcare facilities at EUR 1.6 billion. Two steps could be taken that would improve this situation: (i) further extending the supply of high-quality childcare with longer opening hours; and (ii) tackling disincentives to increase working hours, such as the relatively low salary of women in part-time jobs. These two steps are key to both making the most of women's potential contribution to the labour market and helping divide childcare duties more equally between parents. These measures would also help close Austria's high gender pay gap (see Graph 3.1) and its relatively high gender pension gap.

There is scope to improve the labour market participation of low-skilled and older workers. Almost half of the long-term unemployed ([23]) in Austria have completed at most lower secondary school (*Pflichtschule*). This is especially problematic since educational outcomes, job opportunities and future income levels of children tend to be determined by those of their parents ([24]). While

([20]) In 2021, the tax wedge of a secondary earner (2 earner household without children, with the average wage) stood at 47.8% compared to an EU average of 39.7% See ECFIN database on taxes and benefits

([21]) Revenues from recurrent property taxes are particularly low in Austria, at 0.20% of GDP compared to an EU average of 1.2% in 2020. See also OECD, 2019 Economic Surveys: Austria, p. 73.; EC, 2018, European Semester: Country Report Austria, p. 20.

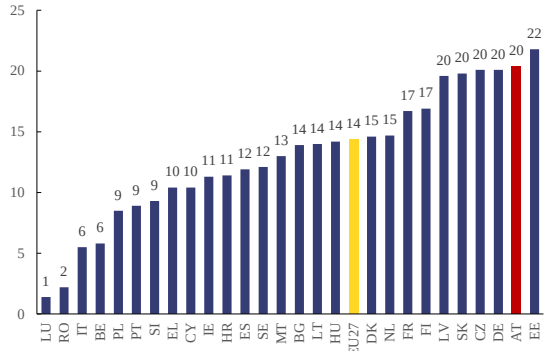
([22]) See Eco Austria, „Kosten des flächendeckenden Ausbaus der Kinderbetreuung in Österreich", Kurzanalyse, November 2021.

([23]) Based on the AT long-term unemployed registered with the national PES with two characteristics: long-term job less (*langzeitbeschäftigungslos*) and unemployed (which is collected differently than the statistics provided through the EU labour force survey).

([24]) 57% of the children of parents with a university degree also have a university degree, while only 7% of the children of parents that only completed compulsory school have a university degree (Statistik Austria, 2018).

the employment rate of older workers (aged 55-64) increased from 46.3% in 2015 to 55.2% in 2021, it is still well below the EU average of 60.5%. Raising the skill levels of workers of all ages is, therefore, essential to ensure fairness and better working lives, in line with the ambition of the EU headline targets on employment and skills by 2030.

Graph 3.1: **Unadjusted Gender Pay Gap (in %)**



Source: EUROSTAT

The labour market participation of people with a migrant background remains low due to language barriers and low qualifications. To break the link between intergenerational education outcomes, reforms should target different layers of the education system. Firstly, general measures are needed, such as greater availability of early childhood education, all-day schooling, strengthened teacher training, and increased funding. These general measures should be complemented with more targeted policies, such as offers of individual mentoring for schools with a high percentage of disadvantaged students. On the integration of recent migrants (i.e. non-EU born residents living in Austria for less than 5 years), special emphasis should be placed on making German language courses more accessible. Another important measure is to provide appropriate retraining and improve the attractiveness of the apprenticeship system. The latter two points will be particularly important given the increasing numbers of people fleeing Ukraine and the need to integrate them into the Austrian labour market.

Hiring highly skilled talent from abroad remains challenging. The increasing skills shortage (*Fachkräftemangel*) is holding back growth of companies that rely on highly qualified professionals, such as IT experts. In 2021, there were 24 000 fewer IT experts than were needed by Austrian companies, according to a recent study ([25]). One potential short-term remedy would be to increase opportunities for highly skilled talent from abroad for positions that cannot be filled by Austrian or EU workers. Currently, the procedures in place entail a significant administrative burden on companies, making it hard to attract the necessary talent, ultimately hindering productivity growth. Austria's 'fast-track' scheme for skilled labour from non-EU countries (*Rot-Weiß-Rot-Karte*) was recently reformed, but this has led to even fewer approvals of working permits. Further measures should be taken to ensure faster and simpler procedures in the future.

Closing the gap with innovation leaders

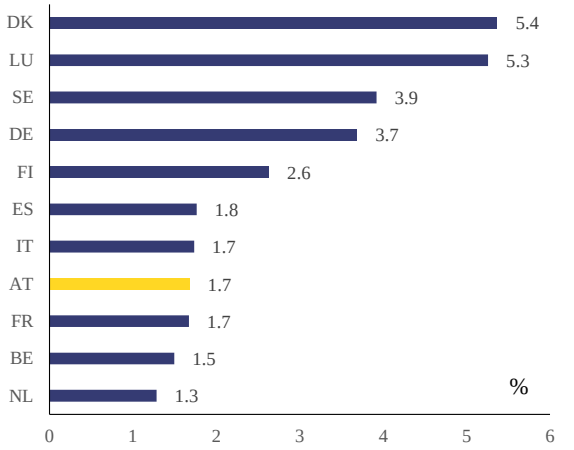
Productivity growth is far below the EU average and lagging behind the EU's innovation leaders. According to the European Innovation Scoreboard 2021, Austria is a 'strong innovator', but still lags behind the most innovative EU Member States (see Annex 9). As a result, Austria's competitiveness is declining in comparison to the EU's innovation leaders (see Graph 3.2.). According to the OECD ([26]), the steady but modest labour productivity gains of Austria's SME-driven economy are mostly due to improvements within specific sectors rather than shifts towards more productive high-tech sectors. These sector-specific improvements may be related to long-term, firm-specific improvements in the skills of workers, while the country's services sector is trailing behind. Restrictive regulation remains an obstacle in particular for the retail sector and for exercising certain professional services. The

([25]) See "IT-Qualifikationen für die österreichische Wirtschaft", IWI-Studie 02/2020, WKO.

([26]) See OECD Productivity Statistics 2020, GDP per hour worked, average annual growth rate for Austria (2012-2019).

traditionally important tourism sector shows little potential for major productivity gains.

Graph 3.2: **Productivity growth 2016-2021**



Source: Statistik Austria, European Commission

Austria has the third-highest research intensity in the EU, but this does not fully translate into actual innovation. Research expenditure has been growing steadily and Austria ranks high in the Innovation Scoreboard's 'intellectual assets' dimension and in the cooperation of its companies with public research. Overall R&D expenditure is high in Austria's traditionally strong industries and companies but remains low in the high-tech sector. These dynamics strengthen specialisation in established industries but mean that Austria falls short in developing new markets or encouraging more early-stage innovation, and business creation. More sources of funding, especially through grants for applied research and innovative start-ups, could help unlock innovation and ultimately benefit productivity.

Structural problems remain with scaling up start-ups. In 2021, Austria produced its very first 'unicorn' company (start-up valued at more than EUR 1 billion) ([27]). This is a very positive development, as successful upscaling of start-up companies tends to lead to network effects that benefit the broader economy. However, new business creation and employment in fast-growing innovative companies remain below the EU average. In addition, Austria was below the EU average for venture capital supply in 2021, and significant gaps remain between Austria and innovation leaders like Denmark and Sweden (see Annex 9). The insufficient supply of venture capital may be detrimental to Austria's start-up ambitions, since suppliers of venture capital often provide not only financing but also advice and support in business development. Austria has a significant share of foreign venture capital investment, out of total venture capital investment. This indicates that there are limited local funding options ([28]). To attract a broader range of possible investors, Austria could introduce policies to promote equity and venture capital investment in the country. Another issue faced by start-ups is the administrative bottlenecks that make it difficult to hire skilled labour from non-EU countries .Start-up associations say that this is a major problem for high-tech start-ups that traditionally rely on highly skilled workers from abroad ([29]).

Reducing dependence on Russian fossil fuels through renewables and infrastructure

The geopolitical developments triggered by Russia's invasion of Ukraine have exposed Austria's energy security to risks. Although Austria has already achieved a high share of renewables in electricity consumption (81% in 2020) and aims to reach 100% by 2030 (see Annex 5), and dependence on Russian oil is below EU-average, major challenges remain. Austria is highly dependent on gas imports from Russia (roughly 80% versus 44% EU average ([30]), and gas remains a major energy source for households and

([27]) Amaral-Garcia, S., Compano, R., Domnick, C., Fako, P., Gavigan J and Testa, G. (2022): High Growth Enterprises Demographics & Finance with a focus on venture capital: Factsheet - Austria, European Commission – Joint Research Centre, Sevilla, Spain, JRC128693

([28]) Amaral-Garcia et al., 2022.

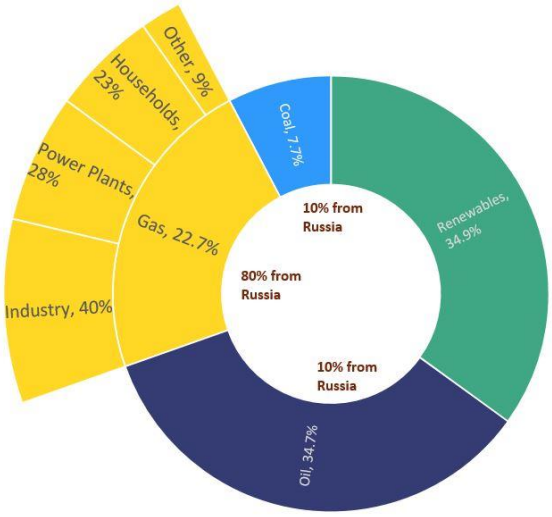
([29]) See Austrian Startups Policy Dashboard.

([30]) Eurostat (2020), Russian imports of gas share of total extra-EU27 imports of gas.

companies (see Graph 3.3). Gas accounts for more than 20% of Austria's energy demand, mostly for heating (23% of total gas consumption) and industrial use (40% of total gas consumption). Diversifying energy supplies remains a major challenge for Austria, and will require targeted actions. This includes ensuring sufficient capacity in interconnectors, for gas and electricity, with neighbouring countries, especially when it comes to additional flexibility and reverse flow capacity for gas, while ensuring that new investments into gas infrastructure are future-proof where possible, to avoid lock-in effects on the path to climate neutrality. This diversification could also be complemented by further investments in the production of renewable gases, including renewable hydrogen and sustainable bio-methane. These renewable gases would allow Austria to replace natural gas, in particular in sectors and regions that are most vulnerable to supply disruptions. Finally, additional sources of renewable energy, such as geo-thermal energy, remain underused and could be explored further.

Lengthy permitting procedures and underinvestment in the electricity grid are key challenges for reaching the renewable energy targets. In 2020, the share of renewables in Austria's gross final energy consumption was 36.5%. The 2021 reform of support for renewables, included in the RRP, has created the necessary framework for increasing the share of renewable energy in electricity consumption through adding 27 TWh of yearly electricity generation capacity from renewables by 2030 and thereby contributing to reaching the 100% target by 2030 (from currently 81 % in 2020). However, investment in renewable energy is hampered by complex spatial planning and permitting procedures (the permitting process typically takes 6.3 years for wind power projects). These lengthy procedures are partly due to staffing problems and a complex division of powers between the federal and regional governments. To accommodate the planned expansion of renewable power generation, Austria would need to significantly increase its investments in network infrastructure, such as storage, distribution and transmission networks. The estimated investment needs in this area amount to EUR 18 billion to make the network fit for 100% renewable electricity within a decade ([31]).

Graph 3.3: **Energy mix and dependence on Russia**



Source: Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)European Commission

Increasing the level of ambition for energy efficiency in the building and industry sectors will help reduce reliance on fossil fuels. Austria's 2020 long-term renovation strategy sets a clear list of milestones to achieve its planned 80% decarbonisation of the building stock between now and 2050. To this end, the Austrian RRP will foster the phasing out of fossil fuel boilers, replacing them with renewable heating technology or district heating. However, Austria's energy efficiency targets for 2030 are low in ambition (they aim to reduce primary energy consumption from 31.5 million tonnes of oil equivalent in 2020 to 30.8 million tonnes in 2030). Given the sluggish pace at which homes have been renovated since 2015, Austria could consider further accelerating its investment in: (i) the deep renovation of buildings; (ii) renewable heating; and (iii) better management of energy consumption (e.g. through smart meters). Further synergies can be achieved by efforts

([31]) Austrian Energy Agency (2020): Von der Coronakrise zur klimaneutralen Stromzukunft, Wirtschaftsimpulse durch Investitionen in die Elektrizitätswirtschaft (link)

to coordinate the measures and incentives in this area between the federal and regional levels. At the same time, energy efficiency and the decarbonisation of industrial processes, including through renewable gases, are key to helping reduce gas demand and protecting businesses from price volatility.

Austria is not on track to meet its ambitious target of climate neutrality by 2040. So far, reductions in greenhouse gas emissions are not on a trajectory compatible with Austria's binding target to reduce greenhouse gas emissions in sectors outside the EU Emissions Trading System by 36% by 2030 compared to 2005. Even when accounting for the additional measures ([32]) considered for 2021-2030, the country still risks falling short of this goal by 9 percentage points. Before 2020, emission reductions in the energy and industrial sectors were offset by increases in final energy consumption by buildings and transport, which have significant potential for emission reductions (see Annex 5). Currently, Austria serves as a major transit country for transalpine road freight. Reducing transport-related emissions will be particularly crucial for the transition to carbon neutrality. Although investment in sustainable mobility accounts for the largest contribution to the climate target in the RRP, developing further mobility solutions and alternatives to car use (e.g. local buses, car sharing, soft mobility) is warranted. This includes solutions aiming at connecting the 'last mile' to public transport networks, especially in remote and rural areas. Efforts to further decarbonise and electrify heavy-duty vehicles could be also stepped up to curb emissions.

([32]) The additional measures do not take into account potential emission reductions, stemming from the of introduction of a CO2 price for sectors that are currently not covered by the EU ETS (see box 3.1)

KEY FINDINGS

The Austrian RRP represents a wide-ranging and ambitious response to Austria's structural challenges through:

- the introduction of a price path for CO_2 emissions in non-ETS sectors and related compensation measures;
- investment in sustainable mobility, renewable energy, and the phase-out of oil and gas heating;
- investment in broadband that reaches half of Austrian households, digitalisation of companies, and the further digitalisation of public administration;
- investment in digital equipment for pupils, high-quality early childhood care, and measures to compensate for learning losses during the pandemic;
- investing in upskilling and reskilling measures and setting up a one-stop shop to support the long-term unemployed.

Beyond the reforms and investments in the RRP, Austria would benefit from:

- ensuring the fiscal sustainability and adequacy of its healthcare and long-term care system;
- reducing complexity in Austria's fiscal framework to make public spending more efficient;
- improving the tax mix with a view to efficiency and fairness;
- reducing restrictive regulation on retailers and certain professional services;
- boosting the labour market participation of women, notably by enhancing childcare facilities, as well as low-skilled, older workers and migrants;
- facilitating hiring processes for highly skilled talent from abroad to address immediate skills shortages in the labour market;
- increasing the level of basic skills for disadvantaged young people, particularly for those with a migrant background;
- reducing its dependence on energy imports by accelerating the deployment of renewable energy, in particular by further streamlining permitting procedures and investing in the required grid infrastructure, as well as storage and renewable gases;
- accelerating the phase out of fossil fuels for heating buildings and increasing energy efficiency measures in the industrial and building sectors by supporting investment in energy efficiency measures, and demand side management;
- reducing transport-related emissions, notably by developing mobility alternatives to cars.

ANNEXES

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ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

This Annex assesses Austria's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph above is based on the EU SDG indicator set developed to monitor progress on SDGs in an EU context ([33]).

Austria performs very well or is improving in most SDG indicators related to *environmental sustainability* (SDGs 2, 6, 9, 11, 12, 13). However, it still needs to catch up on some indicators (SDG 15). Austria has historically performed very well on the share of renewable energy in its gross final energy consumption. It was also able to further increase this share from 33.4% in 2015 to 36.5% in 2020, which is well above the European average (22.09% in 2020). Various measures in the RRP aim to further contribute to general greenhouse gas emission savings and are likely to positively impact Austria's environmental sustainability. These measures include the 'eco-social tax reform' and the investment in renewables, energy efficiency, zero-emission mobility and biodiversity.

Austria generally performs very well or is improving on SDG indicators that assess the *fairness* of society and the economy (SDGs 1, 2, 3, 4, 5, 8, 10) ([34]). On 'Quality education' (SDG 4), Austria increased participation in early childhood education and care (for 3-to-5-year-olds) to 89.9% in 2019 and has steadily increased its share of adults with a tertiary qualification from 38.6% in 2015 to 41.4% in 2020. However, there is still room for improvement in ensuring equal opportunities in education, in particular for disadvantaged young people, and also to foster gender equality and social inclusion (SDG 10). This has been acknowledged by several measures of the Austrian RRP targeted at: (i) access to education, training and upskilling; and (ii) assistance to socially disadvantaged women.

