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2020 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011

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EXECUTIVE SUMMARY

In a context of growing uncertainty and rapid technological change, further structural reform and targeted investment could help Austria achieve more sustainable and inclusive growth. The Austrian economy has performed well in recent years, consistently recording one of the highest levels of *per capita* GDP in the EU. However, rapidly changing economic conditions underscore the need to tackle key outstanding challenges. Austria is still far away from reaching its greenhouse gas emissions targets and this will make it more difficult to achieve carbon neutrality by 2040. There is considerable scope for comprehensive reform of the tax system to foster environmental sustainability, fairness and inclusive growth. Over the medium term, population ageing and the untapped labour market potential of women, the low-skilled and people with a migrant background are expected to limit the extent to which labour contributes to economic growth and this will require further reform efforts. In addition, people's educational success is still heavily influenced by their socio economic background. As a result, future productivity growth hinges on improving innovation outcomes, digitalisation, the business environment and human capital. At the same time, curbing public expenditure remains essential to ensuring long-term fiscal sustainability. More comprehensive reform of the fiscal framework could make public spending more efficient, especially at subnational level.

The broad-based, solid economic growth of recent years lost momentum in 2019 and is expected to remain moderate in 2020-2021. Austria had experienced fast growth (2.1-2.5%) from 2016, but this slowed down in 2019 (1.6%). In line with worsening sentiment indicators, growth is set to remain moderate in 2020-2021, mostly due to expected lower industrial production, export and investment growth. Private consumption is expected to remain the main contributor to growth. After peaking in 2016, the unemployment rate decreased strongly and reached 4.5% in 2019 (the lowest rate since the crisis) and is expected to only slightly increase (4.6%) in 2020-2021. Over the medium term, with labour contributing less, capital and total factor productivity will become more important for potential growth.

Public finances are developing favourably. Having improved to 0.2% of GDP in 2018 on the back of the economic boom, the general government budget surplus is expected to have grown further to 0.4% in 2019 thanks to higher than expected revenues. The headline balance is expected to narrow to 0.2% of GDP in 2020, before expanding again to 0.4% in 2021, assuming no policy changes. The dip in 2020 is largely due to a series of discretionary fiscal measures that were adopted shortly before the snap elections in September 2019.

Identifying investment needs in green technology and sustainable solutions, and securing adequate funding will be key to delivering on climate and energy objectives and shaping a new growth model. To remain competitive in international markets, Austria will need to focus investment on the ecological transition, research and (digital) innovation, and human capital. For the last decade, its investment ratio has been above the euro area average, but investment growth is expected to be less lively in the coming years. The high level of R&D expenditure is not translating sufficiently into innovation outcomes. Digital technologies are still not widely used, particularly among smaller businesses, and restrictive service sector regulation is hampering investment. Increasing energy efficiency and the share of renewables would strengthen Austria's sustainable growth potential. Investment in skills, affordable full-time childcare and all-day schools would help to improve labour market outcomes, in particular for disadvantaged groups and women.

Austria has made overall limited ([1]) progress in addressing the 2019 country-specific recommendations. ([2]) There has been some progress in the following areas:

- focusing investment on research and development, innovation and digitalisation;

([1]) Information on the level of progress and actions taken to address the policy advice in each respective subpart of a country-specific recommendation is presented in the overview table in the Annex.

([2]) As a result of the governmental crisis in June 2019, a caretaker government took over until the end of the year. Following snap elections and coalition talks, the new government was sworn in at the beginning of 2020. The following analyses report on planned measures and reforms as announced in the new government programme. However, the new plans are not incorporated in the assessment of the implementation of the country-specific recommendations.

- supporting productivity growth by stimulating digitalisation of businesses and company growth;
- reducing the tax wedge;
- ensuring the sustainability of the health care system and
- supporting full-time employment among women.

There has been limited progress in the following areas:

- ensuring the sustainability of the pension and long-term care systems;
- simplifying fiscal relations;
- reducing regulatory barriers in the service sector, and
- raising the levels of basic skills for disadvantaged groups.

There has been no progress in the following areas:

- Labour market outcomes for the low skilled.

Austria performs relatively well on the social scoreboard supporting the European pillar of social rights. Policies to reduce poverty and social exclusion are generally effective and income inequality is below the EU average. However, the relatively low availability of childcare compromises the labour market participation of women.

As regards progress in its Europe 2020 targets, Austria is performing well on tertiary education and early school leaving. In addition, Austria is close to its national target for its share of renewable energy and the employment rate. However, despite the recently adopted climate package, it is unlikely to reach its national energy efficiency and climate targets by 2020.

Austria performs well on the United Nations' sustainable development goals (SDGs), ([3]) particularly SDG 3 (good health and well-being). However, it scores below EU average for SDG 13 on climate action.

Other key structural issues analysed in this report, which point to particular challenges for Austria's economy, are the following:

- **The fiscal framework is still overly complex and the tax mix relies too strongly on labour.** Austria's fiscal federalism provides weak incentives for efficient public spending at subnational level, due to a considerable mismatch of revenue-raising and spending responsibilities. Greater subnational tax autonomy paired with a more transparent allocation of competences across levels of government could improve political accountability and incentives to contain costs. The tax system has considerable scope for reform to foster fairness, inclusive growth and environmental sustainability. High labour taxes create significant disincentives for labour demand and supply. Relying more on wealth-related and environmental taxes, including a consistent taxation of CO_2 emissions would be more efficient gains, make climate-friendly energy sources more competitive and provide fiscal space to reduce more distortive taxes.
- **The projections for pension, health and long-term care expenditure point to a challenge for long-term fiscal sustainability.** While improving pension adequacy, the 2020 Pension Adjustment Act includes measures that thwart previous reform efforts to improve fiscal sustainability. Progress on reducing health care spending is slow and hospital and pharmaceutical expenditure is still well above the EU average. Despite recent measures, the long-term care system still relies on a comparatively large share of informal care and the sustainability challenges of public spending.

([3]) Within the scope of its legal basis, the European Semester can help drive national economic and employment policies towards the achievement of the United Nations Sustainable Development Goals (SDGs) by monitoring progress and ensuring closer coordination of national efforts. The present report contains reinforced analysis and monitoring on the SDGs. A new annex (ANNEX E) presents a statistical assessment of trends in relation to SDGs in Austria during the past five years, based on Eurostat's EU SDG indicator set.

- **Overall employment has grown, but the employment gender gap has widened since 2016.** The gender gap in part-time employment is among the widest in the EU, driven largely by a lack of affordable high-quality full-time childcare. Supporting the full-time employment of women could alleviate labour shortages in some sectors and address the gender gaps in pay and pensions in the long term. People with migrant backgrounds, the low-skilled and older workers are other groups whose potential is underutilised. Meanwhile, the growing number of vacancies points to emerging labour shortages.

- **While the overall social situation is improving, is the benefits are not spread evenly across social groups.** The share of people at risk of poverty or social exclusion has continued to fall, reaching its lowest level since 2005. However, the risks remain high for vulnerable groups such as single-parent households, foreign-born adults and families with three or more dependent children. Also, the risk of poverty varies significantly between regions, with people in cities generally more affected than those in towns, suburbs and rural areas.

- **Prices and rents are growing strongly, but housing remains comparatively affordable; risks in the banking sector are contained.** Despite rising housing prices and rents, Austria's subsidy scheme and elaborate system of limited-profit housing associations keep costs relatively low. Consequently, housing cost overburden is less of an issue than in the EU on average, but some groups remain vulnerable. Risks to the banking sector seem contained, despite dynamic mortgage lending, but they warrant close monitoring.

- **Educational attainment remains strongly influenced by socio-economic or migrant background.** According to the 2018 PISA survey, educational outcomes had not improved, with large share of students underperforming, a quarter in reading and a fifth in mathematics and science. While the early school leaving rate is below the EU average, it remains significantly higher among foreign-born pupils. Digital skills levels remain below the best-performing countries. Teacher shortages are possible.

- **Austria's future competitiveness depends partly on additional efforts in research and innovation.** Austria has been exceeding the European R&I investment target since 2014. However, its innovation outcomes do not fully reflect this. R&D intensity is very uneven due to a lack of coordination between federal states. Further challenges are the modest level of investment in basic research, low employment in fast-growing innovative firms, the limited availability of venture capital (especially in scale-up stages), and the untapped potential of female researchers.

- **Administrative burden and restrictive regulation continue to hold back the service sector**. Despite efforts to cut red tape, administrative burdens remain heavy. Regulatory restrictiveness is high for professional services, such as accounting, architecture, engineering, real estate agents and in retail. Addressing this would also benefit the manufacturing sector, which relies on an innovative and competitive services sector.

- **Challenges remain as regards the digitalisation of smaller firms and broadband coverage in rural areas.** On key aspects of digitalisation, Austria's smaller firms lag behind their peers in the best-performing Member States. Public support for broadband deployment remains, but Austria is lagging behind, in particular on rural ultrafast broadband. The digitalisation strategy lacks monitoring and performance targets.

- **Greenhouse gas emissions are still far above EU and national targets; without further measures carbon neutrality is unlikely to be realised by 2040**. Reaching EU and national climate targets will require internalising the costs of CO_2 emissions, e.g. through implementing an eco-social tax reform. Reducing transport-related emissions is essential for meeting air quality standards and climate goals. Austria is shifting transalpine transport to rail, but more effort is needed on urban mobility. Promoting reuse, recyclability and secondary raw materials markets could

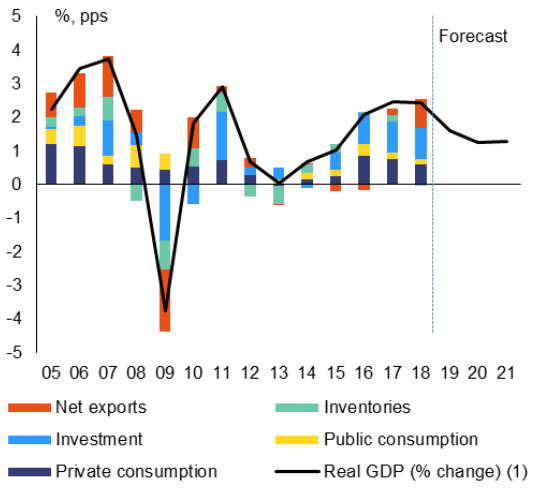
boost the circular economy and drive innovation. The transition to climate neutrality is a challenge for the regions with carbon-intensive industries. The Commission's proposal for a Just Transition Mechanism under the next multi-annual financial framework for the period 2021-2027, includes a Just Transition Fund, a dedicated just transition scheme under InvestEU, and a new public sector loan facility with the EIB. It is designed to ensure that the transition towards EU climate neutrality is fair, by helping the most affected regions in Austria to address the social and economic consequences. Key priorities for support by the Just Transition Fund, set up as part of the Just Transition Mechanism, are identified in Annex D, building on the analysis of the transition challenges outlined in this report.

1. ECONOMIC SITUATION AND OUTLOOK

GDP growth

Austria's strong economic growth of recent years, slowed in 2019 and is expected to remain moderate in 2020-2021. Austria's small open economy is well integrated in global value chains and its economic performance is closely linked to EU and global developments. From 2016, it experienced fast growth (2.1-2.5%). After a still-strong outturn in the first quarter of 2019, GDP growth slowed significantly in the second and third quarters. This is due to falls in exports and in equipment investment. The decrease in exports concerned various sectors, in particular chemicals and related products but also machinery and transport equipment and manufactured goods (affected *inter alia* by weaknesses in the German automotive sector). Looking ahead, persistent headwinds from the external environment and weak readings from business and sentiment indicators point to lower growth, of around 1.3% in 2020-2021 (see Graph 1.1). Solid wage growth and fiscal measures are expected to stimulate private consumption and hence support growth, together with investment in the construction sector (see Section 3.2.2).

Graph 1.1: **GDP growth and contributions**



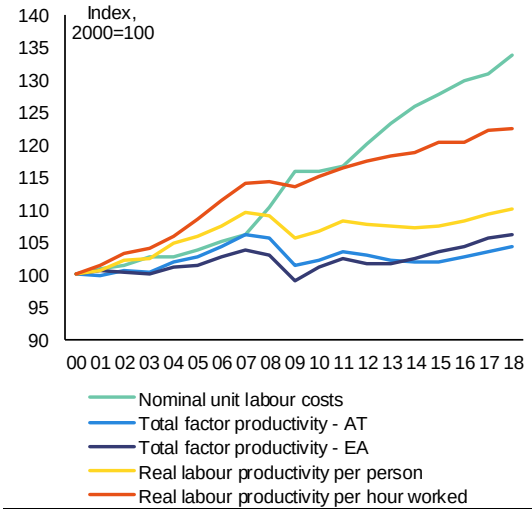
[1] Winter forecast for real GDP growth
Source: European Commission, (2020)

Investment

In line with the economic slowdown, investment decelerated in 2019. From 2015, Austria saw investments pick up significantly, thanks to high capacity utilisation, strong housing demand and overall low financing costs. However, in a context of high uncertainty and weakening industrial production, investment growth turned negative in Q2 and Q3 2019 and is set to remain less dynamic in 2020-2021. On the other hand, excess demand for housing is likely to support investment in the construction sector (see below and Section 3.2.2). Public sector investment is also expected to be conducive to growth. Austria's investment ratio has been consistently above the euro area average since 2009. It has been increasing again gradually since the crisis, reaching 24% of GDP in 2018. This is mostly due to an increase in the share of business investment (household and public investment have remained broadly stable).

Potential and productivity growth

Graph 1.2: **Labour productivity**

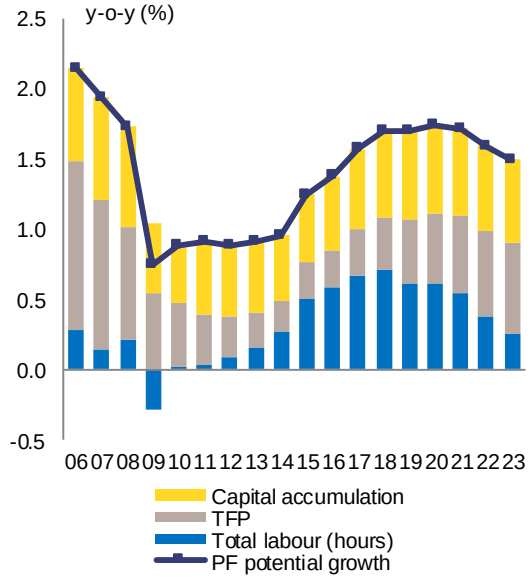


Source: European Commission

Potential growth is set to remain below pre-crisis levels, as productivity growth remains moderate. Like that of most EU countries, Austria's potential growth has been decelerating since before the crisis. Despite increasing again in recent years, it is expected to remain at around 1.7% in the coming years. This reflects the long-term downward trend in total factor productivity (TFP) growth (see Graph 1.2 and Section 3.4.1; European Commission, 2019a) and a declining contribution from labour due to projected lower growth in the working-age population. Since 2008, the contribution of capital

accumulation to potential growth has been relatively stable, while hours worked contributed little until 2015 (see Graph 1.3). This was due *inter alia* to an increasing share of part-time work. Over the medium term, population ageing is expected to depress the contribution of labour, increasing the importance of capital and TFP in sustaining potential growth (see Section 3.4.1).

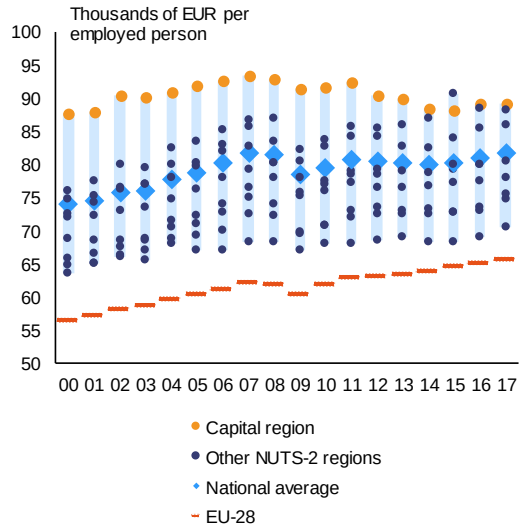
Graph 1.3: **Contributions to potential growth**



Source: European Commission

productivity (real gross value added per worker) ranged from 100% of the EU average in Burgenland to 129% in Vienna in 2016. They are less pronounced than in Germany and Italy and decreased between 2010-2017. This was mostly due to negative labour productivity developments in Vienna (-0.4% p.a.) and increases in all other *Länder* (see Graph 1.4).

Graph 1.4: **Labour productivity (real GVA per worker), EU-28, Austria (NUTS-2 regions), 2000-2017**



Source: European Commission

Regional disparities

Economic disparities between Austrian regions are among the smallest in the EU and have narrowed steadily. In 2016, *per capita* GDP was highest in the urban NUTS 3 territories of Vienna, Sankt Pölten, Graz, Linz-Wels, Salzburg, and Innsbruck. ([4]) It was also high in more rural areas in West Austria (most territories in Tyrol and Vorarlberg), where it was 35 percentage points (pps) above the EU average. However, in rural parts of Burgenland, Weinviertel, Mühlviertel and Upper Carinthia it reached only about 77-87% of the EU-average. In 2017, *per capita* GDP in the regions of Salzburg and Vienna (NUTS 2 level, *Länder*) was 52 pps above the EU average, while it stood at only 91% in Austria's least developed region, Burgenland. Disparities in labour

([4]) NUTS 3 correspond to the smallest of the 3 levels in which EU regions are classified under the "Nomenclature of territorial units for statistics"; in Austria, NUTS 3 regions are groups of *Bezirke*.

Inflation

Inflation is expected to fall below 2%, but to remain above the euro area average. Inflation was above 2% in 2017 and 2018, but is expected to fall to 1.5%-1.6% over 2019-2021. The fluctuations are driven mainly by oil prices, rising in 2017-2018 and falling in 2019. In the coming years, core inflation is set to exceed headline inflation, due to traditionally higher costs in services and price pressures linked to strong domestic demand and wage increases. Prices continue to increase in tourism-related services such as hotels and restaurants, though this might be linked to rising input prices (Schnabel *et al.*, 2015). This, together with continuously increasing costs for housing (see Section 3.2.2), water, electricity and fuels, is expected to keep inflation above euro area levels (1.2-1.4%) in 2019-2021.

Labour market

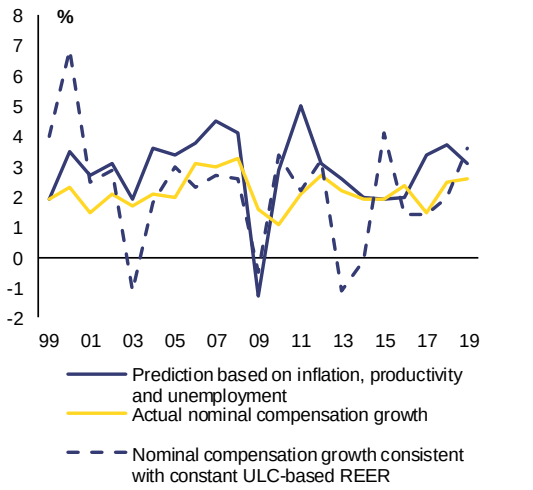
On the back of strong economic growth, the labour market improved markedly in 2018. Employment grew by 1.7% in 2018 and despite the parallel increase in the labour force, the unemployment rate decreased to 4.9%. In 2019, employment growth is expected to have slowed along with the economic cool down, while unemployment fell to 4.5%, the lowest rate since the crisis. It is expected to increase slightly to 4.6% in 2020-2021. Over the last five years, Austria has made progress towards reaching SDG 8 on decent work and economic growth.

Wages and competitiveness

In the past, structural factors had a dampening effect on wage growth, but wages picked up in 2018. Nominal compensation per employee increased by 2.9% in 2018 and is expected to have continued growing, at 2.8%, in 2019. As nominal wages grew faster than inflation, real wages saw a 1.2% increase in 2018, supporting employees' purchasing power. For 2019, they are expected to have grown by 0.9%. In general, the main determinants of nominal wage growth are labour productivity and past inflation. However, rising participation rates and the increased openness of the economy have been found to reduce wage growth in past decades (Fenz *et al*., 2019). This might explain why wage growth was slower than what could have been expected on the basis of the historical relationship with inflation, productivity and unemployment (see Graph 1.5). ([5])

Unit labour costs (ULC) growth remained contained, at 2.2%. Despite slowing somewhat between 2015 and 2017, nominal ULC growth has stayed relatively stable since 2012, fluctuating around 2% and reaching 2.2% in 2018 (see Graph 1.5). This, together with a nominal appreciation of the euro, contributed to real effective exchange rate appreciation (REER), in line with main euro area peers. While Austria's cost competitiveness ([6]) has declined recently, in 2019, it is expected to have been boosted by a modest depreciation of the REER.

Graph 1.5: **Benchmark for nominal compensation growth**



Source: European Commission

Social developments

While income inequality remains below the EU average, wealth inequality is high. In 2018, the disposable income of the richest 20% of households was about four times higher than that of the poorest 20%. This constitutes an improvement with respect to 2017 and is well below the EU average. Income inequality before transfers is also declining and below the EU average. However, GDP growth has outpaced the growth of household incomes from 2010 to 2018 and gross disposable household incomes were still below the pre-crisis levels in 2018, calling the inclusiveness of the economic recovery into question. In addition, Austria ranks high in terms of inequality based on net wealth, mainly due to low house-ownership rates at the bottom of the wealth distribution. The tax-benefit system continues to perform well in reducing income inequality and protecting people from social exclusion. The risk of poverty and social exclusion fell further below the EU average and pre-crisis levels, but the foreign-born population continues to be more exposed, including in work poverty. Moreover, despite improvements in 2018,

([5]) This is a benchmark for wage growth consistent with internal and external labour market conditions. It is calculated as wage growth predicted on the basis of changes in labour productivity, prices, the unemployment rate, and wage growth consistent with the real effective exchange rate (REER) based on constant unit labour cost (ULCs) (European Commission, 2018a; European Commission, 2015).

([6]) Measured as relative ULCs: REER based on the ULC deflator.

inequality of opportunity remains high, especially for children of low-skilled parents.

External position

The current account balance remained relatively stable, along with a slightly positive net international investment position. In the past years, Austria's current account balance remained broadly stable, around 2%, driven mostly by a positive trade balance. GDP and aggregate demand grew strongly in 2018, leading to a small increase in the current account surplus from 1.7% in 2017 to 2.4%. This is due mostly to higher exports than imports in the services sectors, in particular in tourism-related services, but exports in other business services have also increased. After strong growth in 2018, exports growth weakened in 2019, and is expected to remain moderate in 2020-2021. The net international investment position continued its gradual increase, reaching 3.7% of GDP in 2018, which is in line with fundamentals. The export market shares indicator (5-year cumulated change) improved further, to 4%, after its sharp decline in the early 2010s.

Private sector debt

Private sector debt continues to decline. On the back of rising GDP, private sector debt continued to decline in 2018, albeit slightly, reaching 121% of GDP. The fall was driven by a decline in households' and non-financial corporations' debt (to 49.6% and 71.4% respectively), despite an increase in credit flows to the latter in the past 3 years (by 2.3-2.5% in 2016-2018). Private debt and credit growth remain well below the macroeconomic scoreboard thresholds.

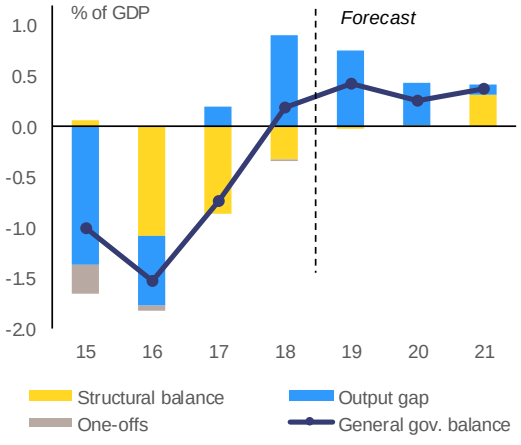
Housing

House prices have been growing strongly, driven mostly by developments in Vienna. In the past decade, Austria has seen repeated house price surges, leading to the strongest price rises in the euro area relative to a low pre-crisis levels. This can be mainly attributed to an accumulation of excess demand (higher demand than supply), also due to the low interest rate environment (see Section 3.2.2; Schneider, 2019). The rises were driven mostly by the capital, Vienna, where prices have doubled over the past decade. However, between 2015 and 2018, prices also grew strongly in other regions, reducing slightly the gap between Vienna and the rest of the country (European Commission, 2019a). Risks to the banking sector stemming from the increasing exposure of banks to the real estate sector seem contained so far (see Section 3.2.1), but parallel increases in rents put pressure on the affordability of housing (see Section 3.3.3).

Public finances and fiscal sustainability

Public finances have developed favourably. On the back of the economic boom, and for the first time in several decades, the general government budget reached a surplus position in 2018 (0.2% of GDP). This surplus is estimated to have grown further in 2019 (0.4% of GDP), thanks to higher than expected revenues. The headline balance is expected to narrow to 0.2% of GDP in 2020, before expanding again to 0.4% in 2021 (see Graph 1.6). The expected dip in 2020 is largely due to a series of discretionary fiscal measures such as increased tax credits, lower health contributions, and increased pensions. Given the positive development of general government net lending, the structural balance is projected to be above the medium-term objective of -0.5% of GDP, improving from -0.3% of GDP in 2018 to 0.3% in 2020. Public debt is expected to continue its downward path from 74.0% of GDP in 2018 to 69.9% and 67.2% in 2019 and 2020, respectively.

Graph 1.6: **Key fiscal indicators**



Source: European Commission, 2019 autumn forecast

United Nations' Sustainable Development Goals (SDG)

Austria performs generally well with regard to the SDGs. In the context of this report, progress can be noted in relation to SDG 1 (no poverty) due to social transfers. For SDG 3 (good health and well-being) Austria performs very well due to a low level of unmet health care needs. In relation to SDG 4 (quality education) the overall performance is better than the EU average with the notable exception of the indicator on underachievement in reading. Strong industries in relation to water management and waste treatment lead to a very good performance for SDG 6 (clean water and sanitation). Also for SDG 7 (affordable and clean energy and SDG 8 (decent work and economic growth) a good performance can be noted. In relation to SDG 9 (industry, innovation and infrastructure), more innovation outcomes would improve the performance The performance for SDG 12 (responsible consumption and production) could improve through a more circular economy while for SDG 13 (climate action) the slight increase in greenhouse gas emissions lead to a below average result.

Table 1.1: **Key economic and financial indicators - Austria**

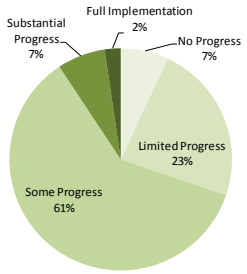
	2004-07	2008-12	2013-16	2017	2018	forecast 2019	2020	2021
Real GDP (y-o-y)	3.0	0.6	0.9	2.5	2.4	1.6	1.3	1.3
Potential growth (y-o-y)	2.1	1.0	1.1	1.6	1.7	1.7	1.7	1.7
Private consumption (y-o-y)	1.9	0.9	0.6	1.4	1.1	.	.	.
Public consumption (y-o-y)	2.1	1.2	1.1	1.1	0.9	.	.	.
Gross fixed capital formation (y-o-y)	1.7	-0.2	1.9	4.0	3.9	.	.	.
Exports of goods and services (y-o-y)	7.6	1.2	2.4	5.0	5.9	.	.	.
Imports of goods and services (y-o-y)	6.2	1.3	2.7	5.0	4.6	.	.	.
Contribution to GDP growth:								
Domestic demand (y-o-y)	1.9	0.7	0.9	1.9	1.7	.	.	.
Inventories (y-o-y)	0.4	-0.1	0.0	0.2	0.0	.	.	.
Net exports (y-o-y)	0.9	0.0	-0.1	0.2	0.9	.	.	.
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.3	0.0	0.4	0.7	0.7	0.6	0.6	0.5
Capital accumulation (y-o-y)	0.7	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Total factor productivity (y-o-y)	1.2	0.5	0.2	0.3	0.4	0.4	0.5	0.6
Output gap	0.2	-0.4	-1.0	0.2	0.9	0.8	0.4	0.1
Unemployment rate	5.3	4.7	5.7	5.5	4.9	4.6	4.6	4.6
GDP deflator (y-o-y)	2.1	1.7	1.9	1.1	1.7	1.9	1.7	1.7
Harmonised index of consumer prices (HICP, y-o-y)	2.0	2.3	1.3	2.2	2.1	1.5	1.6	1.5
Nominal compensation per employee (y-o-y)	2.5	2.2	2.1	1.6	2.9	2.8	2.0	1.9
Labour productivity (real, person employed, y-o-y)	1.7	-0.4	0.1	0.8	0.7	.	.	.
Unit labour costs (ULC, whole economy, y-o-y)	0.9	2.5	2.0	0.8	2.2	2.3	1.3	1.1
Real unit labour costs (y-o-y)	-1.2	0.8	0.0	-0.3	0.5	0.5	-0.4	-0.6
Real effective exchange rate (ULC, y-o-y)	0.0	0.0	0.9	0.3	1.2	-1.3	-1.1	-0.8
Real effective exchange rate (HICP, y-o-y)	-0.3	-0.7	0.8	1.1	2.1	-0.9	-0.5	-0.3
Net savings rate of households (net saving as percentage of net disposable income)	11.2	10.0	7.2	7.3	7.7	.	.	.
Private credit flow, consolidated (% of GDP)	5.9	2.2	1.8	3.6	3.9	.	.	.
Private sector debt, consolidated (% of GDP)	124.1	129.7	124.8	121.8	121.0	.	.	.
of which household debt, consolidated (% of GDP)	50.9	53.1	51.0	50.2	49.6	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	73.2	76.6	73.8	71.6	71.4	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	.	3.4	5.0	3.0	2.3	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	0.0	1.9	1.6	0.3	-0.1	-0.5	-0.3	-0.2
Corporations, gross operating surplus (% of GDP)	26.9	25.3	24.1	24.5	24.5	24.3	24.5	24.6
Households, net lending (+) or net borrowing (-) (% of GDP)	5.2	4.0	2.3	2.0	2.2	2.2	2.1	2.0
Deflated house price index (y-o-y)	0.7	2.9	4.6	3.2	2.5	.	.	.
Residential investment (% of GDP)	4.4	4.3	4.3	4.5	4.5	.	.	.
Current account balance (% of GDP), balance of payments	2.9	2.6	2.2	1.6	2.3	2.1	2.0	2.1
Trade balance (% of GDP), balance of payments	3.8	3.2	3.4	3.2	3.6	.	.	.
Terms of trade of goods and services (y-o-y)	-0.7	-0.7	0.9	-1.3	-0.6	-0.1	-0.1	-0.1
Capital account balance (% of GDP)	-0.1	-0.1	-0.2	-0.1	-0.1	.	.	.
Net international investment position (% of GDP)	-12.8	-5.1	2.7	2.8	3.7	.	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (1)	-9.8	-11.3	-10.9	-4.4	-5.0	.	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (1)	175.9	193.7	170.9	148.2	142.2	.	.	.
Export performance vs. advanced countries (% change over 5 years)	14.7	-3.3	-8.9	-0.1	1.8	.	.	.
Export market share, goods and services (y-o-y)	-0.5	-4.8	0.9	-0.9	3.0	1.0	-0.8	-1.2
Net FDI flows (% of GDP)	1.4	2.8	1.0	-0.8	0.7	.	.	.
General government balance (% of GDP)	-2.8	-3.2	-1.8	-0.7	0.2	0.4	0.2	0.4
Structural budget balance (% of GDP)	.	.	-0.7	-0.9	-0.3	0.0	0.0	0.3
General government gross debt (% of GDP)	66.5	79.1	83.3	78.3	74.0	69.9	67.2	64.6
Tax-to-GDP ratio (%) (3)	42.2	42.2	43.3	42.4	42.8	42.8	42.7	42.5
Tax rate for a single person earning the average wage (%) (4)	33.4	33.5	34.1	32.4	32.8	.	.	.
Tax rate for a single person earning 50% of the average wage (%) (4)	20.9	21.1	22.8	21.4	21.7	.	.	.

(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.
(3) The tax-to-GDP indicator includes imputed social contributions and hence differs from the tax-to-GDP indicator used in the section on taxation.
(4) Defined as the income tax on gross wage earnings plus the employee's social security contributions less universal cash benefits, expressed as a percentage of gross wage earnings.
Source: Eurostat and ECB as of 4-2-2020, where available; European Commission for forecast figures (Winter forecast 2020 for real GDP and HICP, Autumn forecast 2019 otherwise).

2. PROGRESS WITH COUNTRY-SPECIFIC RECOMMENDATIONS

Austria's progress in implementing the recommendations addressed to it in 2019 ([7]) has to be seen in a longer-term perspective since the introduction of the European Semester in 2011. Of all the Country Specific Recommendations (CSRs) addressed to it since 2011, Austria has made at least 'some progress' on 70%, and 'limited' or 'no progress' on 30% (see Graph 2.1). It has made substantial progress in consolidating public finances and stabilising the financial sector.

Graph 2.1: **Overall multiannual implementation of 2011-2019 CSRs to date**



* The overall assessment of the CSRs related to fiscal policy excludes compliance with the Stability and Growth Pact
** 2011-2012 annual assessment: Different CSR assessment categories
** The multiannual CSR assessment looks at implementation until the 2020 country report since the CSRs were first adopted.
Source: European Commission

As regards the 2019 CSRs, Austria has made overall limited ([8]) progress. ([9]) Limited progress was made on CSR1 on the sustainability of the pension, health and long-term care systems, together with the alignment of financing and spending responsibilities. Overall, limited progress was also made on CSR 2. Some progress was made in shifting taxes away from labour to sources less detrimental to inclusive and sustainable growth, for supporting full-time employment for women, while limited progress was recorded for improving the educational achievements of disadvantaged young people. No progress was made in improving labour market outcomes for the low-skilled. Some progress was made on CSR 3 on investments in research and development, innovation and digitalisation, and supporting productivity growth by stimulating businesses' digitalisation and company growth and reducing regulatory barriers in the service sector. Limited growth was recorded as regards investments in sustainability and reducing regulatory barriers in the service sector.

Austria has taken positive steps to increase efficiency in the health care sector, but the savings potential is still unclear. Important reform measures to address the CSR (e.g. the introduction of a 'target-based governance' system and the 2017 Primary Health care Act have been adopted in recent years and are currently being implemented. The reform to merge the 21 social health insurance funds to 5 is also expected to improve efficiency. There is progress, but implementation is not fully on track for every reform and the savings potential of each of the reforms is still unclear. The overutilization of hospital and pharmaceutical care, the overlap of competencies in the health care sector, and the role of prevention remain to be addressed.

Since 2014, action has been taken to increase the effective retirement age, but recent measures go partly in the opposite direction. The 2020 Pension Adjustment Act adopted in the run-up to the snap elections at the end of September 2019 not only fails to address sustainability challenges, but also includes measures that undermine previous reform efforts. While a targeted increase of low pension incomes may be justified by the objective of pension adequacy, the undiscounted pension after 45 contribution years thwarts previous efforts to increase the effective pensionable age and raises fairness issues. The measure is conflicting with recently observed labour market shortages.

Austria has continued to implement initiatives to improve the fiscal framework, but subnational tax autonomy is still inadequate. The 2017 Intergovernmental Fiscal Relations Act helped to simplify financial relations between the various layers of government, but it cannot be

([7]) For the assessment of other past reforms, see in particular Section 3.
([8]) Information on the level of progress and action taken to address the policy advice in each subpart of a CSR is presented in the overview table in Annex A. This overall assessment does not include an assessment of compliance with the stability and growth pact.
([9]) A caretaker government was in office in the second half of 2019. Following snap elections in September 2019 and coalition talks, a new govenrment was sworn in at the beginning of 2020. The analysis takes account of the new government programme, where appropriate.

considered a major step towards greater tax autonomy or a more transparent assignment of competence. The plan to introduce task-oriented allocation of shared taxes to municipalities in the fields of elementary education and compulsory schools was suspended having failed to produce results. The first spending reviews to assess the effectiveness and efficiency of subnational public spending in the areas of health care in schools and municipal water management are expected to be finalised in early 2020. A benchmarking model was established for comparative assessment of the efficiency and effectiveness of subnational spending and is being extended to other policy areas.

Several measures have helped to reduce the labour tax wedge. The tax burden has been reduced for low-income earners, families with working parents and employers. However, the overall tax structure remains unchanged and there is still scope for shifting the tax burden to more growth-friendly sources of revenue. A future-oriented strategy to support environmental sustainability, fairness and inclusiveness would require a more thorough reform of the tax mix. Several measures go in this direction, but more needs to be done to secure efficiency gains.

Austria has partly improved labour market outcomes for women. While more women are in work than in 2011, most of the increase has been in part-time employment. Increased support for childcare facilities and all-day schools has improved opportunities for parents of young children, but coverage varies between *Länder*.

Austria has taken only limited steps to improve basic skills for disadvantaged young people and people with migrant backgrounds. While older measures to strengthen early childhood education and care could have long-term positive effects on educational outcomes, the direction of reform measures in general education is less promising; in fact, they undermine previous efforts. However, the new (January 2020) government programme contains a range of promising measures.

Austria has made efforts to stimulate investment and productivity through simplification and support for company growth, but the service sector is still highly regulated. Austria has reduced regulatory compliance costs through administrative simplification measures and e-government solutions. It has also reviewed the regulation of trades and opened the stock market to listings of SMEs, although venture capital remains an issue. It has not yet addressed the restrictions for key professions (as identified by the Commission), nor carried out a wider review of service sector regulation.

Digitalisation has been a political priority for some time, but a more ambitious approach seems warranted. The caretaker government continued to implement useful initiatives in all areas of digitalisation, without providing the major political impetus expected in 2019 (previously announced as year of digitalisation). Overall coherence and thus the impact of digitalisation policy efforts would have benefited in particular from the adoption of specific, measurable targets. Gaps also remain in digital infrastructure.

There is scope for increasing investments in the ecological transition and environmental sustainability. Public investments from the climate and energy fund fell in 2018, compared to the previous year. However, private investments in the ecological transition have increased, due to investors' growing interest in sustainable financing and a wider range of green finance opportunities.

At Member States' request, the Commission provides tailor-made expertise via the structural reform support programme to help design and implement growth-enhancing reforms. Since 2018, it has supported 11 projects in Austria. In 2019, it helped the authorities *inter alia* to strengthen primary health care. In addition, work started on designing and implementing a comprehensive education monitoring system, building capacity in the Austrian Digitalisation Agency and reducing administrative burden.

Table 2.1: **Summary table on 2019 CSR assessment**

Austria	**Overall assessment of progress with 2019 CSRs: Some progress***
CSR 1: *Ensure the sustainability of the health, long-term care, and pension systems, including by adjusting the statutory retirement age in view of expected gains in life expectancy. Simplify and rationalise fiscal relations and responsibilities across layers of government and align financing and spending responsibilities.*	**Limited progress** • Some progress in ensuring sustainability of the health care system • Limited progess in ensuring sustainability of the long-term care system • Limited progress in ensuring sustainability of the pension system • Limited progress in simplifying fiscal relations
CSR 2: *Shift taxes away from labour to sources less detrimental to inclusive and sustainable growth. Support full-time employment among women, including by improving childcare services, and boost labour market outcomes for the low-skilled in continued cooperation with the social partners. Raise the levels of basic skills for disadvantaged groups, including people with a migrant background.*	**Limited progress** • Some progress in shifting taxes away from labour to sources less detrimental to inclusive and sustainable growth • Some progress in supporting full-time employment of women • No progress in improving labour market outcomes for the low-skilled • Limited progress in raising the levels of basic skills for disadvantaged groups
CSR 3: *Focus investment-related economic policy on research and development, innovation, digitalisation, and sustainability, taking into account regional disparities. Support productivity growth by stimulating digitalisation of businesses and company growth and by reducing regulatory barriers in the service sector.*	**Some progress** • Some progress in investments in research and development and innovation • Some progress in investments in digitalisation • Limited progress in investments in sustainability • Some progress in supporting productivity growth • Limited progress in reducing regulatory barriers in the service sector

(1) This overall assessment of CSR1 does not include an assessment of compliance with the Stability and Growth Pact.
(2) The assessment of CSR3 does not take into account the contribution of the EU 2021-2027 cohesion policy funds. The regulatory framework underpinning the programming of the 2021-2027 EU cohesion policy funds has not yet been adopted by the co-legislators pending inter alia an agreement on the multiannual financial framework (MFF).

Source: European Commission

Box 2.1: **EU funds and programmes to address structural challenges and to foster growth and competitiveness in Austria**

Austria is benefiting from EU support. The financial allocation from the EU cohesion policy funds ([1]) for Austria, including national co-financing, amounts to €2.95 billion in the current multiannual financial framework, equivalent to around 0.1% of GDP annually. By the end of 2019, some €2.6 billion (around 88% of the total) were allocated to specific projects and €906 million were reported as having been spent by selected projects ([2]), showing a below average level of implementation.

EU cohesion policy funding has brought many social and economic benefits. Funding from the European Regional Development Fund (ERDF) has enhanced research and innovation (R&I) infrastructure, promoted business investment in R&I and developed links and synergies between firms, R&D centres and the higher education sector. Funds have also improved SMEs' regional competitiveness of SMEs; ERDF support to firms selected for support by the end of 2018 will trigger €918 million of private investment, and is expected to boost employment by over 1,800 full-time equivalents. ERDF funds contributed to the reduction of greenhouse gas emissions by 38,400 t CO_2 eq with projects implemented by end 2018. The European Social Fund (ESF) helps to prevent and combat unemployment by extending the range of training on offer and improving the functioning of the labour market. So far, this has helped 22,996 people who had been long-term unemployed. The ESF has also promoted the social integration of disadvantaged people (34,225), people with a migrant background (90,734), young people/NEETs (20,929) and people with a disability (3,761). By the end of 2018, 167,123 had benefited from ESF-funded operations.

Agricultural and fisheries funds and other EU programmes also help to address Austria's investment needs. In particular, the European Agricultural Fund for Rural Development (EAFRD) provides significant support to Austria's agricultural sector, amounting to €7.7 billion including national co-financing ([3]). Other EU programmes, such as the Connecting Europe Facility, allocated €894 million to specific projects that support the highly frequented Austrian transportation network. Horizon 2020, the EU's framework R&I programme, allocated EU funding of €1.3 billion in Austria (including €263 million for more than 400 SMEs).

EU funding helps to mobilise private investment. By the end of 2018, European Structural and Investment Funds (ESIF) ([4]) supported programmes mobilised additional capital by committing about €9 million in the form of loans, guarantees and equity ([5]), which is expected to leverage additional private investment.

EU funds already invest in action to meet the UN Sustainable Development Goals (SDGs). In Austria, up to 97% of allocations under the ESI funds for 2014-2020 support 12 out of the 17 SDGs.

([1]) European Regional Development Fund (ERDF) and European Social Fund (ESF), including national co-financing.
([2]) https://cohesiondata.ec.europa.eu/countries/AT
([3]) The European Maritime and Fisheries Fund (EMFF) contributes additional €13.9 million, including national co-financing.
([4]) ERDF, Cohesion Fund, ESF, ESFRD and EMFF.
([5]) Member States' reporting on financial instruments based on Article 46 of Regulation (EU) No 1303/2013, cut-off date 31 December 2018.

3. REFORM PRIORITIES

3.1. PUBLIC FINANCES AND TAXATION

3.1.1. FISCAL FRAMEWORK

Austria's fiscal federalism continues to be characterised by a significant mismatch of financing and spending responsibilities at subnational level. The opaque system of tax sharing, intergovernmental transfers and cost bearing provides weak incentives for political accountability and cost containment at the subnational level as the link between tax revenues and public expenditure is largely blurred (European Commission, 2019a; Matzinger, 2015a, b). In 2018, subnational governments (*Länder* and local governments) raised about 9.0% of total tax revenues (2.4% of GDP), but were responsible for roughly 34.5% of total public expenditures (18.7% of GDP). As a step towards greater subnational tax autonomy, the housing subsidy contribution became an exclusive state government tax as of 2018, leading to a tripling of the own tax revenues of the *Länder* (BMF, 2018). However, the *Länder* have yet to use their new leeway to increase the relevant tax rates and have not yet agreed a common position on how to implement greater tax autonomy in practice.

Implementation of several initiatives introduced by the Intergovernmental Fiscal Relations Act paints a mixed picture. ([10]) While measures have been taken to simplify the allocation of funds in the fiscal equalisation, measures to improve the efficiency of public spending have been less successful. The plan to introduce a task-oriented allocation of shared taxes to municipalities in the fields of elementary education and compulsory schools was suspended having failed to produce results. Instead, the federal authorities agreed to provide earmarked grants in the relevant areas, in line with previous practices. Spending reviews to assess the effectiveness and efficiency of subnational public spending in the areas of health care in schools and municipal water management are expected to be finalised in early 2020. A spending review concerning general compulsory schools was finalized in August 2018. A benchmarking model was established for a comparative assessment of the efficiency and effectiveness of subnational spending and is being extended to other policy areas. Efficiency gains and potential savings exist also in the system of public subsidies (Grossmann, 2018). In 2010, a transparency database was set up to report on individual applications and to monitor the appropriate use of granted subsidies. However, recent studies (*ibid.*) and the Austrian Court of Audit (2017) criticise the design of the database as suffering from conceptual and accessibility problems and incomplete coverage of subsidised areas. The 2019 amendment of the law on the database aims to address these issues and improves *inter alia*, query rights for stakeholders (e.g. funding agencies). The new government has declared its intention to look into the possibility of fiscal sanctions for *Länder* that fail to submit input for the database.

Increasing subnational tax autonomy remains on the political agenda. Linking discussions on subnational tax autonomy to findings on how to make the tax system more efficient could provide new insights for comprehensive reform strategies. Several studies analyse potential revenue and efficiency effects of greater subnational tax autonomy, which remains on the new government's agenda (Pitlik et al., 2015; Bröthaler et al., 2011). According to the new government's programme, the new Intergovernmental Fiscal Relations Act will focus on the alignment of financing and spending responsibilities and more transparent distribution of competence across layers of government. It will establish that the achievement of climate goals is a common task and a precondition for granting transfers.

3.1.2. TAXATION

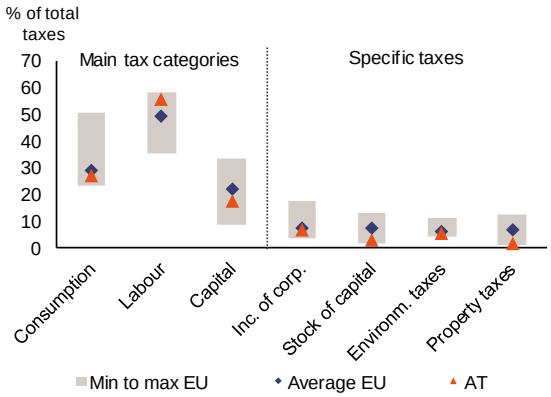
There is considerable scope for comprehensive tax reform to foster fairness, inclusive growth and environmental sustainability. Despite a series of tax relief reforms (in 2005, 2010 and 2015), Austria remains a high-tax country with a tax-to-GDP ratio that constantly exceeds the EU

([10]) The latest Intergovernmental Fiscal Relations Act is for the period 2017-2021. Negotiations on the 2022 version are expected to start in the course 2020.

average (AT: 41.8%, EU: 39.0% in 2017). ([11]) However, rather than the absolute level of taxation, what matters for allocative efficiency (and ultimately economic growth) is the design of the tax system, i.e. the relative and effective burden on different tax bases. Empirical studies suggest that taxes on immovable property and consumption are less harmful to long-term growth than personal and corporate income taxes and social contributions (Arnold, 2008; Arnold *et al.*, 2011; Acosta-Ormaechea and Yoo, 2012). Against this background, Austria's tax mix appears to be relatively detrimental to growth in international terms (Köppl and Schratzenstaller, 2015a), which is also reflected in SDG 17. The share of labour taxes in total tax revenue is among the highest in the EU; this is also mirrored by a high implicit tax rate (ITR) on labour (Graph 3.1.1). ([12]) On the other hand, revenue from taxes on consumption and capital are below the EU average. The ITR on consumption is slightly above the EU average, and that on capital slightly below. Also revenue from several specific taxes is low in comparison to EU averages, e.g. taxes on alcohol and tobacco, energy and pollution, property taxes and taxes on the capital stock.

Austria's high labour tax burden creates significant disincentives for labour demand and supply. Austria's tax wedge on labour (a rough indicator for incentives to work and to recruit people) exceeds the EU average, in particular for low and medium income levels (Graph 3.1.2). ([13]) For example, the overall tax wedge for a single person on an average wage is 47.6%, as compared to an EU average of 42.9%. ([14]) Social security contributions represent by far the biggest component of the tax wedge, especially at lower income levels (AT: 90.5% vs EU-23: 80.7% for those on 50% of average earnings). The upper contribution limit for social contributions leads to a lower share in the tax wedge for those on 150% of average earnings (approx. €71,810 in 2018). Graph 3.1.2 also reveals a comparatively high burden on Austrian employers in terms of non-wage labour costs.

Graph 3.1.1: **Austria's tax mix (2018) and ITRs (2017) in EU comparison**



Implicit tax rates (%)

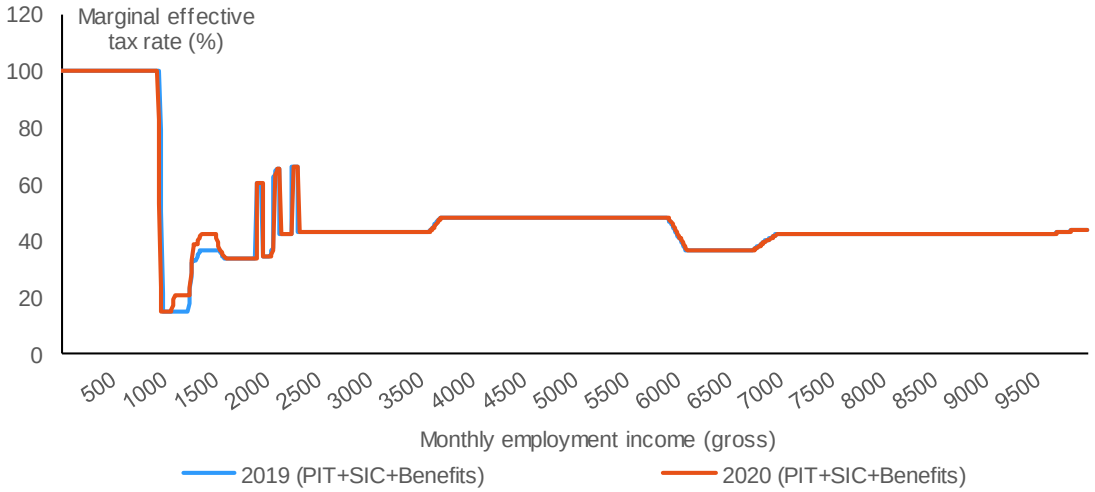
	Consumption	Labour	Capital	Corporate income
EU-Average	20.7	36.3	31.4	19.8
AT	22.2	41.3	27.9	17.2

(1) The ITR on consumption excludes Croatia and the ITR on capital and corporate income excludes Croatia and Malta for reasons of data availability. All averages are GDP-weighted.
Source: European Commission

Low-income earners, in particular, face high disincentives to work longer hours. The effective marginal tax rate (EMTR) shows the share of an additional euro of income that is 'taxed away', in the sense that taxes and social contributions accrue and cash social benefits are withdrawn. Therefore, it provides an insight into the financial disincentive to work longer hours. Graph 3.1.2 shows the EMTR for a hypothetical single-person household and eligible for the minimum income benefit (*Mindestsicherung*). ([15]) Graph 3.1.2 shows that, for every euro of this person's gross monthly earnings up to €970, the same amount is withdrawn from the minimum income benefit, leading to an EMTR of 100%. Earnings up to this amount do not affect the person's disposable income.

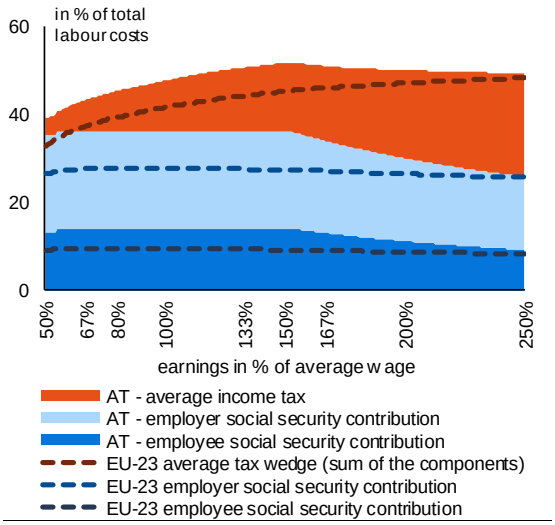
([11]) According to the Commission 2019 autumn forecast, the overall tax burden is set to increase further to 42.0% of GDP by 2021.
([12]) The ITR is computed as the ratio of revenue from a specific tax to its corresponding base. It is an indicator for the average effective tax burden.
([13]) The tax wedge on labour is defined as the sum of personal income taxes and employee and employer social security contributions net of family allowances divided by the total labour cost (gross wages plus employer's social contributions). It is calculated for specific types of tax payers in terms of household composition and income level expressed as percentage of average wage. Data are taken from the OECD taxing wages database.
([14]) Data are taken from the European Commission tax and benefit database, which relies on OECD data.
([15]) EUROMOD simulates Vienna's minimum income benefit provisions (EUROMOD Country Report Austria, p. 36)

Graph 3.1.2: **Marginal effective tax rate of a single household without children**



(1) The graph shows the EMTR for a single-person household. The baseline scenario (blue line) uses tax-benefit rules in place in 2019. The reform scenario (red line) includes the increase of the negative tax and the traffic tax credit introduced by the 2020 Tax Reform Act.
Source: European Commission, based on the EUROMOD model.

Graph 3.1.3: **Composition of Austria's labour tax wedge in EU comparison in 2018**



(1) EU-23 excludes Cyprus, Croatia, Malta, Bulgaria and Romania for reasons of data availability.
(2) Average income tax includes central and local income taxes as well as family benefits.
(3) Social security contributions do not include contributions to private pension funds.
Source: OECD taxing wages database

For monthly earnings exceeding the minor employment threshold (*Geringfügigkeitsgrenze*) of €530, social contributions payable by employees and employers kick in, well before the benefit withdrawal comes to an end. Benefits are entirely withdrawn at €970 per month but payments for social contributions mean that the EMTR stays at roughly 15%. Despite the traffic tax credit and the negative tax, the marginal effective rate jumps from 15% to over 30% for monthly gross earnings of €1,240-1,280. ([16]) The increase of the traffic tax credit and the negative tax under the reform change the EMTR only slightly. For monthly earnings between €960-1,000, the effective marginal burden decreases under 2020 policy rules, while it actually increases for monthly earnings of €1,090-1,600. For gross earnings above €1,610, the two lines roughly coincide again.

Since 2018, several measures have been taken to reduce the tax burden on low-income earners, families and employers. The overall budgetary impact of these measures (see Table 3.1.1) is roughly estimated at 0.5% of GDP. ([17]) While the measures implemented in 2018 mainly aimed to relieve families with at least one working spouse, the 2020 Tax Reform Act focuses on low-income earners.

([16]) The negative tax foresees a reimbursement of social contributions of 50% or at most €400 per year.
([17]) A detailed description of the individual measures is provided by the Austrian Parliamentary Budget Office (2018, 2019a).

Table 3.1.1: **Measures to reduce the tax wedge on labour**

Government programme Kurz I, first half-year 2018
Family bonus
Abolishment of deductibility of child care cost and of child allowance under PIT
Reduction of contributions to unemployment insurance for lower income earners
Reduction of employer's contribution to accident insurance
Tax Reform Act 2020
Increase of the pensioner's tax credit
Increase of the negative tax for pensioners
Increase of the negative tax for employees
Increase of traffic tax credit for employees
Decrease of health contributions for self-employed and farmers

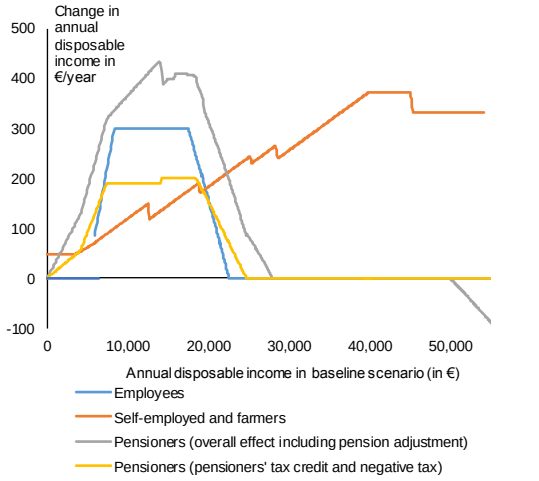
Source: Compilation by European Commission

The 2020 Tax Reform Act and the 2020 Pension Adjustment Act increase the disposable income, especially at the lower end of the income distribution. Their distributional effects have recently been assessed in a microsimulation study by the Austrian Parliamentary Budget Office (2019a). Graph 3.1.4. shows the estimated change in annual disposable income for employees, pensioners, the self-employed and farmers. While the income relief for employees and pensioners is characterised by a phase-in, phase-out, and a plateau region providing maximum relief, the gain in disposable income for the self-employed and farmers increases in a linear fashion due to an across-the-board reduction of health insurance contributions. ([18])

There remains scope for a future-oriented reform strategy in the area of labour taxation. Despite individual reform measures, the effective marginal burden on employees at the lower end of the income distribution remains very high, mainly due to social security contributions and a relatively high initial marginal tax rate. Lower initial tax rates and an expansion of measures that incentivise labour supply could be achieved by broadening the tax base. This could involve an overhaul of current tax expenditures, e.g. the preferential tax treatment of other earnings and the commuter subsidy. (Köppl and Schratzenstaller, 2015a,b; Bittschi and Kocher, 2018). The new government programme announces to further relief pensioners, employees, the self-employed and farmers with low and medium incomes. Specifically, the initial rates of the personal income tax and the corporate income tax rate shall be reduced, tax provisions for farmers shall be simplified and the capital income tax shall promote green or ethical investments. In addition, the government intends to inquire ways to tackle the cold progression, i.e. the additional tax burden that arises over time when the tax tariff is not adjusted for inflation.

([18]) For employees, the increase of the negative tax and the traffic tax credit result in up to €300 more disposable income for annual earnings above the minor employment threshold. The relief phases out for disposable incomes above €22,600. For farmers and the self-employed, the maximum relief is reached at the upper health insurance contribution limit..