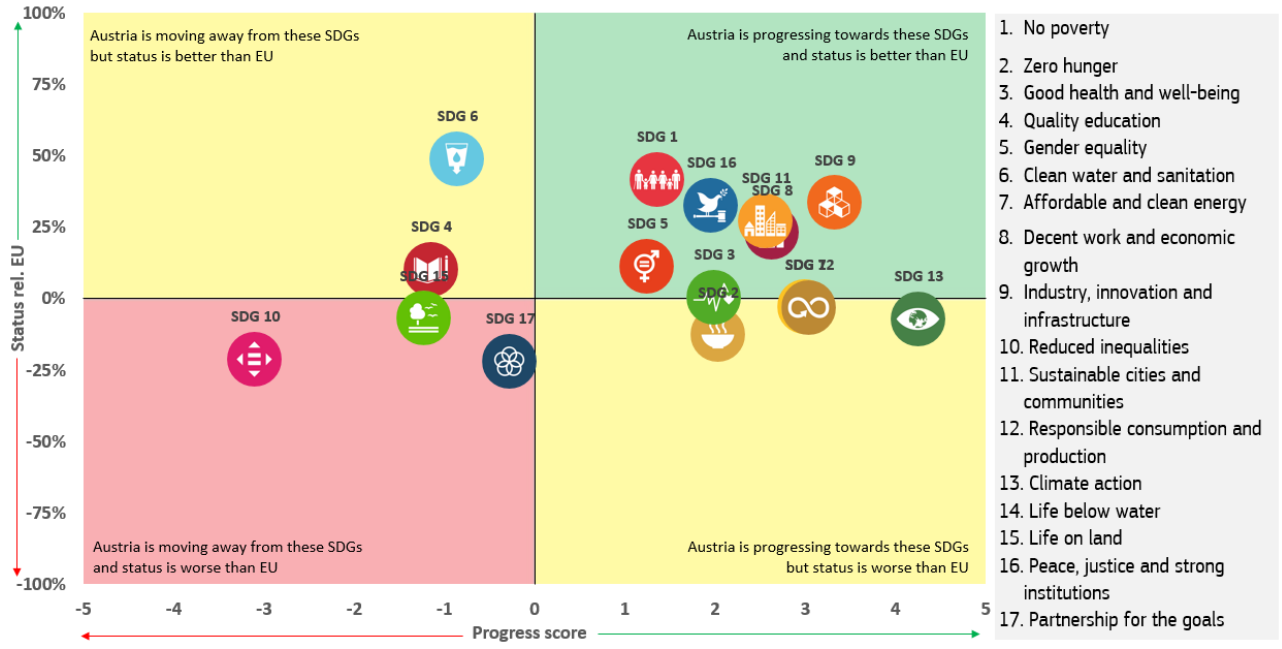
Austria performs well or very well on most SDG indicators related to *productivity* (SDGs 4, 8, 9). Compared to the EU average (54%), Austria performs relatively well in digital skills with 63% of adults having at least basic digital skills in 2021. Austria also performs well on 'Decent work and economic growth' (SDG 8) and 'Industry, innovation, and infrastructure' (SDG 9). With 3.2% of GDP allocated to R&D in 2020, Austria has one of the highest levels of R&D spending in the EU, even if this is below the national target of 3.76%. The share of R&D personnel in the active population rose from 1.65% in 2015 to 1.83% in 2020 (EU: 1.42% in 2020). Austria's RRP contains several measures to address bottlenecks in digitalisation and make significant investments in strategic research and innovation. This should ensure further progress on these SDGs.

Overall, Austria performs well on indicators related to *macroeconomic stability* (SDGs 8 and 16). Austria performs well on SDG 8 and notably increased its investment share of GDP from 22.7% in 2015 to 25.3% in 2020 (EU: 22.33% in 2020). In addition, Austria achieves high scores on indicators measuring 'Peace, justice, and strong institutions' (SDG 16), showing a stable and predictable environment for doing business. The RRP includes several targeted measures aimed at improving the sustainability of the pension system and the quality of public spending, and is thus expected to also contribute to some extent to Austria's long-term macroeconomic stability.

([33]) For detailed datasets on the various SDGs see the annual ESTAT report 'Sustainable development in the European Union', https://ec.europa.eu/eurostat/product?code=KS-09-22-019

([34]) See 'Annex 12 – Employment, skills and social policy challenges in light of the European Pillar of Social Rights' for further information.

Graph A1.1: **Progress towards the SDGs in Austria in the last five years**



For detailed datasets on the various SDGs see the annual ESTAT report 'Sustainable development in the European Union', https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-03-21-096; Extensive country specific data on the short-term progress of Member States can be found here: Key findings - Sustainable development indicators - Eurostat (europa.eu)

Source: Eurostat, latest update of 28 April 2022. Data mainly refer to 2015-2020 and 2016-2021.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU's efforts to support its recovery from the COVID-19 pandemic, fast forward the twin transitions and strengthen resilience against future shocks. Austria submitted its recovery and resilience plan (RRP) on 30 April 2021. The Commission's positive assessment on 21 June and the Council's approval on 13 July paved the way for disbursing EUR 3.46 billion in grants under the RRF in 2021-2026. The financing agreement was signed on 22 September 2021. The key elements of the Austrian RRP are set out in Table A2.1.

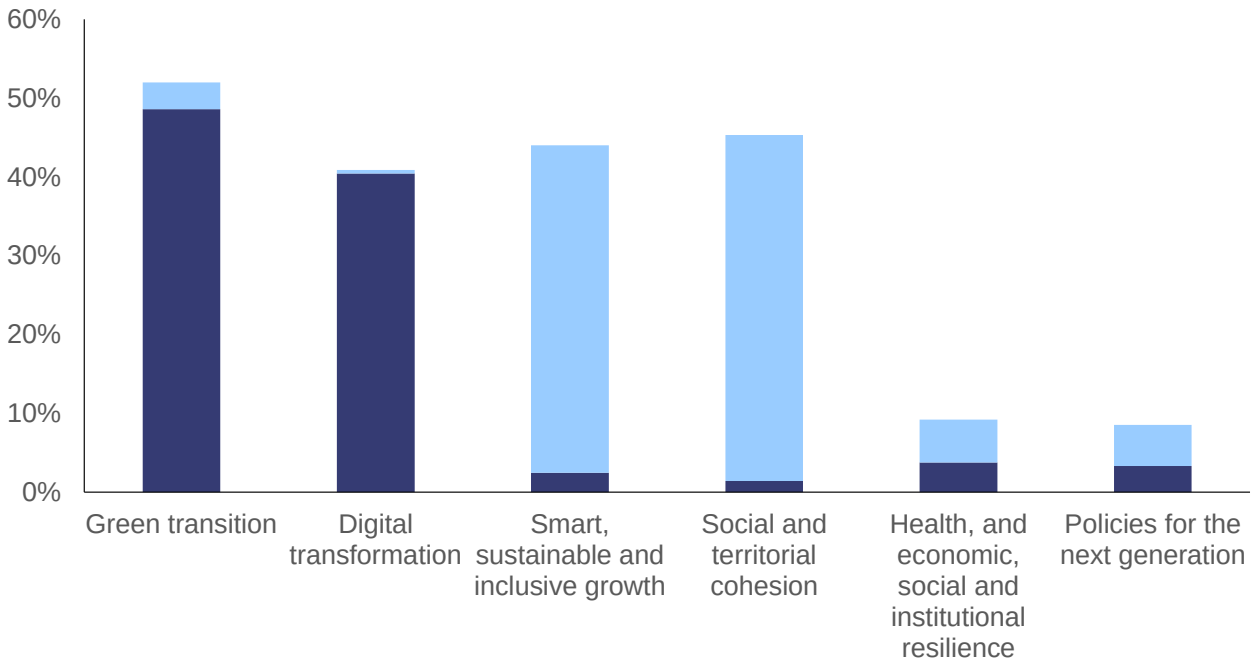
The progress made by Austria in the implementation of its plan is published in the Recovery and Resilience Scoreboard. The Scoreboard also gives a transparent overview on the progress of Austria's implementation of the RRF as a whole. The share of funds contributing to each of the RRF's six policy pillars is outlined in the graph below.

Table A2.1:**Key elements of the Austrian RRP**

Total allocation	EUR 3.46 billion in grants (0.87% of 2019 GDP)
Investments and Reforms	32 investments and 27 reforms
Total number of Milestones and Targets	171
Estimated macroeconomic impact (1)	Raise GDP by 0.4-0.7% by 2026 (0.5% in spillover effects)
Pre-financing disbursed	EUR 450 million (September 2021)
First instalment	Austria did not yet submit a first payment request

(1) See Pfeiffer P., Varga J. and in 't Veld J. (2021), 'Quantifying Spillovers of NGEU investment', European Economy Discussion Papers, No. 144 and Afman et al. (2021), 'An overview of the economics of the Recovery and Resilience Facility', Quarterly Report on the Euro Area (QREA), Vol. 20, No. 3 pp. 7-16.
Source: European Commission 2022

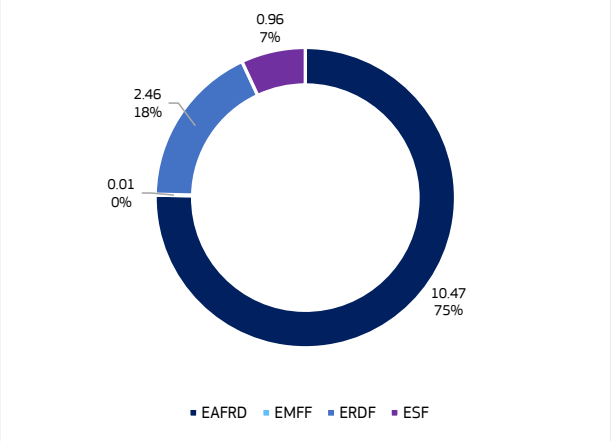
Graph A2.1: **Share of RRF funds contributing to each policy pillar**



(1) Each measure contributes towards two policy areas of the six pillars. Therefore the total contribution to all pillars displayed on this chart amounts to 200% of the estimated cost of the Austrian RRP. The bottom part represents the amount of the primary pillar, the top part the amount of the secondary pillar.
Source: RRF Scoreboard https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

The EU's budget of more than EUR 1.2 trillion for 2021-2027 is the investment lever to help implement EU priorities. Underpinned by an additional amount of about EUR 800 billion through NextGenerationEU and its largest instrument, the Recovery and Resilience Facility, it represents significant firepower to support the recovery and sustainable growth.

Graph A3.1: **2014-2020 European Structural and Investment Funds (ESIF) 2014-2020 total budget by fund**



(1) EUR billion in current prices, % of total
Source: European Commission, Cohesion Open Data
Note: The data for the EAFRD refer to the period 2014-2022 and for REACT-EU to the period 2021-22.

In 2021-2027, EU cohesion policy funds ([35]) will support long-term development objectives in Austria by investing EUR 1.29 billion ([36]). This includes EUR 135.8 million from the Just Transition Fund destined to support the regions most affected by the green transition and alleviate its socio-economic impact on them. The 2019-2020 country-specific recommendations and investment guidance provided in the context of the European Semester informed the drafting of the partnership agreements and programmes for the 2021-2027 Cohesion funding period, ensuring synergies and complementarities with other EU funding. In addition, Austria will benefit from EUR 6.1 billion support for the 2023-27 period from the Common Agricultural Policy, which supports social, environmental, and economic sustainability and innovation in agriculture and rural areas, contributing to the European Green Deal, and ensuring long-term food security.

In 2014-2020, the European Structural and Investment Funds (ESIF) for Austria are set to have invested EUR 6.67 billion ([37]) from the EU budget. The total investment including national financing will have amounted to EUR 13.91 billion (Graph A3.1), representing around 0.53% of GDP for 2014-2020 and 16.76% of public investment ([38]). By 31 December 2021, 83% of the total was allocated to specific projects and 61% was reported as spent, leaving EUR 5.48 billion to be spent by the end of 2023 ([39]). Among the 11 ESIF objectives, the most relevant ones for cohesion policy funding in Austria are research and innovation, the competitiveness of SMEs, and low-carbon economy. By the end of 2020, cohesion policy investments had supported 856 enterprises in Austria and had led to the direct creation of 2 622 full-time equivalent jobs. Originally, Austria had planned to save 218 000 tonnes of CO2 equivalent, 98 836 have already been saved. In total 302 623 tonnes of CO2 equivalent will be saved, once the already selected and ongoing projects are finalised. ESIF policy investments also supported more than 214 000 participants in funded projects from which more than 22 000 gained a qualification and more than 9 900 were in employment after a social inclusion project.

([35]) European Regional Development Fund (ERDF), Interreg, European Social Fund+ (ESF+), Cohesion Fund (CF), Just Transition Fund (JTF) .

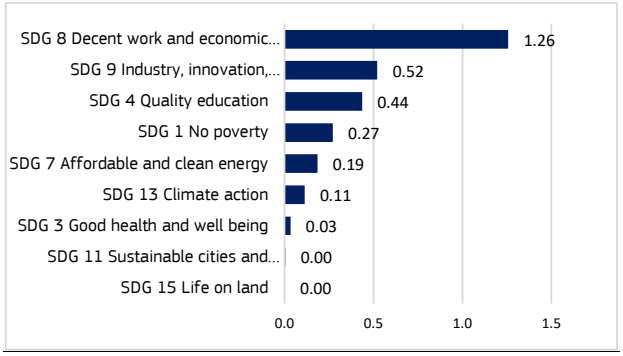
([36]) Current prices, source: Cohesion Open Data

([37]) ESIF includes cohesion policy Funds (ERDF, ESF+, CF, Interreg), the European Agricultural Fund for Rural Development (EAFRD) and European Maritime and Fisheries Fund (EMFF). According to the 'N+3 rule', the funds committed for the years 2014-2020 must be spent by 2023 at the latest (by 2025 for EAFDR). Data source: Cohesion Open data, cut-off date 31.12.2021 for ERDF, ESF+, CF, Interreg; cut-off date 31.12.2020 for EAFRD and EMFF..

([38]) Public investment is gross fixed capital formation plus capital transfers from the general government.

([39]) Including REACT-EU. ESIF data on https://cohesiondata.ec.europa.eu/countries/AT

Graph A3.2: **Cohesion policy contribution to the SDGs (EUR billion)**



Source: European Commission

Cohesion policy funds are already substantially contributing to the SDGs objectives. In Austria, cohesion policy funds are supporting 8 of the 17 SDGs with up to 97% of cohesion policy spending in the country contributing to the attainment of the goals.

The REACT-EU instrument (Recovery Assistance for Cohesion and the Territories of Europe) under NextGenerationEU provided EUR 278 million of additional funding to 2014-2020 cohesion policy allocations for Austria. The funding aims to ensure a balanced recovery, boost convergence and provide vital support to regions following the coronavirus outbreak. REACT-EU helped Austria to (i) strengthen research and innovation capacities: (ii) support enterprise investments, in particular innovative, green and digital projects: and (iii) increase energy efficiency and the use of renewable energy sources, essentially in companies. Austria will also use REACT-EU funds to counteract the negative long term social and labour market consequences of the pandemic, such as drop-outs in education or lower employment prospects (i) by (re)integrating unemployed into the labour market and (ii) training and upskilling of people, particularly in the health, care and ICT sector. The funds will improve the training prospects of young people and adults particularly affected by the Covid-19 pandemic (i) by developing and implementing care, assistance and support measures in the school sector and in the transition from school to job, (ii) preventing early drop-outs from education and vocational training as well as unemployment, and (iii) extending continuing vocational training opportunities.

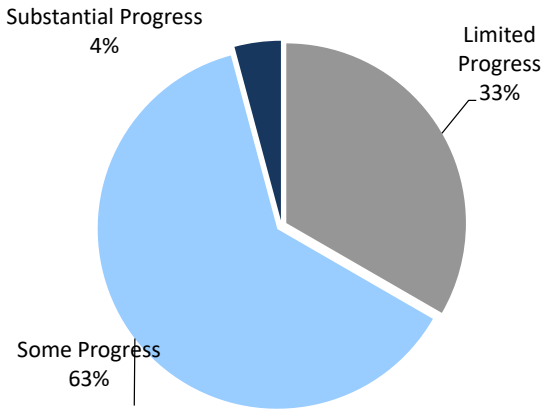
The Commission provides tailor-made expertise via the Technical Support Instrument (TSI). The instrument will support Austria in designing and implementing growth-enhancing reforms, including for implementing its RRP. Since 2018, Austria has received assistance through 29 technical support projects under the TSI and the structural reform support programme. TSI-projects can have a variety of aims. For example, TSI projects delivered in Austria in 2021 aimed at (i) strengthening evidence-based policy making, and (ii) digitalising Austria's public administration at regional level. The Commission also helped Austria in implementing specific reforms and investments in the RRP, for instance for setting up primary healthcare units. In 2022, new projects will start, including projects to further strengthen the national financial literacy strategy by setting up a centralised and comprehensive online platform.

Austria also benefits from other EU programmes, such as the Connecting Europe Facility, which allocated EU funding of EUR 962.3 million to specific projects on strategic transport networks, and Horizon 2020, which allocated EU funding of EUR 1.92 billion.

ANNEX 4: PROGRESS IN THE IMPLEMENTATION OF COUNTRY-SPECIFIC RECOMMENDATIONS

The Commission assessed the 2019-2021 country-specific recommendations (CSRs) ([40]) addressed to Austria in the context of the European Semester. The assessment takes into account the policy action taken by Austria to date ([41]), as well as the commitments in the recovery and resilience plan (RRP) ([42]). At this early stage of the RRP implementation, overall 67% of the CSRs focusing on structural issues in 2019 and 2020 have recorded at least "some progress", while 33% recorded "limited" (see Graph A4.1). Considerable additional progress in addressing structural CSRs is expected in the years to come with the further implementation of the RRP.

Graph A4.1: **Austria's progress on the 2019-2020 CSRs (2022 European Semester cycle)**



Source: European Commission

([40]) 2021 CSRs: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H0729%2820%29&qid=1627675454457
2020 CSRs: https://data.consilium.europa.eu/doc/document/ST-8439-2020-INIT/en/pdf
2019 CSRs: https://data.consilium.europa.eu/doc/document/ST-10173-2019-INIT/en/pdf

([41]) Incl. policy actions reported in the National Reform Programme, as well as in the RRF reporting (bi-annual reporting on the progress with implementation of milestones and targets and resulting from the payment request assessment).