Graph 3.1.4: **Income relief provided by 2020 Tax Reform Act and 2020 Pension Adjustment Act**



(1) The baseline scenario consists of the tax-benefit rules in place in 2019. The reform scenario includes all measures under the 2020 Tax Reform Act and the 2020 Pension Adjustment Act.
Source: Austrian Parliamentary Budget Office, based on the EUROMOD model.

Austria's revenue from consumption taxes is only slightly below the EU average, but there is room for efficiency improvements. Austria's consumption taxes account for 27.6% of total tax revenues, slightly below the EU average of 28.3% (Graph 3.1.5). Value-added taxes (VAT) make up the biggest share of consumption taxes and are levied at a standard rate of 20% and two reduced rates of 13% and 10%. VAT accounts for 18.3% of total taxes, close to the EU average of 18.1%. The VAT gap (an indicator for the effectiveness of VAT enforcement and compliance) stood at 7.9% in 2017, well below the EU-wide gap of 11.2%. ([19]) While the effectiveness of reduced rates as a distributional tool is questionable (OECD, 2014; Köppl and Schratzenstaller, 2015b; Bittschi and Kocher, 2018), recent empirical

([19]) The VAT gap is the difference between expected VAT revenues and actually collected VAT as a percentage of VAT Total Tax Liability. The smaller the gap, the more effective the VAT enforcement. Data are taken from the VAT gap report 2019 (CASE, 2019).

evidence supports the view that broadening the tax base is more supportive of growth than raising the standard rate (Acosta-Ormaechea and Morozumi 2019). Against this background, the re-introduction in 2018 of the 10% rate on overnight stays is questionable, while the removal of the VAT exemption for imports from third countries below a value €22 goes in the right direction.

Austria appears to make insufficient use of taxes on tobacco and alcohol and environmental taxes. Taxes on alcohol and tobacco accounted for 1.5% of total tax revenue in 2017, as compared to an EU average of 2.0%. This points to unused revenue potential and steering effects. ([20]) Similarly, Austria is among the countries with the lowest revenues from environmental taxes (5.7% of the total revenues, as compared to an EU average of 6.1%). ([21]) Graph 3.1.5 shows that its mix of environmental taxes, in percentage of total tax collection, follows the EU average very closely, with energy taxes having the largest share, followed by transport taxes. In contrast, taxes on pollution and resource use appear underutilised.

Increasing the level and efficiency of energy taxes is key to reducing emissions. According to the Austrian Environment Agency 37% of Austria's greenhouse gas (GHG) emissions were covered by the European emissions trading system (ETS) in 2017. Private households produced about 18% of total CO_2 emissions through heating and transport (Austrian Parliamentary Budget Office, 2019b). Non-ETS areas are subject to national taxes and excises, which differ substantially between energy products (e.g. diesel vs petrol) and usage (heating vs propellant). Furthermore, national taxes and excises do not generally reflect the carbon content of specific energy sources (Kettner-Marx and Kletzan-Slamanig, 2018). As regards the taxation of fuel (as a major source of GHG emissions), Austria has the third lowest tax rates on petrol and diesel in the EU in terms of purchasing power parity (Kettner-Marx and Kletzan-Slamanig, 2018). Moreover, circulation taxes on buses, coaches and heavy-duty trucks are relatively low and electric buses are subject to higher taxes than old, fuel-inefficient buses. Overall, the uneven and generally low levels of energy taxation undermine its efficiency and effectiveness as a policy tool to incentivise environmentally beneficial consumption. Rather, low fuel taxes attract consumers from outside Austria (*Tanktourismus)* (Köppl and Schratzenstaller, 2015b, Kettner-Marx and Kletzan-Slamanig, 2018). ([22])

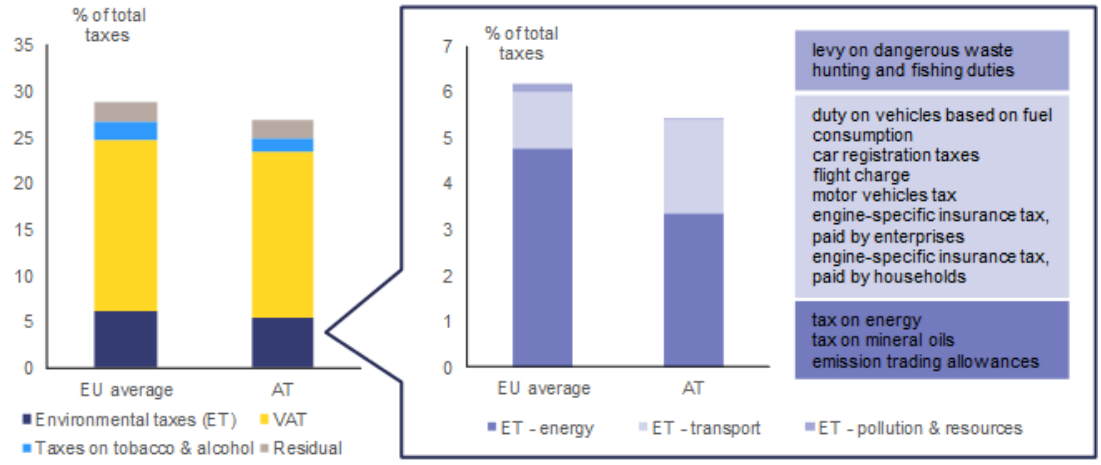
Consistent taxation of CO_2 emissions would increase the competitiveness of climate-friendly energy sources, in addition to providing fiscal space to reduce more distortive taxes. Higher, CO_2-related energy taxes would help to internalise the social costs of pollution, lead consumers to rely more on renewable energy sources (SDG 12) and encourage investors to seek for innovation in climate-friendly technology. Furthermore, additional revenues from higher energy taxes could be used to finance tax cuts in other areas (e.g. labour) or to fund environmentally beneficial R&D. Thus, the introduction of a CO_2 tax could have a 'double dividend' in terms of reduced emissions and positive growth effects, recently shown in a simulation study by the Austrian Institute of Economic Research (Kettner-Marx and Kletzan-Slamanig, 2018; Kettner-Marx *et al.*, 2018). Using a dynamic new Keynesian model, the study assesses the short-term environmental, macroeconomic and distributional effects of various CO_2 tax scenarios and compensation mechanisms. The results suggest that significant reductions in CO_2 emissions can be achieved together with positive (albeit small) effects on GDP and employment, if the additional revenue is used to finance a reduction in employers' social contributions or VAT. However, as consumption taxes are known to be regressive, an in-depth analysis of the distributional impact of increased energy taxes including an assessment of different compensatory measures, seems warranted, with an eye to political feasibility and a 'beyond GDP' debate. Against this background, Box 3.1.1 investigates the distributional and equity effects of

([20]) While the tax on tobacco is increased as of 2020, the new government programme announces to abolish the tax on sparkling wine and to re-design the tobacco tax.

([21]) Regulation (EU) No 691/2011 on European environmental economic accounts defines an 'environmental' tax as a tax (i.e. defined as such in the European system of accounts (ESA 2010)) of which the base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment. European statistics distinguish four categories of environmental tax: those relating to energy, transport, pollution and resources.

([22]) The new government programme announces measures to prevent 'fuel tourism' and to reduce freight transport.

Graph 3.1.5: **Austria's consumption tax mix in EU comparison (2018)**



Source: European Commission, Taxation trends (GDP-weighted EU average). National tax list.

introducing a CO_2 tax on energy consumed in the private household sector, considering various compensatory measures to mitigate undesired regressive effects. ([23])

Recent measures aim to incentivise climate-friendly consumption, but more needs to be done to counteract climate change. Recently adopted measures include a redesign of the car registration tax including a CO_2 component, VAT reductions for e-bikes and e-publications and abolition of the electricity tax for self-produced electricity (from photovoltaics). The overall budgetary cost related to the hitherto greening of the tax system is estimated at €55 million (0.01% of GDP). While the new measures go in the right direction, more needs to be done to achieve effective climate protection. The new government programme announces an eco-social tax reform to counteract climate change while taking into account competitiveness aspects. In a first stage, the flight tax is to be increased (for short and middle distance flights) and the duty on vehicles based on fuel consumption and the truck toll are to be re-designed, among others. ([24]) In a second step, CO_2 emissions shall be priced.

Greater use of wealth-related taxes could help to improve the fairness and efficiency of the tax system. The tax-benefit system effectively reduces income inequality (see Section 3.3.) but wealth inequality remains among the highest in the EU, as confirmed by the third wave of the ECB's Household Finance and Consumption Survey (Fessler, Lindner and Schürz, 2019). The wealthiest 10% of the population own about 56.4% of total net wealth, while the bottom 50% own 3.4%. One main reason for this is that housing wealth, a key component of household net worth, is concentrated at the upper end of both the income and net wealth distribution (*ibid.*). At the same time, revenue from wealth-related taxes plays only a small role in Austria (0.8% of GDP versus an EU average of 2.6% of GDP in 2017). ([25]) Especially the revenue potential from recurrent taxes on property, which are deemed relatively growth-friendly, remains largely untapped due to the use of outdated cadastral values as the tax base (European Commission, 2018b, 2019a). There is also a fairness issue, as the tax base does not reflect the current value of property, so taxable values have not kept up with real estate prices. In addition, inheritance and gift taxes, which are deemed relatively growth-friendly, were abolished in 2008.

([23]) See the Austrian Parliamentary Budget Office (2019b) for a comprehensive assessment of the distributional impact of introducing a CO_2 tax.

([24]) The flight tax was halved in 2018.

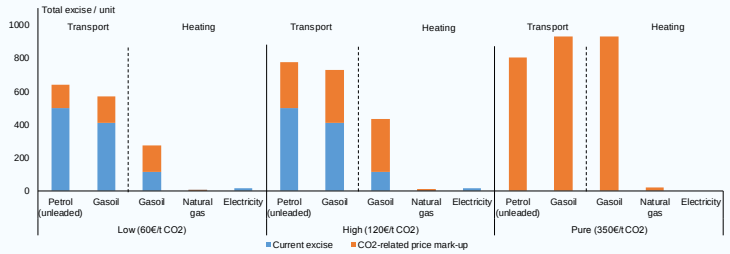
([25]) Data are taken from Taxation trends 2019 (European Commission, 2019m).

Box 3.1.2: **The distributional and equity effects of introducing an explicit price for CO_2**

Effective policy action on climate change requires, among others, efficient energy taxes, including an explicit price for CO_2. While Austria needs to take action to achieve the agreed reductions in greenhouse gas emissions, it currently makes little use of efficient energy taxation. However, the new government programme announces an eco-social tax reform to internalise the social costs of CO_2 emissions in sectors not covered by the European Emissions Trading System, by introducing either a price for CO_2 or a national emissions trading system. This microsimulation study contributes to the national debate by analysing the distributional effects of introducing a CO_2 tax on energy consumed by private households.

Three CO_2 tax scenarios are simulated (Graph 1). In the low- and high-tax scenarios, prices of €60 and €120 per tonne of CO_2 are applied on top of existing excises, while in the pure CO_2 tax scenario, existing excises are abolished and a price of €350/t CO_2 is applied. ([1]) For the low-tax scenario, two types of compensations are considered: a lump-sum for all households and a targeted benefit for households that spend at least 15% of their disposable income on energy consumption. ([2])

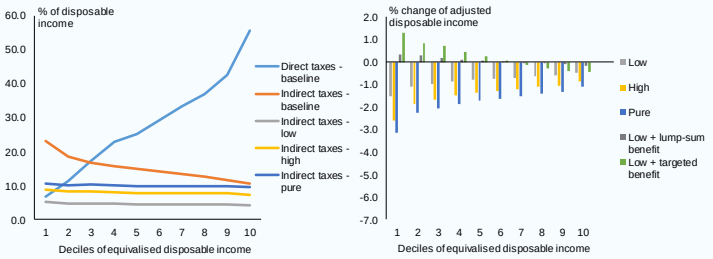
Graph 3.1.6: **Simulated CO_2 tax scenarios and compensatory measures**



(1) Current excises refer to those in place in 2016, as simulated by the EUROMOD indirect tax tool. The excise on coal for heating is not simulated. In contrast to value-added taxes, excise are levied on units of purchased goods.
Source: European Commission, Joint Research Centre, based on the EUROMOD model

The EUROMOD indirect tax tool gauges the budgetary and equity effects of simultaneous reforms of direct and indirect tax policies. ([3]) In a first step, it imputes private household expenditures for 16 commodity groups into EUROMOD input data (based on EU-SILC) by means of Engel curves estimated using national Household Budget Surveys. ([4]) It then applies estimated implicit tax rates (relative to consumer prices) to compute households' indirect tax liabilities for the different commodity groups. The tool assumes of full tax compliance and that changes in indirect taxes are passed on entirely to consumers. As the aim is to assess the 'overnight' distributional effect of introducing a CO_2 tax, the simulation assumes that households continue to consume the same quantities of all goods as before the tax hike. ([5])

Graph 3.1.7: **Distributional and equity effects**



At-risk-of-povery-rate

Baseline	Low	High	Pure	Lump-sum benefit	Targeted benefit
15.4%	16.0%	16.3%	16.6%	15.3%	15.1%

Note: Poverty line is set to 60% of median equivalised adjusted disposable income.

Gini coefficient

Baseline	Low	High	Pure	Lump-sum benefit	Targeted benefit
0.2741	0.2752	0.2761	0.2765	0.2732	0.2714

Note: Gini coefficient of adjusted disposable income.

(1) The simulation uses Austrian tax-benefit rules in place in 2016.
(2) Adjusted disposable income is defined as disposable income minus indirect tax payments.
Source: European Commission, Joint Research Centre, based on the EUROMOD model

Well-designed compensatory mechanisms help attenuate the regressive impact of increased energy taxes (Graph 2). While personal income taxes in Austria are highly progressive, indirect taxes have in

general a regressive effect on the distribution of disposable income as poorer households spend a larger share of their income on consumption goods. The higher the CO_2 -related price mark-up, the greater the effect: adjusted disposable income decreases by 0.5-1.1% in the 10th decile and by 1.5-3.2% in the bottom decile in the scenarios without compensation. The introduction of a cash benefit renders the reform progressive, leading to a gain in adjusted disposable income for households until the 6th decile. The net loss in adjusted disposable income for households as of the 7th decile is mainly due to higher absolute payments for consumption taxes.

Compensatory measures reduce inequality and the 'at-risk-of-poverty' rate. Inequality, as measured by the Gini coefficient, increases in the scenarios without compensatory measures, but is reduced by the targeted cash benefit and a lump-sum compensation. The 'at-risk-of-poverty' rate is affected in a similar way. ([6])

([1]) While the 'mixed' scenarios currently seem to be politically more feasible (albeit at even lower levels), the pure-tax scenario is the economically efficient in terms of CO_2 reduction, as it levies a uniform tax in line with the carbon content of a specific energy source. The €60/t (€120/t) price mark-up corresponds to the current price in Finland (Sweden), while 350€/t CO_2 reflects a scenario that achieves net zero greenhouse gas emissions in ETS sectors by 2050 (European Commission, 2018f). The CO_2 -related price is computed as follows: on the basis that 1,000 litres of petrol produce roughly 2.3 tonnes of CO_2 , a price of €350/t of CO_2 leads to a tax rate of €805/1,000 l of petrol. The average increase of indirect taxes paid by a household in the low-tax scenario (assuming constant quantities) amounts to €9.57 per month, i.e. a 0.7% increase in consumption expenditure.

([2]) In both cases, the compensation is designed in a budget-neutral way, i.e. the additional revenue from indirect taxes is entirely used to finance the new cash benefit. The benefit does not interact with the rest of the tax-benefit system, so the entitlement to other cash social benefits remains unchanged. The amount per household is obtained as a weighted share, using the OECD equivalence scale. For a one-person household, the benefit amounts to €13.78 per month in the lump-sum scenario and €22.88 in the targeted scenario.

([3]) For detailed methodological descriptions see De Agostini et al. (2017).

([4]) As a result, the simulation captures private households' energy consumption for heating and transport only. Also, simulated revenues from indirect taxes hinge on the expenditures reported in Household Budget Surveys, which can be subject to over- and underreporting. Comparing the simulated VAT revenues to estimates of theoretical household VAT liability yields a coverage of about 87% (CASE, 2018, p.75). For excises, no estimates are available, so this reason, the present analysis focuses exclusively on the distributional and equity effects of the various CO_2 tax scenarios and does not report budgetary effects.

([5]) While this assumption is plausible in the short term, the tax is intended to have steering effects that will ultimately lead to a reduction of CO_2 emissions and hence tax revenues. This would require a corresponding adjustment of the compensation (Austrian Parliamentary Budget Office, 2019b).

([6]) A more granular distributional analysis for different types of consumers (car owners, commuters, tenants, etc.) is needed to give a full picture of the distributional effects. See, for instance, the analysis provided by the Austrian Parliamentary Budget Office (2019b).

3.1.3. PENSIONS

Austria's public pension expenditure is comparatively high and projected to increase in the medium and long term. At 13.8% of GDP, public spending on pensions is among the highest in the EU (2016 EU average: 11.2%; European Commission, 2018c). Based on the projections of the 2018 Ageing Report, the expected increase is also above the EU average. Spending is projected to increase by 1.0 pp of GDP between 2019-2040, when most of the baby-boomer generation will be in retirement, and by 0.4 pps of GDP between 2019-2070 (the respective EU averages are 0.9 pps and -0.1 pps of GDP). Current pension costs are reflected in relatively high social contribution rates, which account for most of the tax wedge on labour. The future increase in spending will either reduce the fiscal space for other policy areas or increase government debt.

Past reform efforts aimed to strengthen the sustainability of the pension system, while recent measures go partly in the opposite direction. Under the pressure of the financial and sovereign debt crisis and tightened EU fiscal rules, the government implemented several reforms of the pension system between 2009 and 2014 that reduced access to early retirement schemes and invalidity pensions. As a result, the effective retirement age has risen by 9 months since 2014,

reaching 60.4 years in 2018 (61.5 for men and 59.4 years for women) (BMASGK, 2019). Nonetheless, the gap between the effective and the statutory retirement age persists (3.5 for men and 0.5 years for women). Although the pension system is facing major challenges (fiscal sustainability, fairness, changing labour market conditions, etc.), there appears to be little political appetite to steer a public debate on how to make it fit for the future. Indeed, the new government programme envisages measures to further increase the effective retirement age without fundamentally reforming the pension system.

While undermining previous reform efforts to strengthen fiscal sustainability, the Pension Adjustment Act includes measures that further improve pension adequacy. Table 3.1.2 provides an overview of measures adopted in 2019 that affect pension incomes. The 2020 Pension Adjustment Act provides for a staggered increase of low and medium pensions as of 2020 (see Graph 3.1.4). Taken together, the pension adjustment and the tax relief (grey line) provide pensioners with income relief exceeding that for employees throughout the distribution of disposable income. ([26]) Moreover, pensioners benefit as of the first euro, while employees below the minor employment threshold are not affected by the reform. In addition, there is a larger means-tested equalisation supplement (*Ausgleichszulage*) for pensioners with monthly incomes below €933.06 (2019 reference value). Since 1 January 2020, the pension bonus further increases the incomes of individuals with 30 or 40 contribution years of gainful employment (including up to 5 years of child care) and up to 1 year of military or civil service. The 2020 Tax Reform Act further relieves pension incomes through an increase of the pensioners' tax credit and the negative tax. The expected budgetary impact of these measures amounts to roughly 0.2% of GDP. While a targeted increase of low pension incomes may be justified by the objective of pension adequacy, the undiscounted pension after 45 contribution years ([27]) clearly undermines previous efforts to increase the effective pensionable age and also raises fairness issues. Neither does it make sense in the light of recently observed labour market shortages (see Section 3.3).

([26]) The maximum income increase of €410 for pensioners is reached at an annual disposable income of roughly €16,200, compared to €300 for employees with annual disposable income around €8,360.

([27]) The measure enables men with 45 years of pension insurance contributions to retire at the age of 62.

Table 3.1.2: **Recent pension-related fiscal measures**

Pension Adjustment Act 2020
Staggered pension increase above the adjustment factor
Increase of the minimum pension top-up by 3.6%
Extraordinary increase of the minimum pension top-up for couples
Undiscounted pension after 45 contribution years
Abolishment of waiting period for pension adjustment
Pension bonus[1]
Tax Reform Act 2020
Increase of the pensioner's tax credit
Increase of the negative tax for pensioners

(1) The pension bonus was adopted in July 2019.
Source: Compilation by European Commission

Austria's pension system compares well in terms of overall pension adequacy, but income inequality in working life is mirrored in retirement. The gender gap in pension income is one of the highest in the EU (38.8% in 2018, as compared to the EU average of 35.2%), reflecting gender-related income inequalities in working life. The risk of poverty or social exclusion for women aged 65+ is almost twice as high as that for men (18.4% vs 9.5% in 2018). As of 2020, the pension adjustment and the increased minimum pension top-up will particularly benefit pensioners on lower incomes. However, while the pension bonus is intended to help reduce old-age poverty, the number of potential beneficiaries is limited as only about 19% of those eligible for the top-up are expected to fulfil the contribution requirement. The new government programme announces to address the problem of old age poverty with a series of measures, for instance pension splitting among spouses.

3.1.4. HEALTH CARE

Public health care spending continues to pose a challenge for fiscal sustainability. According to the 2018 Ageing Report, the share of GDP spent on public health care is projected to increase by 1.3 pps from 7% in 2016 to 8.3% in 2070, as compared to an EU average increase of 0.9 pps. The overutilisation of hospital care has been identified as the key driver of this growth. To contain public spending, an Art. 15a Agreement stipulates that expenditure growth in 2017-2021will be gradually reduced so that the annual increase in 2021 does not exceed 3.2%. According

to the second comprehensive monitoring report for the period 2017-2021, expenditure remains beneath the ceilings in the years 2017 to 2019. Though expenditure growth has been below the target since its introduction, gains in cost-efficiency through structural reforms and initiatives have yet to materialise.

The strengthening of primary health care is still ongoing and potential savings remain unclear. Until December 2019, 35 of the planned 75 multidisciplinary primary health care (PHC) units were set up or are currently being realised. ([28]) The Austrian Medical Chamber and Social Health Insurance signed a collective contract on the establishment of the PHC units in April 2019. ([29]) The savings potential hinges on using primary health care as the entry point into the health system and resource shifts away from inpatient care, which also relies on patient uptake.

Hospital and pharmaceutical spending are still above the EU average. With €1,099.06 per capita purchasing power standard (PPS), public hospital spending measured as inpatient curative and rehabilitative care was well above the EU average of €556.01 in 2017. Similarly, pharmaceutical spending in the same year stood at €322.77 in per capita PPS, higher than the EU average of €225.18. The share of public current health spending going to inpatient care (28.36% in 2017) has only declined by 1.27 pps since 2010, despite ongoing reforms to strengthen primary and ambulatory care. The number of acute-care beds per 1,000 of population in 2017 was 46% higher than the EU average and the third highest in the EU. Activity-based reimbursement for outpatients is expected to support the shift to a less hospital-centric model. In 2016, generic medicine use had increased only slowly from 2005, to 53%. This is slightly above the EU average, but is still far below the top performers (OECD/European Observatory on Health Systems and Policies, 2019). The increasing number of physicians without contracts with the social health insurance and the expected wave of retirements may have an impact on accessibility.

Gains in cost-efficiency could be achieved through better prevention. Austria has a low level of unmet health care needs and, in the five past years, achieved further progress on SDG 3 (Good health and well-being). However, healthy life years at birth are substantially below the EU average (AT: 57 years, EU average: 64 years in 2017), although *per capita* spending on prevention is only slightly below. Mortality from treatable causes is below the EU average, indicating the general effectiveness of the health system, but more than 12,000 deaths could have been avoided in 2016 through effective public health and prevention, and nearly 6,000 through more effective and timely health care. The new government commits to continue and step up ongoing reforms, in particular in primary and hospital care as well as preventive measures and the health care provision in rural areas.

3.1.5. LONG-TERM CARE

Despite recent measures, public expenditure on long-term care still feeds into fiscal sustainability challenges. With no substantial changes in the system of service delivery, the fiscal risks currently remain unchanged. The abolition of the recourse to assets (*Pflegeregress*) is compensated by transfers from central government. The authorities also introduced increases in the cash benefit allowances for each level of dependency, which will start with a 1.8% rise in January 2020. This is expected to cost €50 million in addition to the existing spending of €2.7 billion, which targets about 464,000 recipients. Other measures include an accreditation system to support the quality of home care provision. Overall, recent measures do not appear to help reduce costs.

The long-term care system delivers comparatively high-quality services, but faces staffing challenges. The long-term care system relies comparatively heavy on informal care. The 24-hour care at home with privately hired or self-employed carers, is increasingly used and relies to a great extent on people from central and eastern European Member States. ([30]) Women make up

([28]) https://www.sv-primaerversorgung.at

([29]) The agreement sets targets for increasing the use of IT to improve coordination and efficiency, e.g. by ePrescriptions and an electronic personal vaccination file.

([30]) As per December 2019, 33,464 24-hour carers worked for patients receiving public financing. Of these, 17,006 were

85.2%([31]) of formal long-term care staff and about two thirds of the employees who take leave to care for dependants are women. According to recent estimates, the nursing care staff requirement for the year 2030 (additional demand and replacement due to retirement) is approximately 76,000 persons. (Rappold and Juraszovich, 2019). Work on a masterplan for long-term care (*Masterplan Pflege*) had started with the aim of improving quality, staffing and financing. The work was curtailed by the early end of the previous government. The new government announced a fundamental reform of the long-term care system.

3.1.6. DEBT SUSTAINABILITY ANALYSIS AND FISCAL RISKS

While risks of fiscal stress appear to be contained in the short and medium term, Austria continues to have a medium fiscal sustainability risk in the long term. The values of the S0 and S1 indicators and the debt sustainability analysis are below the critical thresholds (see Annex B). However, the S2 indicator shows that, relative to the baseline no-policy-change scenario, an improvement of 2.3 pps of GDP in the structural primary balance will be needed to prevent the debt-to-GDP ratio increasing continuously over the long term. The S2 value is driven by the projected rise in age-related government expenditure, in particular long-term care (contribution of 1.4 pps of GDP to the S2 value), health care (1.0 pp) and pensions (0.6 pps) (see Annex B).

Romanian (51%), 9,913 Slovakian (30%), 2,614 Croatian (8%) and 1,861 Hungarian (6%).

([31]) Statistic Austria (2019c), Pflegedienstleistungsstatistik 2018

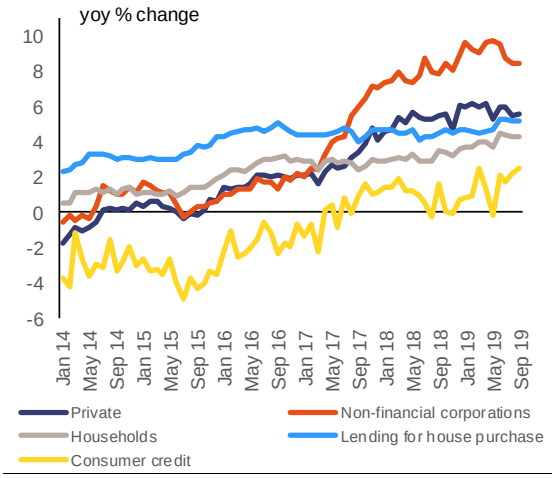
3.2. FINANCIAL SECTOR

3.2.1. BANKING SECTOR AND INSURANCE SECTOR

The banking sector has continued to benefit from benign macroeconomic conditions in recent years. Supported by positive economic developments, the system-wide solvency ratio perked up to 18.7% at the end of June 2019, 0.3 pps higher than at the same point the year before. The common equity Tier 1 ratio increased to 15.5% at the end of June 2019, which is slightly higher than the euro area average. Nevertheless, there is still scope for the significant credit institutions under the supervision of the Single Supervisory Mechanism to catch up with their euro area peers. Asset quality has also strengthened further, with the non-performing loans (NPL) ratio declining to 2.3% at the end of June 2019, 1.1 pps below the euro area average. Asset quality has been supported by NPLs declining for both corporates and households, with NPLs for corporate exposures being by 2.9 pps lower than the euro area average of 6.1% at the end of June 2019. On the back of several macro-prudential measures adopted by supervisors, foreign currency (mainly Swiss franc) loans to Austrian households and non-financial corporations declined by 73% from October 2008. However, the vulnerabilities associated with the outstanding stock of bullet loans (denominated in foreign exchange) linked to repayment vehicles require close oversight. Green financing has also become a priority. The first green bond issuance by an Austrian bank was made in June 2018.

Despite the low interest rates, banks made efforts to improve their profit generation capacity. The profitability of Austrian banks continued to be solid in the first half of 2019, despite low interest rates. The return on equity stood at 4.2% (ECB data, non-annualised), higher than the EU average of 3.4%, but slightly lower than the 4.5% registered in June 2018. The profitability of the significant Austrian credit institutions continues to display some pockets of vulnerability, with their net interest margins remaining under pressure, as in previous years. Some further progress has been made on improving operational efficiency, as banks' cost-to-income-ratio declined from 65.5% at the end of June 2018 to 63.9% at the end of June 2019, marginally lower than the EU average of 64.7%. Nevertheless, further efforts appear warranted to adapt business models to the challenges posed by new IT and digitalisation and to tackle remaining structural cost issues.