([42]) Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRPs. The CSR assessment presented here takes into account the degree of implementation of the measures included in the RRP and of those done outside of the RRP at the time of assessment. Measures foreseen in the annex of the adopted Council Implementing Decision on the approval of the assessment of the RRP which are not yet adopted nor implemented but considered as credibly announced, in line with the CSR assessment methodology, warrant "limited progress". Once implemented, these measures can lead to "some/substantial progress" or "full implementation", depending on their relevance.

Table A4.1:**Summary table on 2019,2020 and 2021 CSRs**

Austria	Assessment in May 2022*	RRP coverage of CSRs until 2026
2019 CSR1	**Limited Progress**	
Ensure the sustainability of the health,	Some Progress	Relevant RRP measures planned as of 2021, 2022 and 2023.
long-term care,	Limited Progress	Relevant RRP measures planned as of 2021.
and pension systems, including by adjusting the statutory retirement age in view of expected gains in life expectancy.	Limited Progress	Relevant RRP measures planned as of 2020 and 2022.
Simplify and rationalise fiscal relations and responsibilities across layers of government and align financing and spending responsibilities.	Limited Progress	Relevant RRP measures planned as of 2022.
2019 CSR 2	**Limited Progress**	
Shift taxes away from labour to sources less detrimental to inclusive and sustainable growth.	Some Progress	Relevant RRP measures planned as of 2021.
Support full-time employment among women, including by improving childcare services,	Limited Progress	Relevant RRP measures planned as of 2023.
and boost labour market outcomes for the low skilled in continued cooperation with the social partners.	Limited Progress	Relevant RRP measures planned as of 2020.
Raise the levels of basic skills for disadvantaged groups, including people with a migrant background.	Limited Progress	Relevant RRP measures planned as of 2021 and 2025.
2019 CSR 3	**Some Progress**	
Focus investment-related economic policy on research and development, innovation,	Some Progress	Relevant RRP measures planned as of 2021, 2022 and 2024.
digitalisation,	Some Progress	Relevant RRP measures planned as of 2021 and 2022.
and sustainability, taking into account regional disparities.	Some Progress	Relevant RRP measures planned as of 2020, 2021, 2022, 2023 and 2024.
Support productivity growth by stimulating digitalisation of businesses and company growth	Some Progress	Relevant RRP measures planned as of 2021 and 2022.
and by reducing regulatory barriers in the service sector.	Limited Progress	Relevant RRP measures planned as of 2021.
2020 CSR1	**Some Progress**	
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable
Improve the resilience of the health system by strengthening public health and primary care.	Some Progress	Relevant RRP measures planned as of 2021, 2022 and 2023.

(Continued on the next page)

Table (continued)

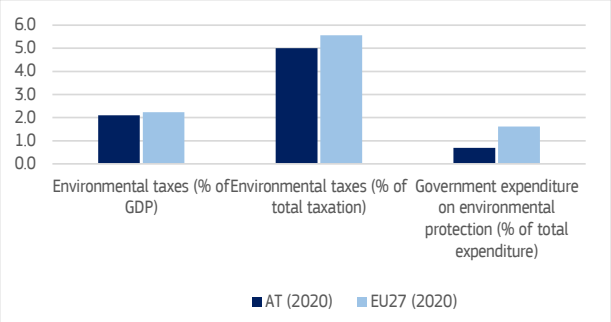
2020 CSR2	**Limited Progress**	
Ensure equal opportunities in education	Limited Progress	Relevant RRP measures planned as of 2021 and 2025.
and increased digital learning.	Some Progress	Relevant RRP measures planned as of 2020 and 2021.
2020 CSR 3	**Some Progress**	
Ensure an effective implementation of liquidity and support measures, in particular for small and medium-sized enterprises,	Substantial Progress	Relevant RRP measures planned as of 2022.
and reduce administrative and regulatory burden.	Some Progress	Relevant RRP measures planned as of 2021.
Front-load mature public investment projects	Some Progress	Relevant RRP measures planned as of 2022.
and promote private investment to foster the economic recovery.	Some Progress	Relevant RRP measures planned as of 2021.
Focus investment on the green and digital transition, in particular on basic and applied research, as well as innovation,	Some Progress	Relevant RRP measures planned as of 2021,2022 and 2024.
sustainable transport,	Some Progress	Relevant RRP measures planned as of 2020, 2021 and 2022.
clean and efficient production and use of energy.	Some Progress	Relevant RRP measures planned as of 2021 and 2022.
2020 CSR 4	**Some Progress**	
Make the tax mix more efficient and more supportive to inclusive and sustainable growth.	Some Progress	Relevant RRP measures planned as of 2021.
2021 CSR1	**Some Progress**	
In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment. Keep the growth of nationally financed current expenditure under control.	Full Implementation	Not applicable
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Some Progress	Not applicable
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Some Progress	Not applicable
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Limited Progress	Not applicable

* See footnote 42.

Source: European Commission

The European Green Deal intends to transform the EU into a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases (GHG) in 2050 and where economic growth is decoupled from resource use. This annex offers a snapshot of the most significant and economically relevant developments in Austria in the respective building blocks of the European Green Deal. It is complemented by Annex 6 on the employment and social impact of the green transition and Annex 7 for circular economy aspects of the Green Deal.

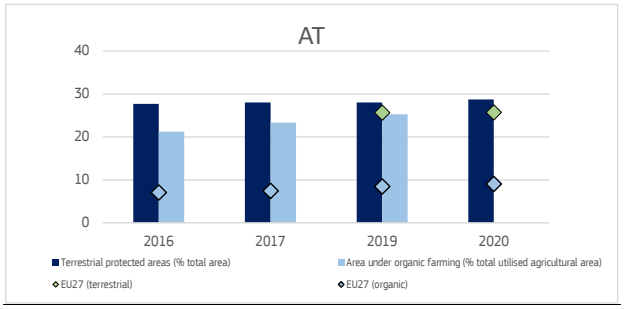
Graph A5.1: **Fiscal aspects of the green transition: Taxation and government expenditure on environmental protection**



Source: Eurostat

A significant gap remains for Austria to reach its European and national targets for reducing greenhouse gas emissions. Austria has committed in its government programme to reaching climate neutrality by 2040. By 2020, the country's total greenhouse gas emissions were only slightly below 1990 levels, even though the sum of the sectors not covered by the EU Emissions Trading System (ETS) ([43]) had reached the EU 2020 target. Emissions in the transport sector have increased roughly by 50% between 1990 and 2020. Austria is putting in place additional climate mitigation and climate adaptation measures. However, these do not appear to be sufficient to reach the agreed 2030 target for sectors not covered by the ETS, let alone the more ambitious targets proposed in line with the ambitions under the European Green Deal. Under current land management practices, Austria is projected to see decreasing net removals of carbon from land management by 2030. The integrated national energy and climate plan (NECP) sets out an approach for mitigating GHG emissions and adapting to a changing climate. However, the NECP still intends to achieve significantly fewer reductions than are set out in Austria's current 2030 target under EU law. Austria allocates nearly 60% of the current financial allocation under its RRP to climate objectives and Austria's RRP also outlines crucial reforms and investments to further enhance the green transition. These reforms and investments will help to reduce GHG emissions and move towards Austria's emissions reduction gap by the 2030 target.

Graph A5.2: **Biodiversity: Terrestrial protected areas and organic farming**



Notes: For terrestrial protected areas, data for 2018 and data for the EU average (2016, 2017) is lacking.
Source: EEA (terrestrial protected areas) and Eurostat (organic farming). Data on organic farming not available for 2020.

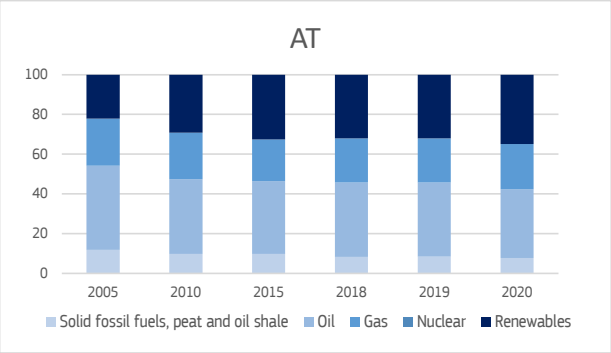
Austria's fiscal indicators suggest that there is space for more focus on the environment. Austria collects less revenue from environmental taxes (covering energy, the environment, resources and pollution) than the EU average, both as a percentage of GDP and as a percentage of total taxation ([44]). Moreover, the Austrian government spends a much smaller share of its expenditure on environmental protection than the EU average. Planned reforms to Austria's tax system target (i) the pricing of GHG emissions, (ii) incentives for climate friendly technologies and (iii) preferential tax rates for low-emission or zero- emission products. Meanwhile, the climate risk to public finances due to uninsured assets is considered low/moderate.

([43]) Buildings, road and domestic maritime transport, agriculture, waste and small industries.

([44]) For more information on taxation see Annex 17

Austria is leading in renewable energy. 81% of its electricity mix is composed of renewables, mainly from hydropower. Nonetheless, Austria still requires significant investment to reach its objective of 100% renewable electricity consumption by 2030. The share of renewables (including biofuels) in Austria's energy mix is 34.9%, followed by fossil fuels such as oil (34.7%), natural gas (22.7%) and solid fossil fuels like coal (7.7%). Austria has no nuclear power as this is barred by law and the country has been coal-free in electricity production since 2020. To ensure the effective deployment of renewables, including those investments already foreseen in the RRP, Austria could tackle administrative and procedural bottlenecks that cause lengthy permitting procedures.

Graph A5.3: **Energy:**
Share in energy mix (solids, oil, gas, nuclear, renewables

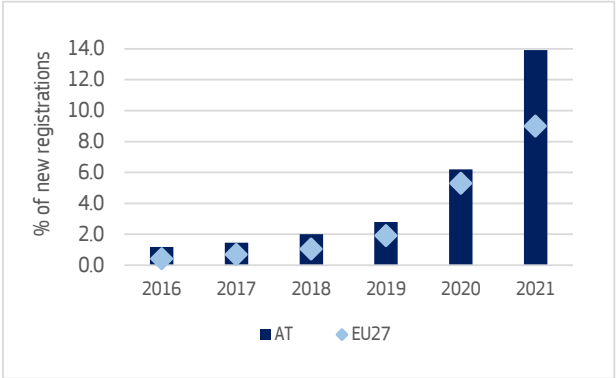


Notes: The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste.
Source: Eurostat.

On biodiversity and ecosystem health, Austria presents a mixed picture. With 25% of its utilised agricultural area under organic farming, it is the EU's frontrunner in this area. However, many protected habitats and species remain in an unfavourable conservation status, with further recent declines despite evident improvements in the level of conservation and restoration efforts over the recent decades. In addition, there have been significant declines in the share of biodiversity-rich agricultural areas. Whereas populations of birds mostly appear to be faring better than Habitats Directive species, some species decreased or went extinct recently.

On pollution, air quality in Austria is generally good with exceptions. No exceedances above the EU's air quality standards were registered for nitrogen dioxide or fine particulate matter in 2020. Austria will likely not meet its commitments for ammonia for 2020-2029 and for ammonia and nitrogen oxides for 2030 onwards. On the pollution of ground water with nitrates, the situation continues to slowly but steadily improve.

Graph A5.4: **Mobility:**
Share of zero emission vehicles (% of new registrations)



Notes: Zero emission vehicles (passenger cars) include battery and fuel cell electric vehicles (BEV, FCEV).
Source: European Alternative Fuels Observatory.

Emissions in the transport sector have been increasing in recent years. After 1990, emissions in road transport significantly increased, peaking in 2005. After a gradual reduction up until 2012, road transport saw again a systematic increase in emissions prior to 2020 (when it witnessed a steep decline due to the COVID 19 pandemic). The country has been working to shift these transport volumes to rail by offering incentives. Austria performs above EU average in electrifying road transport and in the share of electrified railway kilometres. The market development for zero-emission road vehicles is also growing rapidly. The investment and reform measures included in the RRP will help to further decarbonise the transport sector. Nevertheless, more efforts are needed to significantly reduce GHG emissions.

Table A5.1:**Indicators underpinning progress on the European Green Deal from a macroeconomic perspective**

						Target	Distance		'Fit for 55' Target	'Fit for 55' Distance	
			2005	2019	2020	2030	WEM	WAM	2030	WEM	WAM
Progress to policy targets	Non-ETS GHG emission reduction target [1]	MTCO2 eq; %; pp [2]	56.3	-12%	-18%	-36%	-19	-9	-48%	-31	-21

			2005	2016	2017	2018	2019	2020	National contribution to 2030 EU target
Progress to policy targets	Share of energy from renewable sources in gross final consumption of energy [1]	%	24%	33%	33%	34%	34%	37%	46-50%
	Energy efficiency: primary energy consumption [1]	Mtoe	32.7	32.0	32.8	31.8	32.3	29.7	28,7-30,8
	Energy efficiency: final energy consumption [1]	Mtoe	27.9	28.1	28.5	27.8	28.3	26.1	24,0-25,6

			AUSTRIA						EU		
			2015	2016	2017	2018	2019	2020	2018	2019	2020
Fiscal and financial indicators	Environmental taxes (% of GDP)	% of GDP	2.4	2.3	2.4	2.3	2.3	2.1	2.4	2.4	2.2
	Environmental taxes (% of total taxation)	% of taxation [3]	5.5	5.6	5.7	5.4	5.4	5.0	6.0	5.9	5.6
	Government expenditure on environmental protection	% of total exp.	0.79	0.75	0.73	0.76	0.81	0.69	1.66	1.70	1.61
	Investment in environmental protection	% of GDP [4]	0.20	0.21	0.22	0.25	-	-	0.42	0.38	0.41
	Fossil fuel subsidies	EUR2020bn	0.33	0.34	0.31	0.31	0.30	-	56.87	55.70	-
	Climate protection gap [5]	score 1-4	2 out of 4 (slight increase from historical level of 1,5). This is a low/medium risk category (4 being a high risk).								
Climate	Net GHG emissions	1990 = 100	100	101	106	102	104	94	79	76	69
	GHG emissions intensity of the economy	kg/EUR'10	0.23	0.23	0.23	0.22	0.22	0.21	0.32	0.31	0.30
	Energy intensity of the economy	kgoe/EUR'10	0.11	0.11	0.11	0.10	0.10	0.10	0.12	0.11	0.11
Energy	Final energy consumption (FEC)	2015=100	100.0	102.1	103.7	101.2	103.0	94.8	103.5	102.9	94.6
	FEC in residential building sector	2015=100	100.0	104.2	104.9	98.5	100.7	100.8	101.9	101.3	101.3
	FEC in services building sector	2015=100	100.0	98.2	106.4	104.1	106.8	103.7	102.4	100.1	94.4
Pollution	Smog-precursor emission intensity (to GDP) [4]	tonne/EUR'10 [6]	0.49	0.46	0.46	0.44	0.46	-	0.99	0.93	-
	Years of life lost caused due to air pollution by PM2.5	per 100.000 inh.	702	598	635	738	606	-	863	762	-
	Years of life lost due to air pollution by NO2	per 100.000 inh.	142	120	120	95	65	-	120	99	-
	Nitrate in ground water	mg NO3/litre	23.6	22.8	22.5	21.9	21.8	-	21.7	20.7	-
Biodiversity	Terrestrial protected areas	% of total	-	27.7	28.1	-	28.1	28.8	-	25.7	25.7
	Marine protected areas	% of total	-	-	-	-	-	-	-	10.7	-
	Organic farming	% of total utilised agricultural area	20.3	21.3	23.4	24.1	25.3	-	8.0	8.5	9.1

			2000-2006	2006-2012	2012-2018	00-06	06-12	12-18
Biodiversity	Net land take	per 10,000 km2	9.1	6.3	8.0	13.0	11.0	5.0

			2015	2016	2017	2018	2019	2020	2018	2019	2020
Mobility	GHG emissions intensity of transport (to GVA) [7]	kg/EUR'10	0.40	0.39	0.45	0.45	0.58	0.37	0.89	0.87	0.83
	Share of zero emission vehicles [8]	% in new registrations	0.5	1.2	1.5	2.0	2.8	6.4	1.0	1.9	5.4
	Number of plug-in electric vehicles per charging point		8	9	7	9	12	9	8	8	12
	Share of electrified railways	%	71.2	71.9	71.8	71.9	72.1	-	55.6	56.0	-
	Congestion (average number of hours spent in road congestion per year by a representative commuting driver)		27.1	27.2	27.2	27.2	27.1	-	28.9	28.8	-

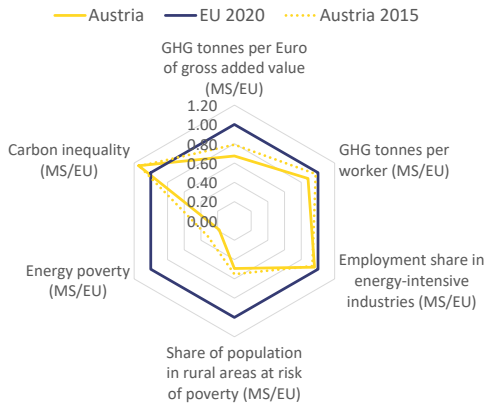
			Year	AT	EU
Digital	Share of smart meters in total metering points [9] - electricity	% of total	2018	11.8	35.8
	Share of smart meters in total metering points [9] - gas	% of total	2018	0.0	13.1
	ICT used for environmental sustainability [10]	%	2021	69.6	65.9

(1) The 2030 non-ETS GHG target is based on the Effort Sharing Regulation. The FF55 targets are based on the COM proposal to increase EU's climate ambition by 2030. Renewables and energy efficiency targets and national contributions under the Governance Regulation (Regulation (EU) 2018/1999). (2) Distance to target is the gap between Member States' 2030 target under the Effort Sharing Regulation and projected emissions, with existing measures (WEM) and with additional measures (WAM) respectively, as a percentage of 2005 base year emissions. (3) Percentage of total revenues from taxes and social contributions (excluding imputed social contributions). Revenues from the ETS are included in environmental tax revenues (in 2017 they amounted to 1.5% of total environmental tax revenues at the EU level). (4) Covers expenditure on gross fixed capital formation to be used for the production of environmental protection services (i.e. abatement and prevention of pollution) covering all sectors, i.e. government, industry and specialised providers. (5) The climate protection gap indicator is part of the European adaptation strategy (February 2021), and is defined as the share of non-insured economic losses caused by climate-related disasters. (6) Sulphur oxides (SO2 equivalent), ammonia, particulates < 10µm, nitrogen oxides in total economy (divided by GDP). (7) Transportation and storage (NACE Section H). (8) Zero emission vehicles include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (9) European Commission Report (2019) 'Benchmarking smart metering deployment in the EU-28'. (10) European Commission (2021). Each year the digital economy and society index is recalculated for all countries for previous years to reflect any possible change in the choice of indicators and corrections to the underlying data. Country scores and rankings may thus differ compared with previous publications.