Graph 3.2.1: **Credit to the private sector (y-o-y% change)**



Source: ECB

Developments linked to the buoyant residential real estate market have not posed challenges so far to banking sector stability. Lending to households expanded further in 2019, increasing by 4.3% y-o-y in September 2019 (see Graph 3.2.1). Meanwhile, mortgage lending remained dynamic and perked up by 5.3% y-o-y in September 2019. Despite the robust mortgage lending and continued house price increases (see Section 3.2.2), authorities have concluded that the counter-cyclical capital buffer can be kept at zero. To date, credit institutions have applied the Austrian Financial Stability Board's September 2018 recommendation and quantitative guidance on sustainable real estate lending (European Commission, 2019a). While banks are broadly complying with the recommended quantitative thresholds, several outliers require close monitoring and supervisory dialogue. As from January 2020, enhanced reporting requirements on real estate exposures are mandatory and applicable for all credit institutions. In the event of more adverse developments, the supervisory authorities can activate the borrower-based macro-prudential instruments under the Austrian Banking Act.

Central, eastern and south-eastern Europe has continued to play an important role for the activities and profitability of Austrian banks. The consolidated foreign claims of banks with

Austrian majority ownership in central, eastern and south-eastern Europe (CESEE) stood at roughly €217 billion at the end of June 2019, up from €210 billion in 2018. The top three host countries for Austrian banks with international activities continue to be Czechia, Slovakia and Romania, which accounted for roughly 63% of the total assets of the CESEE subsidiaries at the end of June 2019. Meanwhile, Czechia, Russia and Slovakia were the most profitable markets at the end of June 2019, generating roughly 67% of Austrian banks' total profit. Asset quality has improved further on the back of the benign macroeconomic conditions in the CESEE region coupled with the lower loan-loss provisioning needs. Since December 2010, foreign currency loans granted to clients in CESEE have gone down by roughly 67%.

The prudential situation of Austrian subsidiaries has strengthened, but they remain exposed to developments in host countries. While the overall prudential situation of Austrian subsidiaries in the CESEE region has strengthened, they remain exposed to developments stemming from measures taken by host countries (additional tax burden due to bank taxes, measures targeting foreign exchange loans, in particular Swiss franc loans). Also, the issuance of debt instruments complying with the minimum requirement for own funds and eligible liabilities (MREL) may be challenging for the Austrian subsidiaries operating in host countries with less-developed capital markets.

The winding-down of public vehicles for impaired assets does not pose risks to public finances. The disposal of the impaired assets of the three asset management companies – the financial defeasance vehicles HETA, Immigon and KA Finanz – has further proceeded without any adverse impact on public finances. At the end of 2018, HETA managed to divest roughly 90% of its total assets. Based on the recoveries so far, the Austrian Financial Market Authority (FMA) – the resolution authority – decided to increase the recovery ratio from 64.4% to 86.32%. Due to the cash reserves obtained from divestments, HETA made a third distribution of proceeds to creditors (€2.05 billion) in December 2019. Based on preliminary estimates, the bondholders subject to bail-in are expected to contribute roughly €3.6 billion to the orderly resolution of HETA. The resolution process of Immigon was formally finalised at the end of June 2019, following a decision by the FMA. Immigon opened the liquidation proceedings with a view to distributing its remaining capital and liquidity. Since some liabilities are not maturing until 2028, Immigon will be removed from the company register in 2029. The divestment of KA Finanz's assets has also advanced, with total assets being reduced to €7.2 billion at the end of 2018. The winding-down process is on track to be completed by 2026, as envisaged.

A much-debated reform of the institutional framework for banking supervision, announced in 2018, will not be further pursued. In November 2018, the previous government announced a reform introducing a new supervisory model based on the consolidation in the FMA of banking supervision activities (including on-site inspections and off-site analysis at micro level), which are currently shared between the Austrian National Bank (OeNB) and the FMA. The reform would carve out other competences from the OeNB, such as its operational role in the supervision of credit institutions and deposit guarantee schemes. However, the OeNB's role in the area of financial stability and macro-prudential supervision would be further strengthened. The reform envisages also an enhanced role for the Ministry of Finance in regulatory issues in the area of competence of the FMA. In the announced format, several aspects of the reform raise concerns as to its impact on the governance as well as on the operational and financial independence of the FMA.

Low interest rates continue to put a strain on the traditional business of life insurance undertakings. While the non-life and health insurance business in Austria continued to expand by 3.6% and 4.3% respectively, in 2018, the life insurance business remained under pressure, as gross written premiums went down by 3.8%. Overall, total gross written premiums of Austrian insurance undertakings increased by 1.2% in 2018. Traditional life insurance products continue to be those most affected by the current low interest environment. The maximum interest rate for life insurance contracts with interest rate guarantee was adjusted downwards by the supervisor and currently stands at 0.5% (as compared with 2.25% 10 years ago). Despite the headwinds in the life insurance sector, the Austrian insurance companies

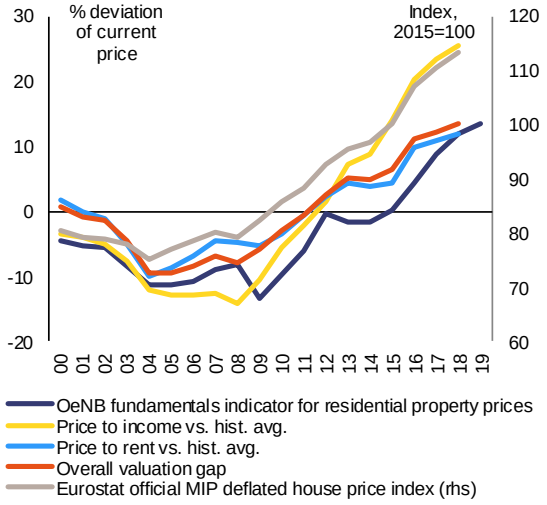
have continued to maintain sufficient solvency ratios. Activities in other countries continue to be important for its insurance sector, as five insurance groups with international activities (VIG, UNIQA, Grawe, Merkur and Wüstenrot) operate in 27 countries in western Europe and CESEE. These markets have contributed significantly to the total written premiums of Austrian insurers, with the foreign business accounting for 40.3% of total gross written premiums in 2018, marginally higher than in 2017.

3.2.2. HOUSING MARKET AND REAL ESTATE FINANCING

House prices have risen strongly in the past decade, but recent data show opposing tendencies. House prices have gone up strongly, with nominal prices 82% above 2006 levels (see also Section 1). In the last 2 years, real house price growth has remained contained with 2.5% growth (4.7% nominally) in 2018, after 3.2% (5.3% nominally) in 2017 (Eurostat). By contrast, the OeNB nominal residential property price index shows a clear acceleration, with 6.9% nominal growth in 2018 after 3.8% in 2017. Both sources indicate high nominal year-on-year growth in Q3 2019 of 6.18% (Eurostat) and 5.2% (OeNB). In Vienna, prices increased by 9.8% in Q2, a development last seen in 2013, but growth decreased slightly in Q3 to 7.6%. In other *Länder*, prices grew moderately and have been decelerating for several successive quarters (OeNB, 2019).

Excess demand for housing appears to have peaked in 2016, as building permits and construction picked up. After peaking in 2016, increased construction activity and weaker demand are expected to eliminate excess demand by 2020, though it may take longer in Vienna (Schneider, 2019; European Commission, 2019a). This is also visible in the strong increase in the number of building permits issued in 2016 (+16.9%) and 2017 (+10.2%). While growth in the demand for building permits fell strongly in 2018 (-16.9%), it was still high (70,000 permits). First estimates for 2019 show stable development. The fact that permit applications focused on multi-family homes suggests that the dwelling stock in cities (in particular Vienna) may grow faster than in past years (IIBW, 2019). Construction of dwellings increased by 6.2% in 2017 and 1.3% in 2018. While investment in construction picked up since 2016, the parallel increase in GDP meant that residential investment as a percentage of GDP remained roughly stable. It increased slightly, to 4.5%, in 2017-2018, compared to 4.3% in 2012-2016.

Graph 3.2.2: **Price developments and valuation gaps**



[1] Overvaluation gap estimated as an average of the price/income, price/rent and fundamental model valuation gaps
Source: European Commission, OeNB

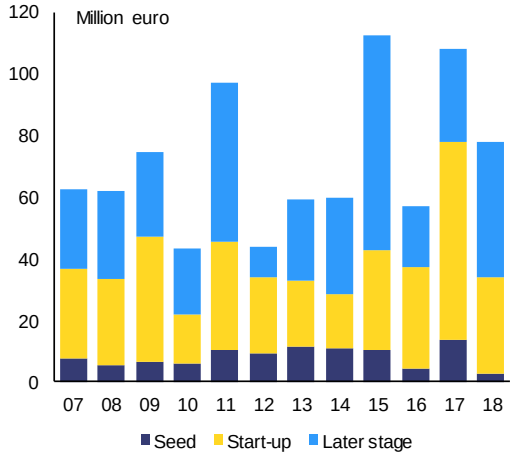
Most indicators suggest that house prices are overvalued by 10% or more. Several assessment indicators suggest an average house prices overvaluation of 10-14% (see Graph 3.2.2). As prices have increased more than income, the price to income ratio is 29% (Q3 2019) above its long-term average and among the highest in the euro area. In 2018, a 100 m² dwelling cost on average 10.7 years of the average annual household income, somewhat more than in most euro area countries. The OeNB fundamentals indicator for residential property prices increased further for Vienna, reaching 26% in Q3 2019, and went up to 14% for the country as a whole (OeNB, 2019). A key difference from other euro area markets is that rents also increased strongly. This has affected the affordability of housing (see Section 3.3.3, also on housing subsidies). However, the price to rent ratio is only 15% (Q3 2019) above its long-term average and the model-based methods point to a rather low valuation gap. Risks to the banking sector seem contained (see Section 3.2.1).

3.2.3. CAPITAL MARKETS AND ACCESS TO FINANCE

The financial sector is dominated by banks, while capital markets have scope for further development. For Austrian companies, in particular SMEs, bank credit is the main source of external financing. In 2018, as in previous years, non-financial corporations have heavily relied on bank loans, which represented 46.4% of GDP, 12 pps above the EU average. By contrast, funding from capital markets stood at 20.3% of GDP and remained significantly below the EU average of 49.7% in 2018. The Vienna Stock Exchange experienced a setback in 2018, as the Austrian index (ATX) lost 19.7%. This was on the back of muted growth prospects in various EU Member States and falling investment sentiments in light of a more restrictive US monetary policy and uncertainties induced by trade conflicts. Austria also has some catching up potential as regards the number of listed companies (OECD, 2019a).

Despite useful measures taken in recent years, companies' access to non-bank financing is still subdued. The Vienna Stock Exchange launched a new segment dedicated to SMEs in January 2019. Despite favourable listing conditions in terms of simplified requirements and lower costs, only six SMEs have been listed so far. The modest use of equity financing is only partly explained by demand side factors, such as the concerns of some SMEs related to losing control. Most SMEs have not had access to debt financing via the capital market, through issuing bonds or commercial papers. This is mainly due to the lack of economies of scale, as tapping the bond market entails significant transaction costs. According to Demmou *et al*. (2019), policies aimed at providing similar access to equity and venture capital could have a positive impact on the economy through increases in productivity growth. The impact is particularly pronounced in sectors that make intensive use of intangible assets, such as software, patents, R&D expenditure and human or organisational capital. The new government programme includes measures to reduce administrative burdens relating to capital markets.

Graph 3.2.3: **Venture capital investment in Austria, 2007-2018**



Source: Invest Europe (2019), compilation European Commission

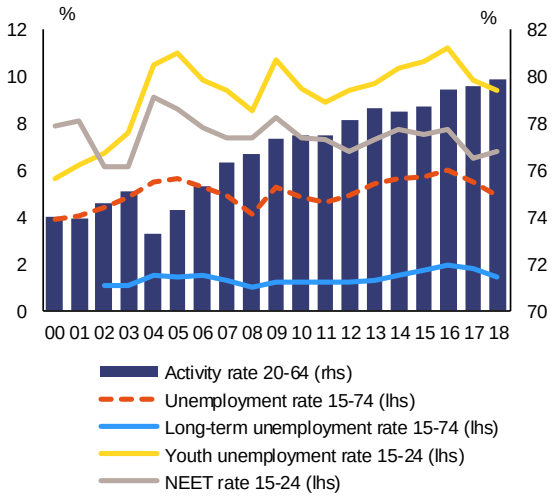
Austria is lagging behind peer countries as regards the availability of equity capital, including venture capital. As percentage of GDP, venture capital investment is still relatively low (0.02%) compared to Denmark (0.1%) and Sweden (0.09%), but it has been catching up steadily (Invest Europe, 2019). The small size of the market also involves a high degree of volatility. After the crisis, venture capital investments dropped sharply, driven by a decline in private investment, while the public sector took a more prominent role (European Commission, 2017). Since 2015, venture capital investment has increased exceeding even pre-crisis levels, but it remains scarce for companies outside Vienna (Flachenecker *et al*., 2020). The recent expansion has been driven by an increase in funding for start-up and later-stage companies (see Graph 3.2.3). Administrative barriers and restrictive service sector regulations may be partly responsible for the low supply of domestic equity capital (AVCO, 2019). Several funds were put in place through the 'Venture Capital Initiative', including three in the investment phase. These funds invest, *inter alia*, in IT, medical engineering and industrial biotechnology. The new government programme includes improved incentives for private venture capital for innovative start-ups and SMEs.

3.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES

3.3.1. LABOUR MARKET

The labour market continues to improve, but regional differences remain pronounced. Employment and activity rates (among 20-64 year-olds) have risen steadily since 2015, to 76.8% and 80.5% in Q1 2019. While unemployment continued to drop in 2018, reaching 4.9% (see Graph 3.3.1), there are pronounced disparities between regions, ranging from 2.4% in Tyrol and 2.8% in Salzburg to 10.0% in Vienna. Differences also apply for youth unemployment, which reached 18.6% in Vienna, 13.4% in Burgenland and 12.2% in Carinthia, but was significantly lower in other regions, so that the national figure was 9.4%. Low inter-regional labour mobility seems to be an important factor behind the differences.

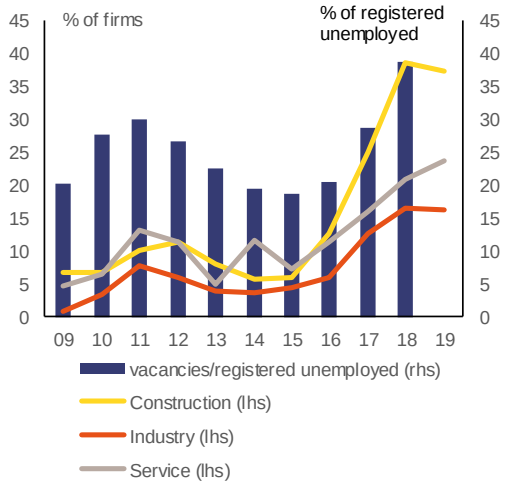
Graph 3.3.1: **Rates of activity, unemployment and NEET (not in education, employment or training)**



Source: European Commission, Labour Force Survey

The growing number of vacancies points to emerging labour shortages. The number of vacancies increased by 17% between Q2 2018 and Q2 2019, reaching 129,100. Recent survey data show that labour shortages affect especially construction and services. In Q2 2019, the vacancy rate reached a record 3%, compared to EU and euro area averages of 2.3%. In 2018, the share of firms reporting lack of labour as a limiting factor jumped from 24.9% in 2017 to 38.6% in the construction sector, and from 16.1% to 20.8% in the service sector. In the first 10 months of 2019, this figure dropped slightly (to 37.3%) for construction, but continued to increase for services to 23.8% (see Graph 3.3.2). Given population ageing and structural changes, encouraging higher labour market participation of women, migrants and older workers is necessary.

Graph 3.3.2: **Vacancies per registered unemployed and labour shortage by sector**



[1] Vacancies/unemployed refer to the ratio of vacancies registered at the Hauptverband der österreichischen Sozialversicherungsträgerin to registered unemployed, respectively
[2] Labour shortage is measured as percentage of firms reporting labour shortage as a factor limiting production (annual average of seasonally adjusted quarterly data for industry and services, and annual average of seasonally adjusted monthly data for construction)
Source: European Commission, business surveys for Business Climate Indicators

The female labour market potential remains underutilised. The female employment rate has been increasing continuously and is above the EU average (71.7% vs 67.4%). However, the male employment rate has grown faster, widening the gender employment gap (9.0 pps in 2018 vs 7.8 pps in 2016). Moreover, 47.6% of employed women worked part-time in 2018, one of the highest rates in the EU (EU average 30.8%). This is linked to the fact that nearly two-thirds of children enrolled in childcare attend it for fewer than 30 hours a week. In 2019, addressing these challenges and promoting a more equal division of caring responsibilities between women and men, Austria introduced the legal right to a 1-month paternity leave scheme (*Familienzeit*) and encourages parents to share their right to parental

leave (*Elternkarenz*). The gender pay gap ([32]) remains above the EU average (19.9% vs 16.0% in 2017) ([33]).

The labour market potential of people with migrant background remains underutilised. The employment gap between non-EU born and native-born residents narrowed from 16.9 pps in 2017 to 13.6 pps in 2018 (from 21.8 pps to 18.9 pps for non-EU born women), but it remains among the highest in the EU. The labour market participation of recent migrants (i.e. non-EU born residents established for less than 5 years) is improving and 50.4% of them were employed in 2018, a 5 pps increase from 2016. On the other hand, unemployment was still high among nationals of certain countries (50.9%, 39.2% and 29.6% respectively among nationals of Syria, Iraq and Afghanistan), despite significant drops between 2017 and 2018. The new government programme announces a common federal integration strategy for recognised refugees through better cooperation between the public employment service, the Integration Fund Austria and civil society.

Foreign-born workers are disproportionately affected by in-work poverty and over-qualification. In-work poverty remains much higher among foreign-born workers than among native-born residents (16.9% vs 5.5% in 2018). This suggests that the former occupy jobs below their qualifications and are concentrated in the low-wage sector (30% of non-EU born residents work for less than two thirds of the median wage, compared to 12% of native-born workers (Statistik Austria, 2019a). Despite a slight improvement, over-qualification clearly remains an issue for non-EU born workers (43% over-qualification rate for non-EU born vs 25.7% for native-born workers).

Despite positive labour market developments, challenges remain in terms of participation by older workers. Although the employment rate of older workers (aged 55+) increased from 46.3% in 2015 to 54% in 2018, it is still below the EU average of 58.7%. Long-term unemployment is relatively low (1.4% in 2018), but older workers are disproportionately affected. The number of long-term unemployed aged 50+ more than quadrupled between 2008 (10,562) and 2018 (44,045). Over the same period, the share of long-term unemployed in that age group rose from 24% to 45%, with significant regional differences (AMS, 2019). The '*20,000 plus*' pilot initiative reduced the number of older people in long-term unemployment in 8 out of 11 pilot regions. In response, the parliament earmarked a further €50 million for continued support in 2019 and 2020. Population ageing and the harmonisation of the retirement age of women with that of men are the main drivers of an expected rise in the share of people aged 55+ in the workforce. The new government programme includes tailored measures to increase employment opportunities for older workers.

Upskilling can help to reduce unemployment among low-skilled workers. Around 50% of the unemployed have completed lower secondary school (*Pflichtschule*) at most. Unemployment among the low-skilled has doubled since 2008, to over 20%. 14.7% of adults have less than an upper-secondary qualification, while the number of jobs requiring only elementary skills is limited and likely to decrease. The Adult Education Initiative (*Initiative Erwachsenenbildung*) provides free access to education for socio-economically disadvantaged adults who lack basic skills or never graduated from lower secondary education.

The skills base needs to adapt to technological change. Specific skill gaps are prevalent in ICT and science, technology, engineering and mathematics (STEM). Of 10 Austrian leading companies, eight report recruitment problems in STEM jobs (IV, 2015). Rapidly increasing technological change, particularly linked to digitalisation, artificial intelligence and robotics, poses a challenge to the economy and society in general. 43% of firms report a lack of IT staff and 74% fear that the situation will get worse (IV, 2018). Research underlines that innovation will change the nature and distribution of tasks, creating a challenge for the low-skilled and manual routine workers (BMVIT, 2017a; OECD, 2018a).

([32]) While only about 7% of men working full-time earn less than €1,700 gross a month, twice as many women (17%) work for such a low wage. 4% of men work full-time for the low wage of €1,500 a month, while 9% of women working full-time earn this.

([33]) The gender pay gap is one of the reasons for the high gender pension gap (38.8% in 2018 vs the EU average of 29.1%) and means that the risk of poverty and social exclusion among older women (see social policy section) keeps rising while that among older men is falling. Figures published on Austrian Equal Pension Day 2019 (29 July) show an improvement of only 1 day from 2018 (APA-OTS, 2019).

Rather than replacing jobs, the new world of work is expected to replace primarily individual tasks. A recent OECD study estimates that 16.6% of jobs are at high risk of automation and a further 29.7% at risk of significant change (OECD, 2019b).

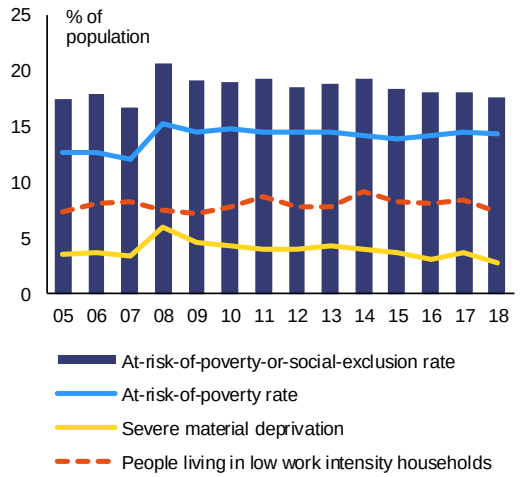
The increased need for continued learning requires good basic digital skills and better cooperation between actors in adult learning. Better framework conditions should facilitate the entry of new players including higher education institutions. The exact nature of future skills is difficult to predict, but research suggests a differentiation between digital/cognitive and non-cognitive skills (Gonzalez Vazquez *et al.*, 2019).While cognitive skills have been at the centre of formal education, Austria's curricula do not yet focus enough on non-cognitive skills,. It is planned within the ongoing curricula reform to further strengthen these elements. Compared to *Innovation Leaders* ([34]), Austria needs to further improve digital skills in the workforce (in 2017, only 39% of workers had above-basic digital skills, compared to 53% in the Netherlands) (see also Section 3.3.4). In 2019, several initiatives (e.g. 'DigComp 2.2 AT') were pursued to address labour market needs linked to digitalisation. Under the related 'fit4internet' initiative, launched in 2019, anyone can assess their digital skills and receive suggestions for training as a basis for further personal development. Other initiatives include 'Digital Pro Bootcamps' to train employees who already have IT experience, and the 'Work in Austria' programme aimed at attracting foreign skilled labour, incl. IT experts. An orientation platform on digital jobs (www.digitaleberufe.at) was set up in September 2019 jointly by the Ministry of Education, Science and Research and the digital economy. It informs teachers, pupils and parents about the wide range of digital jobs.

Austria has an overall well-functioning social dialogue system. The legal and institutional framework for tripartite social dialogue foresees the involvement of the social partners in policy-making and provides them with feedback from government. However, the previous government weakened the role and importance of the social partners somewhat, by not involving them fully in the design and implementation of reforms in the areas of social insurance and assistance as stipulated by the legal provisions on social dialogue.

([34]) As defined by the *European innovation scoreboard 2019* (the 'innovation leaders' are Sweden, Finland, Denmark and the Netherlands; the 'strong innovators' are Luxembourg, Belgium, the UK, Germany, Austria, Ireland, France and Estonia).

3.3.2. SOCIAL POLICY

Graph 3.3.3: **Main indicators of poverty, 2005-2018**



Source: European Commission, Labour Force Survey

The overall social situation has improved. In 2018, the share of people at risk of poverty or social exclusion fell to 17.5%, the lowest level since 2005. This improvement was driven mainly by a significant decline in the severe material deprivation rate (2017: 3.7%; 2018: 2.8%) and in the number of households with low work intensity (2017: 8.3%; 2018: 7.3%). Social transfers effectively reduce poverty (Graph 3.3.3), moving Austria forward in SDG 1 (no poverty). A reform of the minimum income benefit (*Neue Sozialhilfe*) was planned to come into force as of January 2020, but central elements thereof were declared unconstitutional in December 2019.

However, some vulnerable groups continue to fall behind. Though down slightly, the risk of poverty or social exclusion remains high for certain vulnerable groups: foreign-born residents aged 18+ (31.4%), single-parent households (46.4%) and households with two adults and three or more dependent children (27.9%). Moreover, the persistence of poverty (the share of people at

risk of monetary poverty currently and in at least 2 of the preceding 3 years) increased (2008: 5.6%; 2018: 10.2%), with an especially high increase for children (2008: 4.0%; 2018: 12.5%). Some 21.6% of children (aged 0-17) are at risk of poverty or social exclusion, a higher share than in other age groups. The new government programme prioritises the fight against child poverty. In 2018, the 'at risk of poverty or social exclusion' rate for children of low-skilled parents was 45.1 pps higher than for children of high-skilled parents. For the children of foreign parents, the risk was also considerable (22.4 pps higher than the average). The latest results of the OECD programme for international student assessment (PISA) show that the percentage of 15-year-old students underperforming in reading is 26.3 pps higher for those with a lower than for those with a higher socio-economic background (see Section 3.3.4).

The social situation continues to vary significantly across regions. In line with the overall trend, the share of people at risk of poverty or social exclusion decreased in cities (to 25.5% in 2018 from 26.3% in 2017) and even more so in towns/suburbs (to 13.5% in 2018 from 16.4% in 2017). However, poverty and social exclusion became slightly more common in rural areas (1.2 pps increase to 14.2%). Among the regions, in 2017 the risk was highest in Vienna (26.7%) and Vorarlberg (22.2%), and lowest in Lower (12.6%) and Upper (13.2%) Austria.

Social protection for employees and the self-employed performs comparably well, but the uptake of voluntary opt-ins remains low. The self-employed are mandatorily covered by all major strands of social protection, except for unemployment benefits. Relatively few self-employed opt into unemployment insurance ([35]). One reason might be the design of the opt-in system, which binds them to the selected level of contributions for 8 years. Marginally employed workers (*Geringfügig Beschäftigte*), most of whom are women, are not covered by unemployment insurance. They can opt into other strands of social insurance, including sickness, maternity, pension and invalidity schemes, at rather low cost. However, only 11.4% do so, partly due to a lack of awareness (Riesenfelder *et al.*, 2011).

3.3.3. AFFORDABLE HOUSING

Austria has an elaborate system of limited-profit housing associations and a subsidy scheme that keeps housing costs relatively low. The housing and rental market is characterised by a low home ownership rate (48%), combined with a well-established system of social housing, which usually provides accommodation at prices below market rents. Only 18% of households live in a private rented property, 17% in Limited Profit Housing Association (LPHA) properties and 7% in municipal housing. The remaining 9% live in dwellings with other forms of housing contracts([36]) (Amann and Mundt, 2019). Together with the legal framework, the building and loan association and housing subsidies, the social housing scheme is a powerful tool to increase economic and social resilience by stabilising the housing and construction sector. It also enables political intervention, e.g. fostering investment in the energy efficiency of buildings (see Section 3.5) (Mundt, 2018; IIBW, 2019). However, a dearth of available dwellings and long waiting lists, together with often-substantial entry costs in the case of LPHAs, may *de facto* limit access for people at risk of poverty (Fink, 2019).

Rising rental costs make it more difficult to access affordable housing. Rents increased by 13% between 2014 and 2018, especially on the private market (see also Section 3.2). While the overall incidence of housing cost overburden ([37]) is relatively low (AT: 6.8%; EU average: 9.9%, 2018), there are substantial regional disparities. This affects mostly people living in cities (11.6%). The housing cost overburden rate for people at risk of poverty is 36.5% and even higher for those aged 16 to 29 (AT: 44.8%; EU: 40.4%). Strong house price rises in the past decade reduced affordability, in spite of low interest rates (see Sections 1 and 3.2). Housing cost overburden was around 15.2% for tenants (2015-2018) and 1.9% for owner-occupied dwellings (EA19: 25.8% and 5.3%; EU

([35]) Between 2009 and 2018, 2,342 self-employed people opted into unemployment insurance (of a total of 465,100 registered in Austria in 2018).

([36]) e.g. subleases, rent-free tied accommodation for civil servants, etc.

([37]) When total housing costs (net of housing allowances) represent more than 40% of total disposable household income (net of housing allowances).

27.1% and 5.3% vs 14.1% and 2.3% in 2011-2014).

Housing subsidies have gradually decreased. The housing subsidy scheme is one of the most effective in the EU. It is also one of the most efficient: the share of expenses that can be attributed to housing subsidies is less than 0.5% of GDP, far less than in other EU countries (IIBW, 2019; Amann and Mundt, 2019). It is mostly a municipal competence (Amann and Mundt, 2012; Mundt, 2018) and mainly supply-side driven, with subsidies for (i) renovation (24% of total housing subsidies), (ii) and the construction new of flats (53%), single family-houses (8%), private homes (roughly 30%) and municipal and non-profit housing (70%). There is also a demand-side subsidy (iii) in the form of housing allowances, but this is much lower (16%) ([38]) (IIBW, 2019; Amann and Mundt, 2019; Klien, 2019). However, despite rising house prices and rents (see also Section 3.2), there has been a clear drop in expenses for housing subsidies (-18% since 2014), which are now below the 10-year average. This affected all areas ([39]) (IIBW, 2019).

3.3.4. EDUCATION AND SKILLS

Preparations for the future skill needs of the Austrian economy should start with a focus on basic and non-cognitive skills. Given the ageing population and structural challenges, a pre-condition for successful change is a good level of basic skills in the future workforce (see Section 3.3.1). The key lever is the quality of early childhood, primary and, in particular, lower secondary education. The January 2020 government programme acknowledges the challenges.

The increasingly diverse and growing school population calls for more targeted funding. With migration the main driver of population growth, the school population is becoming increasingly diverse (European Commission, 2019c) ([40]). In Viennese primary schools, 45% of the pupils have a migrant background. This compares to 40% in areas with high, 20% in areas with medium and 6% in areas with low population density (Oberwimmer *et al.* 2019). The government therefore stresses the need to focus on language learning from an early age and pupils from non-German speaking families are given separate German lessons. However, while government expenditure on education is slightly above the EU average (4.8% vs 4.6% of GDP in 2017), the system for allocating resources to schools does not take sufficient account of the additional complexity linked to socio-economic background and teaching non-native and non-German-speaking pupils (OECD, 2016; Oberwimmer *et al.*, 2019). The latest education reform brought some progress regarding legally defined criteria for the allocation of resources including an opportunity index.

The educational attainment of 15-year-olds is still influenced by socio-economic background. PISA 2018 did not identify a major change in basic skills in Austria compared to 2015 and 2012: reading, mathematics and science remain around the EU average. (OECD, 2019c; European Commission, 2019d). Around a quarter of Austrian 15-year-olds (23.6%) underperform in reading (EU average 21.7%), which continues the negative trend observed since 2012. Socio-economic and/or migrant background remain key determinants of underperformance ([41]). Some 37.2% of 15-year-olds from poor socio-economic backgrounds and 47.4% of foreign-born pupils underachieve in reading. In mathematics and science, the shares are 21.1% and 21.9% respectively. The difference between advantaged and disadvantaged schools (139 PISA points in reading) is about 3.5 years of schooling. Students from a poor socio-economic background receive less specific support in learning than their peers in other countries. This seems more common in disadvantaged than advantaged schools. In addition, pupils with a migrant background are more likely to leave school early without a valid school-leaving

([38]) This includes "*Wohnungsunterstützung*" in Styria, although it traditionally comes under the social, not the housing budget.

([39]) Renovation funding decreased by 24%, subsidies for flats by 22%, new construction by 16% and housing allowances by 13%.

([40]) In 2017, 22% of the population had a migrant background and 15.2% were foreign-born, of whom about half were from other Member States. Eurostat projects that the number of 3-18 year-olds will increase by 7.9% between 2020 and 2030 and by 8.6% by 2040.

([41]) 2012/2015/2018 absolute difference 51/64/63 with constant ECSC 31/41/37 (Bifie, 2019)

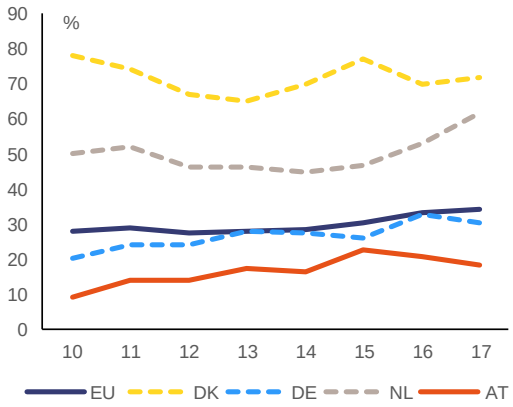
certificate. Despite a 1.4 pps decrease, the rate among foreign-born young adults is still 17%, three times higher than among the native-born pupils (5.5%). Regional differences are evident. While early school leaving affects 4.4% of pupils in rural areas, the figure rises to 7.7% in towns/suburbs and to 10.1% in cities.

Increasing the availability and quality of early childhood education and care could help to improve educational outcomes, in particular for children from disadvantaged backgrounds. Although there has been an increase in expenditure on early childhood education and care since 1980, it is less than the average increase in the EU ([42]). Overall, 95.6% of children between the age of 4 and school entry age attended early childhood education and care in 2017. The share of children up to the age of 3 attending early childhood education and care rose from 4% in 2005 to 20% in 2018, but Austria lags well behind the reference group of *Innovation Leaders* (see Graph 3.3.4). Most children attend only part-time care and those who may profit the most (children with weak socio-economic or migrant backgrounds) attend less often. Competence for early childhood education and care is split between different government levels, preventing a harmonised quality framework (European Commission, 2019a) and leading to uneven levels of quality assurance (Breit *et al.*, 2019). An Article 15a agreement addresses these challenges only partly, but contributes positively to SDG 4.

Teacher shortages are likely to become a major challenge. The number of teachers older than 60 more than doubled in 2013-2017. 47% of secondary teachers are 50 or older and 11% are 60 or older. Hence, there is a need to attract more students to initial teacher training and help young teachers to start out (Oberwimmer, 2019). The January 2020 government programme foresees measures for opening the teaching profession for career changers.

Vocational education and training offers excellent employability. The share of students enrolled in vocational programmes at upper secondary level (68.6%) remains well above the EU average of 47.8% (UOE). The employment rate among recent vocational graduates was 87.3%, compared to the EU average of 79.5% (Eurostat, LFS). The Federal Ministry for Digital and Economic Affairs launched a review of apprenticeship programmes (*Lehrberufsscreening*) to develop updated and new apprenticeship training contents. Guidelines for the competence-oriented development of apprenticeships (*Leitlinien zur Lehrberufsentwicklung*) have been developed to inform all those responsible for the design, steering and implementation of competence-oriented job profiles, training and examination regulations.

Graph 3.3.4: **Participation of children under 3 years of age in formal childcare, 2010-2017**



Source: European Commission, EU-SILC

Participation in tertiary education has increased steadily, but regional disparities persist. Tertiary attainment stood at 40.7% among 30-34 year olds in 2018 and is generally higher in cities than in rural areas (48.5% vs 33.9%). The highest concentration of 25-64 year-olds with higher education is in Vienna (42.3%) and the lowest in Vorarlberg (27.6%). In 2018, the employment rate among recent tertiary graduates was 88.6% (EU average: 84.9%), reflecting strong demand for highly skilled workers.

While digital skills have improved steadily, Austria still does not match the 'innovation leaders'. Austria is one of the few EU countries that have introduced a digital key competence framework for all school levels, including the structured testing of pupils. Moreover, its concerted effort to equip teachers with relevant

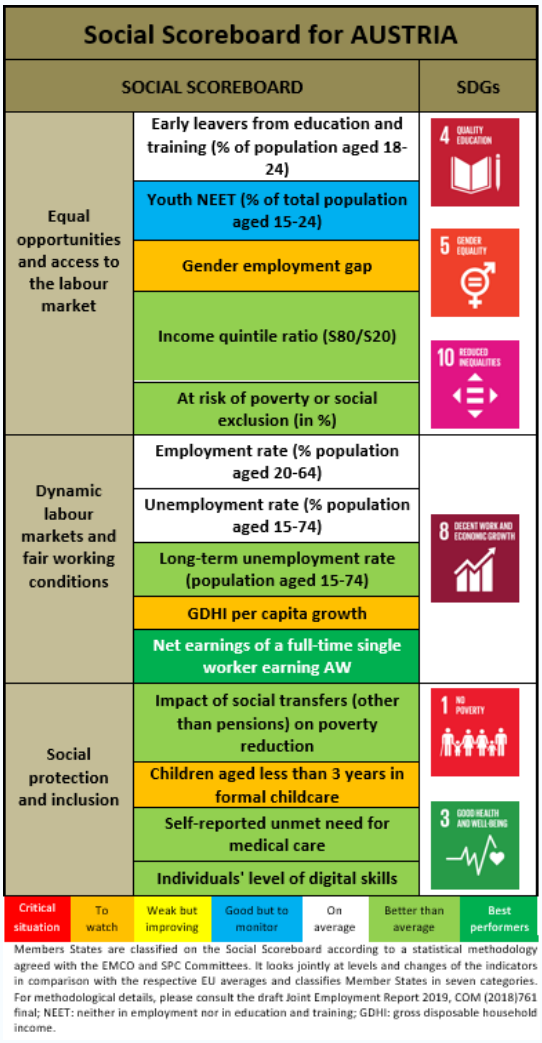
([42]) Although childcare expenditure has doubled since 1980, it rose much more in other Member States. Germany increased its budget 4-fold, France 5-fold and Italy and Belgium 7-fold.

digital skills has allowed it to catch up with the leaders (Denmark and Estonia) ([43]), for the 16-19 age group. However, digital skills in the adult population remain close to the EU average (European Commission, 2019e). The new government programme recognises the importance of digital skills and provides for numerous measures to teach digital competences to pupils and teachers. While Austria registered slight improvements in internet users' basic skills compared to 2017, it is behind the top-performing countries (see Section 3.3.1) (European Commission, 2019e).

([43]) In 2017, 77% of 16-19-year-olds were above average (Denmark: 75%, Estonia: 77%) (Eurostat).

Box 3.3.3: **Monitoring performance in light of the European Pillar of Social Rights**

The European Pillar of Social Rights is a compass for a renewed process of upward convergence towards better working and living conditions in the European Union. It sets out twenty essential principles and rights in the areas of equal opportunities and access to the labour market; fair working conditions; and social protection and inclusion.



Austria performs relatively well on the Social Scoreboard supporting the European Pillar of Social Rights, but some challenges remain. Despite a high employment rate of women (71.7% in 2018 against an EU average of 67.4%), the gender employment gap increased from 7.8 pps in 2016 to 9.0 pps in 2018. Many women work only part-time (47.6% in 2018, well above the EU average of 30.8%), which is linked to their caring responsibilities and lack of affordable full-time childcare facilities. About two thirds of the employees taking leave to care for frail or sick dependants or family members (i.e. long-term care leave or family hospice leave) are women.

Overall, long-term unemployment is below the EU average, but remains a challenge among older workers. The number of the long-term unemployed aged 50 and over has more than quadrupled since 2008. In 2018 the long-term unemployed constituted 45% of all unemployed aged 50 and over, compared to 24% in 2008, with significant regional differences. The initiative '*20,000 plus*' has shown positive effects in increasing the employment for the long-term unemployed and public finances.

Fair working conditions and social protection contribute to good social outcomes. The incidence of severe material deprivation in Austria is among the lowest in the EU and falling (2.8% in 2018, compared to 3.7% in 2017). Additionally, the net earnings of a single worker earning the average wage in Austria remain among the highest in the EU. Compared to 2017, net earnings also grew faster than in comparable countries with high productivity levels. This good performance can also be attributed to the country's well-established collective bargaining system and its high coverage rate.

In order to improve gender balance in care over children and professional activity, the Government adopted the one-month paternity leave scheme (*Familienzeit*). Since September 2019 all fathers have a legal right to care leave, accompanied by protection against dismissal after return to work. The introduction of the paid parental leave showed that the sole legal entitlement was insufficient to increase the involvement of fathers. The measure is expected to effectively increase the uptake of paid parental leave by men.

3.4. COMPETITIVENESS, REFORMS AND INVESTMENT

3.4.1. INVESTMENT AND PRODUCTIVITY TRENDS

Productivity growth and investment needs

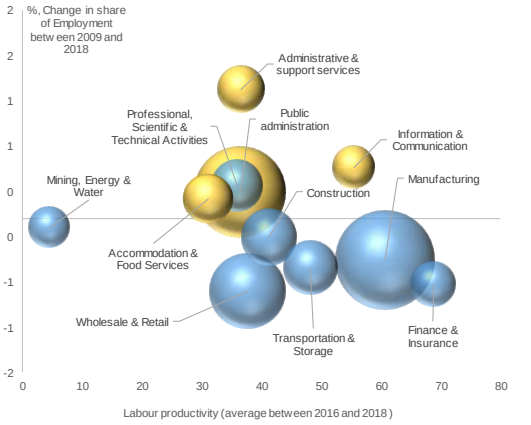
Since 2009, labour productivity growth in Austria has fallen below the EU average. Despite relatively robust GDP growth, aggregate labour productivity growth (value added per hours worked) dropped to 0.6% in 2018 (from 1.5% in 2017). While productivity is still relatively high, its growth has been below the EU average since 2009. The decline can be attributed to various factors, including the net migration uptake of 2015-2017 and a job rich recovery after the crisis. While Austria's employment measures helped to mitigate the impact of the crisis, they also led to labour hoarding and fewer hours worked (Böheim, 2017). On the positive side, regional differences in real gross value added per worker have decreased and are less pronounced than in peer countries (see Section 1).

Productivity growth has been slowing for several decades. Overall, Austria performs relatively well in achieving economic growth in a sustainable and inclusive manner. However, as in most EU countries, productivity growth has gradually slowed in recent decades (European Commission, 2019a). In the medium term, population ageing will increase the need for higher capital and total factor productivity growth to sustain high standards of living and wages (see Section 1). Nevertheless, in contrast to most EU countries, Austria has not yet appointed a productivity board.

Structural change explains part of the slowdown of productivity growth. The agricultural and manufacturing sectors saw their economic weight shrink substantially by 82% and 30% respectively from 1970 to 2016. On the other hand, as in most EU countries, the service sectors (including regulated professions, non-market services and tourism-related services), which are characterised by lower productivity, have gained in importance. These shifts explain a 0.3 pp. decrease in average labour productivity growth between 1970 and 2016 (Bauer *et al.*, 2020). In recent years (2009-2018), there has also been a shift to services in relative shares of employment (see Graph 3.4.1). However, labour productivity growth in the service subsectors has fared comparatively better than in other Member States (Bauer *et al*., 2020).

Recent dynamics show only a gradual shift to more productive sectors. Austria's ambition is to become an *Innovation Leader* ([44]). However, its share of high-tech, medium-high-tech and knowledge intensive services is lower than the EU average and that of most *Innovation Leaders* and *Strong Innovators*. More recently (2007-2016), there has been a slow structural shift towards more productive sectors. However, even these show relatively low productivity growth in international comparison (Schuch and Testa, 2020).

Graph 3.4.1: **Productivity levels and change in the share of employment for aggregated sectors 2009 - 2018**



[1] The size of the circles is proportional to the share of GVA in 2018.
[2] Blue balloons indicate where productivity has decreased in this period. Gold balloons show sectors in which labour productivity has increased
Source: European Commission

Low business dynamics in services, size-distribution aspects and a lack of digital skills have also restricted productivity growth. In contrast to generally rising numbers for new firms (see Section 3.4.3), entry rates in the business services sector (without sole proprietorships) are below the EU average and declined steadily between 2008 (8.3%) and 2016 (6.3%) (Bauer *et al*., 2020). The labour productivity gap between small (0-9 employees) and large firms (>250) is greater than in peer countries. In particular, looking at the information and communication sector, only a few large companies perform well. Given that smaller firms account for a greater share of employment than in

([44]) As defined by the European *Innovation Scoreboard 2019 – Innovation leader*: SE, FI, DK, NL, *Strong innovator*: LU, BE, UK, DE, AT, IE, FR, EE.

the EU as a whole, such firm-size distribution effects may also explain the negative productivity gap in this sector relative to the EU (Bauer et al, 2020). Increasing skills mismatches, skills shortages, and a lack of digital skills also hamper productivity growth (see Section 3.3.1 and 3.4.3) (Vandeplas and Thum-Thysen, 2019; OECD, 2019d).

Total factor productivity (TFP) growth remains insufficient to catch up with innovation leaders. After nearly a decade of TFP stagnation, the trend has been more positive in recent years (+1% in 2018). However, TFP growth is not sufficient to catch up with peer countries (e.g. Germany), where the post-crisis TFP growth came sooner and was more pronounced. As in most EU countries, the growth is also lower than in past decades (European Commission, 2019a). Investment, *inter alia* into intangible assets, is an important lever for improving TFP growth (Weyerstrass, 2018). However, while Austria is investing strongly in R&D and brands, its performance is only average in terms of intangible investment-to-capital ratio ([45]) (see below). This means that intangible investment makes only an average contribution to productivity growth (Bauer *et al.*, 2020).

Investments to support digitalisation and innovation, coupled with improved business regulation, are Austria's main levers for boosting productivity growth. Austria invests heavily in R&D but has so far not managed to turn these investments into proportional innovation outcomes, as also reflected by SDG 9. Its overall innovation performance has been stagnating and, thus, the gap to *Innovation Leaders* is not closing ([46]). A further bottleneck for productivity growth is the weak diffusion of digital technologies and business models among smaller companies, coupled with average digital skills in the adult population (see Section 3.3.4). Firms' innovation capacity and digitalisation are tightly linked to business dynamics, not least as regards starting up and scaling up. High administrative burden and restrictive regulation in some areas also have a dampening effect on the business environment. Overall, there seems to be some room to improve productivity growth by stimulating business entry and dynamism, which could also lead to better resource allocation and allow unproductive firms to leave the market. Investment in the ecological transition could also offer significant opportunities to improve productivity and competitiveness (see Section 3.5).

Research and innovation

Austria is second in the EU in terms of R&D intensity and continues to increase its R&D investments. R&D investment is an important lever for supporting productivity growth (Weyerstrass, 2018). Austria has set itself an ambitious national R&D expenditure target of 3.76% of GDP by 2020 and wants to be an *Innovation Leader* (European Commission, 2019f). Although it may not reach its target, R&D expenditure increased further in 2018 to 3.17% of GDP (EU: 2.11%). The private sector has been the main driver, with Business Expenditure on R&D (BERD) rising faster than public expenditure ([47]). The government supports BERD mainly through R&D tax incentives (56% of total support in 2016) (OECD, 2018b), while direct support (e.g. via grants) has decreased slightly since 2015. However, there are big regional disparities in R&D expenditure (European Commission, 2019a). On NUTS-1 level, all three Austrian regions fare among the top *Strong Innovators*, with West Austria performing better on the 'Regional Innovation Index' (119.9) than South (116.2) and East Austria (114.8). Of the three, West Austria also saw the biggest improvement from 2011 (European Commission, 2019g).

Scientific impact indicators show potential for increasing the effectiveness of the R&I system. Although its overall scientific performance is above the EU average([48]), it remains below that of other EU countries with similar public R&D intensities([49]) (Schuch and Testa, 2020). Austria excels in fewer scientific fields and performs

([45]) Though especially cross-country comparison on investment in intangibles have to be analysed with care, as data collection is still in early stages. Amongst others, companies sometimes book these investments as expenditure instead. Also, in Austria, ICT output may be underestimated as Statistik Austria does not yet use hedonistic price indices (Streissler, 2016).

([46]) In the *European Innovation Scoreboard*, Austria ranked 7th for 2016, 10th for 2017 and 9th for 2018. Only the four best ranked countries were considered as Innovation Leaders

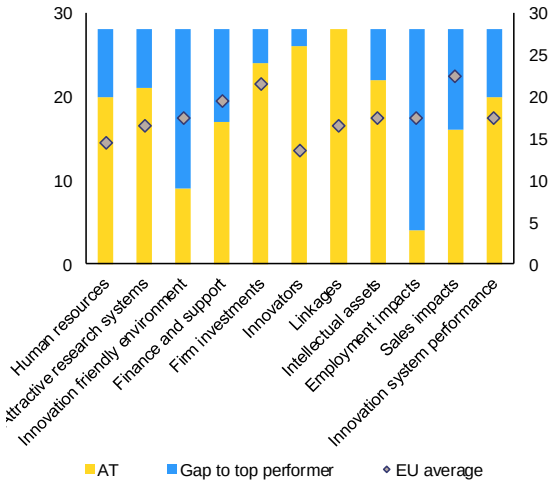
([47]) Business R&D intensity 2.22%; annual growth rate 2.5%; public R&D intensity 0.93%; annual growth rate 1.3%.

([48]) Austria ranked 8th in the EU for top 10% publications and 4th for international co-publications.

([49]) Finland, Sweden, Netherlands, Belgium.

considerably below the EU average in engineering and medical sciences (European Commission, 2018d). There was an overall increase in public R&D investment over the last decade, mainly for applied research although public competitive funding for basic research has also increased in recent years. The current Research Technology and Innovation (RTI) strategy acknowledges the need to improve framework conditions for basic research. In early 2019, the federal government announced a new measure (the *'Exzellenzinitiative'*) to promote cutting-edge research. This is included in the new government programme and will be managed by the Austrian Science Fund (FWF) over the next legislative period.

Graph 3.4.2: **Austria's innovation strengths and weaknesses**



Source: European Commission, European Innovation Scoreboard

Smart specialisation has helped to strengthen cooperation and public-private dialogue on innovation, but regional disparities persist. Austria's approach to smart specialisation is based on the national RTI strategy and regional strategies at the level of the nine *Länder*. Regional priorities are aligned with and complement the thematic priorities in the federal strategy (OECD, 2018c). However, R&D expenditure varies significantly across regions, which could be addressed by strengthening cooperation between the Austrian *Länder* and with regions in other countries (OECD, 2018c). The national RTI strategy 2021-2030 is currently being finalised in close consultation with a wide range of stakeholders, including the nine *Länder*, via the twice-yearly '*Länderdialog*' (a policy platform for national and regional governments and agencies in science and R&I). The new government plans to adopt it in 2020. It is important that all actors, including SME representatives, are actively involved also in the implementation of the strategy.

R&I priorities are well aligned with EU priorities on sustainable development. Austria's energy and climate strategy '#mission 2030' stresses the importance of R&I for achieving long term climate and energy targets (BMNT/BMVIT, 2018). In May 2018, Austria joined the global research initiative 'Mission Innovation' (BMVIT, 2018) in order to accelerate its clean energy transition (see also Section 3.5). This includes the commitment to double public R&D investments in clean energy by 2020/2021 in selected priority areas.

Although Austria has a strong human resource base in science and technology, female researchers are still underrepresented. In 2017, Austria ranked fourth in the EU in terms of new graduates in science and engineering ([50]). However, the underrepresentation of women in research may signal that the economy is not using its human resource potential to the full (OECD, 2018c). The proportion of female researchers, including in the business sector, remains below the EU average (European Commission, 2019h) ([51]). As the result of measures to achieve gender balance (e.g. individual support for early-stage researchers), the proportion of women among professors in public universities has grown significantly and progress was made on ensuring gender parity in committees (BMBWF/BMVIT/BMDW, 2019).

Austria's economy could benefit from more investments in intangible assets that complement R&D activities. In the last two decades, intangible assets complementing R&D (e.g. software, databases, copyrights, training, design etc.) have grown in importance as drivers of innovation and growth. Investments in intangible assets could reverse the slowdown in productivity growth (see above). However, Austria's public and

([50]) Per thousand population aged 25-34, significantly increasing in the last decade

([51]) Average 29% women researchers in AT vs. 33 % in the EU.

private sector invests less into intangible assets than those in *Innovation Leaders* or other *Strong Innovators* ([52]) (Bauer *et al.*, 2020).

Digital transformation

Small firms are lagging behind in the adoption of new digital technologies and business models. Companies' take-up of digital technologies is an important lever for productivity growth (Weyerstrass, 2018). Austrian firms rank particularly low in cloud computing services, a technology which is especially relevant for smaller businesses, and the use of big data (European Commission, 2019e). After a call for tenders, three *Digital Innovation Hubs* were set up in September/October 2019 (see also Box 3.4.1). Each relies on a network of partners and provides mainly SME with digital knowhow (BMDW, 2019b). Austria plans to establish 2-3 additional *Digital Innovation Hubs* in 2020. The '*SME Digital*' programme, which offers support to SMEs for digitalisation, ended in March 2019, and was relaunched in October (BMDW, 2019a). It can now support also the actual implementation of digitalisation projects in SMEs**.**

Digitalisation remains a priority for Austria, but the coherence and effectiveness of its efforts would benefit from overall monitoring and benchmarking. Austria adopted an overall digitalisation strategy in 2017, which was comprehensive but lacked relevant benchmarks and progress monitoring. Important digitalisations projects were implemented since then and the development of a new strategy started in 2019. This includes work on thematic actions plans and possible indicators. The new government programme confirms Austria's ambition to become one of the digital leaders in the EU. Among many digitalisation projects, it announces a new artificial intelligence strategy with a strong focus on ethical aspects.

([52]) SPINTAN and INTAN data

3.4.2. NETWORK INDUSTRIES

Broadband

Broadband connectivity is improving, but the take-up of mobile broadband and fixed (ultra) fast broadband is low. Austria ranks at the top when it comes to mobile coverage, but is below average regarding mobile uptake. Fixed ultrafast broadband coverage (58%) is also below the EU average (60%), mainly due to the high costs of fibre rollout (lack of ducts), low retail prices and unwillingness to pay for higher bandwidths. Fast next generation access broadband coverage is 91%, which places Austria in the top third in the EU and 8 percentage points above the EU average. However, Austria lags significantly behind its peers in terms of 'fibre to the premises' (FTTP) coverage, achieving a modest 13% in 2018 (EU: 30%), with marked differences between urban and rural areas (see Box 3.4.4).

Austria is implementing ambitious broadband strategies. By the end of 2018, more than 800,000 people benefited from measures to improve connectivity under Austria's Broadband Strategy 2020 (BMVIT, 2019a). As this strategy is approaching its end, Austria adopted a new strategy for the period up to 2030 in August 2019 (BMVIT, 2019b) (see more details in Box 3.4.4). Austria's ambition to become a leader in the rollout of 5G appears to be on track after a successful 3.4-3.8 GHz frequency auction in March 2019.

Energy and rail

Improvements to the gas infrastructure could strengthen Austria's role as a regional hub. Austria is well positioned as a regional hub for gas, ensuring supply for neighbouring markets. While gas flow volumes have increased steadily in recent years, improvements in gas infrastructure could further strengthen this position. A number of ongoing projects are aimed at establishing new routes and connections with neighbouring countries, and potential new gas fields in the Black Sea.

Box 3.4.4: Digitalisation as an opportunity for rural Austria

Realising the opportunities that digitalisation can offer to its rural areas is of particular importance for Austria. Around 40% of the population lives in predominantly rural regions ([1]) and there are many 'hidden champions' among the businesses based there. Rural regions contribute considerably to GDP, not least as regards agriculture and nature tourism. However, commuting into cities is a major source of emissions (see Section 3.5.1) (Dijkstra and Poelman, 2014). Digitalisation reduces the costs of overcoming geographical distances, e.g. by teleworking. Additionally, it increases the availability of services that were previously limited to cities, and allows businesses to acquire new customers further away. There is still scope to improve digitalisation in rural areas in Austria and this is one of the priorities on the political agenda. Key levers in this regard are:

1. Filling gaps in rural digital infrastructure

Filling the remaining gaps in connectivity is key to ensure that rural areas can fully benefit from the opportunities of digitalisation. Austria is lagging behind in the provision of fast and ultrafast fixed broadband access in rural areas, as compared with both its own urban areas and rural areas in other Member States. As part of the initiative 'Broadband Austria 2020', Austria provisioned €1 billion for the deployment of faster broadband networks from 2015. Consequently, from 2016, rural fast broadband (next generation access) coverage has more than doubled, from 28% of households (EU: 36%) to 57% (EU: 52%) (European Commission, 2019e). Hence, Austria moved from 8 pps below the EU average to 5 pps above. However, companies and individuals do need even faster broadband networks to take full advantage of digitalisation. Ultrafast broadband coverage (defined as 100 Mbps downstream) in rural areas is below the EU average (24% vs 29%). Among broadband technologies, fibre is currently the fastest and most future-proof technology, but in 2018 rural fibre-based broadband coverage was significantly below the EU average (6% vs 14%). The gap has widened since 2016, when it stood at 2 pps, as other Member States built rural fibre-based broadband at a much quicker pace. However, rural mobile '4G' broadband coverage is high (99% of households), relatively affordable (European Commission, 2018e) and might be used by many citizens as a substitute to rural fixed broadband connectivity.

Austria has set itself ambitious targets to close connectivity gaps in rural areas. The current 2030 broadband strategy (see also Section 3.4.2) aims to provide full coverage of gigabit-capable connections throughout the country by 2030. It sets specific intermediate targets, such as providing country-wide availability of 5G by 2025. Despite the current low levels, it also envisages to provide full coverage of ultrafast broadband connections by the end of 2020. At the *Länder* level, Lower Austria provides an example of best practice: it created a company to provide fibre-to-the-home infrastructure and offers open access to service providers (*nöGIG*). The approach has been very successful and is currently being replicated in other regions.

2. Ensuring opportunities for digital skills acquisition in rural areas

Promoting digital skills in rural areas could help people to take full advantage of improved broadband connections. Rural areas offer fewer opportunities for digital skills training, making it more difficult and costly. In 2018, only 34% of the population from 30 to 34 years in rural areas had a tertiary educational level, compared with 49% in cities and only 16% of 18 to 64 year olds participated in education and training (last four weeks, formal and non-formal education and training), compared with 27% in cities ([2]). Often, there is also less on-the-job digital skills training in rural areas, due to lower business density and the lower average ICT intensity of employers. Overall, only 15% of people employed in rural areas work in ICT-intense companies, compared with 25% in urban areas (Firgo *et al.*, 2018, p. 106). However, rural areas vary widely; in some, only 2-3% of employees work in ICT-intense companies. It is therefore vital to provide additional support for digital skills in these areas, as reflected in the 2017 strategy for rural areas (Masterplan *Ländlicher Raum*). A government commissioned study also shows ways to create more jobs for women in rural areas (ABZ Austria/prospect Research & Solution, 2019). The subject 'Digital Basic Education' has been made compulsory as of 2018-2019 and will be introduced at lower secondary level in all schools, for all pupils, to acquire digital skills. The new government programme also provides for numerous measures to digitalise school education and promote digital skills.