Source: Eurostat, JRC, European Commission, EEA, EAFO

The green transition not only encompasses improvements to environmental sustainability, but also includes a significant social dimension. While measures in this regard include the opportunity for sustainable growth and job creation, it must also be ensured that no one is left behind and all groups of society benefit from the transition. Austria's green transition benefits from (i) already having a strong green economy compared to the EU average; (ii) positive trends and (iii) promising recent policy measures. At the same time, the country's energy-intensive sectors are sizeable and lower-income groups are likely to face challenges in the green transition.

Graph A6.1: **Fair green transition challenges**



Source: World Inequality Database

Austria's RRP outlines crucial reforms and investments for a fair green transition. The country has already launched an 'eco-social tax reform' that is set to combat climate change in a socially fair way. A 'climate ticket' for public transport in the form of a flat-rate season ticket that is valid across the Austrian regions is expected to help reduce travel costs and incentivise the use of public transport. Moreover, the Renewable Heating Law will create the framework conditions for replacing outdated fossil fuelled heating systems with renewable energy or district heating, including through a common platform, in cooperation with the Länder and civil society organisations. The Renewable Heating Law will also coordinate accompanying measures to fight energy poverty, including through funding and consultancy services for low-income households. Austria's allocation under the Just Transition Fund (EUR 135.8 million; current prices) will also help mitigate the social impact of the transition in the most affected regions. In addition, the European Social Fund Plus (ESF+) is expected to support the green transition (e.g. the circular economy) through individual projects, and will support the development of digital skills. Austria's national energy and climate plan (NECP) of 18 December 2019 proposes an ad hoc definition of energy poverty, reporting on the number of energy poor households identified. It analyses the interplay between energy poverty, skills and income distribution. The NECP also develops an approach for addressing energy poverty, including a number of support measures. However, the NECP does not set a specific target for reducing energy poverty ([45]).

The carbon footprint of Austria's economy has slightly decreased in recent years and although key energy-intensive sectors remain sizeable, the green economy is relatively large and provides potential for job creation. The intensity of greenhouse gas (GHG) emissions in the Austrian economy (relative to gross value added) decreased slightly between 2015 and 2020 and stands 30% below the EU average, with the average carbon footprint per worker at 11.99 tons of GHG emissions (13.61 in the EU) (see Graph A6.1). No declining sectors (i.e. sectors that will have to be phased out) in the context of the green transition have been identified ([46]). However, 'transforming industries' (such as Austria's energy-intensive industry), including the production of metals, chemicals and paper ([47]), provide jobs for 3% of the total employed workforce. Thus, upskilling- and reskilling will be important for workers in these industries (see Annex 12). The environmental goods and services sector already provides jobs to a comparatively large share of the employed population (4% versus 2.1% in the EU) ([48]). Austria also has considerable wind and solar energy potential, while energy efficiency improvements

([45]) SWD(2020) 919 final: Assessment of the final national energy and climate plan of Austria

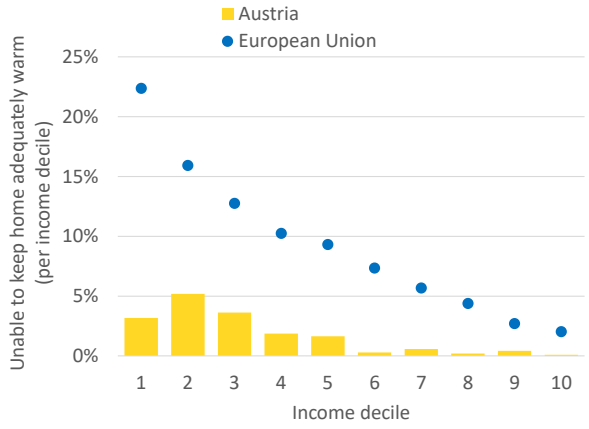
([46]) SWD(2021) 275 final: on the territorial just transition plans

([47]) 2020 European Semester: Overview of Investment Guidance on the Just Transition Fund 2021-2027 per Member State (Annex D)

([48]) There is currently no common EU-wide definition of green jobs. The environmental goods and services sector (EGSS) accounts only report on an economic sector that generates environmental products, i.e. goods and services produced for environmental protection or resource management.

offer further opportunities for creating green jobs ([49]).

Graph A6.2: **Energy poverty by income decile**



HH050: Ability to keep home adequately warm; HY020: Total disposable household income
Source: Eurostat

On the social dimension of the green transition, ensuring access to essential transport and energy services appears to be less of an overall challenge in Austria compared to other Member States. A relatively low but stable share of the population in rural areas lives at risk of poverty (9.2% versus 18.7% in the EU) ([50]). The share of the population unable to keep their homes adequately warm decreased from 2.6% in 2015 to 1.5% in 2020, which is below the EU average (8.2%). Lower-income groups are particularly affected by energy poverty (see Graph A6.2). Consumption patterns vary across the population: the average carbon footprint of the top 10% of emitters in the population is about 6 times higher than that of the bottom 50% of the population (the EU average is 5.3 times higher).

Tax systems are key to ensuring a fair transition towards climate neutrality ([51]). Austria's total revenues from environmental taxes decreased slightly from 2.38% of GDP in 2015 to 2.28% in 2019, and declined further to 2.1% in 2020 (2.24% in the EU). The labour tax wedge for low-income earners ([52]) decreased from 40.5% to 38.6% from 2015 to 2019 (with a further decrease of 1.4 ppt by 2021), compared to 31.9% in the EU in 2021 (see Annex 17). As part of the eco-social tax reform Austria adopted a regional climate bonus in October 2021 in the form of a yearly benefit (up to EUR 200 per person, depending on their place of residence) ([53]). Furthermore, the Austrian Parliament adopted a 'clean heating offensive' in 2021 with some funding earmarked for low-income households. The clean heating offensive seeks to promote (i) the shift away from oil and gas; (ii) the exchange of oil and gas boilers and (iii) thermal regeneration.

([49]) https://publications.jrc.ec.europa.eu/repository/handle/JRC126047

([50]) Based on COM (2021) 568 final (Annex I) as a proxy for potential transport challenges in the context of the green transition (e.g. due to vulnerability to fuel prices).

([51]) COM(2021) 801 final: Council Recommendation on ensuring a fair transition towards climate neutrality

([52]) Tax wedge for a single earner at 50% of the national average wage (Tax and benefits database, European Commission/OECD).

([53]) Bundesgesetzblatt I Nr. 11/2022: Klimabonusgesetz.

ANNEX 7: RESOURCE EFFICIENCY AND PRODUCTIVITY

The efficient use of resources is key to ensuring competitiveness and open strategic autonomy, while minimising the environmental impact. The green transition presents a major opportunity for European industry by creating markets for clean technologies and products. It will have an impact across the entire value chains in sectors such as energy and transport, construction and renovation, food and electronics, helping create sustainable, local and well-paid jobs across Europe.

Austria has made some progress in circular secondary-material usage over the past decade. Austria managed to reduce its gap to the EU average, but it is still far behind the EU's top performers. The Austrian RRP includes investments and reforms supporting recycling, reuse, repair and better waste management. A new take-back system in the retail sector will be combined with a new legal framework for single-use plastic and metal beverage packaging. The modernisation investment in plastic waste sorting facilities will be underpinned by a reform of the law on waste management.

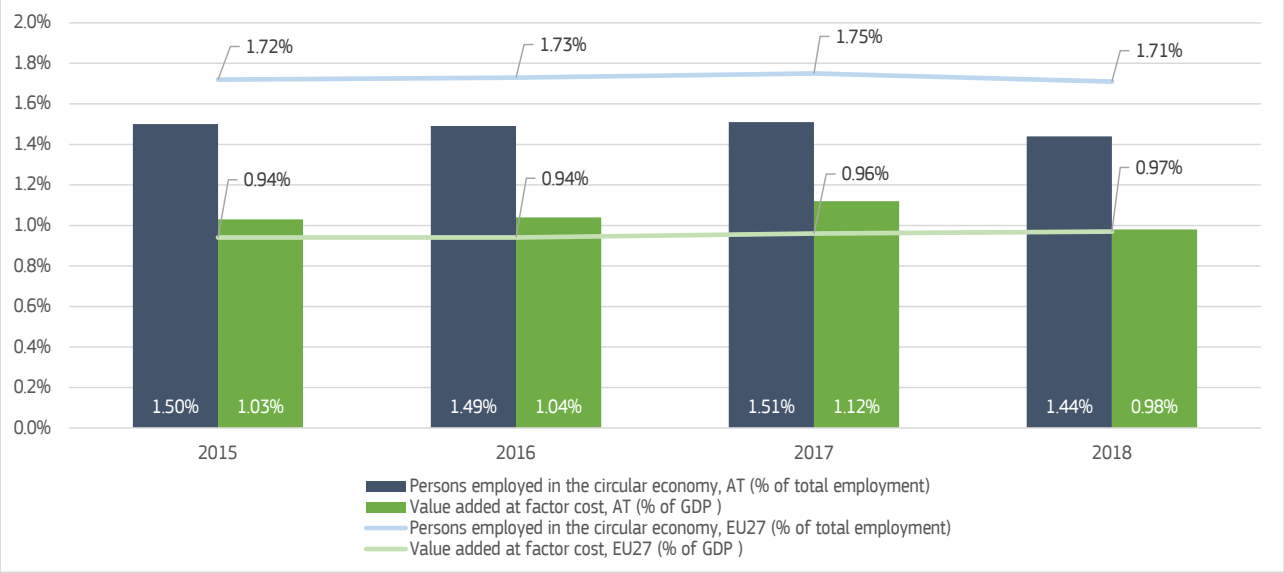
Austria's resource productivity is in line with the EU average. Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help to minimise negative impacts on the environment and reduce dependence on volatile raw material markets. Resource productivity in Austria has remained more or less stable at around the EU average in recent years.

Austria's economic growth is not yet decoupled from the generation of waste. Austria's municipal waste recycling rate is around 58%, well above the EU average of around 48%, and above the 2020 and 2025 EU targets of 50% and 55% respectively. This comparatively high score illustrates the advanced level of waste management in Austria. However, Austria produced the eighth highest amount in kg of municipal waste ([54]) per person in the EU in 2020. Moreover, the amount of municipal waste produced per person has moderately increased in recent years.

Further measures can help Austria maintain its leading position in environmental technology. This includes sustainable product design, resource efficient production processes, digital solutions, industrial symbiosis, remanufacturing in key value chains, and alternatives to unsustainable extraction of raw materials, and new circular business models. There is also scope to shift reusable and recyclable waste away from incineration, including through economic instruments, to ensure that the post-2020 recycling targets, in particular on plastics, are met.

([54]) Municipal waste consists of waste collected by or on behalf of municipal authorities, or directly by the private sector (business or private non-profit institutions) not on behalf of municipalities.

Graph A7.1: **Economic importance and expansion of the circular economy: Employment and value added in the Circular Economy sectors**



Source:

Table A7.1:**Selected resource efficiency indicators**

Key indicators - Austria

SUB-POLICY AREA	2015	2016	2017	2018	2019	2020	EU27	Latest year EU 27
Circularity								
Resource Productivity (Purchasing power standard (PPS) per kilogram)	1.9	1.9	2.0	2.0	2.1	1.9	2.2	2020
Material Intensity (kg/EUR)	0.5	0.5	0.5	0.5	0.5	0.5	0.4	2020
Circular Material Use Rate (%)	10.7	11.2	11.4	11.1	11.5	12.0	12.8	2020
Material footprint (Tones/capita)	24.4	25.4	25.1	24.5	24.4	-	14.6	2019
Waste								
Waste generation (kg/capita, total waste)	-	7,008	-	7,428	-	-	5,234	2018
Landfilling (% of total waste treated)	-	45.9	-	45.6	-	-	38.5	2018
Recycling rate (% of municipal waste)	56.9	57.6	57.7	57.7	58.2	-	47.8	2020
Hazardous waste (% of municipal waste)	-	2.1	-	2.0	-	-	4.3	2018
Competitiveness								
Gross value added in environmental goods and services sector (% of GDP)	3.6	3.7	4.3	4.3	4.2	-	2.32	2019
Private investment in circular economy (% of GDP)	0.1	0.1	0.1	0.1	-	-	0.12	2018

Source: Eurostat

The Digital Economy and Society Index (DESI) monitors EU Member States' digital progress. The Digital Decade comprises four cardinal points: human capital, connectivity, integration of digital technology and digital public services ([55]). This Annex describes Austria's DESI performance.

Digitalisation plays an important role in the Austrian RRP, which has one of the highest shares of its allocation dedicated to the digital transformation of any EU country (53%) ([56])**.** Austria's RRP invests in a wide range of digital areas, especially in connectivity and human capital, with a focus on digitalisation in education and the upskilling and reskilling of vulnerable groups.

The lack of information and communication technology (ICT) specialists is a key challenge for Austria in the DESI dimension on human capital. The country scores well above the EU average in the percentage of the population with at least basic digital skills, and the percentage of ICT specialists is at EU average. Nevertheless, the lack of ICT specialists is a key challenge: the share of enterprises reporting hard-to-fill vacancies for jobs requiring ICT specialist skills is well above the EU average (74.3% compared to 55.4%) ([57]).

Austria has a mixed performance in digital connectivity. The country scores above the EU average in 5G coverage (77% versus the EU average of 66%). However, it still ranks considerably below the EU average in the percentage of households with access to fixed very high-capacity network coverage including fibre to the premises (45% versus 70% in the EU). Recent significant improvements were due to the one-off effect of upgrading already existing networks mostly in urban areas. However, Austria's RRP has ambitious measures to improve connectivity with a focus on rural areas.

Austria's performance in the integration of digital technology is mixed. The percentage of SMEs with at least a basic level of digital intensity is above the EU average (64% compared to 55%). However, one main challenge is that Austrian companies are not yet taking full advantage of the use of all the digital technologies that are available. For example, the use of artificial intelligence among Austrian companies is above the EU average, but the use of cloud services and big data is well below the EU average.

Digital public services is the DESI dimension in which Austria performs in line with the EU average. The country has traditionally been a frontrunner in e-government services. It scores slightly above the EU average in providing digital public services for the public and slightly below in providing digital public services to businesses.

([55]) 2030 Digital Compass: the European Way for the Digital Decade Communication, COM (2021) 118 final.

([56]) The share of financial allocation contributing to digital objectives has been calculated using Annex VII of the RRF Regulation.

([57]) Source: Eurostat – European Union Survey on ICT Usage and eCommerce in Enterprises.

Table A8.1:**Key Digital Economy and Society Index Indicators**

Human capital	Austria DESI 2020	Austria DESI 2021	Austria DESI 2022	EU DESI 2022	EU top-performance DESI 2022
At least basic digital skills	**NA**	**NA**	**63%**	**54%**	**79%**
% individuals			2021	2021	2021
ICT specialists	**4.3%**	**4.5%**	**4.5%**	**4.5%**	**8.0%**
% individuals in employment aged 15-74	2019	2020	2021	2021	2021
Female ICT specialists	**20%**	**20%**	**19%**	**19%**	**28%**
% ICT specialists	2019	2020	2021	2021	2021
Connectivity					
Fixed Very High Capacity Network (VHCN) coverage	**14%**	**39%**	**45%**	**70%**	**100%**
% households	2019	2020	2021	2021	2021
5G coverage*	**NA**	**50%**	**77%**	**66%**	**99.7%**
% populated areas		2020	2021	2021	2021
Integration of digital technology					
SMEs with at least a basic level of digital intensity	**NA**	**NA**	**64%**	**55%**	**86%**
% SMEs			2021	2021	2021
Big data	**6%**	**9%**	**9%**	**14%**	**31%**
% enterprises	2018	2020	2020	2020	2020
Cloud	**NA**	**NA**	**29%**	**34%**	**69%**
% enterprises			2021	2021	2021
Artificial Intelligence	**NA**	**NA**	**9%**	**8%**	**24%**
% enterprises			2021	2021	2021
Digital public services					
Digital public services for citizens	**NA**	**NA**	**76**	**75**	**100**
Score (0 to 100)			2021	2021	2021
Digital public services for businesses	**NA**	**NA**	**81**	**82**	**100**
Score (0 to 100)			2021	2021	2021

* The 5G coverage indicator does not measure users' experience, which may be affected by a variety of factors such as the type of device used, environmental conditions, number of concurrent users and network capacity. 5G coverage refers to the percentage of populated areas as reported by operators and national regulatory authorities.

Source: Digital Economy and Society Index

This Annex provides a general overview of the performance of Austria's research and innovation (R&I) system.

Austria is among Europe's strong innovators according to the 2021 edition of the European Innovation Scoreboard (see note in table), but it struggles to reduce its gap with the EU's innovation leaders. R&D intensity in Austria has surpassed 3% of GDP since 2014, reaching 3.2% of GDP in 2020.

Over the last decade, R&D investments in Austria continued to increase, thanks mainly to the private sector. Business expenditure on R&D (BERD) is one of the highest in the EU (2.22% of GDP in 2020, well above the EU average of 1.53%), rising faster than public expenditure. The government supports BERD mainly through tax incentives, and the country's R&D premium increased from 3% in 2002 to 14% in 2018. Austria is one of the most generous countries in supporting business R&D as a percentage of GDP, equivalent to 0.29% of GDP in 2019.

However, there is room to improve the overall effectiveness of the R&I system by better translating significant R&D investments into innovation outcomes. Austria is lagging behind in terms of employment in fast-growing enterprises in the top 50% most innovative sectors (3.3% of Austrians were employed in this top 50% in 2019 against the EU average of 5.5%). Linked to this is the relatively low availability of equity funding, including venture capital, for innovative start-ups and scale-ups. The RRP includes as one of its main reforms a new 2030 Research Technology and Innovation Strategy. This strategy is aimed at addressing the weaknesses of the Austrian R&I system in translating its R&D efforts into stronger innovation outcomes.

Table A9.1:**Key research, development and innovation indicators**

Austria	2010	2015	2018	2019	2020	Compound annual growth 2010-20	EU average
Key indicators							
R&D Intensity (GERD as % of GDP)	2.73	3.05	3.09	3.13	*3.20*	1.6	*2.32*
Public expenditure on R&D as % of GDP	0.85	0.86	0.91	0.91	*0.96*	1.3	*0.78*
Business enterprise expenditure on R&D (BERD) as % of GDP	1.87	2.18	2.16	2.20	*2.22*	1.8	*1.53*
Quality of the R&I system							
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	10.9	10.8	10.7	:	:	-0.3	9.9
PCT patent applications per billion GDP (in PPS)	4.8	4.9	4.7	:	:	-0.3	3.5
Academia-business cooperation							
Public-private scientific co-publications as % of total publications	13.9	14.3	15.1	15.6	14.8	0.6	9.05
Human capital and skills availability							
New graduates in science & engineering per thousand pop. aged 25-34	15.5	18.3	18.7	18.9	:	0.2	16.3
Public support for business enterprise expenditure on R&D (BERD)							
Total public sector support for BERD as % of GDP	:	0.288	:	0.293	:	2.9	0.196
R&D tax incentives: foregone revenues as % of GDP	0.111	0.146	0.185	0.191	:	6.2	0.100
Green innovation							
Share of environment-related patents in total patent applications filed under PCT (%)	17.1	13.2	14.0	:	:	-2.5	12.8
Finance for innovation and Economic renewal							
Venture Capital (market statistics) as % of GDP	0.020	0.023	0.023	0.024	0.023	1.3	0.054
Employment in fast-growing enterprises in 50% most innovative sectors	2.9	1.9	3.0	3.3		1.6	5.5

(1) 2021 European Innovation Scoreboard, Country profile: Austria https://ec.europa.eu/docsroom/documents/45904.
Source: Source: DG Research and Innovation - Common R&I Strategy and Foresight Service - Chief Economist Unit
Data: Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical database), Invest Europe

Productivity growth is a critical driver of economic prosperity, well-being and convergence over the long run. A major source of productivity for the EU economy is a well-functioning single market, where fair and effective competition and a business-friendly environment are ensured, in which small and medium enterprises (SMEs) can operate and innovate without difficulty. Businesses and industry rely heavily on robust supply chains and are facing bottlenecks that bear a negative impact on firms' productivity levels, employment, turnover and entry/exit rates. This may impact the Member States' capacity to deliver on Europe's green and digital transformation.

The Austrian economy is well integrated into the single market. Although the business environment is favourable and barriers to investment in the country are relatively modest overall, there is some scope for further improvement. The high administrative burden in Austria discourages investment by SMEs in the services sector. In addition, regulatory restrictiveness remains high for certain professional services, such as accounting, architecture, engineering, real estate services and retail. This restrictiveness represents an effective entry barrier. As a result, Austria's productivity growth in services has been one of the weakest in the EU and below peer countries over the past decade. The Austrian RRP includes several measures to improve the business environment and address certain regulatory barriers. For example, it will implement the 'once-only' reform, whereby businesses will only have to report certain data once rather than report the same data several times to different regulatory departments. This will reduce bureaucracy for businesses and compliance costs caused by incompatible IT systems. Furthermore, the plan contains a reform introducing a new legal status for companies to support growth-oriented start-ups and innovative SMEs. This new status will make it possible to flexibly allocate shares to investors and employees to attract skilled workers.

Liquidity support to businesses (tax deferrals and loan guarantees) supported the resilience and recovery of the economy and limited job losses and bankruptcies during the COVID-19 pandemic. Helped by this support, the level of economic activity in Austria had already surpassed its pre-pandemic levels in the summer of 2021. However, the small and volatile market for equity capital (notably risk capital) is still a bottleneck to the scaling up of innovative, growth-oriented firms. In 2020, total venture capital investments represented just 0.03% of Austrian GDP, below peer countries and the EU average.

The competitiveness of public procurement deteriorated in recent years, according to the Single Market Scoreboard. Although the participation of SMEs in public procurement

Table A10.1:**Key Single Market and Industry Indicators - part 1(1 of 2)**

SUB-POLICY AREA	INDICATOR NAME	DESCRIPTION	2021	2020	2019	2018	2017	Growth rates	EU27 average*
		HEADLINE INDICATORS							
Economic structure	Value added by source (domestic)	VA that depends on domestic intermediate inputs, % [source: OECD (TiVA), 2018]				65.05			**62.6%**
	Value added by source (EU)	VA imported from the rest of the EU, % [source: OECD (TiVA), 2018]				21.18			**19.7%**
	Value added by source (extra-EU)	% VA imported from the rest of the world, % [source: OECD (TiVA), 2018]				13.8			**17.6%**
Cost competitiveness	Producer energy price (industry)	Index (2015=100) [source: Eurostat, sts_inppd_a]	109	94.5	99.9	101	96.2	**13.3%**	**127.3**
		RESILIENCE							
Shortages/supply chain disruptions	Material Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	24	6	10	12	8	**200%**	**26%**
	Labour Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	12	6	14	15	10	**20%**	**14%**
	Sectoral producer prices	Average (across sectors), 2021 compared to 2020 and 2019, index [source:Eurostat]						**3.5%**	**5.4%**
Strategic dependencies	Concentration in selected raw materials	Import concentration a basket of critical raw materials, index [source: COMEXT]	0.17	0.16	0.2	0.23	0.25	**-32%**	**17%**
	Installed renewables electricity capacity	Share of renewable electricity to total capacity, % [source:Eurostat, nrg_inf_epc]		80.80	80.60	78.10	77.20	**5%**	**47.8%**
Investment dynamics	Net Private investments	Change in private capital stock, net of depreciation, % GDP [source: Ameco]		4.7	6.1	5.6	5.1	**-7.8%**	**2.6%**
	Net Public investments	Change in public capital stock, net of depreciation, % GDP [source: Ameco]		0.6	0.6	0.5	0.6	**0%**	**0.4%**

Source: See above in the table the respective source for each indicator in the column "description".

Table A10.2:**Key Single Market and Industry Indicators - part 2(2 of 2)**

SINGLE MARKET									
Single Market integration	Intra-EU trade	Ratio of Intra-EU trade to Extra-EU trade, index [source: Ameco]	2.91	2.68	2.58	2.61	2.59	**12%**	**1.59**
Professional services restrictiveness	Regulatory restrictiveness indicator	Restrictiveness of access to and exercise of regulated professions (professions with above median restrictiveness, out of the 7 professions analysed in SWD (2021)185 [source: SWD (2021)185; SWD(2016)436 final])	5				5	**0%**	**3.37**
Professional qualifications recognition	Recognition decisions w/o compensation	Professionals qualified in another EU MS applying to host MS, % over total decisions taken by host MS [source: Regulated professions database]	38.7						**45%**
Compliance - cooperation EC and MS	Transposition - overall	5 sub-indicators, sum of scores [source: Single Market Scoreboard]		Below average	Above	Below	On average		
	Infringements - overall	4 sub-indicators, sum of scores [source: Single Market Scoreboard]		Below average	Below average	On average	On average		
Investment protection	Confidence in investment protection	Companies confident that their investment is protected by the law and courts of MS if something goes wrong, % of all firms surveyed [source: Flash Eurobarometer 504]	0.73						**56%**
BUSINESS ENVIRONMENT - SMEs									
Business demography	Bankruptcies	Index (2015=100) [source: Eurostat, sts_rb_a]	n.a.	n.a.	n.a.	n.a.	n.a.	**n.a.**	**70.1**
	Business registrations	Index (2015=100) [source: Eurostat, sts_rb_a]	n.a.	n.a.	n.a.	n.a.	n.a.	**n.a.**	**105.6**
Access to finance	Late payments	Share of SMEs experiencing late payments in past 6 months, % [source: SAFE]	30.4	30.4	38.2	n.a.	n.a.	**-21%**	**45%**
	EIF Access to finance index - Loan	Composite: SME external financing over last 6 months, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0.8	0.81	0.81	0.78	**2.6%**	**0.56**
	EIF Access to finance index - Equity	Composite: VC/GDP, IPO/GDP, SMEs using equity, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0.08	0.15	0.08	0.41	**-79.7%**	**0.18**
	% of rejected or refused loans	SMEs whose bank loans' applications were refused or rejected, % [source: SAFE]	1.4	5.1	2.4	1.5	4.9	**-71.7%**	**12.4%**
Public procurement	SME contractors	Contractors which are SMEs, % of total [source: Single Market Scoreboard]		54	50	40	42	**28.6%**	**63%**
	SME bids	Bids from SMEs, % of total [source: Single Market Scoreboard]		74	70	60	69	**7%**	**70.8%**

(*) latest available

Source: See above in the table the respective source for each indicator in the column "description".

procedures is increasing (both contractors and bids), Austria nonetheless scores below the EU average in some important indicators such as: (i) the proportion of contracts awarded to a single bidder; (ii) the percentage of procedures without any call for bids; and (iii) the publication rate. Furthermore, the capacity of the Austrian public administration to apply EU rules on the single market could be improved by strengthening the staffing of national SOLVIT centres, which provide solutions related to problems in applying EU rights.

Global supply-chain disruptions, bottlenecks, and rising raw material and transport prices have affected Austrian enterprises. This is especially problematic given their prominent role as suppliers in the automotive industry. A recent report published by the Central Bank of Austria (OeNB) estimates that supply bottlenecks caused a shortfall of around 0.3-0.4 pps of GDP in 2021.

Good administrative capacity enables economic prosperity, social progress and fairness. Public administrations at all government levels deliver crisis response, ensure the provision of public services and contribute to building resilience for the sustainable development of the EU economy.

Overall, Austria's public administration is among the most effective in the EU27 ([58]). The regulatory system is well-developed. Austria's evidence-based policy making indicators are above the EU average (1.9 versus. 1.7 for the EU). Government decisions and ex-ante and ex-post evaluations of legislation are publicly available. Recent reforms aimed at improving public consultations by allowing public input to all legislative proposals throughout the entire legislative process. However, weak inter-ministerial coordination and the fragmented allocation of responsibilities across different levels of government prevents further improvements of government effectiveness.

Austria's performance in the Single Market Scoreboard's public procurement indicator has deteriorated steadily over the past few years. Data for 2020 show the country ranking at the bottom of the EU ranking, due to poor scores in measures of transparency and competition, quality of information as well as the participation of SMEs in procurement processes (Table A11.1).

Austria has advanced in the digitalisation of its public administration and the delivery of digital services. In 2021, 79% of Austrians used the internet for interacting with the public authorities versus 71% on average in the EU. The RRP sets out reforms and investments to accelerate the digitalisation of the federal administration and support Austria's digital transition. These are expected to reduce the administrative burden for companies and to increase the efficiency and citizen-orientation of services.

The justice system performs efficiently. The duration of administrative cases in Austria remains relatively lengthy (388 days in the first instance in 2020), but the clearance rate in this area has improved visibly. The overall quality of the justice system is good. Digital tools are broadly used in courts. As for judicial independence, no systemic deficiencies have been reported ([59]).

Graph A11.1: **Performance on the single market public procurement indicator**

Notes: The competition and transparency indicators are triple-weighted, whereas the efficiency and quality indicators have unitary weights. All others receive a 1/3 weighting in the SMS composite indicator.
Source: Single market scoreboard 2020 data

Performance in selected civil service indicators is relatively good. The participation of Austrian public sector workers in adult learning (19.8% in 2021) is above the EU average (18.6 in 2021). Gaps in analytical capabilities, however, continue to pose challenges to the quality of policies ([60]). The share of civil servants aged 55+ is at the EU average. Moreover, Austria has improved gender parity in senior civil service management positions since 2017.

([58]) Worldwide Governance Indicators, 2020.

([59]) For more detailed analysis of the performance of the justice system in Austria, see the EU Justice Scoreboard and the 2022 country-specific chapter for Austria of the Rule of Law Report (forthcoming).

([60]) OECD, Regulatory Impact Assessment and Regulatory Oversight in Austria, 2020, Paris

Table A11.1:**Public administration indicators – Austria**

AT	Indicator (1)	2017	2018	2019	2020	2021	EU27
E-government							
1	Share of individuals who used internet within the last year to interact with public authorities (%)	70.0	75.0	79.0	81.0	79.0	70.8
2	2021 e-government benchmark´s overall score (2)	na	na	na	na	76.3	70.9
Open government and independent fiscal institutions							
3	2021 open data maturity index	na	na	na	na	92.1	81.1
4	Scope Index of Fiscal Institutions	83.6	83.6	83.6	83.6	na	56.8
Educational attainment level, adult learning, gender parity and ageing							
5	Share of public administration employees with tertiary education, levels 5-8 (3)	32.8	36.9	38.1	38.0	38.9	55.3
6	Participation rate of public administration employees in adult learning (3)	19.8	19.1	19.5	14.3	19.8	18.6
7	Gender parity in senior civil service positions (4)	25.4	24.6	20.6	22.0	19.0	21.8
8	Share of public sector workers between 55 and 74 years (3)	19.2	22.5	22.5	22.0	21.4	21.3
Public Financial Management							
9	Medium term budgetary framework index	0.67	0.67	0.67	0.67	na	0.72
10	Strength of fiscal rules index	1.4	1.4	1.4	1.4	na	1.5
11	Public procurement composite indicator	-0.7	-1.0	-3.3	-6.3	na	-0.7
Evidence-based policy making							
12	Index of regulatory policy and governance practices in the areas of stakeholder engagement, Regulatory Impact Assessment (RIA) and ex post evaluation of legislation	1.89	na	na	1.86	na	1.7

(1) High values stand for good performance barring indicators # 7 and 8.
(2) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services.
(3) Break in the series in 2021.
(4) Defined as the absolute value of the difference between the share of men and women in senior civil service positions.

Source: Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Fiscal Governance Database (# 4, 9, 10); Labour Force Survey, Eurostat (# 5, 6, 8), European Institute for Gender Equality (# 7), Single Market Scoreboard public procurement composite indicator (# 11); OECD Indicators of Regulatory Policy and Governance (# 12).

ANNEX 12: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights provides the compass for upward convergence towards better working and living conditions in the EU. The implementation of its 20 principles on equal opportunities and access to the labour market, fair working conditions, social protection and inclusion, supported by the 2030 EU headline targets on employment, skills and poverty reduction, will strengthen the EU's drive towards a digital, green and fair transitions. This annex provides an overview of Austria's progress in achieving the goals under the European Pillar of Social Rights.

Although the labour market is recovering, the labour market potential of women, the low-skilled, older workers, and people with a migrant background remains underused. The employment rate of women in Austria stood above the EU average in 2021 (71.3% versus 67.7%). However, Austria had one of the highest rates of female part-time workers in the EU, with 49.9% of Austrian women in employment working part-time in 2021 (against an EU average of 28.3%). Moreover, the gender pay gap in Austria remains one of the highest in the EU (18.9% versus 13.0% in 2020). Participation in formal childcare of children under the age of 3 decreased slightly (-1.6 pps) to 21.1% in 2020 and is well below the EU average of 32.3%. The Austrian RRP has committed funding to increasing the availability of early childhood education and care facilities, which should also benefit the labour market participation of women. The employment rate of older workers (aged 55-64) was 55.2% in 2021, still below the EU average of 60.5%. The labour market participation of people with a migrant background also remains low, with an employment gap of 12.7 pps in 2020 between non-EU-born and Austrian-born residents. Also, the employment rate of recent migrants (i.e. non-EU-born residents established in Austria for less than 5 years) increased from 47.7% in 2020 to 50.8% in 2021. The 'Promoting reskilling and upskilling' measures of the RRP will address these challenges by supporting training for the low-skilled and the long-term unemployed. The EU cohesion policy funds will also support upskilling and reskilling measures. These measures should bring unemployed people into the workforce and help Austria contribute to achieving the EU headline target on employment and skills by 2030.

Table A12.1:**Social Scoreboard**

Social Scoreboard for AUSTRIA		
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24) (2021)	8.0
	Individuals' level of digital skills (% of population 16-74) (2021)	63.0
	Youth NEET (% of total population aged 15-29) (2021)	9.4
	Gender employment gap (percentage points) (2021)	8.6
	Income quintile ratio (S80/S20) (2020)	4.11
Dynamic labour markets and fair working conditions	Employment rate (% population aged 20-64) (2021)	75.6
	Unemployment rate (% population aged 15-74) (2021)	6.2
	Long term unemployment (% population aged 15-74) (2021)	2
	GDHI per capita growth (2008=100) (2020)	97.11
Social protection and inclusion	At risk of poverty or social exclusion (in %) (2020)	16.7
	At risk of poverty or social exclusion for children (in %) (2020)	21.9
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP) (2020)	41.1
	Disability employment gap (ratio) (2020)	20.5
	Housing cost overburden (% of population) (2020)	6.3
	Children aged less than 3 years in formal childcare (% of under 3-years-olds) (2020)	21.1
	Self-reported unmet need for medical care (% of population 16+) (2020)	0.1
Critical situation / To watch / Weak but improving / Good but to monitor / On average / Better than average / Best performers		

Note: Update of 29 April 2022. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2022. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.