3. Providing business support for digitalisation in rural areas

Targeted support for firms in rural areas could improve the use of digital business models. Most Austrian SMEs are aware of digital challenges and opportunities, but struggle to grasp sufficiently the underlying technology, in particular where ICT is not their core business. The 39% of SMEs that did not improve their understanding of digitalisation between 2018 and 2019 is a sign of these difficulties. About 22% of SMEs see digitalisation as an opportunity to increase their staff, while 9% expect a decline (Arthur D. Little, 2019). It is very important that these firms receive support, but SMEs in rural areas typically have fewer support structures nearby than those in agglomerations. To address this challenge, Austria created three digital innovation hubs (DIHs). The DIHs are located in East and West Austria, making them more accessible by rural SMEs. The *'SME Digital'* initiative (see Section 3.4.1) advises SMEs (including those located in rural areas) on digitalisation. Since 2019, it has also provided follow-up support for the actual implementation of digitalisation projects.

([1]) According to the urban-rural typology applied to NUTS level 3 regions (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Urban-rural_typology)

([2]) Rural areas and cities classified by local administrative units (LAUs) according to the degree of urbanisation (Eurostat, 2018). The degree of urbanisation is defined in line with Eurostat. https://ec.europa.eu/eurostat/cache/RCI/#?vis=degurb.gen&lang=en.

Internal electricity connections are increasingly becoming bottlenecks. The planned increases in renewable generation capacity will further heighten the need for network enhancement (see Section 3.5). Wind power and hydropower sites, which have the highest potential for expanding renewables, are not always in the vicinity of energy-intensive industry. Network enhancements have been slow due to lengthy permit procedures.

There is scope to improve competition in the rail sector. In passenger rail transport, the incumbent *ÖBB* maintains its overwhelming share of the market for public service contracts. The remainder (around 10% in 2016) is split between ten companies. This situation is partly the result of such contracts being attributed by direct award. In total, there have been 16 companies active in passenger rail transport in the year 2018. Rail freight has seen greater market opening but the outcome is modest compared to some other EU countries. *ÖBB*'s competitors had reached a market share of 26% in 2016, compared to up 63% for non-incumbents in other Member States (European Commission, 2019a). Their share increased to 33% in 2018 (Schienen-Control, 2019).

3.4.3. MARKET FUNCTIONING, GOODS AND SERVICES SECTOR

Business dynamics

With overall framework conditions favourable for businesses, Austria performs well in terms of start-ups. Austria has seen the emergence of a dynamic start-up eco-system. The growth in the number of start-ups (20% a year between 2004 and 2016) continuous steadily. Start-ups are prevalent in the knowledge-intensive service sector, with most of them active in IT and software development (AustrianStartups, 2018). Vienna is the start-up hub, hosting more than half of all registered start-up companies (European Commission, 2019i). Although almost three quarters of start-ups already operate internationally, access to markets is one of the biggest hurdles for scale-up and growth (European Commission, 2019i). Survival rates remain high. A third of Austrian SMEs are facing ownership transfers, which will in many cases present a particular challenge in their lifecycle (OECD, 2019a). The new government programme includes measures to facilitate such transfers. In 2019, Austria launched several initiatives to improve the business environment for start-ups, including on access to finance and training for employees.

These measures were bundled in a start-up initiative presented in May 2019.

However, scaling-up remains a problem for Austrian companies. The proportion of high-growth firms is below the EU average: 6.8% vs 9.9% (OeNB, 2018; Flachenecker *et al.*, 2020). High-growth firms are particularly prevalent in the services sector and especially for ICT (European Commission, 2019i). Austria has one of the lowest proportions in the EU of high-growth firms active in innovative sectors (European Commission, 2019f). Its economic structure is characterised by a large manufacturing sector and firms focusing on incremental innovation may account for this. Another key factor influencing the scaling-up rate of smaller firms is access to finance, in particular risk capital (see Section 3.2.3). More support for innovative firms in high-tech sectors, such as ICT, could provide growth opportunities (OECD, 2018c).

Service sector

Restrictive regulation remains a problem, particularly in the area of business services, trades, professions, and retail. The regulation of professionals, such as accountants, architects, engineers and real estate agents, is more restrictive than the EU average (European Commission, 2016a, 2016b, and recently confirmed in OECD, 2019e). Higher than intra-EEA average restrictiveness has also been demonstrated by the OECD for construction services and wholesale and retail services (OECD, 2019g). In 2017, the Commission identified specific restrictions on seven key professions; these remain largely unaddressed. The 2017 revision of the Trade Licence Act (*Gewerbeordnung*) brought benefits but overall restrictiveness of trades regulation remains high. The new government programme does not announce further reforms in this area. Regulatory restrictions limit investment, productivity enhancing allocative efficiency, job creation and innovation in the services sector (see also Section 3.4.1 and European Commission, 2019a). They also affect other parts of the economy that rely on competitive and innovative services.

Retail trade continues to be highly regulated. The high number of licences and permits needed to engage in commercial activity represents an effective entry barrier. While the retail sector has seen relatively stable growth, store-based retail experienced slightly slower growth in 2018 than in 2017 and a noticeable drop in overall selling space. The high costs for operating retail stores together with regulatory barriers, such as restrictive and inflexible opening hours, contributed to this. The growing trend towards online retail, in response to growing consumer demand for 24/7 shopping, puts pressure on stationary retailers. Retail prices remain high compared to neighbouring countries', with food prices now the second highest in the EU (up from third in 2017). Only 13% of SMEs are selling online, which is low in European terms. However, most of those are also selling abroad, unlike in other Member States.

The tourism sector continues to perform strongly, but with underlying structural risks. The tourism and leisure sector contributes 15.3% of GDP and provides employment for 275,000 people, including in regions with less job opportunities (BMNT, 2019). The 90,000+ firms in the sector are benefiting from continued strong demand in all regions (+4.1% guests and +3.7% overnight stays in 2018; Statistik Austria, 2019b). Growth rates range between 6.2% in Vienna and 5.9% in Upper Austria to 0.3% in Burgenland (the national average was 4.1%). This boom, coupled with a generally tight labour market, has resulted in tourism-related skill and labour shortages. Online business models (not least online accommodation platforms) provide opportunities, but put also pressure on traditional tourism. Administrative burden remains a key concern in the sector (WKÖ, 2019a). In March 2019, the government presented the masterplan '*Plan T'* (see Section 3.5.2), which foresees indicators to monitor the overall health and value creation of the tourism sector. Implementation of the 2017 tourism digitalisation strategy is ongoing.

Industry and manufacturing

The manufacturing sector has seen decent growth, but would benefit from a stronger application of Single Market rules. Employment in the manufacturing sector grew by 1.5% in 2017. Most manufacturing jobs are in the production of food, metal products, machinery, and equipment. Styria focuses *inter alia* on the manufacturing of motor vehicles and (semi-) trailers and is more likely than other regions to be affected by the

current structural changes in the automotive industry. The numbers of incompletely or incorrectly transposed EU directives and of delays in the transposition of directives in Austria are above the EU average. Delays in complying with Court rulings are also particularly long. Ineffective enforcement of Single Market rules increases uncertainty for domestic and foreign firms, reducing their incentives to make additional investments. The correct and timely transposition of Single Market rules could thus boost Austria's productivity and welfare in the long run (see Section 3.4.1). The Single Market rights of Austrian businesses and citizens would also benefit from adequate resources for the Austrian SOLVIT centre.

3.4.4. INSTITUTIONAL QUALITY AND GOVERNANCE

Administrative burden and e-government

High administrative burden remains a problem. The comparatively high density of regulation and the resulting burden remain a major concern for businesses (WKÖ, 2019b). Reducing administrative burden has therefore been a priority for some time now. The 2018 'Clearing Law' (*Zweites Bundesrechtsbereinigungsgesetz*) resulted in the repeal of around 2,500 outdated legal acts. As most of these had limited prior applicability, businesses did not feel direct burden reduction. They benefited however from the reduced overall complexity. Austria adopted a first law to abolish instances of over-fulfilment of EU requirements in May 2019. Further efforts in this regard are in preparation and have been confirmed in the new government programme.

Austria is traditionally a front-runner in e-government services, but has still room for improvement. Austria scores above the EU-average in providing digital public services to its citizens. It was ranked 12th among Member States for 2018, one place down from 2017 (European Commission, 2019j). The percentage of individuals who had interacted with public authorities by internet was 66% in 2018, an increase of 13 pps since 2012. This is also due to good user centricity. The biggest progress is found in Tyrol (20 pps), Salzburg and Burgenland (16 pps each). Businesses profit from a one-stop online tool for the creation of one-man business (BMBWF/BMVIT/BMDW, 2019). Only 10% of practitioners use e-prescriptions, which makes Austria one of the Member States with the most catching up to do on e-health. The new government programme announces further measures to improve digital public services.

Public procurement

There is scope to improve public procurement. The 2018 Federal Act on Public Procurement laid down new rules for e-procurement and the open data source. However, the authorities and entities under EU procurement legislation still publish only a small proportion of works, goods and services contracts on EU level. At a value of only 2.1% of GDP, this is around half the EU average (4.1%). As a result, a lot of the potential offered by the 2014 Public Procurement Directives remain untapped. Especially in the health sector, Austria is among the six Member States with the lowest publication rate (contracts worth 0.2% of GDP in 2017). It has not yet adopted a professionalisation strategy for tendering authorities. Such as strategy would be helpful, particularly in light of the very heterogeneous and decentralised landscape of public buyers.

Austria has started to use public procurement to promote the ecological transition. Austrian public procurement amounts to around €40 billion a year (roughly 13.3% of GDP) (IÖB, 2019). Recognising its potential to promote the ecological transition, Austria developed a tool box for green public procurement. The National Action Plan on Sustainable Public Procurement sets criteria for 17 procurement groups, which the Federal Procurement Agency has adopted as requirements. The new government programme announces further measures to strengthen green public procurement, including a revision of the action plan on sustainable public procurement. While federal authorities have to use the Federal Procurement Agency for the purchase of products and services, *Länder* and municipalities do so on a voluntary basis.

Box 3.4.5: Investment challenges and reforms in Austria

Section 1. Macroeconomic perspective

Since 2015, business investment has picked up significantly across all areas, thanks to high capacity utilisation, strong housing demand and overall low financing costs. The investment ratio, which has consistently been above euro area average, has also improved, mainly due to the increase in business investment, while household and public investment have remained broadly stable (see Section 1). However, bank loans are still the main source of external funding for SMEs and equity capital is generally hard to access (see Section 3.2.3).

Section 2. Assessment of barriers to investment and ongoing reforms

Public administration / business environment	Regulatory / administrative burden	CSR	Financial sector / taxation	Taxation	CSR
	Public administration			Access to finance	CSR
	Public procurement /PPPs	CSR	R&D&I	Cooperation between academia, research and business	
	Judicial system			Financing of R&D&I	
	Insolvency framework		Sector specific regulation	Business services / regulated professions	CSR
	Competition and regulatory framework			Retail	
Labour market / education	EPL & framework for labour contracts			Construction	
	Wages & wage-setting			Digital economy / telecom	
	Education, skills, lifelong learning			Energy	
				Transport	

Legend:

	No barrier to investment identified		Some progress
CSR	Investment barriers that are also subject to a CSR		Substantial progress
	No progress		Fully addressed
	Limited progress		Not assessed yet

There are barriers to investment, but they are relatively modest overall. Continued efforts to reduce the tax wedge (see Section 3.1.2), improve the business environment, make more equity capital available and reduce regulatory barriers will help strengthen overall investment and boost productivity (see Sections 3.2, 3.4.1 and 3.4.3).

Selected barriers to investment and priority actions underway:

1. Austria's tax mix relies heavily on labour taxation, which creates disincentives for labour demand and supply. At the same time, the revenue potential of environmental and wealth-related taxes remains significantly underused. While recent measures reduce the tax wedge on labour and incentivise environmentally beneficial consumption, they are not part of a comprehensive future-oriented reform strategy to foster fairness and inclusive growth while combating climate change (see Section 3.1.2).

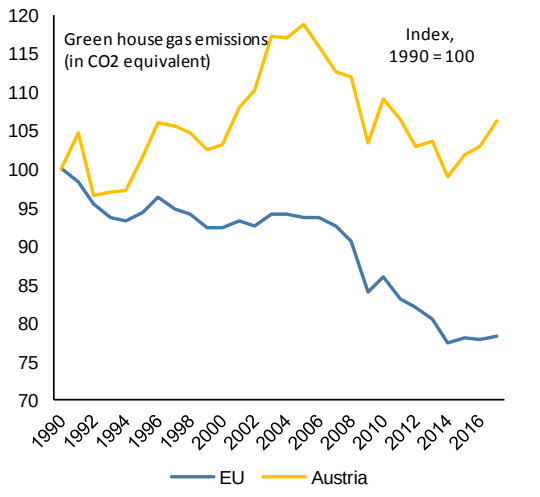
2. The high administrative burden in Austria discourages investment, in particular among SMEs. Restrictive regulation in the services sector dampens investment and competition among service providers, which in turn increases input costs for manufacturing firms. Austria has adopted a 'clearing' law and got rid of some instances of gold-plating, with further initiatives pending. The small and volatile market for equity capital (notably risk capital) is a barrier to the scaling-up of innovative, growth-oriented firms (see Sections 3.2.3, 3.4.1 and 3.4.3).

3.5. ENVIRONMENTAL SUSTAINABILITY

Austria faces increasing economic and health costs from climate change and environmental degradation. The proportion of people who report exposure to pollution and other environmental problems has not diminished in recent years (European Commission, 2019k). Temperature increases in the last few years have been more than twice the global average. As an Alpine country, Austria is prone to prolonged dry periods and heat waves. The risk of forest fires is expected to increase, along with outbreaks of heat-tolerant pests. These and other effects of climate change will necessitate adaptation measures to prevent adverse macroeconomic developments, mitigate increasing health costs and maintain or restore ecosystem health.

Austria is at risk of missing its 2020 greenhouse gas (GHG) emission targets. While total emissions decreased by 3.7% in 2018, with the emissions from industrial processes declining by close to 10%. However, the transport sector witnessed a further increase. From 1990 to 2017, GHG emissions have slightly increased in Austria, while they have significantly decreased in the EU as a whole (see Graph 3.5.1), as also reflected by SDG 13. Overall, in 2017, the main sources of GHG emissions (including ETS) were the energy and industry sectors (44.9%), transport (28.8%), buildings (10.1%) and agriculture (10.0%) (UBA, 2019). *Per capita* GHG emissions (9.35 t CO_2eq) were above the EU average (8.45 t) (EEA, 2019).

Graph 3.5.1: **Change in total GHG emissions 1990-2017**



Source: European Commission

More efforts are also needed to meet the renewable energy targets. The use of energy from renewable resources (as reflected by SDG 7) has stagnated at 33.4% of gross final energy consumption, though only 0.6 pps below the 2020 target. Additional efforts in the deployment of renewable energy would not only help Austria to make its contribution to the 2030 EU-wide goal of 32%, but also on the intended increase of renewables in its electricity consumption to 100% (in 2017 the share of renewables in electricity generation was at 77%, one of the highest levels in the EU. To that effect, Austria seeks to step up its already significant production of hydroelectricity. This will also put pressure on the need for internal network enhancements (see Section 3.4.2).

The national energy and climate plan (NECP) lacks detail on implementation and costing. Austria published the latest version of the NECP on 18 December 2019. It foresees to meet its 2030 renewables target (46-50%) and the energy efficiency target (25-30%) with existing measures. At the same time, the NECP acknowledges that Austria requires additional measures to reach the national GHG emissions reduction target of 36% and therefore includes several options for measures for the new government to evaluate and implement to meet the 2030 goals. The new government commits to adjust the NECP to ensure the attainment of the 2030 GHG emissions goal and seeks to achieve carbon neutrality by 2040. ([53]) In the course of 2020, the Commission will assess the final NECPs submitted by Member States.

Nature-based solutions have great climate mitigation potential and are vital and cost-effective complements to sector-specific decarbonisation. Nature-based solutions complement decarbonisation measures in various sectors. They focus on reducing emissions from the land sector (including agriculture, forests and land use) and protecting and enhancing natural carbon sinks ([54]). Overall, they could deliver over a third of the emissions reductions needed by 2030

([53]) In particular, the new government supports the upwards revision of the EU 2030-2050 climate and energy goals, the provision of sufficient financial means in the EU budget to fight for the ecological transition, an EU Carbon Border Tax Adjustment or border tariffs, and an EU-wide carbon floor price.

([54]) A carbon sink is any system that absorbs more carbon than it emits.

to keep global warming well below 2 °C (IPBES, 2019). In Austria, forests play a key role in climate mitigation, accounting for 58% of natural carbon storage. However, climate-change-induced extreme weather events and pest infection, which particularly affect monoculture ecosystems, threaten their resilience.

Investment in the ecological transition could boost the economy and create jobs. Overall, Austria's environmental goods sector has been growing strongly, providing 41,400 jobs in 2015, three times as many as in 1993, while turnover is more than six times higher. It has been estimated that for each new job in that sector, two additional jobs are created in related sectors (BMVIT, 2017b). Austria is already strong in some eco-tech industries, such as water management and waste treatment, which is reflected in SDG 6. Investing in the eco-tech sector, green skills and eco-innovation could bring further positive economic and employment effects. It could help Austria achieve its climate and environmental goals while helping firms compete on the world market. Although public investment in climate, energy and the environment decreased in 2018, there is a growing number of initiatives to facilitate green private investments, including in the new government programme.

3.5.1. TRANSPORT-RELATED EMISSIONS

Reducing transport-related emissions is key for Austria's shift to carbon neutrality, and for meeting air quality standards. According to the NECP, the transport sector has the greatest potential for GHG emission reduction (-7.2 million t CO_2eq by 2030 compared to 2016). Between 1990 and 2017, CO_2 emissions from transport increased by 79.6%, while overall CO_2 emissions increased by 14.2% (excluding land-use-change emissions, but including international aviation and indirect CO_2) (European Commission, 2019k).

More and more transalpine traffic is using Austrian crossings. In 2018, Austria's share of total transalpine traffic reached a record (62%), while France's (20.3%) and Switzerland's (17.7%) fell slightly. Between 2017 and 2018, almost all growth (95%) in Austria's transalpine freight traffic was in road transport, the remainder in rail. Road volumes increased by 4.7%, to 153.7 million tonnes, while rail volumes grew by only 0.6%, to 69.8 million tonnes. In 2018, the share of rail in Austria's transalpine freight traffic was the lowest ever recorded (27.8%); it was much higher in Switzerland (70.5%) and much lower in France (7.4%).

Austria has taken some steps to shift traffic from road to rail. Austria's transport policy incentivises a shift to rail, in particular for transalpine traffic. Transiting road freight transport is being made expensive through road tolls and, at least in Tyrol, subject to sectoral driving bans and quantitative restrictions (Blockabfertigung) on the access highway to the Brenner Pass. In contrast, rail freight benefits from various subsidies and favourable regulation, e.g. making rail transport more attractive by financially supporting unaccompanied combined transport, the transport of trucks on rail (*Rollende Landstraße*) and single wagonload traffic.

Transport imposes significant external costs. The total annual external costs of transport by road, rail and inland waterways are estimated at €19 billion, i.e. 5.9% of Austria's GDP in 2016 (EU: 5.7%) (Schroten *et al.*, 2019). Road users generate almost all (95%) of the costs, while the rail sector is responsible for only 4%. Environmental costs (air pollution, climate change, costs of energy production, i.e. the well-to-tank emissions, noise, habitat damage) account for 33% of the external costs of transport. Congestion (19%) and accident costs (47%) make up the remainder ([55]).

Air pollution continues to be a concern and additional measures are needed to ensure compliance with EU air quality standards. Air pollution (as reflected by SDG 11) gives rise to health care costs, productivity losses and lower agricultural yields. In 2018, the EU limit value for nitrogen dioxide was exceeded in 5 out of 11 air quality zones. Overall, since 1990, nitrogen oxide (NOx) emissions from traffic fell by 43%, but emissions from passenger cars had risen six fold (UBA, 2019). This is a result of more cars powered by diesel (56% of the car fleet), which is taxed lower than petrol (see Section 3.1.2). In addition, a large majority of vehicles still give off

([55]) Infrastructure costs are not included in these figures.

very high NOx emissions in real-world driving conditions and do not comply with emissions standards. Ammonia emissions are also rising. Measures in the national air pollution control programme do not seem sufficient to reverse that trend. Introducing or expanding the use of low-emission agricultural techniques would help. The new government programme announces measures to reduce (in particular, traffic-related) emissions.

Land-use and urban sprawl developments are also problematic. Land-take increased by 26% between 2001 and 2018, while the population grew by only 9.9% (Statistik Austria, 2019b). Low-density developments have sprung up around towns and cities more than in comparable countries, resulting in soil sealing, congestion and air pollution, due to an increased reliance on private vehicles for transport and commuting. This also entails a loss of agricultural soils and biodiversity. More effective multi-level governance on planning, mobility and housing development could help tackle these problems.

3.5.2. SUSTAINABLE BUILDINGS AND TOURISM

Several measures have been taken to improve energy efficiency across sectors, in particular for buildings. Implementation of the Ecodesign Directive improved the energy efficiency of household appliances. The Energy Efficiency Law requires energy suppliers to achieve savings of 0.7% of the previous year's consumption, 40% of which must come directly from households. Energy-consuming companies (apart from SMEs) have to monitor or manage consumption, e.g. through energy audits. Strict requirements for building regulations and thermal renovation of buildings have already led to almost 50% more energy savings. Heat supply systems such as boilers, district heating, solar systems and heat pumps also contribute. Additional regulatory measures to phase out oil heating (ban for new buildings as of 2020) and renovation subsidies may improve efficiency further. The government aims to double the current building renovation rate through priority measures such as replacing fossil fuels for heating with renewables. The objective is backed by financial measures (see Section 3.3.3) and administrative rules.

Despite a decrease in overall energy consumption in 2018, the 2020 target might not be met. Energy saving measures have contributed to a steady fall-off of energy intensity in the last decade. This also led to a decrease in the overall energy consumption in 2018. However, they are not enough to offset the increases in 2016-2017. Therefore, Austria is currently not on track to meet its 2020 energy efficiency target.

Austria's booming tourism sector faces costs from climate change and the challenge of reducing its own environmental footprint. Austria benefits from strong tourist influx in the summer and winter months. Rising average temperatures extend the summer season, but create risks for the economically important winter season, with high financial and ecological costs of compensating for a lack of naturally occurring snow (*Klima- und Energiefonds*, 2017). The tourism sector will need to diversify if winter tourism is to be ecologically sustainable and profitable in the long term. Tourism-related emissions stem primarily from travel, which links to the need for cleaner transport. There is scope to improve the energy efficiency of tourism premises (WKÖ, 2019). On the positive side, ecotourism has growing development potential. The number of eco-certified tourism businesses nearly doubled from 199 in 2005 to 343 in 2015. The tourism strategy (*Plan T*) puts sustainability at its centre and contains specific sustainability indicators, in particular the proportion of renewable energy used in restaurants and accommodations (see also Section 3.4.3) (BMNT, 2019).

3.5.3. CIRCULAR ECONOMY, RESOURCE EFFICIENCY AND ECO-INNOVATION

Austria has achieved a relative decoupling of GDP growth and resource use, but its resource productivity is below EU average. Resource productivity measures how efficiently the economy uses material resources to produce wealth. Until 2016, Austria's resource productivity grew more slowly than the EU average. In contrast, domestic material consumption started to increase (UBA, 2019). Moving to a more circular economy, e.g. by promoting reuse, recyclability and secondary raw materials markets, could boost resource productivity and the efficient use of natural resources, as reflected in SDG 12. Using

the full potential of the circular economy will also help Austria reach its climate targets. As material and energy intensity are still relatively high and falling more gradually than in other Member States, an overhaul of environmental taxation (especially energy taxes) could also help to bring about the desired steering effects (see Section 3.1.2).

So far, there is no overarching strategy on the circular economy. There are a number of sectoral strategies and programmes, including the new bio economy strategy. The new government programme announces a comprehensive cross-sectoral climate and circular economy strategy, with a focus on energy- and emission-intensive sectors. This could build on a good starting position to develop the regulatory framework, making use of synergies with digitalisation, while mobilising appropriate funding to boost the circularity of the economy and lead to progress on SDG 12.

While Austria meets all current recycling targets, additional efforts are needed to meet the post-2020 plastic packaging recycling targets. Austria meets all current recycling targets, but its plastic packaging recycling rate is 33.6%, over 20 pps below the 2030 target. The rate of separate packaging and paper collection has stagnated (2014: 1.06 million t, 2017: 1.07 million t). Currently, 71% of plastic waste and over 90% of mixed plastic waste is incinerated (UBA, 2019). In order to foster a more circular use of material, the entire product lifecycle (from design and production to consumption) needs to be addressed in addition to the waste phase, including through more separate collection. Overall, waste generation is increasing and above EU average.

3.5.4. JUST TRANSITION TO A CLIMATE-NEUTRAL ECONOMY

A just transition to a climate-neutral economy may need to involve support to the regions most affected. There are no coal mines in Austria and the only remaining active coal power plant (in Styria) is due to be shut down in 2020. Support for a transition to climate-neutral industry in high carbon intensity regions could help reduce GHG emissions, while maintaining industrial competitiveness and technological leadership. The regional innovation and economic strategies already acknowledge this, e.g. Styria and Upper Austria aim for a more sustainable and energy-efficient industry. The transition will also affect the labour market; in particular, employment shifts to alternative technologies and activities will require re- and upskilling. The EU Just Transition Fund 2021-27 aims at alleviating the social and economic impacts of the transition towards climate neutrality, and can help to deal with the challenges in Austria's most affected regions.

At *Länder* level, the highest carbon-intensities can be found in Styria and Upper Austria. In 2016, the *Östliche Obersteiermark* (in Styria) district had the highest carbon intensity (in terms of GHG emissions of main industrial facilities per gross value added generated), mostly due to the manufacturing of basic iron and steel (EEA, 2016). Another carbon-intensive sub-region is the district of *Traunviertel* (Upper Austria), where almost half the emissions from large industrial facilities are from the chemical industry. However, some of the industrial GHG emissions in that region are from renewable energy.

The manufacturing of refined petroleum products in the south of the Vienna region is highly carbon-intensive. The *Wiener Umland/Südteil* is the sub-region with the second highest carbon intensity of large industrial facilities in Austria. Refined petroleum products are derived from both locally extracted and imported oil. In 2016, the manufacturing of coke and refined petroleum products was the sector with the highest carbon intensity in Austria. However, this sub-region has a strong economic structure and may have less need for additional support for the transition to a climate-neutral economy.

Overall, Austria is not yet accessing the socio-economic benefits that a forceful ecological transition and low-carbon pathway offers. Austria's lead in environment-related innovation has narrowed in recent years. Consistent and generally higher pricing of carbon emissions would boost environment-related innovation (OECD, 2019a, p. 46). A more ambitious NECP and accompanying environmental policies could open the way to ecological modernisation that goes hand in hand with positive macroeconomic and labour market effects and other benefits in relation to health and well-being.