Source: European Commission

Having a disadvantaged socioeconomic or migrant background damages education and labour market outcomes. Rates of early leaving from education and training by people with a migrant background in Austria has substantially worsened in recent years, and the gap between Austrian-born and non-EU-born pupils on this measure remains significant (5.7% versus 24.0%). This impacts educational outcomes and labour market participation for these groups, particularly given the ongoing green and digital transitions (see also Annex 13). The share of Austrian adults (aged 25-64) participating in learning over the past 4 weeks is above the EU average (14.6%

versus 10.8.% in 2021). The share of the Austrian population with at least basic digital skills, at 63%, is well above the EU average of 54%. Nevertheless, in 2020, 74.3% of enterprises in Austria that recruited or tried to recruit personnel reported that vacancies for jobs requiring ICT specialist skills were hard to fill. However, there is scope for further strengthening the level of basic skills for disadvantaged groups, including people with a migrant background. Austria is also experiencing continued skills shortages, with the 2019 OECD Economic Survey reporting that 81% of Austrian companies of all sizes refrained from investment due to a lack of skilled staff. Measures included in the RRP to support upskilling and reskilling have the potential to further support Austria's contribution to reaching the 2030 EU headline targets on skills and employment.

A strong social protection system and extensive policy measures have limited the social impact of the COVID-19 pandemic. The share of people at risk of poverty or social exclusion increased slightly in Austria in 2020 to 16.7% (up from 16.5% in 2019), but with a greater increase for children (21.9%, up from 20.1% in 2019). At the same time, gross disposable household income per capita declined in 2020 to 97.11 down from 99.32 in 2019, and is below the 2008 level (100). Social transfers (other than pensions) continue to have a high impact on poverty reduction in Austria. Investments to combat energy poverty are set out under the RRP. Also, the Austrian operational programme on the European Social Fund Plus (ESF+), currently under negotiations, is expected to develop measures to address poverty. The many people with disabilities that are living in institutions remains a challenge, calling for an effective deinstitutionalisation strategy. This deinstitutionalisation strategy should include community-based services fostering inclusive education, employment and independent living facilities.

This annex outlines the main challenges for Austria's education and training system in light of the EU-level targets of the European Education Area strategic framework and other contextual indicators, based on the analysis from the 2021 Education and Training Monitor. Austria's education and training system struggles with equity challenges that risk worsening due to the pandemic. Austria lags behind the EU average and the EU-level targets for participation in early childhood education.

Participation in early childhood education and care (ECEC) has slightly decreased recently. This is the case for both over-3-year old and under-3-year old children. (See Table A13.1 and also Annex 12.) The shortage of places on ECEC and the lack of a compulsory quality framework hold back the positive development of children.

Austrians' basic skills have not improved over time and socio-economic and migrant background continue to affect education outcomes. Between 2015 and 2018, the share of underachieving pupils, as measured for 15-year-olds by PISA increased for reading (+1.1 pps) and science (+1.1 pps), but decreased for mathematics (-0.7 pps), with all values at around the EU average. Socioeconomically disadvantaged students and students with a migrant background are particularly likely to underachieve on these measures. The performance gap between more disadvantaged students and more advantaged students stands at around the EU average. However, the gap comparing pupils born in Austria with those born abroad is larger than in other EU countries, amounting to 1.5 years of schooling. Socioeconomically disadvantaged pupils in Austria are academically less resilient than those elsewhere in the EU. Learning losses expected due

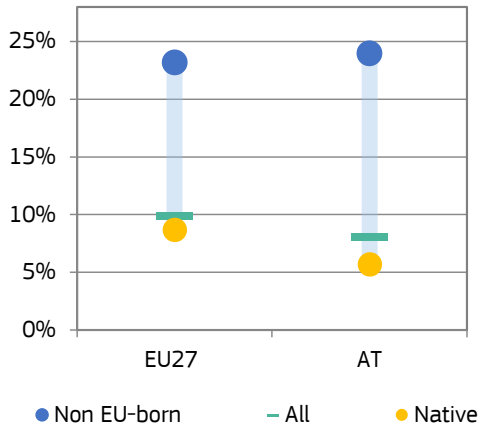
Table A13.1: **EU-level targets and other contextual indicators under the European Education Area strategic framework**

Indicator			Target	Austria	EU27	Austria	EU27
Participation in early childhood education (age 3+)			**96%**	**88.1%**	**91.9%**	**89.9%** 2019	**92.8%** 2019
Low achieving 15-year-olds in:		**Reading**	**< 15%**	**22.5%**	**20.4%**	**23.6%** 2018	**22.5%** 2018
		Mathematics	**< 15%**	**21.8%**	**22.2%**	**21.1%** 2018	**22.9%** 2018
		Science	**< 15%**	**20.8%**	**21.1%**	**21.9%** 2018	**22.3%** 2018
Early leavers from education and training (age 18-24)	**Total**		**< 9 %**	**7.3%**	**11.0%**	**8.0%**	**9.7%**
	By gender	*Men*		7.8%	12.5%	9.6%	11.4%
		Women		6.8%	9.4%	6.3%	7.9%
	By degree of urbanisation	*Cities*		9.7%	9.6%	9.5%	8.7%
		Rural areas		4.2%	12.2%	5.5%	10.0%
	By country of birth	*Native*		5.5%	10.0%	5.6%	8.5%
		EU-born		12.1% u	20.7%	21.0%	21.4%
		Non EU-born		24.3%	23.4%	19.1%	21.6%
Tertiary educational attainment (age 25-34)	**Total**		**45%**	**38.6%**	**36.5%**	**42.4%**	**41.2%**
	By gender	*Men*		35.8%	31.2%	38.2%	35.7%
		Women		41.5%	41.8%	46.8%	46.8%
	By degree of urbanisation	*Cities*		48.5%	46.2%	52.5%	51.4%
		Rural areas		31.6%	26.9%	34.1%	29.6%
	By country of birth	*Native*		40.4%	37.7%	43.0%	42.1%
		EU-born		41.4%	32.7%	48.6%	40.7%
		Non EU-born		28.1%	27.0%	34.5%	34.7%
Share of school teachers (ISCED 1-3) who are 50 years or over				43.3%	38.3%	43.5% 2019	38.9% 2019

Source: Eurostat (UOE, LFS); OECD (PISA). Notes: The 2018 EU average on PISA reading performance does not include ES; u = low reliability; Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills, exposure of vocational educational training graduates to work based learning and participation of adults in learning.

to the pandemic risk further aggravating the situation. Young people with a migrant background in Austria are more likely to leave education and training prematurely. Of young people in Austria that were born elsewhere in the EU, 21.0% leave education early, while 24.0% of young people in Austria born outside the EU leave education and training prematurely. This compares to only 5.6% of Austrian-born children who leave education early.

Graph A13.1: **Early leavers from education and training by country of birth, 2020**



Source: European Commission

The education system faces significant challenges. The OECD ([61]) highlights significant challenges for Austria's education system, including in access to early childhood education, the level of resources in focal schools – schools with a disproportionate share of children from disadvantaged backgrounds – and the need to attract and train sufficient staff and teachers. The limited number of places in ECEC and the lack of a compulsory quality framework hold back the positive development of children. Austria is experiencing growth in its school-aged population, and more and more 'all day'-schools (where children are looked after until 6pm) are being set up. In addition, a high share of teachers are retiring soon. All these trends mean that Austria needs to attract more applicants to teacher education. Continued professional development for teachers needs to be made more relevant. Moreover, both initial and continued training in digital education needs to be strengthened after the experiences of the pandemic. Before the pandemic, Austrian teachers felt the least prepared of any teachers in the EU to use ICT in the classroom ([62]). Disadvantaged schools in particular require adequate resources to improve the learning outcomes of pupils with low socioeconomic or migrant backgrounds.

Participation rates in higher education in Austria are above the EU average, but have not yet reached the European Education Area (EEA) target of 45%. More women than men graduate from university (a difference of 8.4 pps), making this gap twice as large as a decade ago. In Austrian cities, there are about one third more higher education graduates than in rural areas (as a share of population). While the share of tertiary attainment among 25-to-34-year olds born elsewhere in the EU exceeds the share of tertiary attainment among Austrians of the same age cohort by 5.6 pps, non EU-born trail 8.5 pps behind the share of Austrian graduates (48.6% of graduates for those born elsewhere in the EU, 43% for those born in Austria and only 34.5% of graduates born outside the EU). The fact that Austria has a comparatively high share of graduates from abroad is in contrast to the average situation with the EU, and indicates that Austria successfully attracts foreign talent to help reducing existing skills gaps.

The reforms and investment measures under the RRP will go some way to helping Austria address these longstanding challenges. Key support in the RRP focuses on digitalisation in education, increasing places in ECEC, and providing for some COVID-19 related compensational support measures to students. However, more effort is needed to substantially address the persisting challenges.

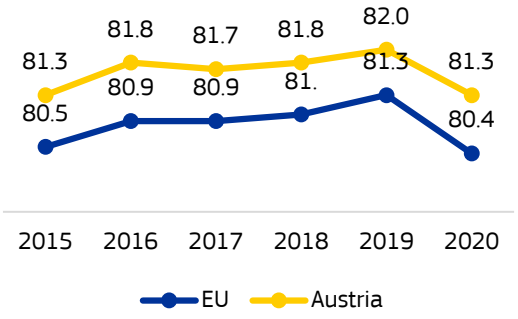
([61]) OECD Review of School Resources Austria, OECD School Education during COVID-19 Country Note Austria.

([62]) OECD (2018): TALIS study

Especially relevant in light of the ongoing COVID-19 pandemic, resilient healthcare is a prerequisite for a sustainable economy and society. This annex provides a snapshot of the healthcare sector in Austria.

Life expectancy in Austria is higher than the EU average, but fell by more than 8 months in 2020 due to deaths from COVID-19. As of 17 April 2022, Austria reported 1.82 cumulative COVID-19 deaths per 1 000 inhabitants and 462 confirmed cumulative COVID-19 cases per 1 000 inhabitants. Deaths from COVID-19 had a negative impact on life expectancy, but, even before the pandemic, the increase in life expectancy had slowed down considerably between 2010 and 2019. Treatable mortality rates (mortality avoidable through optimal quality healthcare) are lower than the EU average, as are cancer mortality rates.

Graph A14.1: **Life expectancy at birth in years**

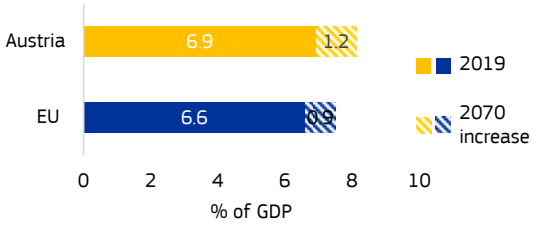


Source: Eurostat database

Austria's total health expenditure amounted to 10.4% of GDP in 2019, slightly above the EU average of 9.9%. Three quarters of total health expenditure is publicly funded, a lower share than in the EU overall. Direct out-of-pocket spending as a share of total health expenditures by households is higher than the EU average. Public expenditure on health is projected to increase by 1.2 pps of GDP by 2070 (compared to 0.9 pps of GDP for the EU), raising long-term fiscal sustainability concerns (see the Commission's 2021 Ageing Report).

Although the Austrian health system generally provides good access to high quality care, some structural challenges persist. These challenges include the fragmentation of the health-service delivery model and a very hospital-centric health system. Austria spends substantially more than most countries on hospital (inpatient) care (1 287 EUR PPP per person in 2019, against an EU average of 1 010 EUR). This phenomenon is partly reflected in the high number of hospital beds by EU standards. The number of physicians and nurses per 1 000 people is above the EU average. However, challenges remain, in particular that of an ageing physician workforce.

Graph A14.2: **Projected increase in public expenditure on healthcare over 2019-2070 (AWG reference scenario)**



Source: European Commission/EPC (2021)

The RRP foresees investments in Austrian healthcare of EUR 254 million. This corresponds to 5.6% of total RRP spending, which is dedicated to: (i) improving primary care; (ii) supporting the development of an electronic mother-child-pass platform; (iii) rolling out "early childhood intervention" for pregnant women, their young children and families in stressful life situations; (iv) setting up community nurses scheme; and (v) creating an Institute for Precision Medicine.

Table A14.1:**Key health indicators**

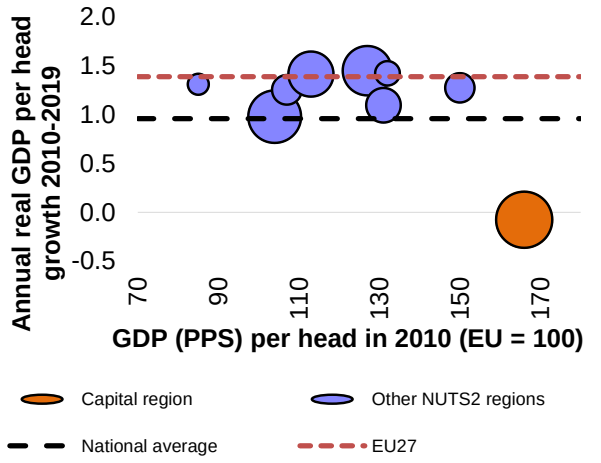
	2016	2017	2018	2019	2020	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	77.8	76.2	75.2	73.2		92.1 (2017)
Cancer mortality per 100 000 population	237.2	234.3	234.0	229.6		252.5 (2017)
Current expenditure on health, % GDP	10.4	10.4	10.3	10.4		9.9 (2019)
Public share of health expenditure, % of current health expenditure	74.0	74.0	74.8	75.2		79.5 (2018)
Spending on prevention, % of current health expenditure	2.1	2.1	2.1	2.1		2.8 (2018)
Acute care beds per 100 000 population	558.8	548.7	538.9	531.3		387.4 (2019)
Doctors per 1 000 population *	5.1	5.2	5.2	5.3		3.8 (2018)
Nurses per 1 000 population *	6.8	6.9	6.9	10.4		8.2 (2018)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day **	11.4	11.9	10.4	9.2	7.1	14.5 (2020)

(1) Doctors' density data refer to practising doctors in all countries except FI, EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries (imputation from year 2014 for FI) except IE, FR, PT, SK (professionally active) and EL (nurses working in hospitals only). More information: https://ec.europa.eu/health/state-health-eu/country-health-profiles_en

Source: Data sources: Eurostat Database; except: * Eurostat Database and OECD, ** ECDC.

The regional dimension is an important factor when assessing economic and social developments in Member States. Taking into account this dimension enables a well-calibrated and targeted policy response that fosters cohesion and ensures sustainable and resilient economic development across all regions. With an average of 126%, almost all Austrian regions are situated above the EU average in terms of GDP per capita (PPS), with only one region, Burgenland, falling behind with a GDP per capita that is 89% of the EU average. These disparities have steadily decreased in the past decade and are among the lowest in the EU, next to its neighbour Germany.

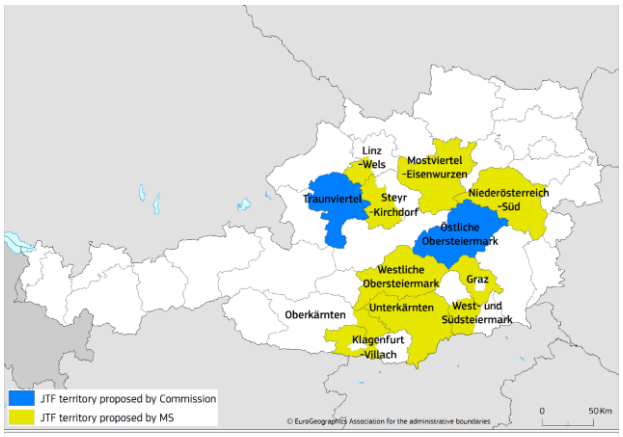
Graph A15.1: **GDP per head (2019) and GDP growth (2010-2019) in Austria**



Source: European Commission

Although overall economic disparities are low, relatively strong disparities persist on a regional level. Data from 2019 show that GDP per capita as a percentage of the EU average was highest in territories with strong urban centres (Vienna – 149%, Salzburg – 151%), but also touristic regions in western Austria (Tirol – 136%, Vorarlberg – 137%). The mainly rural and peripheral Burgenland is at only 89% of EU's average GDP per capita. However, Burgenland is on a good path to catch up with the other regions, forming part of the country's leaders in growth of GDP per capita between 2010 and 2019 (when it grew at +1.31% per year), right after Upper Austria, Styria and Vorarlberg. Overall, growth in real GDP per capita was lower in Austria than on average in the EU (+0.96% versus +1.39% per year from 2010 to 2019). In Vienna, a negative trend can even be observed (with the GDP per capita falling by -0.8% per year in this period) related to a strong increase in the city's population.

Graph A15.2: **Territories most affected by the climate transition in Austria**



Source: European Commission
Notes: JTF has not yet been formally resubmitted by AT.

Disparities in Austria's labour productivity have shrunk. In 2018, productivity measured as gross value added per person employed was above the EU average (at 116.76%). At the regional level, Austria's weakest region of

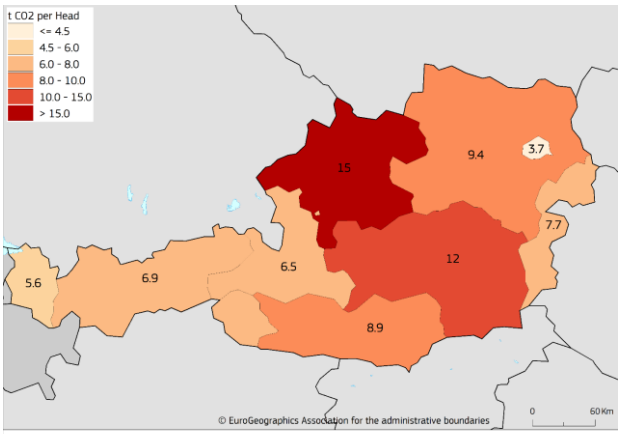
Table A15.1:**Selected indicators at regional level – Austria**

	EU27=100, 2019	EU27=100, 2018	Avg % change on preceding year, 2010-2019	Avg % change on preceding year, 2010-2019	Total % change, 2011-2019	Total % change, 2011-2019	% of active population, 2020	% of GDP, 2017	% of total employment, 2020	tCO_2 equivalent, 2018
European Union	100	100	1.00	1.39	1.8	2.2	7.1	2.19	4.5	7.2
Österreich	126	116.76	0.48	0.96	6.25	6.00	5.40	3.14	4.09	
Burgenland	89	100	0.42	1.31	3.5	6.9	4.2	0.85	2.4	7.7
Niederösterreich	104	113	0.50	0.98	4.6	5.9	4.2	1.80	2.9	9.4
Wien	149	126	-0.33	-0.08	12.1	10.4	10.6	3.60	7.2	3.7
Kärnten	108	108	1.00	1.26	0.8	2.8	4.7	2.94	4.6	8.9
Steiermark	115	105	0.76	1.42	3.3	4.4	4.4	4.87	3.8	12.0
Oberösterreich	130	117	1.02	1.45	5.7	4.7	3.9	3.46	3.4	15.0
Salzburg	151	124	0.89	1.28	5.7	4.1	3.0	1.59	2.8	6.5
Tirol	136	116	0.46	1.10	7.1	5.1	3.0	2.88	3.6	6.9
Vorarlberg	137	133	0.78	1.43	7.5	4.6	3.6	1.75	2.1	5.6

Source: EUROSTAT

Burgenland matched the EU average in 2018, while productivity levels in other regions ranged from 105% in Styria to 133% in Vorarlberg. Vienna is situated in between these two poles, with a productivity level of 126%. Labour productivity has slowly converged internally since 2010 (i.e. differences in productivity between regions have decreased), after a previous decade of slow increases in disparities. Between 2010 and 2019, annual productivity grew by 1.0% in Upper Austria and Carinthia (greater than the national average of 0.5%, but less than the EU average). On the other hand, labour productivity has declined in the region of Vienna. Overall, productivity levels in Austria have been stagnating in recent years.

Graph A15.3: **CO2 emissions from fossil fuels per head (2018)**

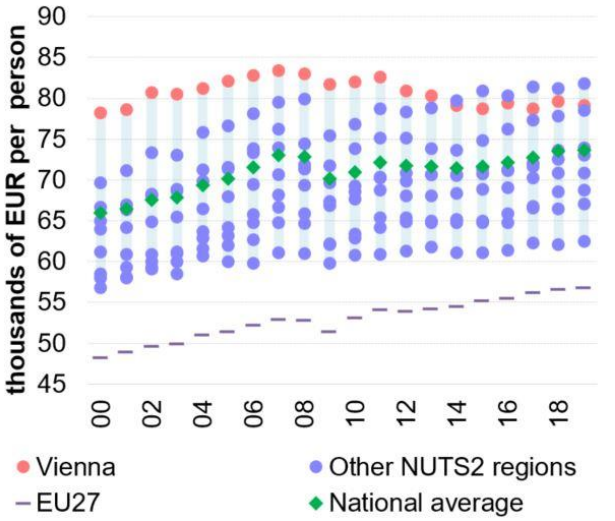


Source: European Commission

Greenhouse gas emission intensity per capita in Austrian regions hovers around the EU average (7.2 tCO_2) except in Styria and Upper Austria, where it reaches 12 and 15 tCO^2 per capita respectively. The last coal-fuelled electric power plant closed in the spring of 2020. Close to 80% of Austria's electricity comes from renewable sources. Austria plans to become climate neutral by 2040 with its entire energy production stemming from renewables by 2030. The bulk of emissions in Austria stem from a number of GHG-intensive sectors dominated by SMEs or small mid-caps active in the sectors of (i) basic metals: (ii) paper and paper products: (iii) chemicals and chemical products: (iv) petrol and petroleum products and (v) cement and are concentrated in Upper Austria, Styria, Lower Austria, and Carinthia. Austria intends to focus support from the Just Transition Fund on regions that face strong transition pressure due to their ambitious climate neutrality roadmap and regions that have a highly vulnerable labour market, due to the high shares of GHG-intensive industries that will be shut down in the transition to a climate-neutral economy.

At national level, R&D investments have continuously increased in recent years, driven by the public and private sectors. R&D intensity in Austria has surpassed 3% of GDP since 2014 and surpassed the EU research and innovation (R&I) investment target since 2018. However, Austria has not yet reached its own national target of 3.76 % of GDP for 2020. Significant differences can be seen at regional level, with Styria (R&I at 4.9% of GDP in 2017) in the lead and Burgenland (R&I at 0.85% in 2017) at the bottom. Although Austria has a good innovation performance compared to the EU average, digital technologies are still not widely used, particularly in smaller businesses. To make matters worse, restrictive service sector regulation is hampering investment. Austria's share of high-tech, medium-high-tech and knowledge intensive services is lower than the EU average and that of most strong innovators. Regional disparities were also striking in the high-technology sectors in 2020, with the highest being in Vienna (7.2%) and Carinthia (4.6%), with considerably lower values in Salzburg (2.8%) and Vorarlberg (2.1%).

Graph A15.4: **Gross value added per worker**

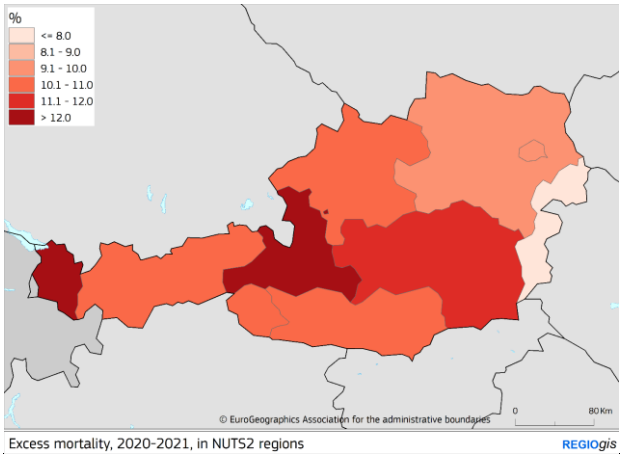


Source: European Commission

The declining trends in unemployment and labour slack reversed in all regions in 2020. The unemployment rate increased by more than 1.4 pps in Vienna, while the increases in less developed regions were moderate (maximum

+0.5 pps in Lower Austria and Burgenland). Likewise, labour market slack increased in all regions, notably in Vienna (+3.1 pps), but it increased by the least in Burgenland and Lower Austria (+2.0 pps and 2.2 pps, respectively).

Graph A15.5: **Excess mortality 2020-2021 by NUTS2 region (%)**



Source: European Commission
Note: Mortality from 2020/week 9 to 2021/week 38 compared to average mortality in the same weeks of years 2015 to 2019

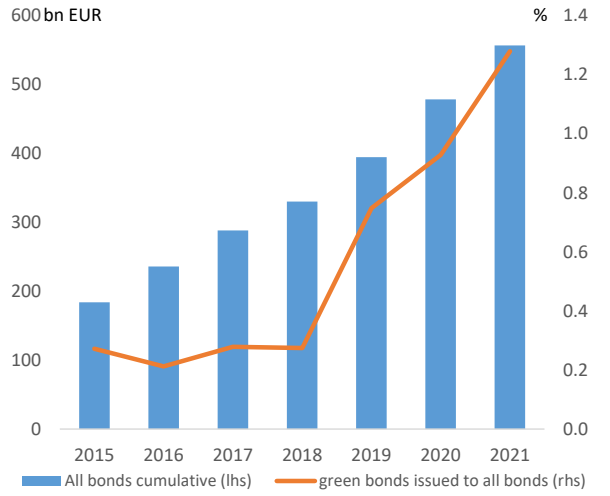
The COVID-19 pandemic affected Austria strongly, with an excess mortality rate of 10% in 2020. The excess mortality was lowest in Burgenland (8%), while it hit 12% in Salzburg, Vorarlberg and Styria (Graph A15.4). All regional labour markets deteriorated as the COVID-19 pandemic restrained economic growth in 2020. Overall, real GDP shrank by 6.7% in 2020.

ANNEX 16: KEY FINANCIAL SECTOR DEVELOPMENTS

This annex provides an overview of key developments in Austria's financial sector. The Austrian financial sector remains predominantly bank-based. Total banking sector assets stood at 245% of GDP at the end of Q2-2021. Of these assets, the five largest banks had a share of 38.5% at the end of 2020, higher than in previous years. The banking sector is domestically owned to a large extent, albeit by complex ownership structures. The loan-to-deposit ratio has been on a declining path since 2019, mainly due to the strong and strengthening deposit franchise of banks.

Non-financial corporations rely strongly on bank loans for external financing, as the market-funding ratio was rather low at 34.2% in 2020. The issuance of green bonds has gained momentum since 2018, but green financing is still subdued compared to EU frontrunners in this area.

Graph A16.1: **Issuance of green bonds**

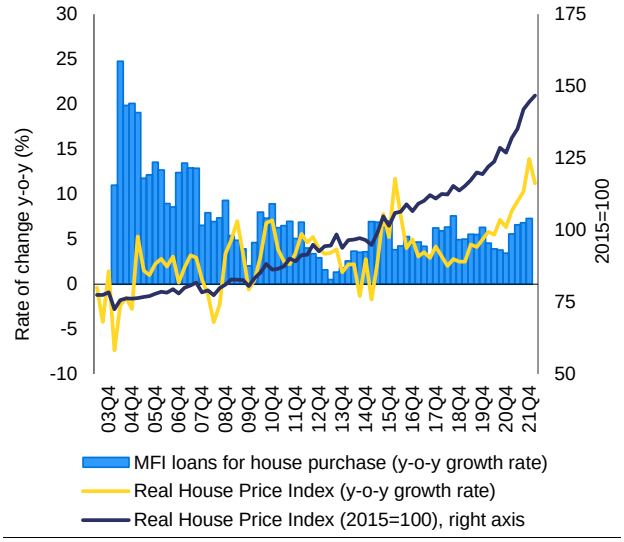


(1) Last Data: Q3 2021
Source: Bloomberg

The banking sector has increased its resilience in recent years. Supported by regulatory developments and retained earnings, the solvency ratio increased to 19.5% in 2020 and remained flat in H1-2021. Nevertheless, Austria's largest banks still have catching up potential compared to their euro area peers. Asset quality has improved for both corporates and households. Both benefited from the public support measures since the onset of the pandemic, with the non-performing loans ratio declining to 1.9% in Q2-2021. Despite the increase in loan-loss provisions in 2020, profitability of Austrian banks remained resilient and further improved in Q2-2021. The cost-to-income ratio has declined on the back of the efforts made by banks to increase efficiency. All banks have liquidity coverage ratios well above the regulatory minimum. Banks have also benefitted from abundant central bank liquidity, which stood at roughly 10% of total liabilities in Q2-2021.

The buoyant real estate market has shown increasing signs of overheating following several years of increases in house prices. Supported by state guarantees on loans, credit to the private sector expanded since the onset of the pandemic, with housing loans growing particularly strongly since 2019. Private debt climbed to 131.2% of GDP in 2020.

Graph A16.2: **Evolution of house price index**



Source: Eurostat, The data are expressed as quarterly index (2015=100)

Table A16.1:**Financial soundness indicators**

	2017	2018	2019	2020	2021
Total assets of the banking sector (% of GDP)	219.5	217.8	219.4	254.1	248.2
Share (total assets) of the five largest banks (%)	36.1	36.0	36.0	38.5	-
Share (total assets) of domestic credit institutions (%)[1]	76.3	77.4	82.4	83.0	84.5
Financial soundness indicators:[1]					
- non-performing loans (% of total loans)	3.5	2.6	2.2	2.0	1.8
- capital adequacy ratio (%)	18.9	18.6	18.7	19.5	18.9
- return on equity (%)	8.7	8.6	7.8	4.1	8.3
NFC credit growth (year-on-year % change)	6.9	9.3	7.0	5.0	8.7
HH credit growth (year-on-year % change)	3.0	3.6	4.3	4.5	6.1
Cost-to-income ratio (%)[1]	65.5	63.8	63.1	60.8	57.5
Loan-to-deposit ratio (%)[1]	97.8	98.8	100.9	90.4	88.2
Central bank liquidity as % of liabilities	3.1	3.0	2.5	8.3	10.0
Private sector debt (% of GDP)	122.3	122.7	121.5	131.2	-
Long-term interest rate spread versus Bund (basis points)	26.5	29.1	31.6	28.5	28.6
Market funding ratio (%)	35.0	33.8	32.5	34.2	-
Green bond issuance (bn EUR)	0.3	0.5	1.4	1.4	2.5

Source: ECB, Eurostat, Refinitiv.
Note: Last data: Q3 2021

This annex provides an indicator-based overview of Austria's tax system. It includes information on the tax structure, i.e. the types of tax that Austria derives most revenue from, the tax burden for workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance and on the risks of aggressive tax planning activity.

Tax revenues in Austria are high in relation to GDP, and the tax system relies heavily on labour taxation while growth-friendly tax bases appear to be underused. Despite a series of tax reforms (2005, 2010, 2015), Austria remains a high-tax country with a tax-to-GDP ratio above the EU average. To address this challenge, the eco-social tax reform, which was adopted in February 2022, provides significant tax relief to households and businesses. With the introduction of a price path for CO_2 emissions in sectors currently not covered by the European Emissions Trading System, the eco-social tax reform also includes an important project from the RRP (see Box 3.1 in Section 3 for more details). However, reducing the labour tax burden further, especially for low-income earners, and making greater use of growth-friendly taxes (e.g. recurrent property taxes or inheritance and gift taxes), have the potential to boost economic growth in addition to increasing the fairness of the tax system. In 2020, labour tax revenues as a percentage of GDP were among the highest in the EU. By contrast, consumption tax revenues as a percentage of GDP were only slightly above the EU average, while environmental tax revenues were slightly below it. Recurrent taxes on property in Austria were among the lowest in the EU, also because the cadastral values which serve as their tax base are largely outdated. Moreover, Austria has no inheritance or gift taxes.

Austria's labour tax burden is relatively high at various wage levels. In 2021, the labour tax wedge ([63]) was substantially higher than the EU average at various income levels, i.e. for single persons at the average wage (100%) as well as at 50%, 67% and 167% of the average wage. Second earners at a wage level of 67% of the average wage, whose spouse earns the average wage, also face a higher tax wedge compared to the EU average, although they are not taxed more heavily than single persons at the same wage level. On the other hand, the tax system effectively addresses income inequality. In 2020, the tax-benefit system helped reduce income inequality, as measured by the GINI coefficient, by more than the EU average.

Austria is doing moderately well on digitalisation of the tax administration, which can help reduce tax arrears as well as cut compliance costs. Outstanding tax arrears have declined slightly by 0.3 pp. to 7.6% of total revenue in 2019. This is significantly below the EU average of 31.8%, though that average is inflated by very large values in a few Member States. The EU Annual Report on Taxation 2021 highlights scope for improvement in the rate of tax return e-filing in Austria. ([64]) The VAT gap (an indicator of the effectiveness of VAT enforcement and compliance) has remained relatively stable in Austria at 8.7%, below the EU-wide gap of 10.5%. Moreover, the average forward-looking effective corporate income tax rates were considerably above the EU average in 2020.

([63]) The tax wedge is defined as the sum of personal income taxes and employee and employer social security contributions net of family allowances, expressed as a percentage of total labour costs (the sum of the gross wage and social security contributions paid by the employer). It is calculated for specific types of tax payers in terms of household composition and income level expressed as a percentage of the average wage. Data on tax wedges can be consulted in the 'Tax and benefit database' by ECFIN https://europa.eu/economy_finance/db_indicators/tab/.

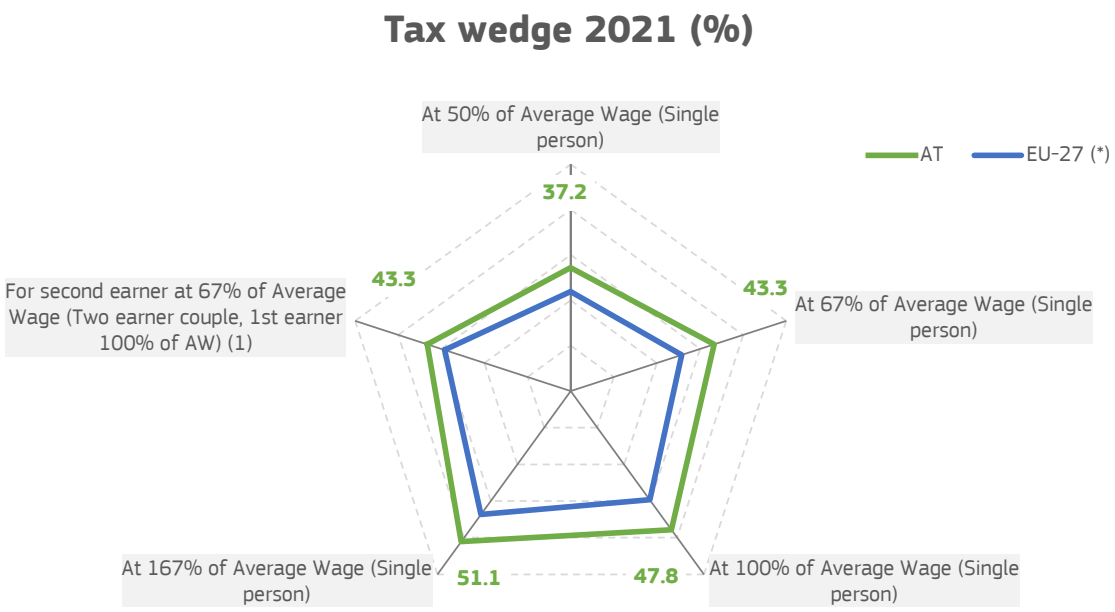
([64]) European Commission, Directorate-General for Taxation and Customs Union, Annual Report on Taxation 2021: review of taxation policies in the EU Member States, Publications Office, 2021, https://data.europa.eu/doi/10.2778/294944, see section 2.1.4 Improving tax administration of the Annual Report on Taxation 2021 for further details.