ANNEX A: OVERVIEW TABLE

	Summary assessment [1]
2019 country-specific recommendations (CSRs)	
CSR 1: Ensure the sustainability of the health, long-term care, and pension systems, including by adjusting the statutory retirement age in view of expected gains in life expectancy. Simplify and rationalise fiscal relations and responsibilities across layers of government and align financing and spending responsibilities.	Austria has made **Limited progress** in addressing CSR 1
Ensure the sustainability of the health,	**Some progress** Important reform measures to address the CSR, such as the introduction of the 'target-based governance' system and, the 2017 Primary Healthcare Act, and a reform to merge the 21 social health insurance funds have been adopted in recent years and are now currently being implemented. The reform to merge the 21 social health insurance funds to 5 is also expected to improve efficiency. There is progress, but implementation is not fully on track for every reform and the savings potential of each of the reforms is still unclear. The overutilization of hospital and pharmaceutical care, the general overlap of competencies in the health care sector, and the role of prevention remains to be addressed. According to the second comprehensive monitoring report for the period 2017-2021, the expenditure remains still beneath the ceilings in the years 2017 to 2019.
long-term care,	**Limited progress** Despite recent measures, public expenditure for long-term care is still a problem for fiscal sustainability. There have been no substantial changes in the system of service delivery. The abolition of the recourse to assets (Pflegeregress) has led to increased public spending.
and pension systems, including by adjusting the statutory retirement age in view of expected gains in life expectancy.	**Limited progress** Past reform efforts were aimed at strengthening the sustainability of the pension system, while recent measures partly do the opposite. The 2020 Pension Adjustment Act (adopted in the run-up to the snap elections at the end of September 2019) not only fails to address sustainability challenges but includes measures that actually undermine previous reform efforts. While a targeted increase of low pension incomes may be justified by the objective of pension adequacy, the undiscounted pension after 45 contribution years thwarts previous efforts to increase the effective pensionable age and also raises fairness issues. Neither does is make sense in the light of recently observed labour market

	shortages.
Simplify and rationalise fiscal relations and responsibilities across layers of government and align financing and spending responsibilities.	**Limited progress** The 2017 Intergovernmental Fiscal Relations Act introduced numerous changes, but cannot be considered a major step to greater tax autonomy or a more transparent assignment of competence. Work in these areas is still ongoing. Implementation of several initiatives introduced by the Act paints a mixed picture. While measures have been taken to simplify the allocation of funds in the fiscal equalisation, measures to improve the efficiency of public spending have been less successful. The plan to introduce a task-oriented allocation of shared taxes to municipalities in the fields of elementary education and compulsory schools was suspended having failed to produce results. It is expected that the first spending reviews to assess the effectiveness and efficiency of subnational public spending in the areas of health care in schools and municipal water management will be finalised in early 2020. The benchmarking model was established for a comparative assessment of the efficiency and effectiveness of subnational spending and is being extended to other policy areas. The *Kompetenzbereinigungspaket* can be seen as a first step in the right direction, but more needs to be done.
CSR 2: Shift taxes away from labour to sources less detrimental to inclusive and sustainable growth. Support full-time employment among women, including by improving childcare services, and boost labour market outcomes for the low skilled in continued cooperation with the social partners. Raise the levels of basic skills for disadvantaged groups, including people with a migrant background.	Austria has made l**imited progress** in addressing CSR 2
Shift taxes away from labour to sources less detrimental to inclusive and sustainable growth.	**Some Progress** Austria's still high labour tax burden creates significant disincentives for labour demand and supply. However, the labour tax wedge is reduced by recent measures: Family Bonus plus, reduction of employer's accident insurance contribution, lower health contributions for the self-employed and farmers, increase of pensioner's tax credit, traffic tax credit and increased reimbursement of social security contributions for employees and pensioners. A future-oriented strategy to support environmental sustainability, fairness and inclusiveness would require a more comprehensive reform of the tax mix. Several measures go in this direction, but more needs to be done to secure efficiency gains. The following measures have been

	implemented: greening of the tax system, digital tax package.
Support full-time employment among women, including by improving childcare services,	**Some progress** Increased support for childcare facilities and the expansion of all-day schools created more opportunities for parents of young children. The government adopted the Educational Investment Act (*Bildungsinvestitionsgesetz*).
and boost labour market outcomes for the low skilled in continued cooperation with the social partners.	**No progress** No specific measures have been taken so far.
Raise the levels of basic skills for disadvantaged groups, including people with a migrant background.	**Limited progress** Austria has taken some measures to improve the basic skills of disadvantaged young people and people with a migrant background. The 'pedagogical package' concentrates on introducing numerical marks and grade repetition. The non-academic lower secondary school reintroduces streaming, while as of 2022 new methods to determine school readiness should be available. While the numbers of places in early childhood education and care and all-day schools have been increased, their quality needs to be assured to have a positive impact on basic skills. International and national testing has not detected particular improvements among disadvantaged young people, including those with a migrant background.
CSR 3: Focus investment-related economic policy on research and development, innovation, digitalisation, and sustainability, taking into account regional disparities. Support productivity growth by stimulating digitalisation of businesses and company growth and by reducing regulatory barriers in the service sector.	Austria has made **some progress** in addressing CSR 3
Focus investment-related economic policy on research and development, innovation,	**Some progress** In order to direct R&I investments to more innovation output, the previous government proposed an 'excellence initiative' to strengthen competitive basic research. Strategic planning has been completed and it is for the new government to decide on its implementation. Progess will be assessed again in 2020, when the new government is in place.
digitalisation,	**Some progress** Digitalisation has been a political priority in Austria for some time. The caretaker government continued to implement useful initiatives in all areas of digitalisation, but it did not provide the major political impetus expected for 2019 (year of digitalisation). Overall coherence and thus the actual impact of digitalisation policy efforts would benefit

	in particular from the adoption of specific, measurable targets. Gaps also remain in digital infrastructure.
and sustainability, taking into account regional disparities.	**Limited progress** Public investments from the climate and energy fund decreased in 2018, compared to the previous year. Comparing the two latest available federal subsidies reports (2018 and 2017), disbursements went down in all three relevant sub-items of subsidy category 43 (environment, energy and climate): climate and energy fund: 2018: €39.8 million; 2017: €42.12 million; thermal insulation: 2018: €37.12 million; 2017: €39.67 million; and environmental subsidies: 2018: €49.89 million; 2017: €56.73 million. However, private investments in the ecological transition have gained in significance due to public and private investors' growing interest in sustainable financing and a wider range of green finance opportunities. A recent country report by the environmental, social and corporate governance (ESG) investment rating agency Sustainalytics considered Austria a leader on ESG, ranking it 4th out of 172 in 2018.
Support productivity growth by stimulating digitalisation of businesses and company growth	**Some progress** The *KMU Digital* programme has been prolonged and expanded. It now also supports SMEs' digitalisation projects. The Digitalisation Agency has launched many initiatives and projects to facilitate business digitalisation. Three digital innovation hubs have been created to support SME digitalisation. No major new policy initiatives have been taken on business digitalisation.
and by reducing regulatory barriers in the service sector.	**Limited progress** Services sector firms profited from burden reduction measures, e.g. the *Rechtsbereinigungsgesetz* and the anti-gold-plating

	law. However, no progress was made in 2019 as regards restrictions on retail and the specific restrictions of professions identified in 2017. Recent changes of professional regulation for civil engineers and patent attorneys did not remove restrictions identified by the Commission. Regulatory density for key professions and trades remains high.
Europe 2020 (national targets and progress)	
Employment rate target set in the NRP: 77%	76.2% in 2018
R&D target set in the NRP: 3.76% of GDP	3.17% of GDP in 2018; 3.19% expected for 2019, but not yet confirmed by Eurostat
National greenhouse gas (GHG) emissions target: - 16% in 2020 compared with 2005 (in sectors not included in the EU emissions trading scheme)	Under the EU Effort Sharing Decision, Austria's GHG emissions outside EU emissions trading in 2020 are not to exceed 47.8 million t CO2eq. In 2017, they stood at 51.7 million t CO2eq. In October 2019, the Austrian Environment Agency stated that the achievement of Austria's climate targets in 2020 is 'feasible but not definite'. There is a clear sense that climate mitigation measures have to be stepped up on the basis of the new government programme of January 2020.
2020 renewable energy target: 34%	32.6% in 2017
Energy efficiency, 2020 energy consumption targets: 31.5 Mtoe in primary energy consumption; 25.1 Mtoe in final energy consumption	Primary energy consumption in 2017: 32.55 Mtoe Final energy consumption in 2017: 28.42 Mtoe
Early school/training leaving target: 9.5%	7.3% in 2018
Tertiary education target: 38% of population aged 30-34	40.7% in 2018
Target for reducing the number of people at risk of poverty or social exclusion, expressed as an absolute number of people: -235 000 (base year 2008).	In the baseline year 2008, the number of people at risk of poverty and social exclusion was 1 699 000. The respective number for 2018 was 1 512 000, i.e. 187 000 less, therefore requiring additional efforts to meet the target.

(1) The following categories are used to assess progress in implementing the country-specific recommendations (CSRs):

No progress: The Member State has not credibly announced nor adopted any measures to address the CSR. This category covers a number of typical situations to be interpreted on a case by case basis taking into account country-specific conditions. They include the following:

no legal, administrative, or budgetary measures have been announced

in the national reform programme,

in any other official communication to the national Parliament/relevant parliamentary committees or the European Commission,

publicly (e.g. in a press statement or on the government's website);

no non-legislative acts have been presented by the governing or legislative body;

the Member State has taken initial steps in addressing the CSR, such as commissioning a study or setting up a study group to analyse possible measures to be taken (unless the CSR explicitly asks for orientations or exploratory actions). However, it has not proposed any clearly-specified measure(s) to address the CSR.

Limited progress: The Member State has:

announced certain measures but these address the CSR only to a limited extent; and/or

presented legislative acts in the governing or legislative body but these have not been adopted yet and substantial further, non-legislative work is needed before the CSR is implemented;

presented non-legislative acts, but has not followed these up with the implementation needed to address the CSR.

Some progress: The Member State has adopted measures

that partly address the CSR; and/or

that address the CSR, but a fair amount of work is still needed to fully address the CSR fully as only a few of the measures have been implemented. For instance, a measure or measures have been adopted by the national Parliament or by ministerial decision but no implementing decisions are in place.

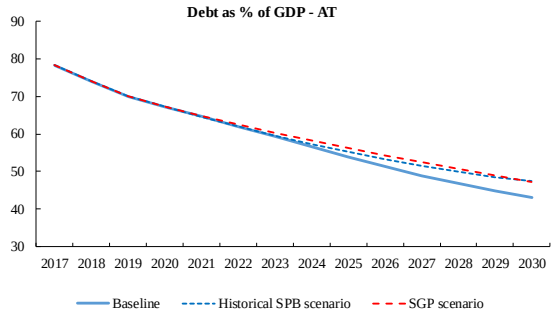
Substantial progress: The Member State has adopted measures that go a long way towards addressing the CSR and most of them have been implemented.

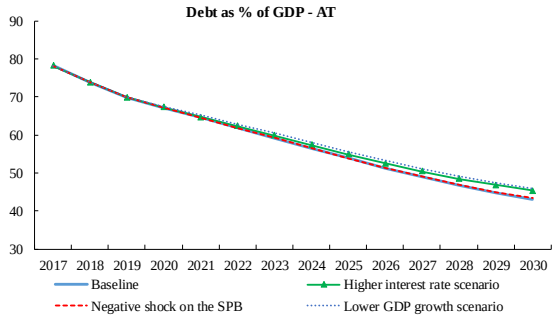
Full implementation: The Member State has implemented all measures needed to address the CSR appropriately.

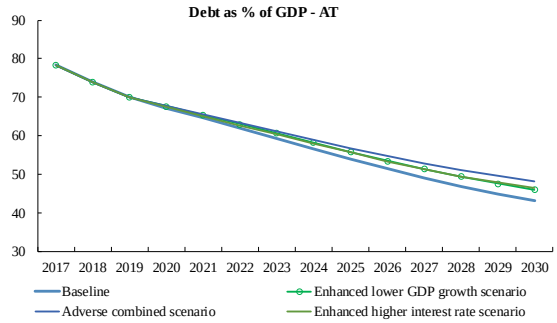
ANNEX B: DSA STATISTICAL ANNEX

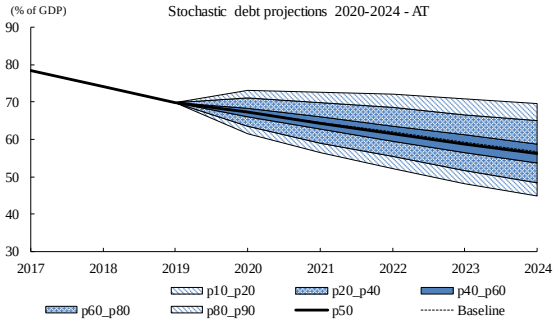
General government debt projections under baseline, alternative scenarios and sensitivity tests

AT - Debt projections baseline scenario	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Gross debt ratio	**74,0**	**69,9**	**67,2**	**64,6**	**61,9**	**59,3**	**56,6**	**53,9**	**51,3**	**49,0**	**46,8**	**44,8**	**43,1**
Changes in the ratio (-1+2+3)	*-4,3*	*-4,0*	*-2,7*	*-2,7*	*-2,6*	*-2,7*	*-2,7*	*-2,7*	*-2,6*	*-2,4*	*-2,2*	*-2,0*	*-1,7*
of which													
(1) Primary balance (1.1+1.2+1.3)	**1,8**	**1,9**	**1,6**	**1,6**	**1,6**	**1,6**	**1,5**	**1,5**	**1,4**	**1,3**	**1,2**	**1,0**	**0,7**
(1.1) Structural primary balance *(1.1.1-1.1.2+1.1.3)*	***1,3***	***1,5***	***1,4***	***1,6***	***1,6***	***1,6***	***1,5***	***1,5***	***1,4***	***1,3***	***1,2***	***1,0***	***0,7***
(1.1.1) Structural primary balance (bef. CoA)	*1,3*	*1,5*	*1,4*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*	*1,6*
(1.1.2) Cost of ageing					*0,0*	*0,0*	*0,1*	*0,2*	*0,3*	*0,5*	*0,6*	*0,9*	*1,1*
(1.1.3) Others (taxes and property incomes)					*0,0*	*0,1*	*0,1*	*0,2*	*0,2*	*0,2*	*0,3*	*0,3*	*0,3*
(1.2) Cyclical component	***0,5***	***0,4***	***0,2***	***0,1***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***
(1.3) One-off and other temporary measures	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***	***0,0***
(2) Snowball effect (2.1+2.2+2.3)	**-1,5**	**-1,0**	**-0,7**	**-0,8**	**-1,0**	**-1,1**	**-1,2**	**-1,2**	**-1,1**	**-1,1**	**-1,0**	**-1,0**	**-1,0**
(2.1) Interest expenditure	*1,6*	*1,5*	*1,4*	*1,2*	*1,1*	*1,0*	*0,9*	*0,8*	*0,7*	*0,6*	*0,6*	*0,5*	*0,5*
(2.2) Growth effect	*-1,8*	*-1,1*	*-0,9*	*-0,9*	*-1,0*	*-0,9*	*-0,9*	*-0,8*	*-0,8*	*-0,7*	*-0,6*	*-0,6*	*-0,6*
(2.3) Inflation effect	*-1,3*	*-1,3*	*-1,1*	*-1,1*	*-1,1*	*-1,1*	*-1,2*	*-1,1*	*-1,1*	*-1,0*	*-1,0*	*-0,9*	*-0,9*
(3) Stock-flow adjustments	**-1,0**	**-1,1**	**-0,4**	**-0,3**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**









Short term	Medium term	S1
LOW (S0 = 0.1)	LOW	LOW (S1 = -2.3)

Debt sustainability analysis (detail)

	Baseline	Historical SPB	Lower GDP growth	Higher interest rate	Negative shock on SPB	Stochastic projections
Risk category	LOW	LOW	LOW	LOW	LOW	LOW
Debt level (2030)	43.1	47.4	45.9	45.3	43.3	
Debt peak year	2019	2019	2019	2019	2019	
Percentile rank	30.0%	38.0%				
Probability debt higher						9.5%
Dif. between percentiles						24.9

DSA	S2	Long term
LOW	MEDIUM (S2 = 2.3)	MEDIUM

Note: For further information, see the European Commission Debt Sustainability Monitor (DSM) 2019.

[1] The first table presents the baseline no-fiscal policy change scenario projections. It shows the projected government debt dynamics and its decomposition between the primary balance, snowball effects and stock-flow adjustments. Snowball effects measure the net impact of the counteracting effects of interest rates, inflation, real GDP growth (and exchange rates in some countries). Stock-flow adjustments include differences in cash and accrual accounting, net accumulation of assets, as well as valuation and other residual effects.

[2] The charts present a series of sensitivity tests around the baseline scenario, as well as alternative policy scenarios, in particular: the historical structural primary balance (SPB) scenario (where the SPB is set at its historical average), the Stability and Growth Pact (SGP) scenario (where fiscal policy is assumed to evolve in line with the main provisions of the SGP), a higher interest rate scenario (+1 pp. compared to the baseline), a lower GDP growth scenario (-0.5 pp. compared to the baseline) and a negative shock on the SPB (calibrated on the basis of the forecasted change). An adverse combined scenario and enhanced sensitivity tests (on the interest rate and growth) are also included, as well as stochastic projections. Detailed information on the design of these projections can be found in the FSR 2018 and the DSM 2019.

[3] The second table presents the overall fiscal risk classification over the short, medium and long term.

a. For the short-term, the risk category (low/high) is based on the S0 indicator. S0 is an early-detection indicator of fiscal stress in the upcoming year, based on 25 fiscal and financial-competitiveness variables that have proven in the past to be leading indicators of fiscal stress. The critical threshold beyond which fiscal distress is signalled is 0.46.

b. For the medium term, the risk category (low/medium/high) is based on the joint use of the S1 indicator and of the DSA results. The S1 indicator measures the fiscal adjustment required (cumulated over the 5 years following the forecast horizon and sustained after that) to bring the debt-to-GDP ratio to 60 % by 2034. The critical values used are 0 and 2.5 pps of GDP. The DSA classification is based on the results of five deterministic scenarios (baseline, historical SPB, higher interest rate, lower GDP growth and negative shock on the SPB scenarios) and the stochastic projections. Different criteria are used such as the projected debt level, the debt path, the realism of fiscal assumptions, the probability of debt stabilisation, and the size of uncertainties.

c. For the long term, the risk category (low/medium/high) is based on the joint use of the S2 indicator and the DSA results. The S2 indicator measures the upfront and permanent fiscal adjustment required to stabilise the debt-to-GDP ratio over the infinite horizon, including the costs of ageing. The critical values used are 2 and 6 pps of GDP. The DSA results are used to further qualify the long term risk classification, in particular in cases when debt vulnerabilities are identified (a medium / high DSA risk category).

ANNEX C: STANDARD TABLES

Table C.1: **Financial market indicators**

	2014	2015	2016	2017	2018	2019
Total assets of the banking sector (% of GDP)(1)	263,0	248,1	235,1	218,9	217,1	218,7
Share of assets of the five largest banks (% of total assets)	36,8	35,8	34,5	36,1	36,0	-
Foreign ownership of banking system (% of total assets)(2)	30,4	31,9	23,9	23,7	22,6	22,1
Financial soundness indicators:(2)						
- non-performing loans (% of total loans)	7,5	6,5	5,1	3,5	2,6	2,3
- capital adequacy ratio (%)	15,6	16,2	18,2	18,9	18,6	18,7
- return on equity (%)(3)	1,1	7,6	7,1	8,7	8,6	8,5
Bank loans to the private sector (year-on-year % change)(1)	0,5	0,6	2,1	4,1	6,1	5,6
Lending for house purchase (year-on-year % change)(1)	3,0	4,3	4,4	4,7	4,6	5,2
Loan-to-deposit ratio(2)	105,1	102,0	98,7	97,8	98,8	100,1
Central bank liquidity as % of liabilities(1)	1,8	2,1	1,9	3,1	3,0	2,9
Private debt (% of GDP)	124,8	124,0	123,5	121,8	121,0	-
Gross external debt (% of GDP)(2) - public	74,1	69,2	65,7	60,0	55,6	56,2
- private	34,8	36,4	37,6	38,2	37,1	37,2
Long-term interest rate spread versus Bund (basis points)*	32,4	25,0	28,7	26,5	29,1	32,1
Credit default swap spreads for sovereign securities (5-year)*	20,1	16,4	18,0	11,6	7,5	6,7

(1) Latest data Q3 2019. Includes not only banks but all monetary financial institutions excluding central banks.
(2) Latest data Q2 2019.
(3) Quarterly values are annualized.
* Measured in basis points.
Source: European Commission (long-term interest rates); World Bank (gross external debt); Eurostat (private debt); ECB (all other indicators)

Table C.2: **Headline Social Scoreboard indicators**

	2014	2015	2016	2017	2018	2019 [5]
Equal opportunities and access to the labour market						
Early leavers from education and training (% of population aged 18-24)	7,0	7,3	6,9	7,4	7,3	:
Gender employment gap (pps)	8,2	8,2	7,8	8,0	9,0	8,8
Income inequality, measured as quintile share ratio (S80/S20)	4,1	4,0	4,1	4,3	4,0	:
At-risk-of-poverty or social exclusion rate(1) (AROPE)	19,2	18,3	18,0	18,1	17,5	:
Young people neither in employment nor in education and training (% of population aged 15-24)	7,7	7,5	7,7	6,5	6,8	:
Dynamic labour markets and fair working conditions						
Employment rate (20-64 years)	74,2	74,3	74,8	75,4	76,2	76,7
Unemployment rate(2) (15-74 years)	5,6	5,7	6,0	5,5	4,9	4,6
Long-term unemployment rate (as % of active population)	1,5	1,7	1,9	1,8	1,4	1,2
Gross disposable income of households in real terms per capita(3) (Index 2008=100)	96,4	95,2	96,4	97,1	98,0	:
Annual net earnings of a full-time single worker without children earning an average wage (levels in PPS, three-year average)	25379	26039	26859	:	:	:
Annual net earnings of a full-time single worker without children earning an average wage (percentage change, real terms, three-year average)	-0,07	0,52	2,13	:	:	:
Public support / Social protection and inclusion						
Impact of social transfers (excluding pensions) on poverty reduction(4)	44,5	45,7	46,4	42,2	43,3	:
Children aged less than 3 years in formal childcare	16,0	22,3	20,6	18,2	20,0	:
Self-reported unmet need for medical care	0,1	0,1	0,2	0,2	0,1	:
Individuals who have basic or above basic overall digital skills (% of population aged 16-74)	:	64,0	65,0	67,0	:	:

(1) People at risk of poverty or social exclusion (AROPE): individuals who are at risk of poverty (AROP) and/or suffering from severe material deprivation (SMD) and/or living in households with zero or very low work intensity (LWI).
(2) Unemployed persons are all those who were not employed but had actively sought work and were ready to begin working immediately or within two weeks.
(3) Gross disposable household income is defined in unadjusted terms, according to the draft Joint Employment Report 2019.
(4) Reduction in percentage of the risk of poverty rate, due to social transfers (calculated comparing at-risk-of poverty rates before social transfers with those after transfers; pensions are not considered as social transfers in the calculation).
(5) Average of first three quarters of 2019 for the employment rate, unemployment rate and gender employment gap.
Source: Eurostat

Table C.3: **Labour market and education indicators**

Labour market indicators	**2014**	**2015**	**2016**	**2017**	**2018**	**2019** [5]
Activity rate (15-64)	75.4	75.5	76.2	76.4	76.8	77.0
Employment in current job by duration						
From 0 to 11 months	13.4	14.0	14.3	14.8	14.9	:
From 12 to 23 months	9.3	9.0	9.5	9.6	9.8	:
From 24 to 59 months	16.6	16.9	16.6	16.2	16.3	:
60 months or over	60.7	60.1	59.6	59.4	59.0	:
Employment growth* (% change from previous year)	1.0	0.6	1.3	1.7	1.7	1.2
Employment rate of women (% of female population aged 20-64)	70.1	70.2	70.9	71.4	71.7	72.3
Employment rate of men (% of male population aged 20-64)	78.3	78.4	78.7	79.4	80.7	81.1
Employment rate of older workers* (% of population aged 55-64)	45.1	46.3	49.2	51.3	54.0	54.4
Part-time employment* (% of total employment, aged 15-64)	26.9	27.3	27.8	27.9	27.3	27.0
Fixed-term employment* (% of employees with a fixed term contract, aged 15-64)	9.2	9.1	9.0	9.2	9.1	8.9
Transition rate from temporary to permanent employment (3-year average)	47.9	45.9	46.9	43.3	42.8	:
Youth unemployment rate (% active population aged 15-24)	10.3	10.6	11.2	9.8	9.4	8.7
Gender gap in part-time employment	37.8	38.1	37.4	37.4	37.7	38.1
Gender pay gap(2) (in undadjusted form)	22.2	21.7	20.1	19.9	:	:
Education and training indicators	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Adult participation in learning (% of people aged 25-64 participating in education and training)	14.3	14.4	14.9	15.8	15.1	:
Underachievement in education(3)	:	21.8	:	:	21.1	:
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	40.0	38.7	40.1	40.8	40.7	:
Variation in performance explained by students' socio-economic status(4)	:	15.9	:	:	13.0	:

* Non-scoreboard indicator

(1) Difference between the average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. It is defined as 'unadjusted', as it does not correct for the distribution of individual characteristics (and thus gives an overall picture of gender inequalities in terms of pay). All employees working in firms with ten or more employees, without restrictions for age and hours worked, are included.

(2) PISA (OECD) results for low achievement in mathematics for 15 year-olds.

(3) Impact of socio-economic and cultural status on PISA (OECD) scores.

(4) Average of first three quarters of 2018 for the activity rate, employment growth, employment rate, part-time employment, fixed-term employment. Data for youth unemployment rate is annual (except for DK, EE, EL, HU, IT and UK data based on first three quarters of 2018).

Source: Eurostat, OECD

Table C.4: **Social inclusion and health indicators**

	2013	2014	2015	2016	2017	2018
Expenditure on social protection benefits* (% of GDP)						
Sickness/healthcare	7,3	7,3	7,4	7,3	7,4	:
Disability	2,1	2,0	1,9	1,8	1,8	:
Old age and survivors	14,5	14,7	14,7	14,5	14,3	:
Family/children	2,8	2,7	2,8	2,8	2,7	:
Unemployment	1,6	1,6	1,6	1,7	1,6	:
Housing	0,1	0,1	0,1	0,1	0,1	:
Social exclusion n.e.c.	0,4	0,5	0,6	0,7	0,6	:
Total	28,8	29,0	29,1	29,0	28,6	:
of which: means-tested benefits	2,4	2,5	2,6	2,8	2,7	:
General government expenditure by function (% of GDP)						
Social protection	21,3	21,5	21,2	21,0	20,5	20,1
Health	7,8	7,9	8,2	8,2	8,2	8,2
Education	5,0	4,9	4,9	4,9	4,8	4,8
Out-of-pocket expenditure on healthcare	19,2	19,1	19,1	19,3	19,2	:
Children at risk of poverty or social exclusion (% of people aged 0-17)*	22,9	23,3	22,3	20,0	23,0	21,6
At-risk-of-poverty rate[1] (% of total population)	14,4	14,1	13,9	14,1	14,4	14,3
In-work at-risk-of-poverty rate (% of persons employed)	7,9	7,2	7,9	8,3	7,7	8,0
Severe material deprivation rate[2] (% of total population)	4,2	4,0	3,6	3,0	3,7	2,8
Severe housing deprivation rate[3], by tenure status						
Owner, with mortgage or loan	1,4	1,2	0,7	0,6	0,7	1,4
Tenant, rent at market price	9,5	10,0	10,0	9,3	10,8	8,4
Proportion of people living in low work intensity households[4] (% of people aged 0-59)	7,8	9,1	8,2	8,1	8,3	7,3
Poverty thresholds, expressed in national currency at constant prices*	11576	11920	11774	11898	12309	12247
Healthy life years						
Females	8,8	7,7	7,7	7,4	7,5	:
Males	8,9	8,4	7,9	8,2	7,6	:
Aggregate replacement ratio for pensions[5]	0,6	0,6	0,6	0,6	0,6	0,6
Connectivity dimension of the Digital Economy and Society Index (DESI)[6]	:	50,8	57,9	61,4	63,5	:
GINI coefficient before taxes and transfers*	49,5	49,9	49,8	49,9	50,4	:
GINI coefficient after taxes and transfers*	27,0	27,6	27,2	27,2	27,9	:

* Non-scoreboard indicator
(1) At-risk-of-poverty rate (AROP): proportion of people with an equivalised disposable income below 60 % of the national equivalised median income.
(2) Proportion of people who experience at least four of the following forms of deprivation: not being able to afford to i) pay their rent or utility bills, ii) keep their home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) enjoy a week of holiday away from home once a year, vi) have a car, vii) have a washing machine, viii) have a colour TV, or ix) have a telephone.
(3) Percentage of total population living in overcrowded dwellings and exhibiting housing deprivation.
(4) People living in households with very low work intensity: proportion of people aged 0-59 living in households where the adults (excluding dependent children) worked less than 20 % of their total work-time potential in the previous 12 months.
(5) Ratio of the median individual gross pensions of people aged 65-74 relative to the median individual gross earnings of people aged 50-59.
(6) Fixed broadband take up (33%), mobile broadband take up (22%), speed (33%) and affordability (11%), from the Digital Scoreboard.
Source: Eurostat, OECD

Table C.5: **Product market performance and policy indicators**

Performance indicators	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Labour productivity per person[1] growth (t/t-1) in %						
Labour productivity growth in industry	1.32	0.77	0.35	3.61	3.55	2.33
Labour productivity growth in construction	-0.04	-3.53	-2.20	-0.82	1.80	1.32
Labour productivity growth in market services	-0.71	0.19	0.69	0.17	0.00	0.06
Unit Labour Cost (ULC) index[2] growth (t/t-1) in %						
ULC growth in industry	1.31	1.59	1.10	-0.81	-2.58	0.99
ULC growth in construction	3.45	6.56	5.19	3.16	0.73	1.57
ULC growth in market services	3.73	1.86	1.53	2.50	2.07	3.40
Business environment	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Time needed to enforce contracts[3] (days)	397	397	397	397	397	397
Time needed to start a business[3] (days)	25.0	22.0	22.0	21.0	21.0	21.0
Outcome of applications by SMEs for bank loans[4]	0.35	0.41	0.49	0.31	0.35	0.22
Research and innovation	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
R&D intensity	2.95	3.08	3.05	3.12	3.05	3.17
General government expenditure on education as % of GDP	5.00	4.90	4.90	4.90	4.80	4.80
Employed people with tertiary education and/or people employed in S&T as % of total employment	41	46	47	48	48	48
Population having completed tertiary education[5]	18	27	28	29	30	30
Young people with upper secondary education[6]	87	90	89	90	87	88
Trade balance of high technology products as % of GDP	0.19	0.50	0.10	-0.26	-0.18	-0.29
Product and service markets and competition	**2003**	**2008**	**2013**			**2018***
OECD product market regulation (PMR)[7], overall	1.61	1.37	1.19			1.44
OECD PMR[7], retail	3.50	3.30	2.40			2.01
OECD PMR[7], professional services[8]	3.21	3.08	2.71			2.54
OECD PMR[7], network industries[9]	2.47	1.84	1.55			1.30

*** While the indicator values from 2003 to 2013 are comparable, the methodology has considerably changed in 2018. As a result, past vintages cannot be compared with the 2018 PMR indicators.**

(1) Value added in constant prices divided by the number of persons employed.
(2) Compensation of employees in current prices divided by value added in constant prices.
(3) The methodologies, including the assumptions, for this indicator are shown in detail here: http://www.doingbusiness.org/methodology.
(4) Average of the answer to question Q7B_a. "[Bank loan]: If you applied and tried to negotiate for this type of financing over the past six months, what was the outcome?".
(5) Percentage population aged 15-64 having completed tertiary education.
(6) Percentage population aged 20-24 having attained at least upper secondary education.
(7) Index: 0 = not regulated; 6 = most regulated. The methodologies of the OECD product market regulation indicators are shown in detail here: http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm
(8) Simple average of the indicators of regulation for lawyers, accountants, architects and engineers.
(9) Aggregate OECD indicators of regulation in energy, transport and communications (ETCR).
Source: European Commission; World Bank — Doing Business (for enforcing contracts and time to start a business); OECD (for the product market regulation indicators); SAFE (for outcome of SMEs' applications for bank loans).