Table A17.1:**Indicators on taxation**

		Austria					EU-27				
		2010	2018	2019	2020	2021	2010	2018	2019	2020	2021
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	41.1	42.3	42.6	42.1		37.9	40.1	39.9	40.1	
	Labour taxes (as % of GDP)	23.1	23.5	23.7	24.4		20.0	20.7	20.7	21.5	
	Consumption taxes (as % of GDP)	11.6	11.4	11.4	11.0		10.8	11.1	11.1	10.8	
	Capital taxes (as % of GDP)	6.4	7.5	7.6	6.7		7.1	8.2	8.1	7.9	
	Total property taxes (as % of GDP)	0.7	0.8	0.8	0.9		1.9	2.2	2.2	2.3	
	Recurrent taxes on immovable property (as % of GDP)	0.2	0.2	0.2	0.2		1.1	1.2	1.2	1.2	
	Environmental taxes as % of GDP	2.3	2.3	2.3	2.1		2.4	2.4	2.4	2.2	
Progressivity & fairness	Tax wedge at 50% of Average Wage (Single person) (*)	38.4	39.0	38.6	36.8	37.2	33.9	32.4	32.0	31.5	31.9
	Tax wedge at 100% of Average Wage (Single person) (*)	48.2	47.6	47.9	47.5	47.8	41.0	40.2	40.1	39.9	39.7
	Corporate Income Tax - Effective Average Tax rates (1) (*)		24.0	24.0	23.4			19.8	19.5	19.3	
	Difference in GINI coefficient before and after taxes and cash social transfers (pensions excluded from social transfers)	10.3	9.8	9.7	9.7		8.4	7.9	7.4	8.3	
Tax administration & compliance	Outstanding tax arrears: Total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		7.9	7.6				31.9	31.8		
	VAT Gap (% of VTTL)		9.4	8.7				11.2	10.5		
Financial Activity Risk	Dividends, Interests and Royalties (paid and received) as a share of GDP (%)		7.1	6.2	4.9			10.7	10.5		
	FDI flows through SPEs (Special Purpose Entities), % of total FDI flows (in and out)							47.8	46.2	36.7	

(1) Forward-looking Effective Tax Rate (OECD)
(*) EU27 simple average, as no aggregated EU27 value
Source: European Commission and OECD.

Graph A17.1: **Indicators on tax wedge**



(1) The second earner average tax wedge measures how much extra personal income tax (PIT) plus employee and employer social security contributions (SSCs) the family will have to pay as a result of the second earner entering employment, as a proportion of the second earner's gross earnings plus the employer SSCs due on the second earner's income. For a more detailed discussion see OECD (2016), "Taxing Wages 2016", OECD Publishing, Paris. http://dx.doi.org/10.1787/tax_wages-2016-en
(*) EU27 simple average as there is no aggregated EU27 value.
Source: European Commission

Table A18.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-18	2019	2020	2021	forecast 2022	forecast 2023
Real GDP (y-o-y)	3.0	0.6	1.4	1.5	-6.7	4.5	3.9	1.9
Potential growth (y-o-y)	2.2	1.0	1.1	1.1	1.0	1.2	1.3	1.4
Private consumption (y-o-y)	1.9	0.9	0.9	0.7	-8.5	3.3	4.1	2.3
Public consumption (y-o-y)	2.1	1.2	1.1	1.5	-0.5	6.7	-1.2	0.7
Gross fixed capital formation (y-o-y)	1.7	-0.2	2.7	4.8	-5.2	4.0	3.7	2.3
Exports of goods and services (y-o-y)	7.6	1.2	3.3	3.4	-10.8	12.7	6.3	3.8
Imports of goods and services (y-o-y)	6.2	1.3	3.6	2.0	-9.4	14.5	4.6	3.8
Contribution to GDP growth:								
Domestic demand (y-o-y)	1.9	0.7	1.3	1.8	-5.8	4.1	2.8	1.9
Inventories (y-o-y)	0.4	-0.1	0.1	-1.2	0.1	0.5	0.1	0.0
Net exports (y-o-y)	0.9	0.0	-0.1	0.9	-1.1	-0.5	1.0	0.0
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.3	0.0	0.4	0.4	0.5	0.6	0.7	0.6
Capital accumulation (y-o-y)	0.7	0.5	0.5	0.7	0.5	0.6	0.6	0.6
Total factor productivity (y-o-y)	1.2	0.5	0.2	0.1	0.0	0.0	0.1	0.1
Output gap	0.0	-0.5	-0.4	2.1	-5.7	-2.7	-0.2	0.3
Unemployment rate	5.7	5.1	5.9	4.8	6.0	6.2	5.0	4.8
GDP deflator (y-o-y)	2.1	1.7	1.8	1.6	2.3	1.8	3.4	3.2
Harmonised index of consumer prices (HICP, y-o-y)	2.0	2.3	1.6	1.5	1.4	2.8	6.0	3.0
Nominal compensation per employee (y-o-y)	2.5	2.2	2.2	2.8	1.7	3.4	1.5	2.6
Labour productivity (real, hours worked, y-o-y)	2.4	0.6	0.7	-0.1	2.1	-0.6	-1.3	0.5
Unit labour costs (ULC, whole economy, y-o-y)	0.9	2.5	1.8	2.5	7.3	1.0	0.5	1.6
Real unit labour costs (y-o-y)	-1.2	0.8	0.0	0.8	4.8	-0.7	-2.8	-1.5
Real effective exchange rate (ULC, y-o-y)	0.0	0.0	0.9	-1.0	.	.	.	.
Real effective exchange rate (HICP, y-o-y)	-0.3	-0.7	1.0	-1.0	2.0	0.2	.	.
Net savings rate of households (net saving as percentage of net disposable income)	11.2	10.0	7.4	8.5	14.4	.	.	.
Private credit flow, consolidated (% of GDP)	5.9	2.2	2.6	5.0	4.7	.	.	.
Private sector debt, consolidated (% of GDP)	124.1	129.7	124.0	121.5	131.2	.	.	.
of which household debt, consolidated (% of GDP)	50.9	53.1	50.7	49.6	53.2	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	73.2	76.6	73.4	72.0	78.0	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	.	3.4	4.2	1.9	1.8	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	0.0	1.9	0.7	-1.3	4.1	4.0	2.7	1.8
Corporations, gross operating surplus (% of GDP)	26.9	25.3	24.2	23.8	24.7	24.4	23.7	24.0
Households, net lending (+) or net borrowing (-) (% of GDP)	5.2	4.0	2.3	2.8	6.0	1.6	-0.4	-1.0
Deflated house price index (y-o-y)	0.7	2.9	3.5	4.0	6.2	.	.	.
Residential investment (% of GDP)	4.4	4.3	4.4	4.7	5.1	5.2	.	.
Current account balance (% of GDP), balance of payments	2.9	2.6	1.9	2.1	1.9	-0.5	-1.1	-0.9
Trade balance (% of GDP), balance of payments	3.8	3.2	3.2	3.3	2.9	0.2	.	.
Terms of trade of goods and services (y-o-y)	-0.7	-0.7	0.4	-0.6	0.9	-2.5	-2.4	0.6
Capital account balance (% of GDP)	-0.1	-0.1	-0.3	0.0	-0.1	0.0	.	.
Net international investment position (% of GDP)	-12.8	-5.1	3.5	13.5	9.3	14.7	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (1)	-9.8	-11.3	-9.0	-1.4	-5.6	-4.8	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (1)	175.9	193.7	162.7	145.9	159.0	155.5	.	.
Export performance vs. advanced countries (% change over 5 years)	14.7	-3.7	-6.3	-0.8	5.7	.	.	.
Export market share, goods and services (y-o-y)	-0.5	-4.8	0.8	-0.5	0.6	2.5	1.6	-0.5
Net FDI flows (% of GDP)	1.4	2.8	0.6	1.4	2.3	1.5	.	.
General government balance (% of GDP)	-2.8	-3.2	-1.3	0.6	-8.0	-5.9	-3.1	-1.5
Structural budget balance (% of GDP)	.	.	-0.7	-0.6	-4.8	-4.4	-3.0	-1.6
General government gross debt (% of GDP)	66.5	79.1	80.9	70.6	83.3	82.8	80.0	77.5

(1) NIIP excluding direct investment and portfolio equity shares.
(2) Domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
Source: Eurostat and ECB as of 2022-05-02, where available; European Commission for forecast figures (spring forecast 2022)

This annex assesses fiscal sustainability risks for Austria over the short, medium and long term. It follows the same multi-dimensional approach as the 2021 Fiscal Sustainability Report, updated on the basis of the Commission 2022 spring forecast.

Table 1 presents the baseline debt projections. It shows the projected government debt and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment. These projections assume that no new fiscal policy measures are taken after 2023, and include the expected positive impact of investments under Next Generation EU.

Graph 1 shows four alternative scenarios around the baseline, to illustrate the impact of changes in assumptions. The 'historical SPB' scenario assumes that the structural primary balance (SPB) gradually returns to its past average level. In the 'lower SPB' scenario, the SPB is permanently weaker than in the baseline. The 'adverse interest-growth rate' scenario assumes a less favourable snowball effect than in the baseline. In the 'financial stress' scenario, the country temporarily faces higher market interest rates in 2022.

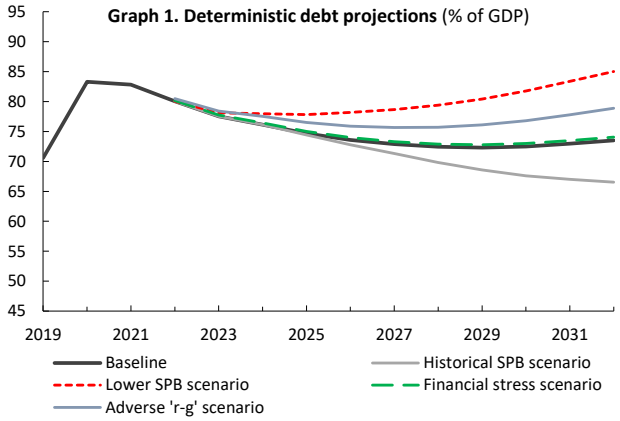
Graph 2 shows the outcome of the stochastic projections. These projections show the impact on debt of 2 000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

Table 2 shows the S1 and S2 fiscal sustainability indicators and their main drivers. S1 measures the consolidation effort needed to bring debt to 60% of GDP in 15 years. S2 measures the consolidation effort required to

Table A19.1: **Debt sustainability for Austria**

Table 1. Baseline debt projections	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross debt ratio (% of GDP)	**70.6**	**83.3**	**82.8**	**80.0**	**77.5**	**76.2**	**74.7**	**73.6**	**72.9**	**72.5**	**72.3**	**72.5**	**73.0**	**73.5**
Change in debt	-3.5	12.7	-0.5	-2.8	-2.5	-1.4	-1.5	-1.1	-0.7	-0.5	-0.1	0.2	0.5	0.6
of which														
Primary deficit	*-2.0*	*6.7*	*4.8*	*2.1*	*0.5*	*0.7*	*0.8*	*1.0*	*1.2*	*1.4*	*1.6*	*1.8*	*1.9*	*2.1*
Snowball effect	*-0.8*	*4.7*	*-3.9*	*-4.8*	*-2.9*	*-2.1*	*-2.3*	*-2.1*	*-1.9*	*-1.9*	*-1.7*	*-1.6*	*-1.5*	*-1.5*
Stock-flow adjustment	*-0.6*	*1.3*	*-1.4*	*-0.1*	*-0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Gross financing needs (% of GDP)	8.7	18.7	13.3	11.5	9.9	10.1	10.0	10.0	10.1	10.3	10.4	10.6	10.9	11.2

Graph 1. Deterministic debt projections (% of GDP)



Graph 2. Stochastic debt projections (% of GDP)

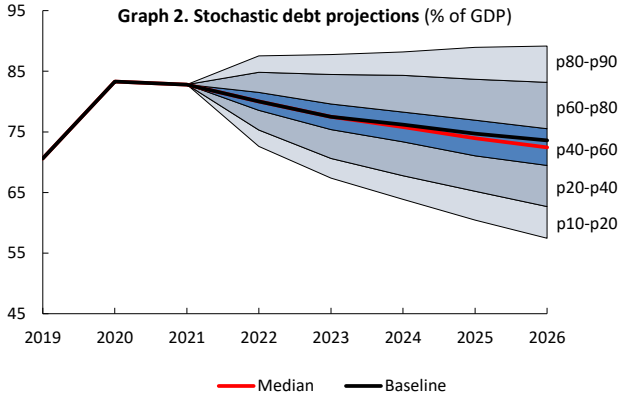


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	**S2**
Overall index (pps. of GDP)		**1.7**	**3.4**
of which			
Initial budgetary position		-1.0	0.8
Debt requirement		1.4	
Ageing costs		1.3	2.6
of which	*Pensions*	*0.7*	*-0.1*
	Health care	*0.3*	*1.0*
	Long-term care	*0.3*	*1.6*
	Others	*-0.1*	*0.0*

Source: European Commission

Table A19.2: **Heat map of fiscal sustainability risks for Austria**

Short term	Medium term									Long term	
				Debt sustainability analysis (DSA)							
					Deterministic scenarios						
Overall (S0)	Overall (S1+DSA)	S1	Overall		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	Stochastic projections	S2	Overall (S2+DSA)
LOW	MEDIUM	MEDIUM	LOW	Overall	LOW	LOW	MEDIUM	LOW	LOW	LOW	MEDIUM	MEDIUM
				Debt level (2032), % GDP	74	67	85	79	74			
				Debt peak year	2021	2021	2032	2021	2021			
				Fiscal consolidation space	91%	71%	95%	91%	91%			
				Probability of debt ratio exceeding in 2026 its 2021 level						21%		
				Difference between 90th and 10th percentiles (pps. GDP)						32		

(1) *Debt level* in 2032: green: below 60% of GDP, yellow: between 60% and 90%, red: above 90%. (2) The *debt peak year* indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early; yellow: peak towards the middle of the projection period; red: late peak. (3) *Fiscal consolidation space* measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed; yellow: intermediate; red: low. (4) *Probability of the debt ratio exceeding in 2026 its 2021 level*: green: low probability, yellow: intermediate, red: high (also reflecting the initial debt level). (5) The *difference between the 90th and 10th percentiles* measures uncertainty, based on the debt distribution under *2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.*

Source: European Commission (for further details on the Commission's multi-dimensional approach, see the 2021 Fiscal Sustainability Report).

stabilise debt over an infinite horizon. The *initial budgetary position* measures the effort required to cover future interest payments, the *ageing costs* component accounts for the need to absorb the projected change in ageing-related public expenditure such as pensions, health care and long-term care, and the *debt requirement* measures the additional adjustment needed to reach the 60% of GDP debt target.

Finally, the heat map presents the overall fiscal sustainability risk classification (Table A19.2)**.** The *short-term risk category* is based on the S0 indicator, an early-detection indicator of fiscal stress in the upcoming year. The *medium-term risk category* is derived from the debt sustainability analysis (DSA) and the S1 indicator. The DSA assesses risks to sustainability based on several criteria: the projected debt level in 10 years' time, the debt trajectory ('peak year'), the plausibility of fiscal assumptions and room for tighter positions if needed ('fiscal consolidation space'), the probability of debt not stabilising in the next 5 years and the size of uncertainty. The *long-term risk category* is based on the S2 indicator and the DSA.

Overall, short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A19.2).

Medium-term risks to fiscal sustainability are medium. On the one hand, the debt sustainability analysis (DSA) points to low risks. In the baseline, government debt is projected to decline from 80% of GDP in 2022 to 72% of GDP in 2029 before increasing again slightly to 74% in 2032 (Table 1). This debt path is sensitive to possible shocks to fiscal, macroeconomic and financial variables, as illustrated by alternative scenarios (one of which pointing to medium risks) and stochastic simulations (Table A19.1 and A19.2). On the other hand, the sustainability gap indicator S1 signals medium risks, as an adjustment of 1.7 pps. of GDP of the structural primary balance would be needed to reduce debt to 60% of GDP in 15 years' time (Table 2). Overall, the medium risks reflect the debt level and the projected increase in ageing costs over the medium term, especially related to public pensions.

Long-term risks to fiscal sustainability are medium. Over the long term, the sustainability gap indicator S2 (at 3.4 pps. of GDP) points to medium risks, while the DSA points to low risk, leading to an overall medium risk assessment. The S2 indicator suggests that, to stabilise debt over the long term, it will be necessary to address budgetary pressures stemming from population ageing, especially those related to long-term care and health care (Table 2).