Table C.6: **Green growth**

Green growth performance		2013	2014	2015	2016	2017	2018
Macroeconomic							
Energy intensity	kgoe / €	0,11	0,11	0,11	0,11	0,10	-
Carbon intensity	kg / €	0,26	0,25	0,25	0,25	0,25	-
Resource intensity (reciprocal of resource productivity)	kg / €	0,52	0,51	0,51	0,52	0,54	0,54
Waste intensity	kg / €	-	0,18	-	0,19	-	-
Energy balance of trade	% GDP	-3,5	-3,0	-2,3	-1,9	-2,1	-2,5
Weighting of energy in HICP	%	9,41	9,75	8,86	8,42	8,03	7,72
Difference between energy price change and inflation	p.p.	-0,1	-1,8	-3,0	-2,8	-2,8	0,5
Real unit of energy cost	% of value added	13,9	12,3	12,7	13,2	-	-
Ratio of environmental taxes to labour taxes	ratio	0,10	0,10	0,10	0,10	0,10	-
Environmental taxes	% GDP	2,4	2,4	2,4	2,4	2,4	2,3
Sectoral		-	-	-	-	-	-
Industry energy intensity	kgoe / €	0,10	0,10	0,09	0,09	0,09	-
Real unit energy cost for manufacturing industry excl. refining	% of value added	13,6	12,7	13,2	13,7	-	-
Share of energy-intensive industries in the economy	% GDP	10,34	10,28	10,21	10,45	10,55	10,76
Electricity prices for medium-sized industrial users	€ / kWh	0,11	0,11	0,10	0,10	0,10	0,10
Gas prices for medium-sized industrial users	€ / kWh	0,04	0,04	0,04	0,03	0,03	0,03
Public R&D for energy	% GDP	0,02	0,02	0,03	0,03	0,02	0,02
Public R&D for environmental protection	% GDP	0,02	0,01	0,01	0,01	0,01	0,01
Municipal waste recycling rate	%	57,7	56,3	56,9	57,6	57,7	-
Share of GHG emissions covered by ETS*	%	37,3	36,8	37,4	36,4	37,2	35,9
Transport energy intensity	kgoe / €	0,59	0,58	0,60	0,60	0,58	-
Transport carbon intensity	kg / €	0,43	0,41	0,38	0,36	0,39	0,39
Security of energy supply							
Energy import dependency	%	61,5	65,7	60,6	62,5	64,4	-
Aggregated supplier concentration index	HHI	25,1	37,7	23,3	30,4	35,7	-
Diversification of energy mix	HHI	27,0	27,1	26,6	27,3	27,1	-

All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2010 prices)
Energy intensity: gross inland energy consumption (Europe 2020-2030)(in kgoe) divided by GDP (in EUR)
Carbon intensity: greenhouse gas emissions (in kg CO2 equivalents) divided by GDP (in EUR)
Resource intensity: domestic material consumption (in kg) divided by GDP (in EUR)
Waste intensity: waste (in kg) divided by GDP (in EUR)
Energy balance of trade: the balance of energy exports and imports, expressed as % of GDP
Weighting of energy in HICP: the proportion of 'energy' items in the consumption basket used for the construction of the HICP
Difference between energy price change and inflation: energy component of HICP, and total HICP inflation (annual % change)
Real unit energy cost: real energy costs as % of total value added for the economy
Industry energy intensity: final energy use in industry (in kgoe) divided by gross value added of industry, including construction (in 2010 EUR)
Real unit energy costs for manufacturing industry excluding refining : real costs as % of value added for manufacturing sectors
Share of energy-intensive industries in the economy: share of gross value added of the energy-intensive industries in GDP
Electricity and gas prices for medium-sized industrial users: consumption band 500–20 00MWh and 10 000–100 000 GJ; figures excl. VAT.
Recycling rate of municipal waste: ratio of recycled and composted municipal waste to total municipal waste
Public R&D for energy or for the environment: government spending on R&D for these categories as % of GDP
Proportion of GHG emissions covered by EU emissions trading system (ETS) (excluding aviation): based on GHG emissions (excl land use, land use change and forestry) as reported by Member States to the European Environment Agency.
Transport energy intensity: final energy use in transport sector including international aviation, (in kgoe) divided by transport industry gross value added (in 2010 EUR)
Transport carbon intensity: GHG emissions in transport sector divided by gross value added of the transport activities
Energy import dependency: net energy imports divided by gross inland energy consumption plus consumption of international maritime bunkers
Aggregated supplier concentration index: Herfindahl-Hirschman index for net imports of crude oil and NGL, natural gas and hard coal. Smaller values indicate larger diversification and hence lower risk.
Diversification of the energy mix: Herfindahl-Hirschman index of the main energy products in the gross inland consumption of energy
* European Commission and European Environment Agency
Source: European Commission and European Environment Agency (Share of GHG emissions covered by ETS); European Commission (Environmental taxes over labour taxes); Eurostat (all other indicators)

ANNEX D: INVESTMENT GUIDANCE ON JUST TRANSITION FUND 2021-2027 FOR AUSTRIA

Building on the Commission proposal, this Annex[56] presents the preliminary Commission services' views on priority investment areas and framework conditions for effective delivery for the 2021-2027 Just Transition Fund investments in Austria. These priority investment areas are derived from the broader analysis of territories facing serious socio-economic challenges deriving from the transition process towards a climate-neutral economy of the Union by 2050 in Austria, assessed in the report. This Annex provides the basis for a dialogue between Austria and the Commission services as well as the relevant guidance for the Member States in preparing their territorial just transition plans, which will form the basis for programming the Just Transition Fund. The Just Transition Fund investments complement those under Cohesion Policy funding for which guidance in the form of Annex D was given in the 2019 Country Report for Austria [57].

In Austria, most of the regions with the highest greenhouse gas (GHG) emissions of the main industrial facilities per gross value added generated, are situated in Styria and Upper Austria. Carbon-intensive industries play an important role in employment in these regions. For example, the manufacture of basic metals, paper and paper products as well as chemicals and chemical products employed together almost 40 000 persons in Styria and Upper Austria in 2017. The high carbon intensities of the industries in the Styrian region of Östliche Obersteiermark as well as the Upper Austrian region of Traunviertel[58] highlight the scale of the decarbonisation challenge. Based on this preliminary assessment, it appears warranted that the Just Transition Fund concentrates its intervention on these regions.

In order to tackle these transition challenges, investment needs have been identified for supporting innovation for reducing greenhouse gas emissions, developing alternative economic activities and cushioning related employment shifts. Key actions of the Just Transition Fund could target in particular:

- productive investments in SMEs, including start-ups, leading to economic diversification and reconversion;
- investments in the creation of new firms, including through business incubators and consulting services;
- investments in research and innovation activities and fostering the transfer of advanced technologies;
- investments in the deployment of technology and infrastructures for affordable clean energy, in greenhouse gas emission reduction, energy efficiency and renewable energy;
- investments in enhancing the circular economy, including through waste prevention, reduction, resource efficiency, reuse, repair and recycling;
- upskilling and reskilling of workers.

The smart specialisation strategies of Styria and Upper Austria[59] provide an important framework to set priorities for innovation in support of economic transformation when implementing Just Transition Fund investments.

Carbon-intensive industrial sites in Styria and Upper Austria performing activities listed in Annex I to Directive 2003/87/EC employ a substantial number of workers and their activity is at risk due to their high greenhouse gas emissions. Support to investments to reduce the emissions could be considered, provided that they achieve a substantial reduction of emissions (going substantially below the relevant benchmarks used for free allocation under Directive 2003/87/EC) and on the condition that the investments are compatible with the European Green Deal.

[56] This Annex is to be considered in conjunction with the EC proposal for a Regulation of the European Parliament and of the Council on the Just Transition Fund 2021-2027 (COM(2020)22) and the EC proposal for a Regulation of the European Parliament and of the Council laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, and the European Maritime and Fisheries Fund and financial rules for those and for the Asylum and Migration Fund, the Internal Security Fund and the Border Management and Visa Instrument (COM(2020)23)

[57] SWD(2019) 1019 final

[58] The identified regions are at NUTS 3 level.

[59] As defined in Article 2(3) of Regulation (EU) No 1303/2013 (CPR)

ANNEX E: PROGRESS TOWARDS THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Assessment of Austria's short-term progress towards the SDGs ([60])

Table E.1 shows the data for Austria and the EU-28 for the indicators included in the EU SDG indicator set used by Eurostat for monitoring progress towards the SDGs in an EU context ([61]). As the short-term trend at EU-level is assessed over a 5-year period, both the value at the beginning of the period and the latest available value is presented. The indicators are regularly updated on the SDI dedicated section of the Eurostat website.

Table E.1: **Indicators measuring Austria's progress towards the SDGs**

SDG / Sub-theme	Indicator	Unit	Austria				EU-28			
			Starting		Latest		Starting		Latest	
			year	value	year	value	year	value	year	value
SDG 1 – No poverty										
Multidimensional poverty	People at risk of poverty or social exclusion	% of population	2013	18.8	2018	17.5	2013	24.6	2018	21.9
	People at risk of income poverty after social transfers	% of population	2013	14.4	2018	14.3	2013	16.7	2018	17.1
	Severely materially deprived people	% of population	2013	4.2	2018	2.8	2013	9.6	2018	5.8
	People living in households with very low work intensity	% of population aged 0 to 59	2013	7.8	2018	7.3	2013	11.0	2018	8.8
	In-work at-risk-of-poverty rate	% of population aged 18 or over	2013	7.9	2018	8.0	2013	9.0	2018	9.5
Basic needs	Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor	% of population	2013	12.5	2018	10.4	2013	15.6	2018	13.9
	Self-reported unmet need for medical care	% of population aged 16 or over	2013	0.4	2018	0.1	2013	3.7	2018	2.0
	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household	% of population	2013	0.2	2018	0.3	2013	2.2	2018	1.7
	Population unable to keep home adequately warm	% of population	2013	2.7	2018	1.6	2013	10.7	2018	7.3
	Overcrowding rate	% of population	2013	14.7	2018	13.5	2013	17.0	2018	15.5
SDG 2 – Zero hunger										
Malnutrition	Obesity rate	% of population aged 18 or over	2014	14.7	2017	15.0	2014	15.9	2017	15.2
Sustainable agricultural production	Agricultural factor income per annual work unit (AWU)	EUR, chain linked volumes (2010)	2012	19 869	2017	19 628	2012	14 865	2017	17 304
	Government support to agricultural research and development	million EUR	2014	34.4	2019	37.0	2013	3 048.6	2018	3 242.5
	Area under organic farming	% of utilised agricultural area	2013	18.4	2018	24.1	2013	5.7	2018	7.5
	Gross nitrogen balance on agricultural land	kg per hectare	2012	30	2017	46	2010	49	2015	51
Environmental impacts of agricultural production	Ammonia emissions from agriculture	kg per ha of utilised agricultural area	2012	21.3	2017	24.3	2011	19.7	2016	20.3
	Nitrate in groundwater	mg NO_3 per litre	2012	23.6	2017	22.5	2012	19.2	2017	19.1
	Estimated soil erosion by water	km^2	2010	11 835.0	2016	11 773.0	2010	207 232.2	2016	205 294.5
	Common farmland bird index	index 2000 = 100	N/A	:	N/A	:	2013	83.9	2018	80.7
SDG 3 – Good health and well-being										
Healthy lives	Life expectancy at birth	years	2012	81.1	2017	81.7	2012	80.3	2017	80.9
	Share of people with good or very good perceived health	% of population aged 16 or over	2013	68.7	2018	71.7	2013	67.3	2018	69.2
Health determinants	Smoking prevalence	% of population aged 15 or over	2012	33	2017	28	2014	26	2017	26
	Obesity rate	% of population aged 18 or over	2014	14.7	2017	15.0	2014	15.9	2017	15.2
	Population living in households considering that they suffer from noise	% of population	2013	18.9	2018	17.5	2013	18.8	2018	18.3
	Exposure to air pollution by particulate matter ($PM_{2.5}$)	$\mu g/m^3$	2012	16.2	2017	13.8	2012	16.8	2017	14.1
Causes of death	Death rate due to chronic diseases	number per 100 000 persons aged less than 65	2011	121.9	2016	103.7	2011	132.5	2016	119.0
	Death rate due to tuberculosis, HIV and hepatitis	number per 100 000 persons	2011	4.7	2016	2.9	2011	3.4	2016	2.6
	People killed in accidents at work	number per 100 000 employed persons	2012	3.44	2017	2.53	2012	1.91	2017	1.65
	People killed in road accidents	number of killed people	2012	531	2017	414	2012	28 231	2017	25 257
Access to health care	Self-reported unmet need for medical care	% of population aged 16 or over	2013	0.4	2018	0.1	2013	3.7	2018	2.0

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([60]) Data extracted on 9 February 2020 from the Eurostat database (official EU SDG indicator set; see https://ec.europa.eu/eurostat/web/sdi/main-tables).

([61]) The EU SDG indicator set is aligned as far as appropriate with the UN list of global indicators, noting that the UN indicators are selected for global level reporting and are therefore not always relevant in an EU context. The EU SDG indicators have strong links with EU policy initiatives.

Table (continued)

SDG / Sub-theme	Indicator	Unit	Austria				EU-28			
			Starting		Latest		Starting		Latest	
			year	value	year	value	year	value	year	value
SDG 4 – Quality education										
Basic education	Early leavers from education and training	% of the population aged 18 to 24	2013	7.5	2018	7.3	2013	11.9	2018	10.6
	Participation in early childhood education	% of the age group between 4-years-old and the starting age of compulsory education	2012	93.8	2017	95.6	2012	94.0	2017	95.4
	Underachievement in reading	% of 15-year-old students	2015	22.5	2018	23.6	2015	19.7	2018	21.7
	Young people neither in employment nor in education and training	% of population aged 15 to 29	2013	8.6	2018	8.4	2013	15.9	2018	12.9
Tertiary education	Tertiary educational attainment	% of the population aged 30 to 34	2014	40.0	2018	40.7	2013	37.1	2018	40.7
	Employment rate of recent graduates	% of population aged 20 to 34	2013	89.7	2018	88.6	2013	75.4	2018	81.7
Adult education	Adult participation in learning	% of population aged 25 to 64	2013	14.1	2018	15.1	2013	10.7	2018	11.1
SDG 5 – Gender equality										
Gender-based violence	Physical and sexual violence to women experienced within 12 months prior to the interview	% of women	N/A	:	2012	5	N/A	:	2012	8
Education	Gender gap for early leavers from education and training	percentage points, persons aged 18–24	2013	0.8	2018	3.2	2013	3.4	2018	3.3
	Gender gap for tertiary educational attainment	percentage points, persons aged 30–34	2013	1.4	2018	7.0	2013	8.5	2018	10.1
	Gender gap for employment rate of recent graduates	percentage points, persons aged 20–34	2013	3.6	2018	5.1	2013	4.4	2018	3.4
Employment	Gender pay gap in unadjusted form	% of average gross hourly earnings of men	2012	22.9	2017	19.9	2012	17.4	2017	16.0
	Gender employment gap	percentage points, persons aged 20–64	2013	9.1	2018	9.0	2013	11.7	2018	11.6
	Gender gap in inactive population due to caring responsibilities	percentage points, persons aged 20–64	2013	30.8	2018	25.3	2013	25.5	2018	27.1
Leadership positions	Seats held by women in national parliaments and governments	% of seats	2014	30.3	2019	37.3	2014	27.2	2019	31.5
	Positions held by women in senior management	% of board members	2014	17.1	2019	27.8	2014	20.2	2019	27.8
SDG 6 – Clean water and sanitation										
Sanitation	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household	% of population	2013	0.2	2018	0.3	2013	2.2	2018	1.7
	Population connected to at least secondary wastewater treatment	% of population	2012	94.5	2016	99.8	N/A	:	N/A	:
Water quality	Biochemical oxygen demand in rivers	mg O_2 per litre	2012	1.57	2017	1.34	2012	2.06	2017	2.00
	Nitrate in groundwater	mg NO_3 per litre	2012	23.6	2017	22.5	2012	19.2	2017	19.1
	Phosphate in rivers	mg PO_4 per litre	N/A	:	N/A	:	2012	0.096	2017	0.093
	Inland water bathing sites with excellent water quality	% of bathing sites with excellent water quality	2013	87.6	2018	97.3	2013	76.5	2018	80.8
Water use efficiency	Water exploitation index	% of long term average available water (LTAA)	N/A	:	N/A	:	N/A	:	N/A	:
SDG 7 – Affordable and clean energy										
Energy consumption	Primary energy consumption	million tonnes of oil equivalent (Mtoe)	2013	32.1	2018	31.8	2013	1 577.4	2018	1 551.9
	Final energy consumption	million tonnes of oil equivalent (Mtoe)	2013	28.0	2018	27.9	2013	1 115.5	2018	1 124.1
	Final energy consumption in households per capita	kgoe	2013	819	2018	734	2013	605	2018	552
	Energy productivity	EUR per kgoe	2013	9.0	2018	9.8	2013	7.6	2018	8.5
	Greenhouse gas emissions intensity of energy consumption	index 2000 = 100	2012	86.4	2017	85.3	2012	91.5	2017	86.5
Energy supply	Share of renewable energy in gross final energy consumption	%	2013	32.8	2018	33.4	2013	15.4	2018	18.0
	Energy import dependency	% of imports in gross available energy	2013	61.2	2018	64.3	2013	53.2	2018	55.7
Access to affordable energy	Population unable to keep home adequately warm	% of population	2013	2.7	2018	1.6	2013	10.7	2018	7.3

(Continued on the next page)

Table (continued)

SDG / Sub-theme	Indicator	Unit	Austria				EU-28			
			Starting		Latest		Starting		Latest	
			year	value	year	value	year	value	year	value
SDG 8 – Decent work and economic growth										
Sustainable economic growth	Real GDP per capita	EUR per capita, chain-linked volumes (2010)	2013	36 180	2018	37 810	2013	25 750	2018	28 280
	Investment share of GDP	% of GDP	2013	23.0	2018	24.0	2013	19.5	2018	20.9
	Resource productivity	EUR per kg, chain-linked volumes (2010)	2013	1.92	2018	1.86	2013	1.98	2018	2.04
Employment	Young people neither in employment nor in education and training	% of population aged 15 to 29	2013	8.6	2018	8.4	2013	15.9	2018	12.9
	Employment rate	% of population aged 20 to 64	2013	74.6	2018	76.2	2013	68.4	2018	73.2
	Long-term unemployment rate	% of active population	2013	1.3	2018	1.4	2013	5.1	2018	2.9
	Gender gap in inactive population due to caring responsibilities	percentage points, persons aged 20–64	2013	30.8	2018	25.3	2013	25.5	2018	27.1
Decent work	People killed in accidents at work	number per 100 000 employed persons	2012	3.44	2017	2.53	2012	1.91	2017	1.65
	In-work at-risk-of-poverty rate	% of population	2013	7.9	2018	8	2013	9	2018	9.5
SDG 9 – Industry, innovation and infrastructure										
R&D and innovation	Gross domestic expenditure on R&D	% of GDP	2013	2.95	2018	3.17	2013	2.01	2018	2.12
	Employment in high- and medium-high technology manufacturing and knowledge-intensive services	% of total employment	2013	43.4	2018	44.9	2013	45.0	2018	46.1
	R&D personnel	% of active population	2013	1.55	2018	1.83	2013	1.15	2018	1.36
	Patent applications to the European Patent Office (EPO)	number	2012	1 863	2017	2 030	2012	56 772	2017	54 649
Sustainable transport	Share of buses and trains in total passenger transport	% of total inland passenger-km	2012	22.1	2017	22.3	2012	17.2	2017	16.7
	Share of rail and inland waterways in total freight transport	% of total inland freight tonne-km	2012	36.3	2017	34.6	2012	25.4	2017	23.3
	Average CO2 emissions per km from new passenger cars	g CO_2 per km	2013	131.6	2018	123.1	2014	123.4	2018	120.4
SDG 10 – Reduced inequalities										
Inequalities within countries	Relative median at-risk-of-poverty gap	% distance to poverty threshold	2013	21.3	2018	21.7	2013	23.8	2018	24.6
	Income distribution	income quintile share ratio	2013	4.1	2018	4.0	2013	5.0	2018	5.2
	Income share of the bottom 40 % of the population	% of income	2013	23.1	2018	23.2	2013	21.1	2018	21.0
	People at risk of income poverty after social transfers	% of population	2013	14.4	2018	14.3	2013	16.7	2018	17.1
Inequalities between countries	Purchasing power adjusted GDP per capita	Real expenditure per capita (in PPS)	2013	35 200	2018	39 400	2013	26 800	2018	31 000
	Adjusted gross disposable income of households per capita	Purchasing power standard (PPS) per inhabitant	2013	25 655	2018	27 374	2013	20 392	2018	22 824
	Financing to developing countries	million EUR, current prices	2012	3 734	2017	1 864	2012	147 962	2017	155 224
	Imports from developing countries	million EUR, current prices	2013	15 049	2018	19 101	2013	817 475	2018	1 013 981
Migration and social inclusion	Asylum applications	Positive first instance decisions, per million inhabitants	2013	580	2018	1 699	2013	213	2018	424
SDG 11 – Sustainable cities and communities										
Quality of life in cities and communities	Overcrowding rate	% of population	2013	14.7	2018	13.5	2013	17.0	2018	15.5
	Population living in households considering that they suffer from noise	% of population	2013	18.9	2018	17.5	2013	18.8	2018	18.3
	Exposure to air pollution by particulate matter ($PM_{2.5}$)	µg/m³	2012	16.2	2017	13.8	2012	16.8	2017	14.1
	Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor	% of population	2013	12.5	2018	10.4	2013	15.6	2018	13.9
	Population reporting occurrence of crime, violence or vandalism in their area	% of population	2013	11.3	2018	9.7	2013	14.5	2018	12.7
Sustainable mobility	People killed in road accidents	number of killed people	2012	531	2017	414	2012	28 231	2017	25 257
	Share of buses and trains in total passenger transport	% of total inland passenger-km	2012	22.1	2017	22.3	2012	17.2	2017	16.7
Adverse environmental impacts	Settlement area per capita	m²	2009	654.3	2015	703.6	2012	625.0	2015	653.7
	Recycling rate of municipal waste	% of total waste generated	2013	57.7	2018	57.7	2013	41.7	2018	47.0
	Population connected to at least secondary wastewater treatment	% of population	2012	94.5	2016	99.8	N/A	:	N/A	:

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Table (continued)

SDG / Sub-theme	Indicator	Unit	Austria				EU-28			
			Starting		Latest		Starting		Latest	
			year	value	year	value	year	value	year	value
SDG 12 – Responsible consumption and production										
Decoupling environmental impacts from economic growth	Consumption of toxic chemicals	million tonnes	N/A	:	N/A	:	2013	300.3	2018	313.9
	Resource productivity	EUR per kg, chain-linked volumes (2010)	2013	1.92	2018	1.86	2013	1.98	2018	2.04
	Average CO2 emissions per km from new passenger cars	g CO_2 per km	2013	131.6	2018	123.1	2014	123.4	2018	120.4
	Energy productivity	EUR per kgoe	2013	9.0	2018	9.8	2013	7.6	2018	8.5
Energy consumption	Primary energy consumption	million tonnes of oil equivalent (Mtoe)	2013	32.1	2018	31.8	2013	1 577.4	2018	1 551.9
	Final energy consumption	million tonnes of oil equivalent (Mtoe)	2013	28.0	2018	27.9	2013	1 115.5	2018	1 124.1
	Share of renewable energy in gross final energy consumption	%	2013	32.8	2018	33.4	2013	15.4	2018	18.0
Waste generation and management	Circular material use rate	% of material input for domestic use	2012	7.7	2017	11.6	2012	11.5	2017	11.7
	Generation of waste excluding major mineral wastes	kg per capita	2012	1 735	2016	1 886	2012	1 716	2016	1 772
	Recycling rate of waste excluding major mineral wastes	% of total waste treated	2012	65	2016	66	2012	55	2016	57
SDG 13 – Climate action										
Climate mitigation	Greenhouse gas emissions	index 1990 = 100	2012	102.9	2017	106.2	2012	82.1	2017	78.3
	Greenhouse gas emissions intensity of energy consumption	index 2000 = 100	2012	86.4	2017	85.3	2012	91.5	2017	86.5
	Primary energy consumption	million tonnes of oil equivalent (Mtoe)	2013	32.1	2018	31.8	2013	1 577.4	2018	1 551.9
	Final energy consumption	million tonnes of oil equivalent (Mtoe)	2013	28.0	2018	27.9	2013	1 115.5	2018	1 124.1
	Share of renewable energy in gross final energy consumption	%	2013	32.8	2018	33.4	2013	15.4	2018	18.0
	Average CO2 emissions per km from new passenger cars	g CO_2 per km	2013	131.6	2018	123.1	2014	123.4	2018	120.4
Climate impacts	European mean near surface temperature deviation	temperature deviation in °C, compared with the 1850–1899 average	N/A	:	N/A	:	2013	1.4	2018	2.1
	Climate-related economic losses	EUR billion, in 2017 values	N/A	:	N/A	:	2012	2 719	2017	2 649
	Mean ocean acidity	pH value	N/A	:	N/A	:	2013	8.06	2018	8.06
Support to climate action	Contribution to the international 100bn USD commitment on climate related expending	EUR million, current prices	N/A	:	2017	164.1	N/A	:	2017	20 388.7
SDG 14 – Life below water										
Ocean health	Coastal water bathing sites with excellent water quality	% of bathing sites with excellent water quality	N/A	:	N/A	:	2013	85.5	2018	87.1
	Mean ocean acidity	pH value	N/A	:	N/A	:	2013	8.06	2018	8.06
Marine conservation	Surface of marine sites designated under NATURA 2000	km^2	N/A	:	N/A	:	2013	251 566	2018	551 899
Sustainable fisheries	Estimated trends in fish stock biomass	index 2003 = 100	N/A	:	N/A	:	2012	110.0	2017	136.0
	Assessed fish stocks exceeding fishing mortality at maximum sustainable yield (Fmsy)	% of stocks exceeding fishing mortality at maximum sustainable yield ($F>F_{MSY}$)	N/A	:	N/A	:	2012	52.9	2017	42.7
SDG 15 – Life on land										
Ecosystems status	Share of forest area	% of total land area	2009	45.2	2015	46.7	2012	40.3	2015	41.6
	Biochemical oxygen demand in rivers	mg O_2 per litre	2012	1.57	2017	1.34	2012	2.06	2017	2.00
	Nitrate in groundwater	mg NO_3 per litre	2012	23.6	2017	22.5	2012	19.2	2017	19.1
	Phosphate in rivers	mg PO_4 per litre	N/A	:	N/A	:	2012	0.096	2017	0.093
Land degradation	Soil sealing index	index 2006 = 100	2009	101.4	2015	103.3	2009	101.7	2015	104.2
	Estimated soil erosion by water	km^2	2010	11 835.0	2016	11 773.0	2010	207 232.2	2016	205 294.5
	Settlement area per capita	m^2	2009	654.3	2015	703.6	2012	625.0	2015	653.7
Biodiversity	Surface of terrestrial sites designated under NATURA 2000	km^2	2013	12 559	2018	12 891	2013	787 766	2018	784 252
	Common bird index	index 2000 = 100	N/A	:	N/A	:	2013	94.7	2018	93.5
	Grassland butterfly index	index 2000 = 100	N/A	:	N/A	:	2012	72.2	2017	74.1

(Continued on the next page)

Table (continued)

SDG / Sub-theme	Indicator	Unit	Austria				EU-28			
			Starting		Latest		Starting		Latest	
			year	value	year	value	year	value	year	value
SDG 16 – Peace, justice and strong institutions										
Peace and personal security	Death rate due to homicide	number per 100 000 persons	2011	0.6	2016	0.5	2011	0.9	2016	0.6
	Population reporting occurrence of crime, violence or vandalism in their area	% of population	2013	11.3	2018	9.7	2013	14.5	2018	12.7
	Physical and sexual violence to women experienced within 12 months prior to the interview	% of women	N/A	:	2012	5	N/A	:	2012	8
Access to justice	General government total expenditure on law courts	million EUR	2013	894	2018	1 065	2012	48 381	2017	51 027
	Perceived independence of the justice system	% of population	2016	77	2019	83	2016	52	2019	56
Trust in institutions	Corruption Perceptions Index	score scale of 0 (highly corrupt) to 100 (very clean)	2013	69	2018	76	N/A	:	N/A	:
	Population with confidence in the EU Parliament	% of population	2013	47	2018	55	2013	39	2018	48
SDG 17 – Partnerships for the goals										
Global partnership	Official development assistance as share of gross national income	% of GNI	2013	0.27	2018	0.26	2013	0.43	2018	0.48
	EU financing to developing countries	million EUR, current prices	2012	3 734	2017	1 864	2012	147 962	2017	155 224
	EU imports from developing countries	million EUR, current prices	2013	15 049	2018	19 101	2013	817 475	2018	1 013 981
Financial governance within the EU	General government gross debt	% of GDP	2013	81.3	2018	74.0	2013	86.3	2018	80.4
	Shares of environmental and labour taxes in total tax revenues	% of total tax revenues	2013	5.6	2018	5.4	2013	6.4	2018	6.1

Source: Eurostat

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